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

KALACHA IRRIGATION SCHEME IN MARSABIT

FINAL ANTHROPOLOGY REPORT

SEPTEMBER, 2015

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ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
CBPP	Contagious Bovine Pleuropneumonia
DLMC	District Livestock Marketing Council
DRSLP	Drought Resilience and Sustainable Livelihoods in the Horn of Africa Project
FAO	Food and Agriculture Organisation
FFA	Food for Assets
FGDs	Focused Group Discussion
FGM	Female genital mutilation
FMD	Foot and Mouth Disease
HIV	Human Immunodeficiency Virus
ILRI	International Livestock Research Institute
JAHA	Junior Animal Health Assistant
KARI	Kenya Agricultural Research Institute
KIIs	Key Informants Interviews
KLMC	Kenya Livestock Marketing Council
NGOs	Non-Governmental Organisations
NIB	National Irrigation Board
ORS	Oral Rehydration Solution
PCU	Project Coordinating Unit
SNV	Netherlands Development Organisation
WARMA	Water Resources Management Authority
WASH	Water, Sanitation and Hygiene

1.0 INTRODUCTION

This is an anthropology report for Kalacha Irrigation Scheme in Marsabit County. It is one of the twenty (20) reports that constitute the Anthropological and Gender Study Report. 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 from December, 2014 through to August, 2015.

Marsabit County is situated in the northern part of Kenya. It neighbours Turkana County to the west, Samburu County to the south, Wajir County to the east and Ethiopia to the north. The county covers an area of about 75,750 km^2 and has a population of about 291,179 persons (2009 census).The county is composed of four sub counties namely Laisamis, Saku, North Horr and Moyale. The county is a home to a number of diverse ethnic communities that include the Borana, Burji, Gabra, Rendille, Samburu, Turkana, Dassanetch and El - Molo. This diversity by an aggregate connection is that Marsabit is not only the county with the highest ethnic diversity, but also experiences the highest incidences of inter-ethnic conflict - a situation perceived to have partially contributed to the underdevelopment of the County (Markakis, 1993). The county is prone to ethnic conflicts between the Gabra and Dassanetch communities.

In Marsabit County, the long rains account for 60-70 per cent of total rainfall received in a normal year. However the short rains are more evenly distributed both in space and time and are therefore more suitable for crop and livestock production and are considered the main rains season in the county. In most areas, rainfall season begin in the second dekad of March instead of the normal first dekad. Areas in the central part of the county received between 80-120 per cent of normal rainfall in early 2013. The areas which received above normal rainfall include Longalayani and North Horr. Most areas to the east of the county including parts of Laisamis, Maikoma Uran, Obbu, Gadamoji and Golbo received below normal rainfall ranging between 51-80 per cent of normal. Temporal distribution was poor with most of the rains being received in the month of April. The spatial distribution was generally uneven with the western parts of the county receiving much of the rains while the eastern parts of the county received depressed rainfall. Cessation was early in the first week of May compared to the normal of third week of May[1].

The DRSLP area of focus in Marsabit County is Saku, North Horr and Laisamis sub-counties. The two main irrigation schemes in Marsabit are Kalacha and Songa irrigation schemes. Kalacha Irrigation Scheme is in North Horr Sub-county and is the focus of this report.

1.1 Background of the scheme

Kalacha is located next to the Chalbi Desert, which is a dried up lakebed, consisting of Aeolian and fluvial sands of quaternary origins. Reddish brown sands are common over the desert. Kalacha receives a median rainfall of 150mm-250mm, a mean annual rainfall of 201mm (GoK/GTZ Range Management Handbook, 1994). It lies on the rain shadow side of the Huri Hills. Water exceeds forage availability. It has a bimodal rainfall pattern thus, the long rains in April to May and the short rains in October to January. A risk of drought occurs in 2 to 4 years out of 10.

The scheme was started accidentally in 1982 by the Ministry of Water which dug a borehole but water jetted up (artesian well). Crop farming was started in 1984, by the area chief and four farmers who had settled in the area after moving from Ethiopia through Huri Hills. Farm Africa took the chief and a few elders on an education tour of Marigat in Baringo County where they obtained some expertise in irrigated crop production. They grew sweet potato, sugarcane and carrots.

[1]Marsabit County 2013 Long Rains Food Security Assessment Report

At the time of the study, Kalacha vegetation consisted of 90% bushed grassland, 10% barren land with bushed grassland or dwarf shrub/annual grassland (Schwartz and Walsh 1991). The trees and shrubs in bushed grassland were less than 10% cover. The trees were mainly acacia *mellifera*, acacia *recifens* and *capparaceace* spp. The Chalbi Desert was devoid of vegetation except for occasional *Prosopis* species.

Water in the area was near the surface and was used in a cyclic manner by the pastoralists as they moved with their stock (See the IVP CBRNM 2005) for water usage.

In 1986/1987, MDP/GTZ assisted farmers with farm tools and trained them on production of vegetables and pastures. Thirty Farmers were taken on a learning trip to Songa Irrigation Scheme in Marsabit County. In 2001, CIFA lined the canals (320 m) and added 100m long canals. Solidarites International (2008/2009 to the time of study), an NGO, fenced the scheme and added another 200m long canals. KALRO had been a major stakeholder in the scheme. They carried out soil and water analyses and had laid out pipes in the field.

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 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 Kalacha Irrigation Scheme in Marsabit 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.

A total of 59 household questionnaires were administered of which 70.7% were men and 29.3% were women respondents. Household interviews indicated that 81% of the respondents were married, 12.1% were widowed, 5.1% were single and 1.7% were divorced or separated. Focused group discussions (FGDs) were used to explain some of the statistical data from the survey and collated with data from the key informants interviews (KIIs). On average, the households interviewed indicated that scheme inhabitants had lived in the scheme for a period of 20 years. They were, therefore, well informed about the social dynamics, economic potential and threats of the scheme.

2.1 Social Cultural Dynamics

The main ethnic groups in the scheme were Gabra and Burji. The Gabra have five clans represented in Kalacha namely: Alkana, Gara, Galabo, Odola and Sharbana. Each clan had a *Yaa* supreme court which sorted out conflicts involving rape, family squabbles among other vices.

In 1999, the then Marsabit District had a population of 123,000 people. Kalacha location had 6,524, of which 3,320 male and 3204 female in 1,668 households. Kalacha settlement had a resident population of 4,625 people, 2,388 male and 2,237 female in 1,187 households. The location covered 2,522km^2 and had a population density of three persons per square kilometre; the settlement had a population density of six persons per square kilometre.

The Gabra Celebrated the Sorio three times per year. It is held in high disregard that even men who migrated with their animals had to be home after 2-6 months for the Sorio celebrations. The activities in these ceremonies are:

- Cleansing (men grow hair and beard for many months until Sorio ceremony when hair was cut)
- Marriage
- Loaning of camels
- Engagement to marry

In this ceremony only the “clean” members of the community attended i.e. (those who had not engaged in illegitimate sex and brought forth illegitimate children).The ones who were “unclean” were despised and ex-communicated by the community to maintain tribal purity.

2.1.1 Household headship

Gabra were basically monogamist. Polygamy was only allowed if the first wife had failed to bear a son. It was also motivated by the need to generate family labour, especially to herd livestock. If the second wife failed, the man could take a third wife. Some rich men engaged in polygamy for fun. The women did not like polygamy but tolerate it. The premium placed on sons was related to lineage continuation, as a man is considered a dead-end if there was no son to sustain his name and legacy. Women got an average of six children. There was no widow inheritance. But the widow could get children through informal alliances.

Gabra were patriarchal and a son was imperative in the family. Lack of a son was enough justification for a man to marry another wife. Sons inheritted family property. This reinforced male precedence and constructed a situation where girls are from the beginning economically disadvantaged. But on being married, a daughter received from her father about 10-30 shoats as a foundation for her family’s sustenance.

Wife beating was common using clubs and sticks. There were also conflicts around adultery. In the latter case, the Yaa imposed a penalty of a bull paid by the offending man to the cuckold who, however, retained any resulting child.

The husband was the automatic head of the household. In his absence, the first son took over. Some 74.6% of the households were male-headed and monogamous, 16.9% were female headed, 3.4% male headed polygamous, 3.4% child headed and 1.7% male headed but female managed as depicted in **Figure 1**.

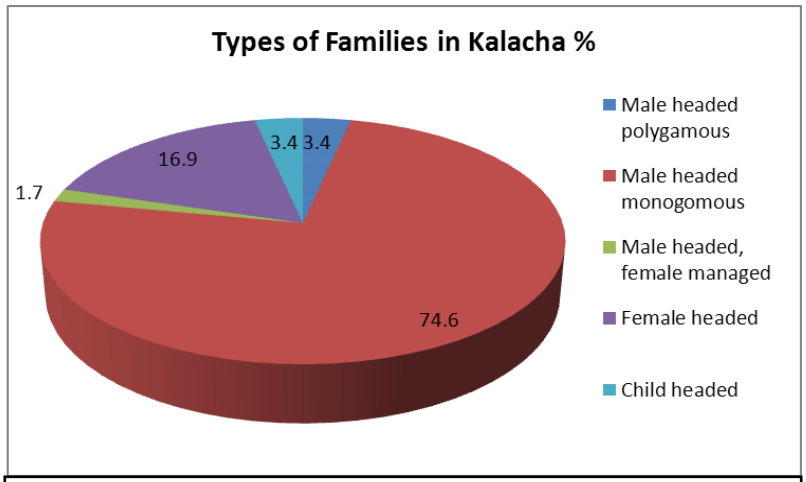


Figure 1: Types of Families in Kalacha

Female headed families resulted from widowhood, divorce, separation, pregnancy before marriage and migration of men during severe drought. Female headed families had a lot of challenges, as they had no livestock, no land and no gifts. At the time of the study, the Boma Project, an NGO, supported small business for female headed households.

2.1.2 Religious Practices

Traditionally, the Gabra believed in a benevolent God (*Waaqa),* who gave rain as he pleased. Animal sacrifices and ritual prayers were part of their religious practices. They believed in merciless justice where grace was unknown and wrongs were righted by payment. Nevertheless, majority of the respondents indicated they were Christians. However, it was noted that Islamic faith was growing among the Gabra community. All these co-existed in peace.

2.1.2 Key Rites of Passage

Figure 2 shows different rites of passage among the adult male and females of the Gabra community as per household data. The rites of passage for both male and female adults were birth, initiation and marriage. The rites of passage defined the status of girls relative to boys. Although all the rites of passage were important to Gabra community, it looked like initiation was an important passage for a male than female compared to marriage which was more important to females than male. The rites are discussed below.

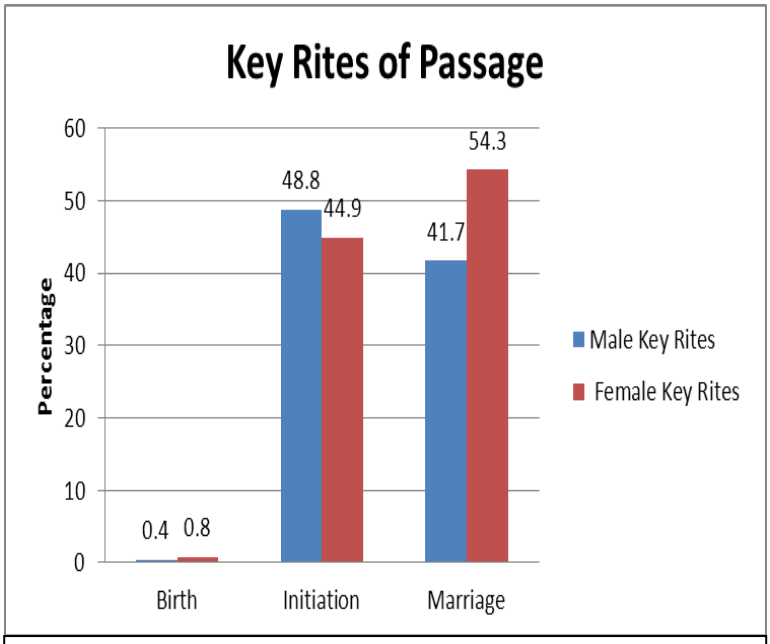


Figure 2: Key Rites of Passage for Males and Females

First was birth and naming. When a woman gave birth, the husband wore the wife's beads and took a ritual stick then shared the news with all neighbours. If the baby was a son, he slaughtered a goat and sheep; if it was a daughter, only a sheep was slaughtered to indicate her lower status. There was no singing and dancing if it was a girl but there was singing and dancing for two hours followed by meat eating by elders if it was a son. The celebrations for girls were reserved for the wedding day. At the time, if the baby was a son, the father's seat was placed on the roof of the family house to announce to the world what had happened. It was removed after 49 days on a Monday or Thursday. Again this was a show of pride and achievement which was not done for baby girls. The naming was done by the mother after a week when

the child was shaved. The name may refer to the day of birth, event during birth, time of birth or any other criteria. However, sons were automatically named after the paternal grandfather if the latter was still alive, again a reinforcement of the patri-lineal system. The gendered pattern of naming was such that a girl could not be named after a male relative and vice versa. The **Table 1** shows the birthing ceremonies in among the Gabra, disaggregated by gender.

Table 1: Birthing Ceremonies

Boys	**Girls**
They were more valued.	They were less valued than the boys.
The ceremony was more elaborate.	There was less celebration.
The father walked around the *manyatta* and gave tobacco sniff to both men and women.	The father walked around the manyatta and gave tobacco sniff to both men and women.
The beneficiaries of the tobacco blessed the child saying 'may he be a warrior who brings wealth and prosperity to his family and community at large'.	The beneficiaries of the tobacco blessed the child saying 'may she get married to a man who will bring wealth and prosperity to his family and community at large'.

Second was pubescent initiation. Boys were circumcised at 18 years of age but this was getting lower to 15-16 years of age. It was done at home by a specialist elder who had a track record of safety and quick healing. The initiate was then isolated in the camel's *boma* for about three weeks with occasional freedom to walk out to the village. The initiate's clothes were given to the initiator to indicate his rebirth. On healing, he re-entered the family with a new status. He started courting, participated in cattle raids or military exploits and was recognised. If he killed an adversary, he was highly lauded with praise names. But an uncircumcised boy who did the same did not get the plaudits. Uncircumcised boys could not do the following; have girlfriends, raid and protect the family from the enemies and be recognised for killing an enemy.

Girls went through female genital mutilation (FGM) between 8 and 14 years of age. The operation was done by skilled elderly women who were not scared to cut human flesh. The "surgeon" was given a token of appreciation in the form of tobacco. The operation was a silent household activity that was not accompanied by any ceremony. This made it difficult to notice. The operation was done within specified five months in a year while boys' circumcision was done within only three months.

There was a practice called **beading** where a boy with interest in a girl gave her a string of neck beads. This indicated to all that the girl had an interested suitor. Beading meant having a friend without contact sexually who you may or not marry eventually but often the beaded girls ended up having a sexual relationships leading to pregnancy and subsequent induced abortion using rudimentary methods of pressing their tummies to kill the foetuses, a practice that was pervasive at the time. Beading did not, however, bar others from pursuing her nor did it guarantee the first suitor that he would be the groom. She could still marry someone else unless the bidder formalises the engagement and marriage. Engagement was done by the groom's father visiting the bride's family and offering one kilogramme of tobacco, two kilogrammes of raw coffee and any other gift item such as camels. If the proposal was agreeable, formal marriage negotiations commence and bride wealth was paid amounting to at least three camels. It was the fathers of the bride and groom who decided on the partnership. A girl who had not gone through FGM could not be beaded, attend Moran dances or get married.

Third were nuptial rites which were multiple and elaborate. Boys got married at 22 to 25 years of age, while girls married at about 15 years of age. There was a belief that the wife must be younger than the husband. Girls in remote places tended to be married off without going to school. However, most Gabra girls were sent to school and marriage was not a factor in dropping out of school. Factors that militated against girls' education were: low value placed on girls' education and domestic workload e.g. fetching water and firewood from far away and herding goats. For boys, the main constraint was retention by fathers to take care of cattle. This affected the eldest son, particularly because he had to accompany his father to the most important ceremonies in the Gabra calendar, so it was the younger sons who benefited from education. If there was only one son, he would not go to school.

A girl who got pregnant out of wedlock had her offspring ex-communicated from the family and community. She could no longer have any contact with the family and was often disposed of among the Rendille for free. The man responsible for the pregnancy was considered unclean but did not suffer the same fate as the girl. Rather, he was rehabilitated through a mock funeral where he was inserted into a grave, shaved, nails cut and he was smeared with the amniotic fluid from a pregnant sheep that had been slaughtered; after which his clothes were buried. When he eventually died for real, there was no ceremony for him as he was considered to have died earlier. After cleansing, he could marry but he and his wife could not participate in communal ceremonies such as the Sorio. But the children were free of the curse on their father.

Significantly gendered rites were described during the study. *One;* the groom's family checked on the character of the targeted bride's mother based on the edict of like-mother-like-daughter. *Two;* the groom's family paid bride price to the bride's family. The bride price was in form of tobacco (half to one kilogramme), raw coffee (1kg) and any other items e.g. goats and camels to the girl's family. Fathers decided for their daughters the kind of man to marry while the mothers had no say. *Three*, the bride's mother gave the bride mats for construction of her hut on conclusion of the wedding, a symbolic prescription of her reproductive roles in the family and a form of indoctrination to internalise the same. *Four*, the groom gifted the bride a camel which he must have acquired on his own regardless of the means used. It was learnt from the FGDs that upon marriage the groom's family moved to the bride's home. He was assigned a site, whereby the man and his clan members build a hut to be used in the ceremony.

Finally were elaborate mortuary rites. A few gendered elements are worth mentioning. *One,* the traditional hut was dismantled when an adult's death occurred and placed on the left side of the grave for a female and on the right side for a male. *Two*, males who lost their parents, spouses or siblings kept long hair until the Sorio season when they were shaved. Girls could only keep long hair if they were not engaged. *Three*, a woman who lost a husband was shaved on the sides of the head and wore the departed husband's turban and beads which were not removed until the Sorio ceremony. Her mourning style was defined, just as that of the males. However, for her, the mourning was visibly clear about who she had lost whereas for the males it was ambiguous. *Four,* the son had to harvest a single stem of acacia tree that did not have any bird's nest on it, carry it home without the trunk touching the ground and place it in a prepared hole after which libations were poured around it by male members of the household.

2.1.4 Interaction with other Communities

The Gabra interacted freely with other communities in several areas including trade, marriage and sharing natural resources (grazing field and water sources) as depicted in **Figure 2**

To a larger extent, the Gabra engaged highly with the Meru in inter- trade. Others that Garba engage in inter-trade were Borana, Gari and with Somali. In intermarriage Gabras intermarried with Borana, Somali's and Samburu and Meru. Gabra shared common grazing fields with Turkana, Samburu, and the Borana. They also shared common water sources with Turkana, Samburu, Borana, Maasai and Gari

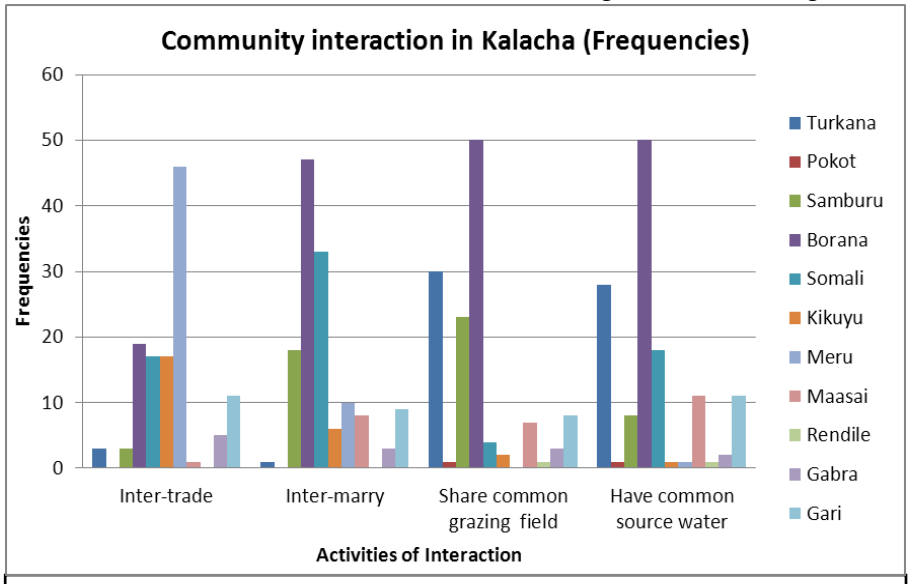


Figure 3: Community interaction in Kalacha

The communities also organized the Kalacha Food and Cultural Festival at a culture centre that they had established. This was an annual event during which time the communities living in the county showcased their traditional foods, shelters and other pieces of material culture. The events were international and attracted locals and outsiders who celebrated the diverse culture of the people of Marsabit. Also, during the event, peace talks were held and locals were implored to tolerate one another and live in a harmonious way.

2.2 Economic Organisation

This section looks at sources of livelihoods including; land, crops grown, livestock, water distribution and income levels.

2.2.1 Type of Livelihoods in Kalacha Scheme

The main source of livelihood for the Kalacha community was livestock production (100%) through nomadic pastoralism. This was supplemented with fodder and hay production in the irrigation scheme as depicted in **Photo 1**. The alternative sources of livelihoods for the Kalacha households included livestock and their products (36.6%), casual labourers (34.1%), small business off farm (20.7%), employment (6.1%) and pole harvesting and selling (2.4%).

Photo 1: Fodder production

2.2.2 Land as source of livelihood

Kalacha settlement was located in Maikona Division of Marsabit County. It bordered El Gade settlement to the north towards North Horr settlement and Maikona settlement to the south. Land was mainly individually owned (68%), although no titles had been issued. The remaining land was owned as follows 22% owned by community through group ranches, 7% owned by individuals through titles and 3% owned by community through clans. The distribution of land ownership is depicted in **Figure 3**.

The average irrigated land per family ranged from 0.3 to 5 acres. Irrigated acreage in the scheme was 22.5 hectares. At the time of the study, there were 600 beneficiaries of the scheme. In the irrigation scheme, plots were distributed by the chief and the committee whenever there were vacancies and all qualified, to get a plot - those with husbands and those without qualified to get. The sizes of the plots varied and the distribution was mainly based on consensus of two acres, for those people who settled in scheme in 1980s and half acre for those who came after.

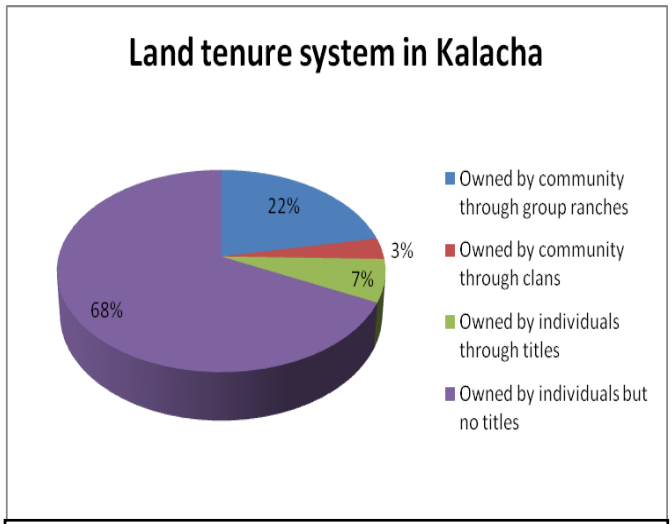


Figure 4**:** Land Tenure System in Kalacha

Out of households interviewed, it was noted that 29.7% of respondents reported an increase of land size used for cultivation; while 59.5% noted that the land under cultivation stayed the same. Ten percent (10.8%) of the households reported a decline in the land under cultivation. The reasons reported for decrease in land under cultivation were drought, insufficient farm tools and inputs, and insufficient man-power.

The households indicated some differences (49.2%) with other communities in regards to land use while a majority 50.8 % indicated no differences in land use. The differences in land use were land boundaries (46.9%), availability of sources of water (24.5%), ownership of grazing land in dry areas (22.4%), land ownership (4.1%) and difference in administrative units (2%).

2.2.3 Crop Production

Crop farming was practised as an alternative to pastoralism. Most of the farming (92%) was under irrigation and very minimal was rain-fed farming. Furrow irrigation system was practised but it was associated with high seepage rates hence low irrigation water use efficiency. The irrigated plots were a source of timber, hay and fodder used to feed livestock but also for sale to generate income for both men and women who owned the plots. The products were sold locally but hay was also sold in other places as far as Dukana in the north. The challenges related to this source of livelihood are clustered below and highlighted in **Figure 4**:

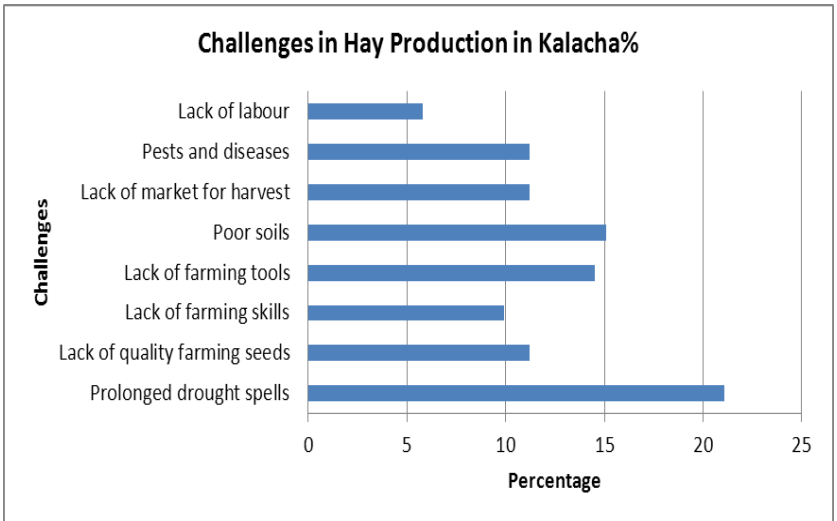


Figure 5: Challenges of Hay Production in Kalacha

- *Shortage of water:* this was caused mainly by limited canal coverage so there was rationing by the irrigation scheme committee with individuals receiving their allocations once in two weeks. There was also seepage in earth canals, loss of water through broken pipes, blockage of pipes, silting of canals and clogging by fallen pods.

- *Limited grass*: overgrowth leuceana had led to stunted growth for grass but farmers liked the tree because it was drought resistant and multipurpose (fed to livestock and generated compost manure).

- *Inputs:* farmers did not use farmyard manure but instead burnt it. There were no good quality seeds for both local and improved pastures and no agro-vets to supply the same in the area.

- *Pests and weeds*: the area was infested with baboons, monkeys and warthogs as well as the prosopis plant.

- *Soil:* the soil suffered from salinity, exhaustion from continuous cultivation without replenishment of nutrients and limited number of leguminous plants.

- *Human factors:* there was negative attitude towards crop farming due to fixation to pastoralism as the main way of life. Canal water was used for livestock, cultivation and human consumption hence contamination problems that were added on to by the lack of toilets in the scheme.

- *Poor road network*: This was a major challenge as it inhibits marketing.

The irrigation scheme committee proposed the following solutions during the FGDs (**Photos 2&3**); canal lining; drilling of a second borehole at the lower part of the scheme for equitable coverage and more frequent distribution; management of prosopis (an experiment to harvest it for kilning to produce charcoal was going on); partnership with KWS to manage wild animals; and electric fencing of scheme to ward off wild animals. They expected the project to stabilise water supply to strengthen productivity which would translate into gainful employment, pasture and fodder, better livestock and increased income. '

Photo 3 : FGD with Kalacha

Photo 3: FGD with Men

2.2.4 Livestock Production

Pastoralism was the main source of livelihood for the community with the livestock kept were camels, cattle, goats, sheep, donkeys and chicken. The average number of livestock owned by a household as per household survey was: cattle (12), camel (9), sheep (16), goats (24), donkey (5) and poultry (7). Camels were source of meat (not slaughtered unless there was severe drought), milk, transport (firewood, water, temporary dwelling structure) and bride wealth. They were milked by men only but women controlled the milk at home. Donkeys on the other hand were used to transport water. Donkeys were not used to plough land; jembes were used instead. The Gabra did not eat donkey meat. Goats/sheep provide milk, meat, hides and skins. Fathers also gave daughters getting married about 10-30 shoats. Sons inherited their fathers' property (shoats, cattle and camels).

The sources of livestock feeds were natural grasses and shrubs, fodder and acacia and Leuceana pods. There was an environmental management committee which managed the grazing pattern. During dry season, animals, apart from milking herds, grazed far away around the watering points. During dry season, animals graze about 22km radius from Kalacha. In case of severe droughts, inhabitants could move for 50-70km to Hurri Hills and Chariashe. The community experienced drought cycles when animals died after every 2-3 years.

Livestock was the primary measure of wealth among the Gabra. Rich men were respected, had a voice in the community and were favoured to ascend to leadership. The average holdings per household were: shoats (100-300), camels (2-20), donkeys (1-5) and cattle (0- 5). **Table 3** shows a wealth ranking based on number of livestock owned.

Table 2: Estimated number of Livestock owned by households based on their wealth ranking

Stock type	Rich	Poor
Camels	30-40	2-3
Shoats	500-600	Less than 20
Cattle	50	One or none
Donkeys	Not considered	

Men had dominion on sale of livestock. But women could also engage in it in the framework of a women group business as was the case of Kalacha Women Group. The two main challenges faced in livestock production were diseases and drought.

Drought: this led to shortage of water and pasture, hence migration of people with their livestock often leading to conflicts with other communities. Competition for water and pasture was the main source of conflict between the Gabra and the Dasanach, Samburu, Rendile and Turkana due to their pastoral way of life. The conflicts could lead to serious armed fights that could lead to death. There were also cattle raids, especially at the onset of rains, when migrant groups were returning to their communities. The raids were opportunistic missions to accumulate livestock. The consequences of conflict were: loss of life by men and male youth who were the combatants; loss to families of the services of the men and male youth; loss of livestock and livelihoods for families; captivity for girls and women; and insecurity, hence inability to engage in productive work.

Peace initiatives were facilitated by the county government, NDMA, Pastoralist Initiative Support Programme (PISP) and the Catholic Diocese of Marsabit. The dividend was that there was peace between the Gabra and all their neighbours. There was a written agreement which prescribed a penalty for violators.

Other type of conflict was the human wildlife conflict. This was mainly due to competition for the palm kernels (kone) for food during the dry season. The kernels were traditionally used for feeding children during periods of hunger that usually occurred during periods of severe drought. Wildlife fed on the same, thereby reducing what was available for people and thereby weakening the traditional coping strategy and complicated women's ability to feed children during periods of food shortage.

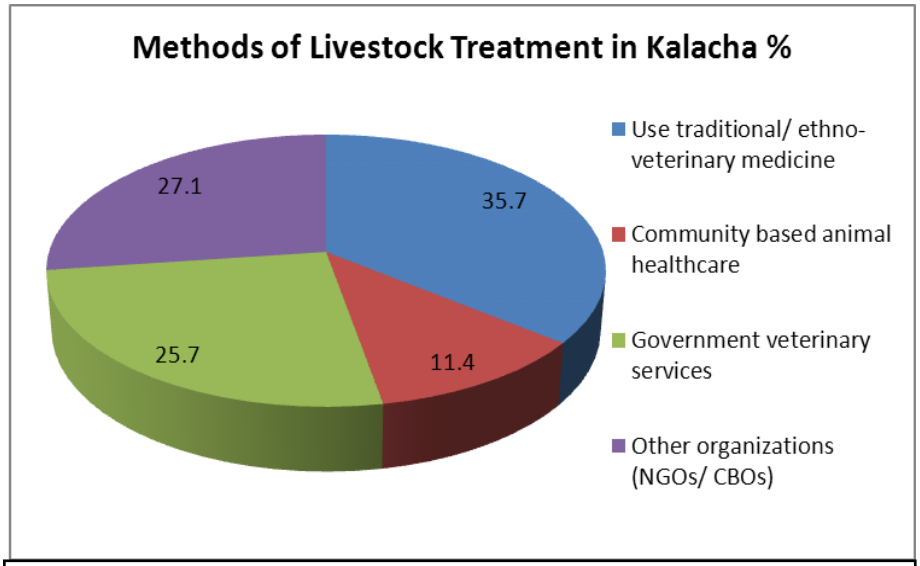


Figure 6: Methods of Livestock Treatment in Kalacha

Diseases: the main livestock diseases were: Haemorrhagic Septicaemia (affecting glands in camels); ORF (affects mouths in goats and camels); PPR (goats and sheep) ; a few cases of anthrax; and diarrhoea due to helminthosis (internal parasites). Pests consist of ticks, fleas and mites. **Figure 6** shows methods used to treat livestock in Kalacha. The disease control was done by: routine vaccinations by the Department of Veterinary Services in collaboration with NGOs; treatment by community animal health workers trained by the Department Veterinary Services; and use of traditional herbal remedies by livestock owners.

2.2.5 Water Distribution

Water was an important resource for both crop and livestock production. In Kalacha, it was available from piped sources, boreholes/protected well, Spring/river/lake/pond, rainwater and protected wells depending on specific locations. The main source of water during the dry season was borehole/protected well (86.2%) piped water (12.1%) and open wells (1.7%).The distance to the source of water during the dry season was 23 minutes. On the other hand during the wet season the main sources of water were borehole/protected well (63.6%), springs/lakes and rivers (13.6%) rain water collection (7%), piped water (4.5%) and open wells (1%). The distance to the source of water during the wet season was also 23 minutes. **Figure 7** summarises the water sources during the wet and dry season in Kalacha.

The challenges to accessing water during the dry season were: lack of clean water as reported by 35.7% of respondents, conflict (26%), poor management of water resources (25.2%) and low allocation of water (2.6%). The conflict and poor management of waters were single most limitation to accessibility of water as contributed 51.2%. Thus by address issues of conflict and improve the available resources management, the community problems of lack of water would largely be addressed. This an area the project can address by building the capacity of WRUAs to manage the water resources as well improving capacity to deal and managing conflicts.

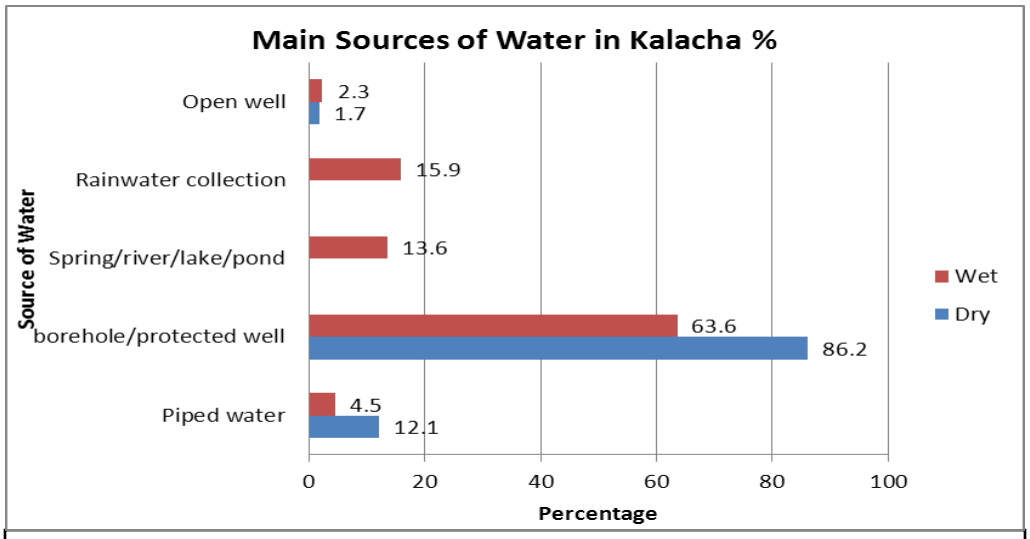


Figure 7: Main Sources of Water in Kalacha in Dry and Wet Season

2.2.6 *Average income levels*

In Kalacha the residents were 100% pastoralist. The main source income therefore was from livestock sales. The sale of livestock was controlled by men and the price fetched was between Kshs.50, 000 and Ksh. 100,000 for a camel. The prices of the cattle livestock is depicted in **Table 3:** However when the was severe drought and livestock were low, the pastoralism turned to other sources of income including; employment (6.1%), casual labour (34.1%), small scale business off-farm (20.7%), sale of livestock and their products (36.6%), and pole harvesting/selling (2.4%). **Table 4** depicts other sources of income.

Table 3: Cattle prices in Marsabit livestock market.

Livestock Type	Category	Estimated Price
cattle	Big bull	Ksh.50,000-60,000
	Medium	Ksh.20,000-30,000
	Small	Ksh.15,000-20,000
Goats	Big male	Ksh.11,000-12,000
	Medium	Ksh.7,000-8,000
	Small	Ksh.2,000-3,000
Sheep	Big male	Ksh.6,000-7,000
	Medium	Ksh.3,000-5,000
	Small	Ksh.2,000-3,000
Chicken		Ksh.300-700

Source: Field Data

Table 4: Other Sources of Income

	Kalacha	
	Freq	%
Employment	5	6.1
Casual labour	28	34.1
Small scale business (off-farm)	17	20.7
Livestock and their products	30	36.6
Pole harvesting/ selling	2	2.4
Total	82	100

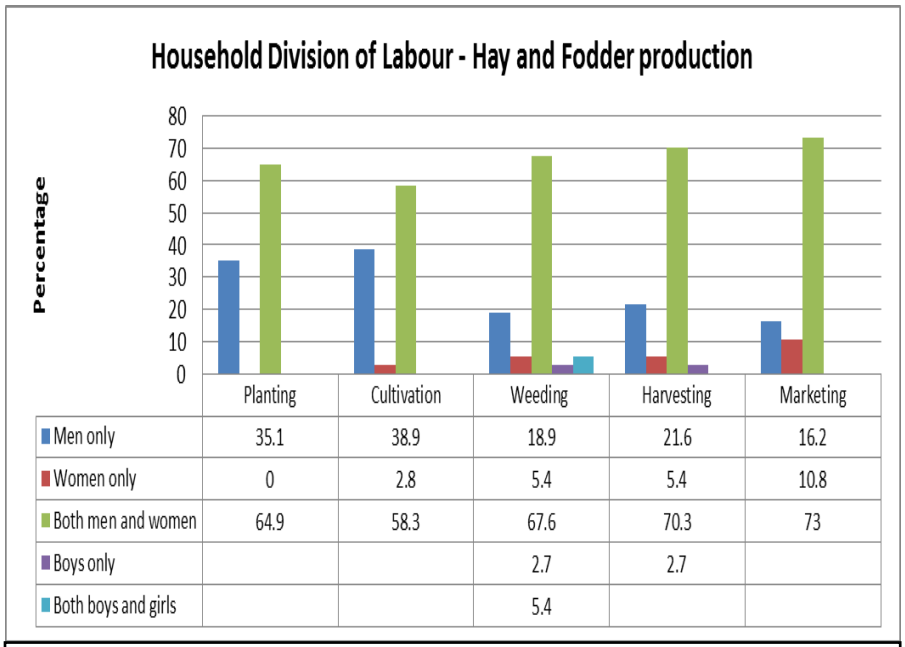
Based on FGDs and KIIs in Kalacha irrigation scheme, the estimated monthly income was KShs 10,712 per household. The main sources of income were from sale of livestock and their products, employment, casual labour, small sale business off-farm, and pole harvesting/ selling. The average household expenditure was KShs 8,025. The monthly expenditure was mainly used on school fees and scholarly, agricultural inputs/investments, clothes, rent, fuel, family household items such as sugar, salt, rent, food among others and travelling.

2.2.7 Labour

Control of labour as a means of production was found to be a preserve of the male adults at 89.7% and elders at 10.7%. Most of farm activities were shared as depicted by **Figure 8**.

For crop production activities, both men and women tilled the land, while canal maintenance and planting was mainly done by women; watering and weeding was done by both men and women, women harvested the hay, both men and women were responsible for compacting and baling the hay, transport, storage and sale of hay was the responsibility of the women.

There was a high level of sharing of workload between men and women in most households. This was a community where there was a very high level of inter-gender collaboration in productive work at household level. For example during planting both genders contribute 64.9% of labour, and 58.3%, 67.6%, 70.3% and 73% during cultivation, weeding, harvesting and marketing, respectively.



	Planting	Cultivation	Weeding	Harvesting	Marketing
Men only	35.1	38.9	18.9	21.6	16.2
Women only	0	2.8	5.4	5.4	10.8
Both men and women	64.9	58.3	67.6	70.3	73
Boys only			2.7	2.7	
Both boys and girls			5.4		

Figure 8 : Division of Labour-Crop Production

The study established that men focused 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. The men also monopolised the sale of livestock while women only sold milk.

Figure 9 summarises the distribution labour for livestock based activities were: herding (men only 25.4%, men and women 16.9%, boys only 27.1%, boys and girls 22.0%); watering (women and men 33.9%, men only 27.1%, women and girls 20.3% and boys only 13.6%); milking (men and women 46.6%, men only 31%, boys only 10.3% and women only 8.6%) and selling (men only 43.1%, men and women 43.1%, women only 10.3%).

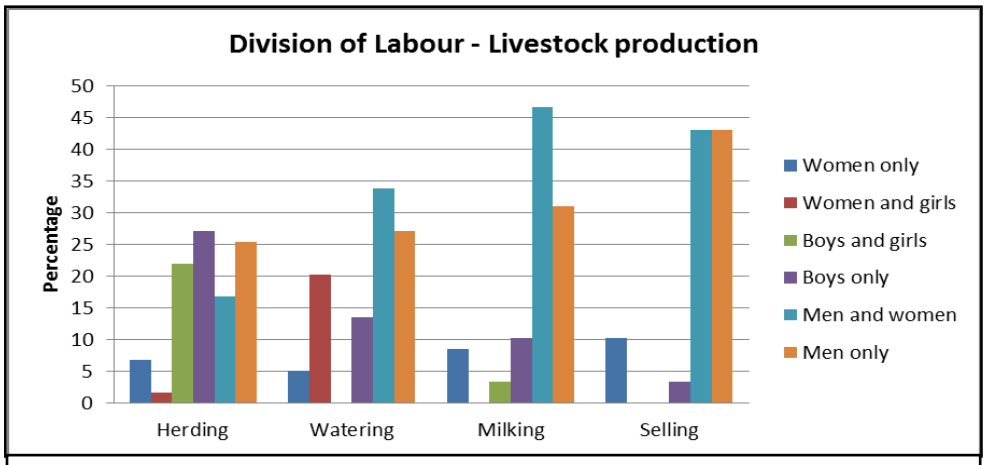


Figure 9 : Division of Labour- Livestock Production

Most of the routine livestock production activities were carried out by men and women. Women mainly undertook watering, milking and selling of milk. The income from sale of milk and manure were used to meet household needs. Men 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. In addition, women watered the animals. Thus the burden of livestock production was a woman's activity

In all the above activities, boys and girls assist on weekends or during school holidays

2.3 The Political Economy of the Scheme

The foremost administrative structure was the Yaa, central administration of the Gabra. It consisted of the *hayyu* (highest elected official of the phratry), *Jaallab laga hayyu* (deputy) and *Jaallab* (councillor). The *Ayu* was selected at clan level on a rotational basis i.e. senior and junior clan alternate. This meant there must be two *ayus* at any one time. Their roles were to: maintain law and order and exercise discipline and justice. There was no woman in the *Yaa* leadership. Each of the five Gabra clans Algana, Garaa, Galaba, Odola and Sharbana had its Yaa which met any time there was an issue. The *Yaa* consisted of about 70 households in one manyatta. Men were the main residents of the manyatta but there were also women. The clan *yaas* were interdependent in that what had been passed by one clan's *Yaa* was respected and endorsed by the others. The *Yaa* was very important in determining who became a leader e.g. an MP. Before two *yaas* met, they must exchange ewes as reciprocal invitations and as a sign of goodwill towards each other. The *Kalu* (president) in the *Yaa* exercised the power of mercy but did not preside over routine administration of justice. The *Yaa* was also a critical peace resolution mechanism. Power within the *Yaa* was transferred generationally after 15 years when the older members retire. Membership to the *Yaa* was hereditary (concept of royal family) and did not depend on age.

Being the dominant community in the Kalacha scheme, the Gabra had the greatest influence over the other communities. The irrigation management committee had 11 members comprising both men and women. Functions of the committee included dispute resolution at the irrigation scheme, water distribution regulation, sourcing of high yield seeds, sourcing for markets and assist in packing of the hay for sale. They also organised meetings with members and mobilised members for collective action e.g. weeding, harvesting pastures and cutting fodder trees. Management also decided on penalties to be paid by offenders and also organized patrols.

2.4 Sensitive Land/ Water issues and Conflict Resolution Mechanisms

2.4.1 Land Related Conflicts

The canal was constructed and lined to buffer crops from seepage losses to the environment. The canal, however, served camels, which had an advantage over crops by accessing water before it reached the crops.

Also, prosposis (*mathenge*) and the thick vegetation of trees formed a hide out for monkeys which invaded very fast. The monkeys chased women and girls when they went to collect fodder for the animals. The monkeys ate the coconut kernels/konoe which was previously eaten by children in times of food shortage. It was a real menace as the monkeys and gorilla eat food crops and so farmers went at a loss and preferred to grow fodder as opposed to food crops, as this was not eaten by the primates. The FGDs revealed that the community used to plant crops a long time ago but not anymore due to monkeys, porcupines and pests, weevils, red spider mites-on kales and black mites. Also, at the time of the study, the scheme was not fenced except some sections like where the hay store was located. There were a few sections that Solidarites International had fenced.

2.4.2 Water Related Conflicts

Water based conflicts were mainly due to competition for the same especially during the dry season, for example; crop farming, livestock, wildlife and tourism competed for water from an artesian well in Kalacha. The tourism facility was taking 32.6% of the available water while the balance was left for the community needs including farming activities. The farms received water from a canal fed by piped water from the well and half of the farms were without water especially in August to September when the number of wildlife using the irrigation canal increased. This increased the tension between the farmers and the lodge.

There were no major inter-clan conflicts. However, there were some inter-ethnic conflicts between the Rendile and Samburu near the border i.e. Kuro, Bales and Bura over pasture and water. From the FGDs, it was also reported that cattle raids were not common during drought period This was because (í) during drought, community elders negotiate with their counterparts from other communities for sharing of the scarce grazing and water resources, and (íí) the fear that raided animals may die due to shortage of feed and water.

. 2.4.3 Conflict Resolution Mechanisms

During the rainy season as people returned, a few people, possibly criminals engage in criminal activities, including raiding and rustling among the three communities, the Samburu, the Rendile and the Gabra. Conflict resolution was mainly carried out by the council of elders (Yaa) and it took the following forms:

a) Payment of fines were imposed on livestock thieves, this had deterred the practice. It was reported in an FGD that if one was caught having stolen a sheep, he had to pay three times its value and be shamed throughout the scheme. This penalty had helped curb the vice in the scheme.
b) Also, rationing of water had been resorted to avoid conflicts over the resource, especially during the dry season. Specific times and days were assigned particular blocks so that all were assured of equitable supply even when water was in short supply. This way, all felt included and cared for and this reduced ill feelings emanating from favouritism that would augment conflicts and wrangles within the scheme.

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

The majority of the residents considered themselves average in food security. At the household level, 31.3% of Kalacha residents reported poor food security, 45.8% reported to have fair food security, while 22.9% they were food secure. The households reported drought (51.5%), livestock diseases (20.4%), conflicts and insecurity (14.6%), floods (9.7%) and human disease (3.9%) as the main causes of food insecurity. Coping mechanisms to food insecurity was that most residents reported to ask relatives for money, borrow food from relatives, rely on relief food distribution, sell livestock, sell personal assets, consume food on credit from local kiosks, reduce number of meals, and reduce food varieties/ eat cheap food. Daily milk consumption averaged at 3.95 litres per household. Also, it emerged 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.

The Common foods given to both male and female infants include porridge, milk, fruits, potatoes, eggs, banana's and beans. It was reported that children in Kalacha started being weaned at an average of 6 months. Malnutrition was common and showed conditions (stunting and wasting) related to poor nutrition mainly due to prolonged drought causing food insecurity as reported by 31% of the respondents. 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 wasted. Marsabit was reported to have the highest proportions (26 percent) of stunted and 10% wasted children (2014 KDHS)[2]. Although Kwashiorkor and Marasmus were not among the common diseases recorded by households, KDHS study shows high incidences of stunting and wasting that could be caused by poor nutrition. In this regards, 92.3% of the households reported to give children supplementary feeding, while 7.7% reported not giving supplementary feeding. The reason given for supplementary feeding was to improve the children's general growth (100%).

The major foods eaten were "ugali" (from maize, sorghum and millet), meat, beans, night shade vegetables and other traditional delicacies. Common foods given to expectant and lactating mothers included ugali, meat, porridge, vegetables, honey, potatoes and animal blood.

Consumption of alcohol was an emerging social problem with majority of the culprits being men some of whom could stay the whole day in drinking dens. It got worse the nearer one got to market centres and along transport arteries.

2.5.2 Sanitation and Hygiene

The household survey findings in Kalacha showed that 79.3% of the residents reported to have toilet facilities in their homesteads while 20.7% of the households reported not to have them. Those without toilets were queried where they disposed of human waste and the following responses highlighted in **Figure 10** were recorded. Some 65% of the residents used neighbours' latrines to dispose human waste. Another 30% used the bushes while 5% used open fields.

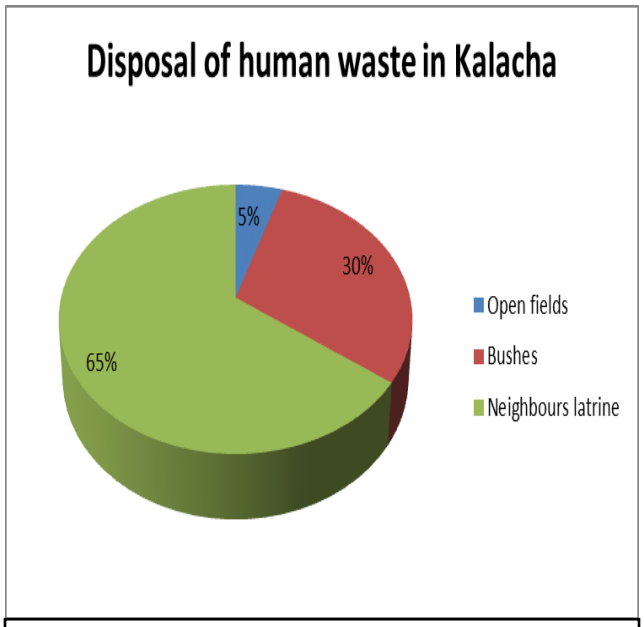


Figure 10: Disposal of human waste in Kalacha

2.5.3 Morbidity and Causes of Morbidity

The Kalacha community reported many common illnesses. The major diseases were malaria (19.1%), headaches (17.7%, diarrhoea (14.8%), coughs (13.4%), typhoid/amoeba (9.1%) and 22.5% had fever. Other reported illnesses were abdominal pains, trachoma, and worm's infestation. **Figure 11** shows common diseases in Kalacha. Headaches and fever were usually symptoms of other diseases.

Diarrheal diseases were not commonly reported for the children below five years of age, this could be attributed to the fact that it was during the dry season. For example the number of baby boys reported to have suffered from diarrheal in two weeks before the visit was 18.2%, while no baby girl was reported to have suffered from diarrhoea in the same period. For those children who had diarrhoea they were treated through oral rehydration solution (ORS) fluid (50%) and a pill/syrup at 50%.

[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)

Malaria was common disease in Kalacha. Some 41.4% of the respondents indicated that their children had suffered from malaria while the remaining 58.6% indicated that their children had not suffered from malaria in the past two weeks before the study. The residents also indicated that they took the children to hospital to be treated for malaria. Some 67% of the residents in Kalacha owned mosquito nets while the remaining 33% did not own mosquito nets. Majority of the households (61.5%) reported that they acquired mosquito nets from the shops, 35.9% reported to have acquired them from hospitals while the remaining 2.6% reported to get them through the government (MoH and chief). It was noted that in 56.6% of the households interviewed indicated that all family members slept under a treated mosquito net. Also, majority of the respondents used the net to prevent malaria (98%) with only a small proportion (2%) using it to fence chicken pens.

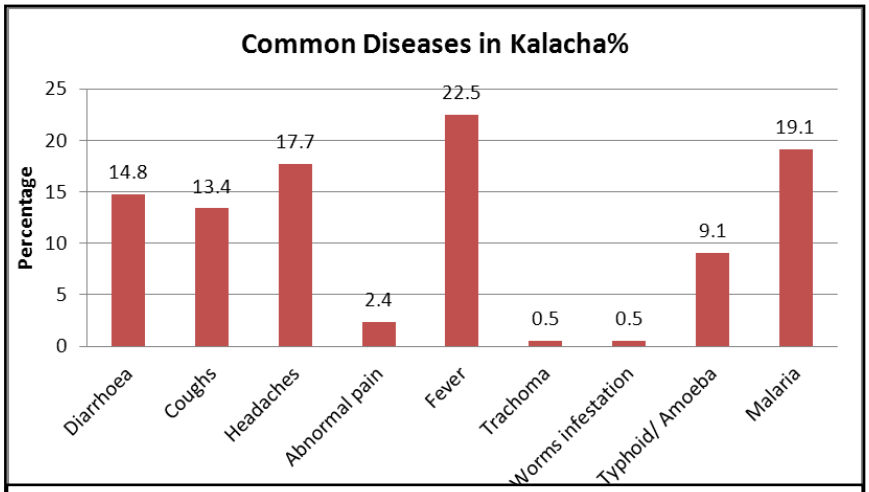


Figure 11: Common Diseases in Kalacha

Ninety-eight per cent of households reported to have knowledge of HIV/AIDS and were well informed on HIV/AIDS transmission. However, there were untruths on HIV/AIDS transmission reported such as mosquito bites, and contact of any type with the infected person. **Figure 12** highlights ways in which people in Kalacha believed HIV/AIDs was transmitted. Majority of respondents confirmed that it was transmitted through mother to child through breastfeeding, engaging in unprotected sex, mother to child on delivery and sharing contaminated needles.

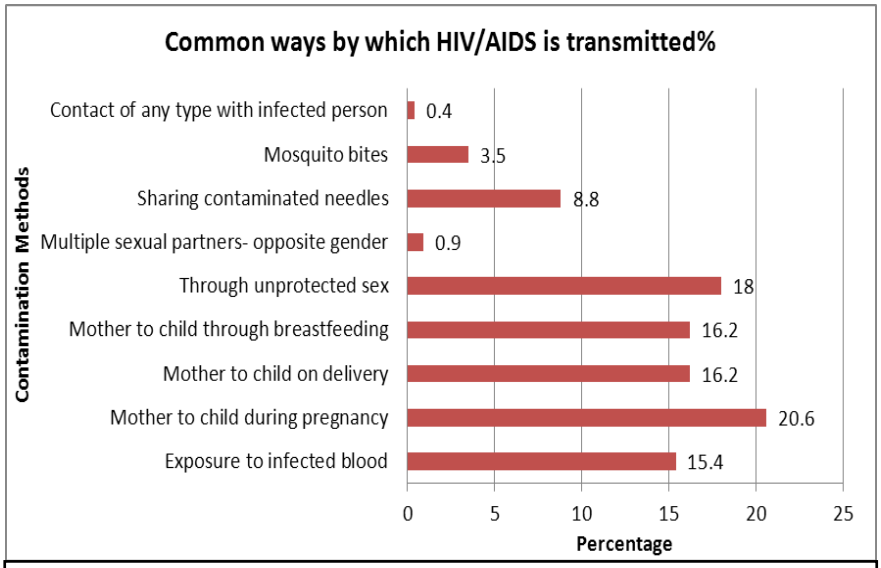


Figure 12: HIV/AIDS Ways of transmitted in Kalacha

2.5.4 Health facilities

In Kalacha health facilities were located near the residents with 83.1 % of the households covered in the survey indicating that they took a maximum of 30 minutes to access the nearest health facility. The remaining residents; 13.6% take 30-60 minutes while 3.4% took 60-120 minutes. The services offered at the health facilities were issuing of drugs (33%), prescriptions (37%), laboratory services (20%) and immunization of children (10%). It was, however, confirmed through the FGDs that immunization was normally done through mobile clinics and this explained the low turnout at the health facilities.

Most of the patients in the facilities were attended to by a trained nurse as confirmed by 49.2% of respondents. Other personnel who attended to patients included clinical officers (25.4%), medical doctors (23.7%) and other health workers (1.7 %)

2.6 Ownership of Resources

2.6.1 Land Ownership

Land was mainly individually owned (68%), community through group ranches (22%), individuals with titles (7%) and community through clans (3%). The average irrigated land per family ranges from 0.3 to 5 acres. Irrigated acreage in the scheme was 22.5 hectares. At the time of the study, there were 600 beneficiaries of the scheme. In the irrigation scheme, plots were distributed by the chief and the committee whenever there were vacancies and residents all qualified to get plots; those with husbands and those without. The sizes of the plots were 2 acres for those who settled in scheme on/or before 1980s and half an acre for those who settled after.

2.6.2 Livestock Ownership

Pastoralism was the main source of livelihood (100%) for the community with the livestock kept being camels, cattle, goats, sheep, donkeys and chicken. The camel was the most important livestock because of its resilience during drought. It was a mandatory payment as part of bride price (either one female or two males). The benefits of household owning a camel included milk, meat and it's for transportation of household wares, smaller animals, sickly family members and the collapsible family shelter during migration. Camels were owned and their sale controlled by men. One camel costs Ksh. 50,000 to 100, 000. They were not slaughtered unless there was a severe drought. They were milked only by men but women control the milk at home. Donkeys were used for transporting water, young goats and luggage during migration. The Gabra did not eat donkey meat. Goats/sheep provide milk, meat, hides and skin. Fathers also give daughters getting married about 10-30 shoats. Sons inherit their fathers' property (shoats, cattle and camels). Livestock was the primary measure of wealth among the Gabra

The study established that in 82.5% of the households, livestock was owned by male heads of households with women owning them in 12.3% of households. The households owning livestock were usually female headed, particularly widows. In 5.3% of the households, other male members owned the livestock. In 91.5% of households, decision making on the acquisition and disposal of the livestock was made by men (88.1% male heads of households and 3.4% other males in the household) compared to women in 8.5% of households (female headed). In some female headed households, decisions were made by brothers in law or mature son's relatives.

2.6.3 Issues arising from Ownership of Resources

Men and women controlled livestock at different levels. Water and pasture were communally owned although during the droughts there were specific areas designated for grazing animals. Such spots attracted conflicts particularly from neighbouring communities who ignored the rules governing the dry season pastures.

2.7 Capacity Building of Community and County Staff

2.7.1 Training needs of Staff in Relevant Anthropological Issues

There was need to develop capacity in the area of

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

2.7.2 Training Needs of and Farmers in Anthropological Issues

There was need to develop capacity in the area of

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

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 Conclusions

3.1.1 Socio-cultural and social economic dynamics

The Gabra were the dominant community in this scheme. Majority of them were christians and believed in their supremacy over the rest of the communities around Marsabit. The Gabra interacted freely with other communities in several areas including trade, cultural functions, and marriage and sharing grazing. In the community, male elders were highly regarded and made decisions relating to community management activities. These activities included conflict resolution (land boundaries, crop destroyed by livestock, theft and domestic issues); presiding over traditional ceremonies and rituals; monitoring of community security and participation in communal activities.

3.1.2 Sources of livelihoods

The Gabra relied on nomadic pastoralism for their livelihood and supplemented it with fodder and hay farming in the irrigation scheme.

3.1.3 Economic organisation

Away from pastoralism other economic engagements included: Sale of firewood, quarrying and crushing of ballast (both as individuals or groups), collection of stones by the roadside and sale for construction, charcoal burning and sale, collection and sale of unrefined salt from Chalbi Desert salt lick (the salt was transported in trucks to Dukana and sold at Kshs 1,200 per 50 kg bag), commercial construction of family shelters and casual work.

3.1.4 Political organisation

In a family the male was the automatic head and in his absence the first son took over headship. At a higher level, the clan the foremost administrative structure was the Yaa, central administration of the Gabra and it was rotational. It consisted of the *hayyu*, *Jaallab laga hayyu* and *Jaallab*. The Yaa, a male preserve and was charged to: maintain law and order and exercise discipline and justice.

3.1.5 Sensitive issues and Conflicts

There were some inter-ethnic conflicts between the Gabra and neighbours near the borders i.e. Kuro, Bales and Bura over pasture and water during the dry spell. Conflict and competition for water resources between the communities, the tourist cabin and the livestock was a sensitive matter.

3.1.6 Morbidity and Culinary Habits of the People

Major diseases included diarrhoea, typhoid/amoeba, malaria, coughs, and headaches. The Gabra did not eat donkey meat.

3.1.7 Ownership of resources

Land was mainly individually owned (68%), although no titles had been issued. Water and pasture were communally owned although during the droughts there were specific areas designated for grazing animals.

3.1.8 Institutions

There were many stakeholders in Kalacha .There was presence of international NGOs in Marsabit County. They included Food for the Hungry and Concern Worldwide whose main role was to provide food under emergency conditions. Adeso's Regal-IR project was also present and it aided in improving traditional structures and establishing grazing areas.

3.1.9 Capacity building Community and County Staff

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 Gabra had a rich cultural heritage that had always helped to glue the people together. However the communities ought to be sensitised about the harmful effects of some customs like the traditional practice of FGM which is repugnant and retrogressive and cattle raiding which impacts negatively on livestock as livelihood. These customs ought to be gradually discarded. Inter-ethnic relations ought to be enhanced through seminars on the importance of co-existence so that roads are not closed to block others from accessing them and grazing animals around the mountain. 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

The people expressed a negative attitude towards crop farming due to fixation with pastoralism as the noble way of life. The people in Kalacha were not able to meet their food requirements and produced below capacity due to various reasons such as insufficient farm inputs, limited access to agro-vets, pests and weeds ruin crops, invasive prosopis is a menace, the area is infested with baboons, monkeys and warthogs that raided their crops and the in-farms, yard manure was burnt. All these could be addressed through extension, provision of agro-vet services and liaison with the KWS to trap the wild game that preys on the crops.

3.2.3 Economic organization

It was reported that there is a shortage of water: This mainly caused by limited canal coverage, so there is rationing by the irrigation scheme committee with individuals receiving their allocations once in two weeks. There was also seepage in earth canals, loss of water through broken pipes, blockage of pipes, silting of canals and clogging by fallen pods but farmers.

The irrigation scheme committee proposed the following solutions during the FGDs: canal lining; drilling of a second borehole at the lower part of the scheme for equitable coverage and more frequent distribution. Salt tolerant plants should be cultivated in the scheme such as barley, cotton, sugar beet; asparagus addition of manure to the soil is advisable to maintain the soil structure. Furrow irrigation system is practised but it is associated with high seepage rates hence low irrigation water use efficiency which the DRSLP could address.

3.2.4 Political Organisation

The *Yaa* is a significant institution that could be a launch pad for the DRSLP as its authoritative and widely accepted by the people.

3.2.5 Sensitive Issues and Conflicts

Equitable allocation of water across the various uses should be guaranteed to curb conflicts. Peace management committees should be supported by DRSLP to build long lasting peace.

3.2.6 Morbidity and Culinary Habits of the People

The project should try to support initiative that separate water system at the scheme for livestock and domestic use to avoid contamination. Water for household use should be treated to fight off waterborne diseases. Provision of latrines around the scheme could prevent waterborne diseases currently a challenge to the residents of Kalacha. Notably the people in Kalacha reported the highest level 79.3 % of use of pit latrines with those without toilets being (20.7%). For those without toilets 30% use the bushes while 5% use open fields.

3.2.7 Ownership of resources

There is need to support and work with county government to enhance land adjudication and issuance of titles.

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
   - Group dynamics
   - Anthropology for development
   - Social cultural organisations
   - Peace and conflict
   - Interpersonal and ethnic relations

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5.0 ANNEXES

Annex 1: List of Respondents

(i) Key Informants

	Name	Sex	Designation/Department
1	Esther Chiwe	Female	County Coordinator, gender and Social development
2	Abdulahi Ibrahim	Male	Surveyor, Land Adjudication Department, Marsabit
3	Nur Abdul Kadir	Male	Coordinator Horn Of Africa Development Initiative
4	Bante Galgalo	Male	Disaster Preparedness and Response Manager, Catholic Diocese
5	Mr. Nginye	Male	Cooperatives Officer, Saku Sub-county
6	Moses Lengarite	Male	County Director of Livestock Production
7	Julius Maina Gitu	Male	County Director of Agriculture
8	Mamo Sora	Male	Assistant Director, Livestock Production
9	Shalom Magoma	Male	Project Officer, Natural Resources Management, Northern Kenya
10	Dida Karayu	Male	Pastoralists Livelihoods Program Manager-FH-Kenya
11	M. Mbuvi	Male	REGAL AG
12	Dr. Shanda Guyo	Male	DVO, Saku Sub-County
13	Wario Bonaya	Male	LHA, Sagante Ward
14	Aden Isack	Male	Chairman, Kenya Camel Association, Marsabit Branch
15	Dr. Charles Odhiambo, Area Coordinator	Male	Concern Worldwide, Marsabit
16	Dr. Abdub Golicha	Male	Concern Worldwide, Marsabit
17	Abdub Kampicha	Male	Chairman, CLMC
18	Mohamed Nur	Male	Treasurer, CLMC
19	Jared Nyagaka Bogita	Male	County Director of Fisheries
20	Kiptoo Joel	Male	Agriculture Officer, N Horr Sub-County
21	Mansur	Male	Water
22	Kithuka	Male	Crop Officer, Saku Sub-County
23	Fugisha	Male	Livestock Production
24	Mr. Nginye	Male	Cooperatives Officer, Saku Sub-County.

(ii) FGD with Irrigation Scheme Members

	Name
1	Quye Denge
2	Roge Duba
3	Kame Garako
4	Galafa Hoko
5	Shanu Molu
6	Dimiti Halakhe
7	Bonaya Jarso
8	Halaka JIllo
9	Abdub Goran
10	Bonaya Isako

(iii) FGD with Kalacha Women's Group Members

	Name
1	Adhi Yattani
2	Boru Didha
3	Hokho Dalicha
4	Adho Balio

5	Doke Boru
6	Bora Adano
7	Kaue Adano
8	Adho Dido
9	Kursa Moli
10	Robe Budhe
11	Bule Halkano
12	Bati Jillo
13	Bilha Mamo
14	Mamo Dabela

Annex 2: List of Trained Staff

(i) List of trained Staff

No.	Name	Designation	Gender
1	Joel K. Kiptoo		M
2	Ali Fugicha		M
3	Ombura Wilson		M
4	Abel Mutugi		M
5	Hamar Lesila		M
6	Dickson K. Maitho		M
7	Denge Godana		M
8	Charles Muturi		M
9	Tura Wario		M
10	Adullahi Mahadi		M
11	Solomon Gathithi		M