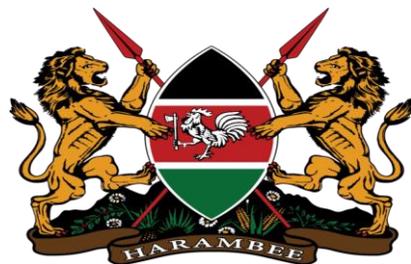




AFRICAN DEVELOPMENT BANK



GOVERNMENT OF KENYA

**MINISTRY OF AGRICULTURE, LIVESTOCK AND FISHERIES
(STATE DEPARTMENT OF AGRICULTURE)**

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

KAMINIA IRRIGATION SCHEME IN WEST POKOT

FINAL ANTHROPOLOGY REPORT -

AUGUST, 2015

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ABBREVIATIONS

ADB	African Development Bank
AMREF	African Medical and Research Foundation
ASAL	Arid and Semi-Arid Lands
CAHWs	Community based Animal Health Workers
CAN	Calcium- Ammonium Nitrate
CBO	Community Based Organisation
CC	County Commissioner
CMDDR	Community Management Disaster & Disaster & Drought Response
DAP	Di-Ammonium Phosphate
DO	District Officer
DC	District Commissioner
DRSLP	Drought Resilience and Sustainable Livelihoods Programme
FAO	Food Agriculture Organization
FGD	Focus Group Discussions
FGM	Female Genital Mutilation
FMD	Foot and Mouth Disease
IFAD	International Fund for Agriculture Development
KII	Key Informant Interview
KTB	Kenya Tourism Board
KDHS	Kenya Demographic Health Survey
KSC	Kenya Seed Company
KVDA	Kerio Valley Development Agency
MCA	Member County Assembly
MP	Members of Parliament
MoALF	Ministry of Agriculture, Livestock and Fisheries
NGO	Non-Governmental Organisation
NCPB	National Cereals Produce Board
ORS	Oral Rehydration Solution
PCU	Project Coordinating Unit
RND	Rural Development News
WID	Women in Development
WASH	Water Supply, Sanitation and Hygiene
WISP	World Initiative for Sustainable Pastoralism

1.1 Background of West Pokot County

This is an anthropology report for Kaminia Irrigation Scheme in West Pokot 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.

West Pokot County is one of the 14 counties in the Rift Valley region. It is situated in the North Rift along Kenya's western border with Uganda. It borders Turkana County to the north and northeast, Trans Nzoia County to the south, Elgeyo Marakwet County and Baringo County to the southeast and east respectively. The county lies within Longitudes 34° 47' and 35° 49' East and Latitude 10° and 20° North. The County covers an area of approximately 9,169.4 km² stretching a distance of 132km from north to south. The county has four sub-counties namely West Pokot, South Pokot, Pokot Central and North Pokot. The four sub-counties have 13 divisions, 61 locations and 222 sub-locations. It covers an area of 9,169.4 Km².

The county is characterised by a variety of topographic features. On the northern and north-eastern parts are the dry plains, with an altitude of less than 900m above sea level. On the south-eastern part are Cherangany Hills with an altitude of 3,370m above sea level. Landscapes associated with this range of altitude include spectacular escarpments of more than 700m. The high altitude areas have high agricultural potentials while medium altitude areas lie between 1,500m and 2,100m above sea level and receive low rainfall in addition to being predominantly pastoral land. The low altitude areas include Alale, Kacheliba, Kongelai, Masol and parts of Sigor. These areas are prone to soil erosion due to flash floods.

The main forests in the county are found in Cherangany Hills. The gazetted forest, which forms part of the Cherangany Hills in Lelan, covers an area of 20,857ha. The un-gazetted forest covers 15,719ha and consists of rain forests blocks scattered all over the county. The main rivers in the county are Suam, Kerio, Weiwei and Muruny. Cherangany Hills are the main source of Muruny and Weiwei rivers, while Mt Elgon is the main source of River Suam. Rivers Muruny, Kerio and Weiwei drain northwards into Lake Turkana, while other small rivers join and drain into River Nzoia, which in turn drains into Lake Victoria. River Suam drains into Turkwel Dam that generates hydro-electric power. The main forest products include firewood, timber, herbs, fruits, grazing fields and honey production. The quantities of these products and their value have not so far been determined. However, there are few farm forests in the county with woodlots for commercial purposes.

The county has three main livelihood zones, namely: pastoral-all species at 33%, agro-pastoral at 37% and Mixed farming at 30%. The county depends more on the long rains than the short rains for crop, regeneration of pasture and browse and recharge of water sources (West Pokot County Long Rains 2013 Assessment Report). The main crops produced include maize, finger millet, potatoes, beans, onions, sweet potatoes, green grams, peas, mangoes, oranges, bananas, coffee and pyrethrum. Maize is the staple food in the county and is mainly grown in West Pokot Sub-County. Potatoes and pyrethrum are grown in South Pokot Sub-County. These food crops produced do not meet the food requirements of the county. The total acreage under food crops and cash crops is 22,000 hectares. This consists of 17,000 hectares under food crops and 5,000 hectares under cash crops. Acreage under food crops continue to increase due to irrigation schemes such as the Weiwei Irrigation Scheme in Sigor.

The traditional zebu is the main cattle breed in Pokot Central and North Pokot sub-counties for meat production, while West Pokot and Pokot South sub-counties keep improved dairy cows such as Ayrshire and Friesian. There are 686,375 indigenous Zebu cattle, 460,327 sheep, 551,596 goats, 30,617 camels, 36,473 donkeys and 397 pigs (County Government of West Pokot, First County Intergraded Development Plan, 2013).

The DRSLP programme, which was initiated in West Pokot County in 2012, covers all the four sub-counties namely Pokot South, Pokot North, Pokot Central and Pokot West.

1.2 Background of the Scheme

The Kaminia Irrigation Scheme is located at Sebit Sub-location in Parua Location of Batei Ward. River Sebit, which drains into river Muruny, is the source of irrigation water for the scheme. The area was originally a group ranch until 2010 when it was sub-divided among inhabitants by elders. Survey had been done by the Government but no titles had been issued. Household land size varies from 3 to 20 acres with an average of 6 acres per household. The inhabitants of the sub-location were drawn from different communities, including Kikuyu, other Kalenjin sub-tribes (e.g. Marakwet), Luo, Kisii, Luhya, Turkana and Somali. However, the scheme was inhabited only by the Pokot community. Some of the scheme inhabitants came from Weiwei and had lived in the area for decades.

The land under irrigation per household varied from 0.125 to 3.0 acres per household. Majority of the households had one-acre under irrigation. The size of the irrigation scheme was expected to be 300 hectares. Land costed from Ksh. 45,000 to Ksh. 100,000 per acre in descending order the farther away from the river to the hillside.

The scheme had a membership of 605 households with an estimated population of about 2,200 people. These households had been clustered into blocks One to Four with 147, 192, 171 and 95 households respectively. Each block had an elected management committee which included women. The community members had invested in pipes to convey water from the river to their farms. The community had requested the Government to upgrade the small schemes and proposed the establishment of Kaminia Irrigation Scheme in a meeting held at Sebit with Government officials and other stakeholders about three years ago. In effect, it was a demand-driven scheme. One main intake would be established for the whole scheme once a survey is conducted.

The government constructed semi-permanent intakes along river Sebit. Prior to this, the farmers used logs and stones to create abstraction points for water into the earth canals but these used to be swept away during the rainy season. To deal with the many gullies caused by soil erosion, the government constructed concrete flumes to get water across the gullies into the canals. Previously, the farmers used wooden flumes. The soils in the area were porous and most of the canal water (up to 80%) was lost through percolation and evaporation. The water catchment area was not well protected and had experienced destruction of trees due to logging. Thus the scheme was ridden with gullies which needed to be healed by growing bananas, sisal, trees and fodder in them. There was, therefore, need to enable people living near the water catchment area to protect it.

In the new scheme, water will be conveyed to the farms through pipes using gravity as the intake point will be higher. To increase water use efficiency and cover more land area, overhead/sprinkler irrigation will be used instead of furrow irrigation that is currently used. This system is less labour-intensive and more cost-effective, as there will be no pumping. Farmers will operate and maintain the scheme infrastructure. For example, they will be involved in rationing of water, repair/maintenance of pipes and sprinkler system and conservation of soil and water. Due to long term engagement with many development partners, the community had generally developed what would be considered a dependency syndrome. Experience had shown that they ran for help even for repairs that required as low as Ksh. 500.

The road network had improved over time, especially after devolution of government. New roads were being opened up and old ones rehabilitated or maintained. But there was need to establish footbridges along the river and roads/paths within the scheme. The inhabitants recognised that the national government had a strong presence through the village headman, assistant chief, chief, District Officer and County Commissioner. The county government was mainly visible through the Member of County Assembly and the Governor.

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;
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 staff 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 Purpose and Scope of the Study

This report captures information from Kaminia Irrigation Scheme in West Pokot 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 are presented in the following section: 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 staff in the scheme.

2.1 Social Cultural Dynamics

The dominant community in the scheme were Pokots. They lived in the scheme for close to 40 years. The Pokot were identified and differentiated from other communities through their various cultural practices which included removal of lower incisor teeth, having the *akala* type of shoes, markings on their face and other parts of the body, ear piercing, putting on *shukas* and carrying walking sticks on their hands. The Pokots were also noted to have a dark complexion and residing on rocky areas as opposed to their neighbouring communities except the Marakwet.

In a Pokot family, the order of authority within the homes in decreasing order was father, mother, first born son, other sons and then daughters.

2.1.1 Household Headship

The majority of the households were in male headed monogamous households (58%), followed by male headed polygamous households (29%). The remaining households were female headed (13%). The **Figure 1** represents the distribution of types of households head in Kaminia

There were few female headed households. Existing ones mainly arose from widowhood and separation or divorce. Older widows who declined to be inherited by brothers in law stayed in the village while younger ones took refuge in marketing centres where they are not beholden to cultural dictates and where they could exercise their freedom unfettered. They mostly engaged in petty trade (e.g. selling vegetables), and worked as house maids, waitresses and commercial sex workers.

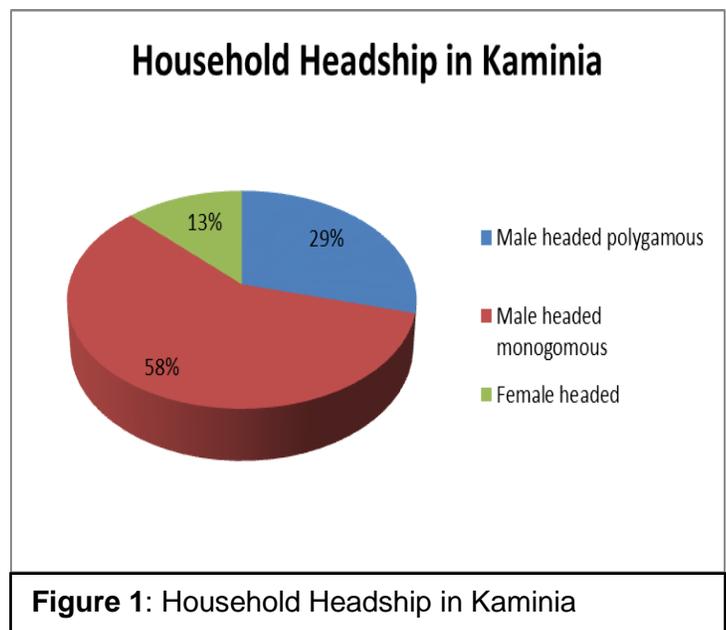


Figure 1: Household Headship in Kaminia

2.1.2 Religious Practices

Majority of people residing in Kaminia scheme were Christians (Catholic, Full Gospel, Dini ya Roho – which originated from Dini ya Msambwa of the late Elijah Masinde). The interview with the community established that most pastoralists and community members had the traditional belief which is closely tied to animism¹.

As depicted in **Figure 2**, and confirmed by the FGD interviews, Pokots embraced other communities in the scheme. The residents were integrating them in their own situations including trade, marriage, initiation etc. They worshipped together and lived in harmony. By engaging in these activities jointly, they were able to provide synergy in their social engagements; even with the Turkana who are taken like the arch-enemies. The Pokot embraced Turkanas and were involved in most of their social activities.

¹ Animism encompasses the belief that there is no separation between the spiritual and physical (or material) world, and souls or spirits exist, not only in humans, but also in some other animals, plants, rocks, geographic features such as mountains or rivers, or other entities of the natural environment, including thunder, wind, and shadows.

2.1.3 Key Rites of Passages

The key rites of passages among the Pokot are shown by **Figure 2** and included birth, initiation, marriage and naming. These rites were traditionally for both adult male and female pokot community members. Traditionally, Pokot women and man underwent circumcision. It was a key rite of passage to mark readiness and preparedness for womanhood and motherhood. During initiation, elder women reinforced the gender values a woman should uphold as a wife, mother and member of the society. Children were named after seasons, occasions and places of birth.

The marriage among the Pokot took place immediately after initiation of both girls and boys. Marriage within the clan had been discouraged, as it was believed it could lead to retarded/disabled children. The key informants' interviews confirmed that Pokots mostly married across clans as opposed to other tribes living with them. The inter-tribal marriage was deemed possible, with the Kikuyu, Maasai, and Luo and Marakwet communities being viewed as the most approachable as depicted by **Figure 3**.

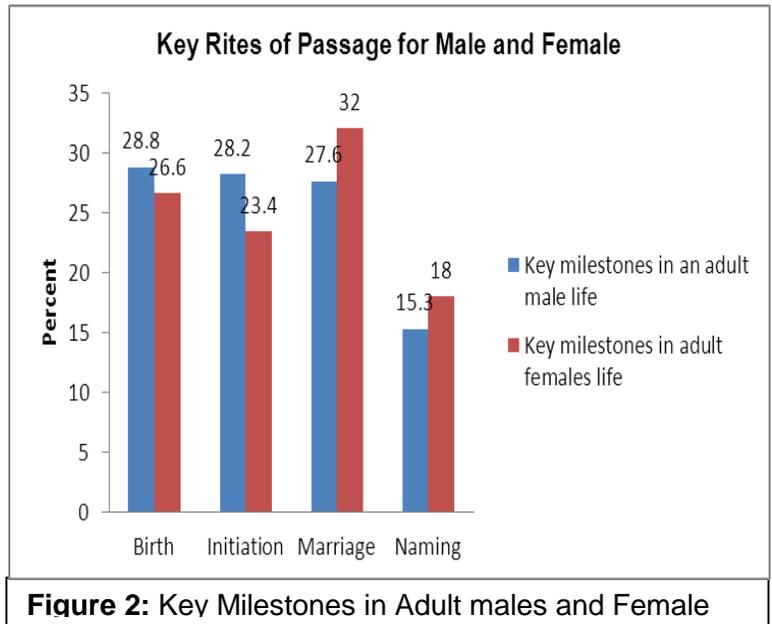


Figure 2: Key Milestones in Adult males and Female

Girls are married off at the age of between 15 and 18, while boys married at between 18 and 25 years of age. Boys were noted to stay longer (25-30 years old) because girls went to school and there was economic pressure on them do things differently. They also lacked livestock to pay dowry and therefore the need for more time to acquire minimum time necessary for dowry. At the time of the study, there was a pre-wedding/fundraising on both grooms' and brides' sides. The engagement period took between two and five months. Before approval of marriage, the clan looked at the boy's history before of marriage. Grooms and brides who lied are believed to have the likelihood of producing children that were mentally retarded, physically deformed, drunken and unable to marry or reproduce. Marriage was finalised by handover of the bride by the bride's parents to the groom's parents. Rituals were conducted during which the brother in-law gave the girl a stick, a female cow and a female goat. Dowry paid to the family of the bride by the groom's family comprised of 12 cattle and 20 goats/sheep. Bride price could be paid over a period of time rather than once when permission was provided by the bride's family after negotiation.

Polygamy was a common practice with each wife accommodated in her own compound. The head of the homestead ensured the co-wives kept a safe distance from each other to reduce conflicts as well as to ensure respect for each other. In the community, a polygamist commanded more respect than a monogamist. In the old days, the parents used

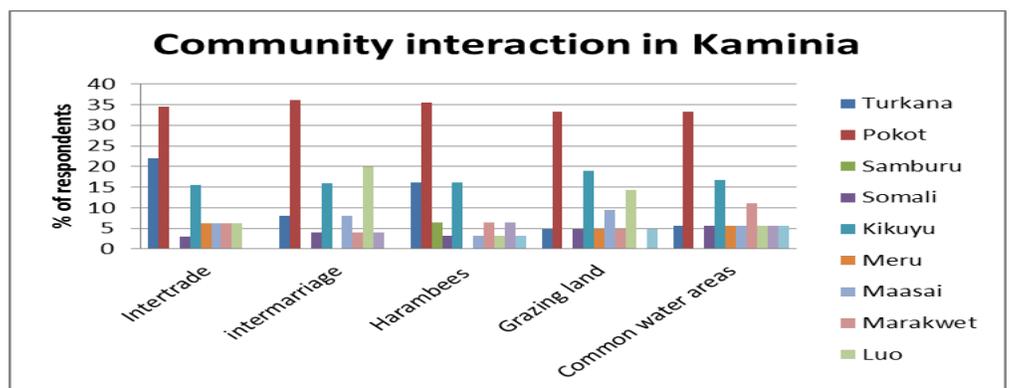


Figure 3 : Community interaction in Kaminia

to make arrangements for marriage. This arrangement had changed over time and at the time of the study a prospective groom normally approached the bride-to-be and made a request. Knowing the clan of your prospective bride or groom was very important among the Pokot.

2.1.4 Interaction with other Communities

The Pokots interacted with other communities in several areas including inter-trade, contributions in harambees, marriage and sharing of grazing fields. **Figure 2** depicts inter community relationship in areas of trade, marriage and sharing of resources (grazing, water etc). There was more interaction with Turkanas in trade (25%), Harambee (15%) and intermarriage (7%). The interaction with Kikuyus was almost even, for example in trade, intermarriage, harambee and common water points were at 15%, respectively.

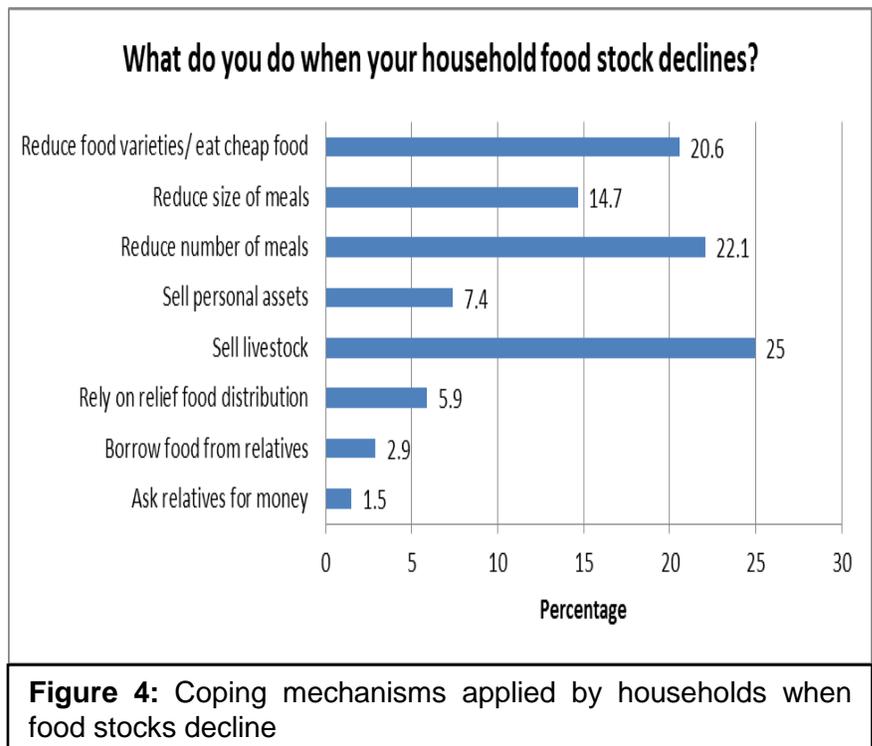
The interaction with Samburu's was more in intermarriage (20%) and sharing of grazing (15%). The Somalis, Meru's, Marakwet, Luo and Maasai interactions were evenly distributed at an average of 5%. An interesting observation was despite Turkanas' being their arch-enemies; there were more interactions than other community with Pokots. Perhaps this could be explained by the fact that they were close neighbours and many times they made peace. When there was peace they shared a lot more as depicted in **Figure 2**. Overall, it was clear Pokots interacted well with other communities and this could be construed to mean that they were accommodative and were likely to take new ideas easily.

2.2 Economic Organization

2.2.1 Types of Livelihoods in Kaminia Irrigation Scheme

The main economic activities in Kaminia were crop farming (76%) and livestock keeping (24%). Communities living in Kaminia Irrigation Scheme confirmed the major social challenge to their wellbeing was drought as indicated by 42% of respondents. In addition, 36% confirmed livestock diseases as a major social challenge as well as human diseases as confirmed by 22% of households. During such periods, households resulted to reducing the number of meals in a day as a common coping mechanism. Other coping mechanisms applied by households are depicted in **Figure 4**.

In addition to the above coping strategies, households further engaged in additional forms of livelihoods to earn income. The alternative sources of income practised in Kaminia included engagement in small-scale business as confirmed by 36% of household respondents. Others were casual labour (28%), trading in livestock and livestock products (14%), seeking employment (14%) and undertaking bee keeping activities (8%).



2.2.2 Land as Source of livelihood

Pokot were traditionally engaged in cattle keeping and agriculture. Land ownership in West Pokot County had been communal or group ranch based but there was a move towards individual ownership as demarcation continued. This was driven by high profits from horticultural crops such as onions. Along the irrigation scheme, the Pokot engaged in farming. The land size under irrigation in the area varied from 0.125-2.000 acres per household. The irrigation command area was estimated to be 300 hectares.

The land in the area was originally a group ranch until 2010 when sub-division was carried out by the elders according to where one lived. Adjudication had been done by Government but titles had not been issued. The land-holding varied from 3 to 20 acres per household with an average of six acres per household. Majority of the households had one (1) acre under irrigation. Based on the household survey and FGD discussions, it was established that land was individually owned as indicated by 92% of households. Few households (8%) confirmed that land ownership was through the clan system.

2.2.3 Crop Production

The Kaminia Irrigation Scheme was an amalgamation of four small-scale irrigation schemes along River Sebit. Inhabitants of these schemes had a long tradition of small-scale crop farming. Each of the four small irrigation schemes had its own abstraction point and water gravitated to the field by earth canals. The community expectation was that one main intake would be built for the whole scheme once a survey was conducted. The community members had invested in pipes to convey water to their farms from the river. The crop farming particularly of growing onions and other vegetables was well established and adopted by many farmers.

Photo 1 & 2 shows onion and vegetables for sale.



Photo 2: Bumper onion harvest sold in Ortum



Photo 1: A woman sells vegetables in Ortum

Most of the households depended on crop production. This was confirmed by 76% of households with crop production as their main form of livelihood as opposed to 24% of households which depended on livestock production. The majority of farmers in Kaminia practised irrigated agriculture as depicted by **Figure 5**.

Under the irrigated agriculture, many different crops were grown, including maize, millets, cassava, bananas, indigenous vegetables (e.g. managu), beans, green grams, ground nuts, kales, onions, tomatoes, cabbages, sugarcane, mangoes, pawpaw's, avocados, lemons and oranges. The Cereals, cassava and vegetables were grown for home consumption while onions, tomatoes and fruits were grown for commercial purposes. Watermelons, pineapples and passion fruit also had great potential.

Land was expensive and prices ranged from Ksh. 45,000 to Ksh. 100,000 per acre depending on proximity to the river - with decreasing prices from the river to the hills.

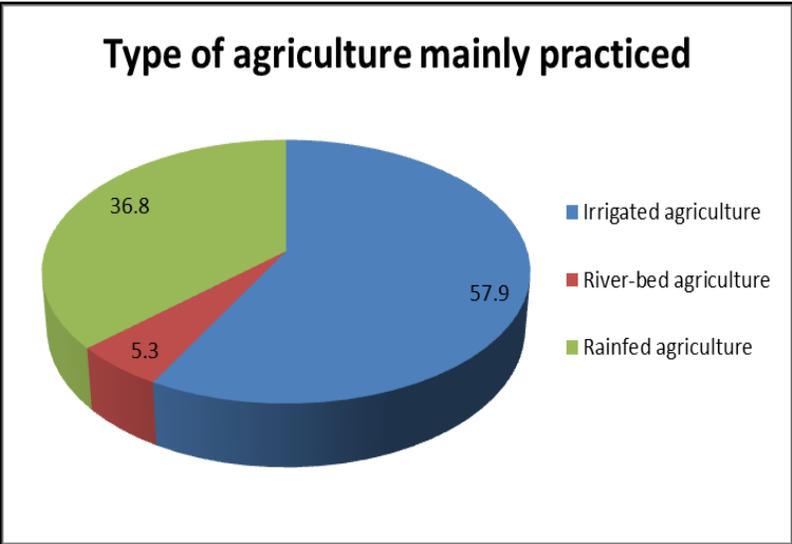


Figure 5: Type of crop farming in Kaminia

Overall irrigated crop farming had improved food security situation in the area over the past three years as confirmed by key informants. The growing of high value horticultural crops had increased the disposable income that was available for use in other household activities such as health and schools fees.

Crops were normally intercropped e.g. maize/bean, sorghum/millet and maize/vegetables. Farmers practised crop rotation to reduce disease and insect pest build up. Farmers used farmyard manure and inorganic fertilizers (e.g. DAP-di-ammonium phosphate, and calcium ammonium nitrate- CAN). These inorganic fertilizers were bought from the National Cereals and Produce Board (NCPB). The key informants confirmed majority of the farmers did not apply any form of mechanisation. Lack of mechanisation affected farmers’ ability to expand the current land area under crop production, as 42% farmers confirmed land under cultivation had decreased; with an additional 33% indicating area under cultivation had remained the same. Only a quarter of the respondents (25%) noted that land under crop production had increased. Many reasons were advanced for decreases in area under crop production as depicted by Figure 6 Lack of labour (35.6%); reduction in soil fertility (33.3%) were mostly mentioned by farmers as the main hindrance to increasing the area under crop production.

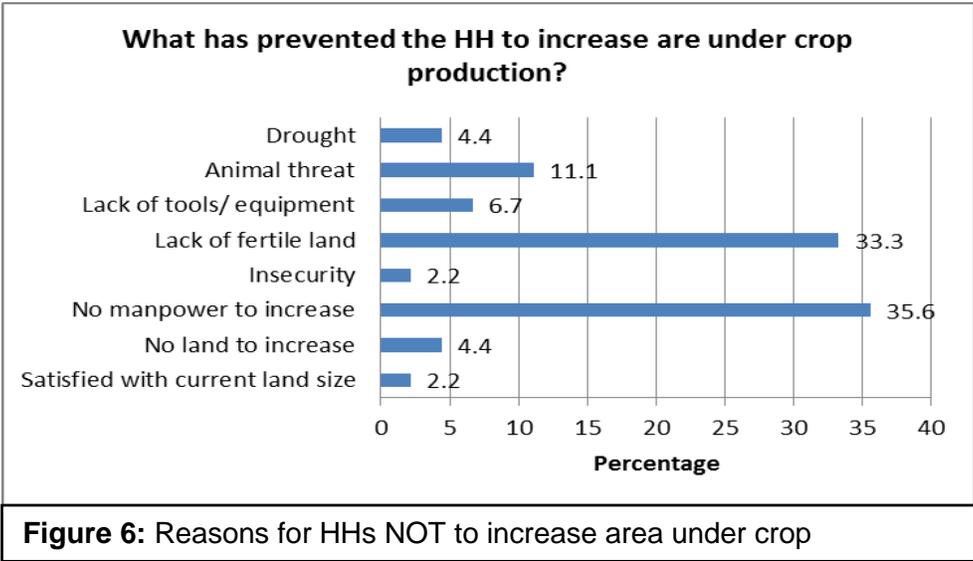


Figure 6: Reasons for HHs NOT to increase area under crop

Seeds were sourced from Kenya Seed Company and stockists based at Sebit Market. Alternatively, farmers use saved seeds from past harvests or obtained certified seed through the Traditional High Value Crops Project for beans, sorghum and millet. Mangoes and pawpaw were obtained from farmers’ own nurseries and KVDA nurseries at Sigor. Farmers raised avocado seedlings on their own. There was a group called Lalwa Mnia Tree Nursery Group which raised trees, including apple, mangoes, oranges, and pawpaw. Donkeys and motorbikes were commonly used as a means of transport for the farm produce. Brokers from Ortum/Chepareria bought produce from the farms.

Key challenges to crop farming noted were prolonged drought spells and attack from pest and diseases as indicated by 24% and 25% of respondents respectively. Others were: poor soils (18%), lack of market for produce (10%), lack of labour (8%), lack of quality seeds (7%), lack of farming skills (6%) and lack of farming tools (3%). From the KII and FGD discussions, soils in the area were noted to be porous and most of the water (up to 80%) in the canals was lost through infiltration and evaporation. In the new scheme, it was proposed farmers would use pipes from the source to the farm under gravitational flow. To increase water use efficiency and increase the irrigation command area, overhead/sprinkler irrigation systems were proposed to be used.

The water catchment area was not well protected and had experienced destruction of trees due to logging. There was need to build capacity of people living near the water catchment area so that they could protect it.

2.2.4 Livestock Production

Livestock keeping was the second most preferred form of livelihood after crop production for communities living within the scheme. However, Pokot traditional way of life was mostly pastoralism. Nomadism used to be the norm but sub-division of land had led to reduction of land for pastoralism. The farmers had reduced herd sizes and now grazed near homes and some even practised zero-grazing. This led to growing of fodder crops such as napier grass as well as use of crop residues such as sugarcane and banana stalks for feeding their cattle.

Livestock was kept mostly for prestige and payment of bride price. Livestock kept were cattle, goats, sheep and poultry (chicken). Cattle were the main livestock. According to the inhabitants, the wealth of a man was measured by the number of livestock he owned. Men were named after their favourite bulls once they were circumcised. Cattle, sheep and goats provided milk, meat, hides and skins, income from direct sales and manure. They were also important for dowry payments. The average livestock herd/flock sizes owned by each family was: 5-20 cattle, 20-30 goats and 10-30 chickens.

Ownership of livestock was mainly by men with the exception of poultry which were owned by women. In exceptional cases widows were given authority to own cattle and goats but only dispose them with consent of male family or clan members, as women were not involved in marketing. Men controlled the sale of livestock but consulted with the wives before the animals were sold.

Photo 3 depicts a sale yard in Ortum. Women took livestock to the market but could not negotiate the price. Selling price negotiation was done by a male family or clan member. In addition to marketing, men were also charged with the responsibility of herding, treatment and dipping. Women’s role was to take care of goats and they did so accompanied by children (both boys and girls). Women also sold milk and manure and were allowed to use the proceeds to meet household needs. In addition, women watered the animals. **Table 1** shows the estimated prices for various types of livestock



Photo 3: Livestock sale yard in Ortum market

The main challenges in livestock production were: diseases (e.g. Food and Mouth Disease (FMD), CBPP, PPR) poor breeding of goats, inadequate pasture/feeds and insecurity (raids). The major sources of animal health services relied upon by communities are shown in **Figure 7**. They included use traditional medicine, getting the service of community based animal health worker (CAHW), government veterinary services other NGOs in the area. Use CAHW (41.7%) and government services (38.9%) were most used by communities in Kaminia. Discussions with communities in FGDs confirmed that farmers bought over-the-counter drugs and they administered them to the animals themselves. It was only in cases where the condition of the livestock deteriorated that rendered it necessary for either the CAHWs or professional veterinary service providers to be consulted.

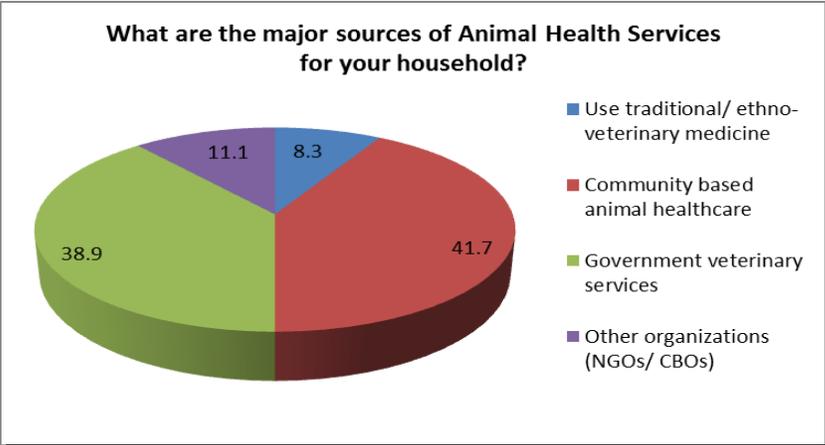


Figure 7: Major source of Animal Health Services

Table 1: Estimated livestock prices (Ortum Market)

Livestock type	Category	Estimated price
cattle	Big bull	Ksh.30,000
	Medium	Ksh.18,000-20,000
	Small	Ksh.10,000-20,000
Goats	Big male	Ksh.7,000
	Medium	Ksh.3,500-4,000
	Small	Ksh.2,000-3,000
Sheep	Big male	Ksh.2,000
	Doper ram	Ksh.15,000
	Ordinary ram (castrate)	Ksh.5,000-7,000
	Wool sheep	Ksh.10,000-15,000
Chicken		Ksh.350-700

Source: Field Data.

Bee Keeping: The households engaged in honey production were 24% and used traditional hives. There were, however, a few modern beehives (KTB and Langstroth). Men owned and managed the hives. Women could own beehives as groups; but not as individuals. Women groups hired men to harvest honey for them and but did their own marketing. The honey semi-processing was done by both men and women. Selling was done by both men (husbands) and women but the money was given to the husband to allocate to various activities.

2.2.5 Water Distribution

The main sources of water during the dry season were spring/river/lake/pond (87.5%) and piped water (12.5%). The time taken to the source of water during the dry season was 65 minutes. During the wet season, the main sources of water were spring/river/lake/pond (58.3%) and rain water collection (41.7%).The time taken to the source of water during the wet season was 63 minutes.

2.2.6 Average Incomes

The main sources of income were from sale of livestock, income from small scale business, sale of crop produce, sale of milk, income as a casual labour, sale of charcoal, sale of manure and sale of eggs. The estimated monthly income for Kaminia residents was Ksh. 17,081 per household and expenditure was Ksh. 14,295.

Figure 8 shows the main sources of income

Income from livestock and small business were approximated Ksh 12,000/00 while crops income was estimated at Ksh 11,000/00 per household. Sale of milk alone was about Ksh. 4, 000/00 making livestock the single most important income contributor to household income at Ksh 16,000/00.

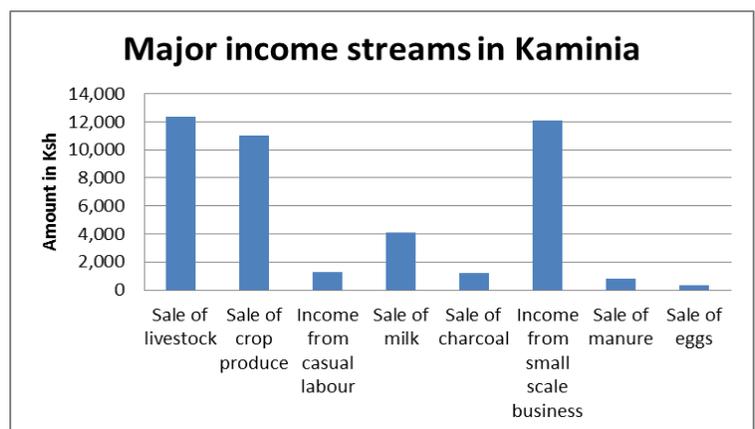


Figure 8: Major income streams in Kaminia

2.2.7 Labour

Male controlled labour as a means of production as confirmed by 79.2% of the respondents, while male youth and female adults had 12.5% and 8.3%, respectively.

The order of authority within the homes in decreasing order was father, mother, first born son, other sons and daughters. Collective communal labour during field operation was common where men come together to help cultivate fields for each other and women make the food for them during such an occasion. Women carried out most of the crop production operations, particularly for staple food crops such as maize, sorghum and millet. Men were mainly involved in onion production as it fetched good income.

Most of the routine manual livestock production activities were carried out by women and children. Women also sold milk and manure and used the proceeds to meet household needs. Men specialised in slaughtering, health care and sale of livestock activities which were occasional. But they consulted with their wives before the animals were sold. Women took livestock to the market but were not allowed to negotiate the price, an activity reserved for a male family or clan member. In addition, women watered the animals. Thus the burden of livestock production was with women.

In Kaminia, most reproductive activities were carried out by women. The key activities include fetching firewood, fetching water, cleaning the compound, laundry, preparing food, taking care of children and constructing/repairing household shelter

2.3 The Political Economy of the Scheme

The dominant community, the Pokot, exercised their influence mainly through the political class as confirmed by 52% of respondents. Other areas where Pokots exercised their influence over other communities included positions of chieftainship (24%), control the economy (10%) and formation of larger religious groupings (10%). A negative aspect was, however, noted by 3% where the Pokot were prone to cause ethnic animosity.

The Pokot were noted to have over 10 clans in the area. Clans were mostly named after wild animals (totems) e.g. Nugu, Nyati, Chura, Mbwa, Radi and Ndovu. The Pokot claimed that this was a tradition that they had and could be traced to generations and had been transmitted without question. Probably it was a way of giving a people an identity, to make a distinction from each other and also to maintain relations that were clan-based. It was noted the people from the same clan bonded well, couldn't intermarry and they provided reciprocity in times of want and need

Men dominated in the community management activities and therefore provided the leadership on community matters. Women were virtually absent and only featured in ceremonies such as funerals and weddings. The inhabitants recognised the national government, which they said had a strong presence through *Mukasa* (village headman), the assistant chief, chief, DO, DC and County Commissioner. They noted that the county government was not strong on the ground, but they acknowledged existence of the MCA and his agents, the MP and the Governor.

2.4 Sensitive and Conflict Management

2.4.1 Land related conflicts

The Pokot believed that all cattle belonged to them. Thus, all Pokot men were expected to raid cattle and bring them home in order to gain respect and good standing among peers and other community

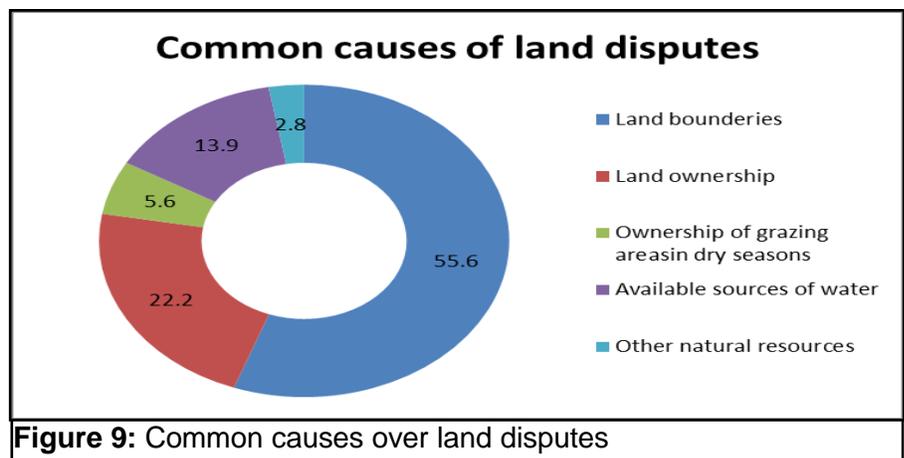


Figure 9: Common causes over land disputes

members. Out of this, cattle raids were frequent as every age set had to show its military prowess by driving in raided animals into the land of the community.

Figure 8 shows the common sources of conflict among Pokots. They included land boundaries (55.6%, land ownership (22.2%), grazing areas ownership (5.6%), water resources (13.9%) among other natural resources. Household data confirmed that close to 80% of households had experienced disputes as a result of land related conflicts. FGD discussions confirmed that land disputes were related to boundaries, grazing areas or conflict over livestock trespassing crop production areas.

2.4.2 Water related conflicts

Water allocation and rationing were common causes of conflict among the members of the scheme. Respondents cited several challenges in accessing water during the dry season. These were lack of clean water for domestic use (50%), conflicts associated with water sources (34.1%); low water allocation (9.1%), power management of water resources (4.5%) and price increase (2.3%).

2.4.3 Conflict Management

Key mechanisms applied to resolve land related conflicts were through constitution of elders' resolution committee (79%) and seeking assistance from police/administrative units (21%) as per household data. **Photo 4** shows a council of elders meeting, an institution renowned to resolve disputes and conflicts in West Pokot.



Photo 4: Council of Elders meets in Ortum

2.5 Morbidity and Culinary Habits of the People

2.5.1 Nutrition and Eating Habits

The majority (88%) of respondents were on average food security. At the household level, 80% of Kaminia residents reported average food security while only 12% reported poor food security. The main challenges to livelihoods were drought/famine (42.4%), livestock diseases (35.6%) and human diseases (22%). The common coping mechanism during the period of hunger was selling of animals to feed the family (or by buying grains at the posho-mill as reported by 25% of the respondents. Other mechanisms used are: borrowing food from relatives, borrowing money from relatives to buy food, taking food on credit from local kiosks, reducing the number of meals and relying on relief food. Others coping strategies applied were:

- ✚ Eating of wild fruit called *tingos* and *lagatet*
- ✚ Giving priority to mothers and small children
- ✚ Eating honey
- ✚ Chewing of tobacco and consumption of alcohol by both men and women to suppress hunger.
- ✚ Harvesting of palm kernels by women for crushing and boiling of the oily seed for feeding.
- ✚ Skipping of meals.
- ✚ Selling firewood, charcoal and sand to buy food
- ✚ Hawking of fruits and vegetables
- ✚ Diversification of food crops grown in farms

Also, it was established that droughts and famines affected women and children more, as the men migrated with the animals leaving them little or no source of meat or milk the staple food of the community.

In the scheme however, the most consumed foods at the household level included pap, *ugali*, mixture of maize and beans, *githeri*, sorghum, millet, meat, beans and *managu* vegetables.

Children were fed on milk on most occasions, were introduced early in life to cope with food shortages. Young children who were supposed to be on exclusive breastfeeding were as well given warm water immediately after birth to ensure they clear the chest of mucous. They were weaned and feed exclusively on pap, *ugali*, mixture of maize and beans, *githeri*, sorghum, millet, meat, beans and *managu* vegetables. These foods were low in important nutrients that would support health growth. Malnutrition was common and diseases related to poor nutrition including Kwashiorkor and Marasmus were observed in villages. This exposed children to increased risk of children morbidity and mortality. About one-quarter (26 percent) of Kenyan children were stunted, while 8 percent were severely stunted. West Pokot was reported to have highest proportions (46 percent) of stunted children (2014 KDHS)².

There were various beliefs around food in the communities as certain foods were meant for a particular gender. Pregnant women were not either fed on milk from sick animals or take milk during army worm infestation. The Pokots belief doing so would harm to the unborn child. During one FGD, participants commented that '*we do not eat donkey meet as do our neighbours, the Turkana*'. Indeed, they reported that even if a donkey was knocked down and killed by a vehicle on the road it would rot there unless a Turkana in the area found it and decided to eat it as was a practice among the community.

2.5.2 Sanitation and Hygiene

Availability of latrines in Kaminia was recorded high as 64% of households indicated they had access and used latrine facilities. A lower percentage (36%) indicated they did not use latrines. For those without access to toilets facilities, they opted to use bushes as indicated by 89% of households. Some 11% of the households used nearby community toilets or school latrines.

The reasons advanced for not using latrines were mainly cultural. Men reported that their culture did not permit men, women and children to use the same latrine, it was a taboo. Rather, the latrines were reserved for women and children while men used the bushes where they spent much of their time during the day and sometimes as night when they acted as sentels. For the old men, they argued that they ate a lot of meat, which took too long to digest and as such they did not require toilets. After all they went for long calls only once in a week. They were herders and if need arose they hid in the nearby bush and relieved themselves.

2.5.3 Morbidity and Causes of Morbidity

There were several diseases identified. They included typhoid/ amoeba, malaria and coughs as indicated by 27%, 18% and 16% of the respondents respectively. Other diseases reported were headaches (16%), fevers (13%), diarrhoea (5%) and worms (2%). Asked whether members of the family slept under a treated mosquito net, almost 90% of the respondents stated this was the case. Asked about malaria infection, the respondents reported that only 32% of the households had their children affected by malaria in the two weeks preceding the study. With regard to diarrhoea for children under 59 months, it was noted that many of the children had not suffered from the disease in the last two weeks. Diarrhoea was, however, reported to be common during the rainy season and treatment was done using the oral rehydration solution (ORS).

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 (Source : 2014 KDHS Report)

During the field work period, communities were harvesting onions hence people had money. This was noted to have a negative impact, as there were a lot of commercial sex workers camping within the area. FGDs revealed that many women flock into the area, especially around the markets where onions we sold. It was noted that many lodgings were recording good profits, as they were fully booked by farmers engaging unsafe sex. The risk of this was that the members of the community could easily get infected through risky behaviour, especially having multiple partners. This was more so in the neighbourhood of Ortum market where men and women of all walks of life converge to sell their farm produce. Also observed was that there were so many lodges in the towns. Participants in the FGDs confirmed this finding and pointed out that the market was a meeting point for the traders and farmers. Traders and brokers in the town were accused of luring young girls into transactional sex. The people in marriage and those outside were all at risk. Thus HIV/AIDS prevalence was reportedly high in the area.

On the question on awareness of HIV/AIDS transmission, it noted 27% of the respondents were aware and confirmed that they were aware of HIV/AIDS. **Figure 10** shows the respondents response to ways through which the virus was transmitted. It was clear the awareness was high, however, some misconception or false belief, such as that mosquito bites can cause HIV and AIDS was noted.

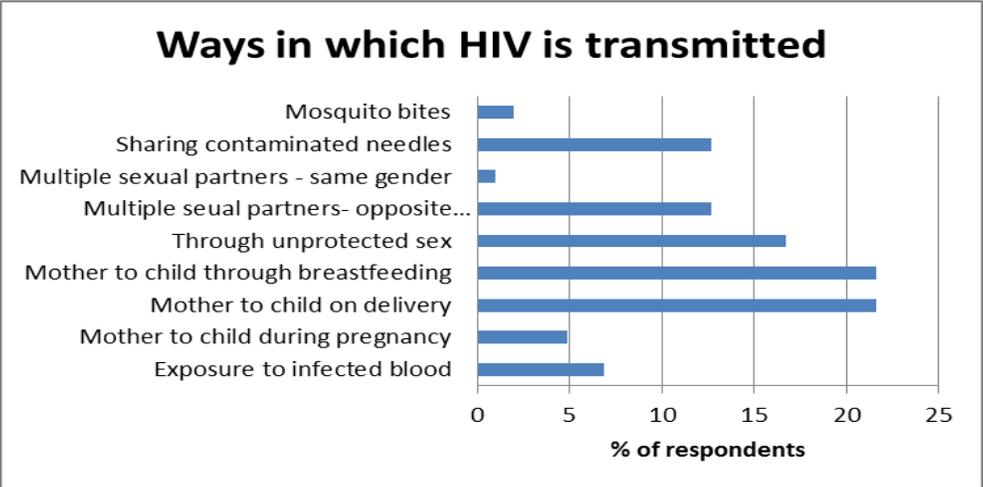


Figure 10 : Ways in which HIV can be transmitted

2.5.4 Health Facilities

Majority of the residents (52%) in Kaminia took 30-60 minutes to health centres, 44% took more than 120 minutes to access services at the health centres and 4% took between 60 and 120 minutes. Services that most residents obtained from the health facilities included dispense of drugs (34.8%), prescriptions and consultations (27.5%).laboratory services (29%) and immunization 8.7%)

Most of the patients were attended to by a clinical officer as confirmed by 75% of respondents. Other practitioners who attended to patients include trained nurses (16.7%) and medical doctors (8.3%). When prescribed drugs are not available, patients bought them from the locally available drug dispensing outlets.

2.6 Ownership of Resources

2.6.1 Land Ownership

Land ownership in the county had been communal or group ranch based. The leaders of group ranches were men and thus land was in their hands. However, the ownership was changing fast to individual ownership as land demarcation continued. The ownership changes were driven by high profits from growing horticultural crops such as onions. Women though did not own land, however, had user rights and they cultivated and earned their livelihood.

2.6.2 Livestock Ownership

The area under irrigation did not have many animals as a paltry 24% of those interviewed affirmed to depending on livestock as a source of livelihood. The few animals that were found belonged to the men; an extension of the cultural practice that all animals belonged to men in the community. Livestock keeping is mostly for prestige and payment of bride price. According to the inhabitants, the wealth of a man was

measured by the number of livestock he owned. Men were named after their favourite bulls after they were circumcised. Men owned all livestock except chicken which was owned by women. The average livestock size owned by each family was: 5-20 cattle, 20-30 goats and 10-30 chickens.

2.6.3 Issues arising from Ownership of Resources

Generally all livestock belonged to men and their wives or female relatives just enjoyed user rights. Thus it was uncommon to find conflicts in a household regarding authority and control over livestock. Land too was owned by community, the clan which was synonymous with the male members who constituted it. As such women did not stake claims regarding this resource. Men controlled the sale of livestock but consulted with the wives before the animals are sold. They were in charge of herding, treatment and dipping. Women sold milk and manure and were allowed to use the proceeds to meet household needs. Women were not allowed to bargain on the price of an animal. Women also watered the animals and could herd. Women could have control over goats and poultry (chicken) of which they had to seek consent from their husbands or male relatives if they wished to sell.

2.7 Capacity Building

2.7.1 Training Needs of staff in Anthropological Issues

Training of various cadres of MoALF staff was undertaken during the fieldwork phase. A total of 12 staff members were trained from the West Pokot County. The list of trainees is shown in **Annex 1**

There is need to develop capacity among the staff in the following areas

- Societal values and norms
- Group dynamics
- Anthropology for development
- Social cultural organizations
- Peace and conflict
- Interpersonal and ethnic relations

2.7.2 Training Needs of Farmers in Anthropological Issues

There was need to develop capacity among the farmers in the following areas

- 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.

3.1 Conclusions

3.1.1 Socio-cultural and social economic dynamics

The Pokot have a rich cultural heritage that has always helped to glue the people together. However there were also traditions, held to date such as FGM which is repugnant. Also, raids and inter-ethnic conflicts were pervasive causing fatalities, especially to men and uncertainty to women and children.

3.1.2 Sources of livelihoods

Drought was a major challenge to Pokots livelihood as indicated by 42% of the people interviewed in Kaminia while another 36% pointed to livestock diseases as a major threat to their economic wellbeing.

3.1.3 Economic organisation

As we discussed land was communally owned and the adjudication process was underway. Crop farming was noted to be reliable alternative sources of livelihoods that were more sustainable and less prone to conflict. This was the solution in the long term and perhaps in the interim peaceful co-existence is quintessential.

3.1.4 Political organisation

The Mukasa is an important social organisation. Elders commanded a lot of authority and respect that can be used alongside the county and national government institution to build lasting peace and reconstruction in the area.

3.1.5 Sensitive issues and Conflict

Animal raiding and perpetual conflicts over resources within and across with the neighbours was a major source of tension and instability in the county. Limited pollution problems are expected in the area because there is no stagnation of water in the fields due to the sloppy terrain and proposed sprinkler irrigation system. However, water from the farms drain back into the river and this may lead to pollution of the river if there is heavy use of chemical fertilizers and pesticides.

3.1.6 Morbidity and Culinary Habits of the People

Approximately 80% of households reported that their food security situation was fair, though frequent droughts had impacted on their food security and livelihoods, reducing their capacity to withstand food shortages and leading to 56% of households interviewed reducing meals in a day in order to stretch the period that their food stocks covered. Regarding causes of morbidity low latrine coverage was a great contributor to diarrheal diseases, especially during the rainy season. As was discussed in the report, close to 50% of the residents do not use pit latrines.

3.1.7 Ownership of resources

In regard to ownership and control of resources, we realised that this was a male dominated society. Thus men were the custodians of the major means of production, land and livestock. Women at best were caretakers who had limited user rights. Also the communal ownership of land and to some extent pasture and water had implications for individual initiative and drive.

3.1.8 Capacity building of county staff and communities

The county staff need capacity building on anthropological issues while the community training needs were mainly on project cycle. The capacity building will enhance implementation of the project.

3.2 Recommendations

3.2.1 Socio-cultural and social economic dynamics

The traditional practice of FGM is repugnant and retrogressive. Cattle raiding are impacting negatively on livestock as livelihood. Communities ought to be sensitized about the harmful effects of these age old customs which gradually ought to be replaced with more conventional ways. The project is recommended to partners with development partners and NGOs advocating for eradication of these retrogressive cultural activities.

3.2.2 Sources of livelihoods

Livestock keeping may not be tenable today owing to the environmental factors such as prolonged and regular droughts. Alternative sources of livelihoods that are sustainable and in line with the current ecological conditions can be explored. Irrigation farming has proved to be viable in areas where it has been tried. An increase in the capacity and acreage of the irrigated farms may be a game changer in West Pokot where there are many sources of water.

3.2.3 Economic organisation

The pipes in the scheme are broken and there is need to replace them. Also, water could be pumped in order to reach farms far ways from the intake, currently farmers complained that flow of water by gravity does not allow water to reach such farms. Promote value addition to expand the market for crops and livestock products. Grafting could be introduced to enhance resilience. Honey production could be harnessed through modern ways of beekeeping, co-operatives and collective marketing of the product. There is need environmentally friendly crop and soil management technologies that integrate both organic and inorganic sources of inputs. There is need to expand as yields have doubled where there is irrigation. The challenge is how to get water from the river to the hills.

3.2.4 Political organisation

From the findings were deduced that 79% of the conflicts and disputes are resolved through the institution of the council of elders. Thus the institution of the *Mkasa* can complement the county efforts to build lasting peace and reconstruction in the area.

3.2.5 Sensitive issues and Conflict

Livestock rustling and perpetual conflicts with the neighbouring conflicts caused harm to all involved. Peace committees and surveillance from all stakeholders should be ensured at all times for the sake of forestalling conflicts and resolving them amicably to safeguard human life loss and destruction of property. There is a need for political goodwill and the need to engage the local politicians in the establishment of the scheme, right from the beginning to avoid potential squabbles.

3.2.6 Morbidity and Culinary Habits of the People

Low latrine coverage calls for education of the residents on the harmful effects of inappropriate ways of human waste disposal. Thus residents could be assisted on ways of how to construct pit latrines by harnessing locally available resources, which is cheap and effective. Nutritional intake, particularly for children and expectant mothers is important to be observed. Food sovereignty that is inhibited by taboos could be overcome through education and workshops.

3.2.7 Ownership of resources

Ownership of property should be flexible to allow women own and control resources. Where women had been allowed some level of control and access, signs of empowerment were evident and the fruits trickled back to familial incomes and the society in general.

3.2.8 Capacity building of county staff and community

It is recommended the following modules be used for county staff and community members' capacity building.

a) The County Staff should be trained on the following:

- ✚ Societal values and norms
- ✚ Group dynamics
- ✚ Anthropology for development
- ✚ Social cultural organisations
- ✚ Peace and conflict
- ✚ Interpersonal and ethnic relations

b) *The Community members should be training on the following:*

- ✚ Societal values and norms
- ✚ Capacity building of project management committee (Group dynamics)
- ✚ Anthropology for development
- ✚ Social cultural organisations
- ✚ Peace and conflict
- ✚ Interpersonal and ethnic relations
- ✚ Crop irrigation agronomy,
- ✚ Conflict management,
- ✚ Pasture establishment and conservancy,
- ✚ Soil and water conservation,
- ✚ Range Management Principles,
- ✚ Pasture and livestock marketing,
- ✚ CMDDR-community management disaster and drought Response.

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21. Kenya Demographic and Health Survey, 2014

Annex 1: List of people interviewed

Key Informants

	Name	Sex	Designation
1	Asa Lelei	Male	Nutrition Program Manager, Action Against Hunger
2	Nicodemus Omwacha-WASH,	Male	Wash Program Manager, Action Against Hunger
3	Nelson Kiproop	Male	Administrator, ACF
4	Millicent Oluoko	Female	Program Officer Malaria Control, World Vision
5	Laban Korellach	Male	Chairman, KANASIANTA POGH WATER RESOURCES USERS and member County Land Commission Board
6	Wilson Lokosayan	Male	Chairman, Muruny WRUA
7	Paul Losute	Male	Coordinator, Camels, Bees and Silk (CABESI)
8	Tadayo Obiero	Male	Water Rights Officer, WARMA
9	Noreen Imbayi	Female	Community dev. Officer, WARMA
10	Priscah Cheptoo	Female	Office Assistant, WARMA
11	Elizabeth Pkukat	Female	Coordinator, YANG'AT
12	Mike Arikau	Male	Programme Officer, Pastoralist Area Development Organisation
13	John Long'oris Kalianyang	Male	Member, Ortum Farmers Cooperative Society
14	David Roron	Male	Chairman, Ortum Farmers Cooperative Society
15	Margaret Ojago	Female	County Social Development Officer, Children's Department
16	Michael Muriithi	Male	Deputy Land Adjudication Officer, National Land Commission
17	Edwin Kemboi Keitany	Male	Country Director of Irrigation
18	Agneta Aleyo	Female	Sub-County Crops Development Officer, Pokot South
19	Jeremiah Gitonga	Male	Country Engineer, Ministry of Agriculture and Irrigation
20	Lazarus Wanjala Wepukhulu	Male	Environmental Resilience and Social Inclusion Officer
21	Richard Siree	Male	County Livestock Marketing Council Official
22	Madam Evelyne	Female	CDA, West Pokot
23	Thomas Wasike	Male	DAO, West Pokot
24	Joseph Gitonga	Male	Engineer, MoA
25	Joseph Kilakan	Male	Chepararia Water Users Association
26	Wilson Lokobon	Male	Chepararia Water Users' Association
27	Flomena Christopher	Female	Morpus
28	Stellah Emmanuel	Female	Morpus
29	Sophia Lukuk	Female	Morpus
30	Regina Merii	Female	Morpus
31	Annet Nelson	Female	Chepararia Water, secretary
32	Emily Lokorinyang,	Female	Member Chepararia Water Association
33	Monica Linga	Female	Morpus

FGD Respondents from Kaminia Irrigation Scheme

	Name	Sex
1	Joseph Loria	Male
2	Andrew Annuan	Male
3	Riono Geoffrey	Male
4	Justin Chepkoech	Male
5	Jackson K. Staa	Male
6	Edward Lokali	Male
7	Simon Karipko	Male
8	Emmanuel Yarasia	Male
9	Michael Katatwa	Male
10	Selina Chemitingi	Female
11	Cheporilis Lomernyang	Female
12	Damaris Leng'aren	Female
13	Fransisca Katatwa	Female
14	Jane Karipkho	Female
15	Rosebella Kedirens	Female
16	Beatrice Lemaren	Female
17	Rosebella Petaluk	Female
18	Penina Pendekto	Female
19	Cheporokuo Lomernyang	Female

FGD with Men of Kaminia Irrigation Scheme

	Name	Block
1	Barnabas Cheliman	2
2	Isaac Kapchai	4
3	Raymond Riono	4
4	Jacob Keditukei	4
5	Joel Juwaluk	4
6	Francis Domongole	3
7	Titus Chelukuta	4
8	Cosmas Chepkos	1
9	Wislon Dado	2
10	Martin Kisur	3
11	Marko Kapchai	4
12	Moses Mukee	3

Annex 2: List of Staff Trained

No.	Name	Designation	Gender
1	Stephen K. Andiema		M
2	Simon C. Ng'olemus		M
3	Leonard W. Berra		M
4	John P. Tingaa		M
5	James M. Gitonga		M
6	Risper W. Khagai		F
7	Caroline Misiko		F
8	Teresia Kodwaran		F
9	Agneta Aleyo		F
10	Thomas N. Wasike		M
11	John N. Mwebia		M
12	Jacob K. Simatwa		M

