



BASELINE REPORT

Building Drought Resilience in Isiolo County Through Sustainable Livelihoods (DRIC): FED/2019/409-181



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Submitted by

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EXECUTIVE SUMMARY

Background

A Consortium of five international, multi-sectoral NGOs namely: VSF Suisse; WeWorld Onlus (WW); Comitato Collaborazione Medica (CCM); E4IMPACT Foundation (E4I); and Social Ministry Research Network Centre (SOMIRENEC); received funding from the European Union (EU), to implement a 48-month project that will support both pastoralists and agro-pastoralists in Isiolo County. The project titled 'Building Drought Resilience in Isiolo County through sustainable Livelihoods will be implemented mainly in seven selected Wards in Isiolo County namely **Oldonyiro, Ngaremara, Chari, Cherab, Kinna, Sericho and Garbatulla**. The Consortium will undertake activities that will enhance livestock productivity and management, Nutrition, One health, Agriculture, Food security and livelihood, entrepreneurship, Advocacy, Water and Sanitation as well as Peace building.

The overall objective of the baseline survey is to provide baseline measures for the project's overall objective and outputs as identified in the Project Logframe. The baseline measures will provide benchmarks against which the project achievements will be monitored and evaluated in terms of its objectives and outputs during and at the end of the project's lifespan of 48 months. The baseline survey was conducted from 28th July to 31st August 2020.

Methodology

The Consultants used a mixed methods and participatory approach in conducting the baseline cross-sectional survey to collect and analyze data to determine the baseline measures of food and nutrition security in the drought prone semi-arid County of Isiolo. The Consultants worked closely with VSF-Suisse/Kenya, consortium partners, relevant county government ministries, health centres, pastoralists and agro-pastoralists, women groups and community members in the 7 target wards of Isiolo County in collecting data using developed and pretested survey questionnaires. They collected data through literature review, key informant interviews, household interviews, focused group discussions and field observations. Trained enumerators conducted household interviews on a randomized sample of 420 households spread proportionately across the seven purposively selected wards under the guidance of an enumerator manager. Both quantitative and qualitative data were collected and synthesized to produce the key findings of the survey. Following data coding, data were analyzed using Statistical Package for Social Sciences (SPSS) software to produce descriptive statistics comprising means, standard deviations, frequency distributions and percentages. Data were triangulated and synthesized to give an overall baseline position for each indicator. The results are presented in tables and charts, along with summary descriptions.

Summary of substantive findings

Household Demographics

The average household size is 6 members (3 male and 3 female) and nearly 50% of these households have children who are between the age of 12 months and 5 years. The average age of the household head is 49 years. Eighty three per cent of the household surveyed were male headed while only 17% of the households were female headed. Approximately, 56% of the household heads surveyed had no formal education while 9 % have attained secondary level education and/or above.

Household assets

Most of the land in Isiolo County is communal grazing land. Therefore, none of the households surveyed owned land. The average total value of assets per household was KES 97,943. The total value of household assets varied widely among the wards, with Ngaremara ward having the highest value at about KES 203 thousand, while Oldonyiro ward had the lowest value at about KES 50,000.

Livestock production and marketing

Eighty seven percent (87%) of the households practiced livestock farming. This is a clear indication that livestock farming is the main livelihood activity in the region. The main type of livestock kept across all the seven wards surveyed are sheep and goats (shoats). The residents claim that they prefer shoats to other animals because they are relatively more tolerant to harsh climatic conditions, particularly drought. Out of the seven wards surveyed, cattle are mainly kept in Kinna and Cherab ward; and only few households practice cattle rearing in Chari and Sericho wards.

Cattle keeping households sell on average 3 cattle annually at an average price of KES 29,338 per animal. The goat rearing households sell on average 12 goats annually at an average price of KES 4,168 per goat. Households which own sheep sell an average of 9 sheep per year at an average price of KES 2,948 per sheep, while camels are rarely sold and the few individuals who sold them did so at an average price of KES 47,663 per camel. Households also keep poultry, and sell some small numbers, except in Kinna ward where there is no indication that they sold any poultry. The total income per household from animal sales averaged KES 214,000 per annum, with the highest income of KES 293,000 in Ngaremara ward and lowest KES 87,000 in Chari ward.

With regard to who authorizes the sale of livestock and how the revenue is utilized, the household heads authorized sale of cattle, goats, sheep and camel in 50% of the households while only women make the decision in only 15% of the households. About 35 % of the households said the decision to sell and how to use the revenue was a joint one between the household head and the spouse. However, in the case of poultry marketing, the decision to sell was primarily left to the women.

Other household incomes were obtained through sale of livestock products, honey and fish. Honey production was mainly reported in Chari ward where 6.9% of the households surveyed were engaged in honey production.

Livestock diseases and their management

Nearly 74% of the households surveyed in the seven wards indicated that their livestock had been affected by diseases in the past one year. The main diseases reported were foot and mouth disease, Anthrax, Trypanosomiasis, Sheep pox and ringworms, Brucellosis, joints swelling (goats), lung disease, worms, blinding in chicken, bloats and chicken pox were also cited.

The pastoralists used both traditional and conventional medicines for treating the infections. Majority of the households (about 70%) use conventional drugs while about 23% use traditional treatments. A pastoralist can opt to use either conventional or traditional drugs depending on the type of disease and accessibility of the treatment. This, in effect means that the same pastoralist can choose to either apply traditional or conventional medicine.

Some of the households reported disease occurrence in their livestock to a County or private animal health officer or to a local community leader while a small proportion (about 6%) do not report diseases.

Zoonotic diseases

Anthrax, Brucellosis, Rabies, Rift Valley Fever, and Foot and Mouth Disease are some of the zoonotic diseases which were reported by households in different wards. The majority of respondents believe that a person could get infected with zoonotic diseases by drinking raw milk, while approximately 20% were convinced that one could acquire these diseases from poorly cleaned animal houses.

VSF-Suisse, the County Government Department of Veterinary Services and Ministry of Health undertook the post flood interventions for 2019/20 following the One Health Approach that entailed messaging, surveillance, and distribution of mosquito nets to the affected communities.

Zoonotic disease desk

There is a zoonotic disease desk in Isiolo Town. Its current activities include disease reporting and surveillance. Any samples collected are remitted to the ZDU in Kabete. Currently, there seems to be little coordination or interaction between the County Department of Veterinary Services and the County Ministry of Health on matters relating to zoonotic diseases. Hence, there is need to work out a system that ensures collaboration of the two ministries and several other actors operating under the One Health Approach in Isiolo County, in order to bring about coordination amongst the players, with a view to avoiding duplication of efforts and wastage of resources.

Challenges faced by livestock keepers

Livestock keepers encounter a myriad of problems such as inadequate feed, the high cost of feeds, lack of market for their animals and livestock products (e.g. milk), poor prices for their livestock and frequent droughts/flooding. The severity of the challenges vary across the wards depending on accessibility to veterinary or extension services.

Milk hygiene

On average, 76% of households are aware of milk hygiene practices, with Chari ward having the highest degree of awareness at 93% of the households, while Sericho ward has the lowest awareness rate at 58% of the households. The households reported implementing various hygiene practices including cleaning milking areas and milk containers, washing hands before milking and using clean feed among others.

Livestock feed and fodder

The main source of livestock feed in all the seven wards is communal grazing lands as reported by all the households which participated in the survey. Only 3% of the households reported that besides utilizing the communal grazing lands, they also buy fodder, particularly during the dry season to feed their weak animals as they migrate with the rest in search of pasture. However, 2 % of households participate in fodder group activities. The main purpose of joining fodder groups as reported by the members was to produce and sell fodder. On average, fodder groups comprised of 38 members of which on average 18 are youth. In addition, with regard to gender composition of the groups, on average they consist of 27 women and 11 men. Thus, this is a clear indication that women are more involved than men in fodder group activities. Fodder groups face a number of challenges, including mismanagement of resources, high membership subscription fee, and ethnic discrimination.

The Isiolo department of livestock production has been assisting pastoralists in Rapsu (in Kinna Ward), Oldonyiro Ward and Chumviyare in Ngaremara Ward to reseed their degraded pasture land using locally available, appropriate grass species such as *Eragrotis superba*, *Cenchrus ciliaris*. The impact of this is usually observed after 2 rain seasons.

Challenges of feed harvest and Storage

Farmers who harvest pasture or fodder lack appropriate equipment for the work. The groups need harvesters and balers to enable them harvest reasonable quantities of pasture/fodder. Furthermore, most the groups have no storage place for the hay.

Rangeland reseeding

Reseeding has been done almost in all wards in the county apart from Bulapesa and Wabera which are within the Isiolo Township. The reseeding work has been supported by different agencies, development partners, and the government, including the Northern Rangeland Trust (NRT). The most commonly used grass species are *cenchrus ciliaris* and *eragrostis superba*, which are highly adaptable in the county and are naturally available. The grass is intended for supplementary feeding for both breeding stock and regular grazing when supply allows. The success rate of the reseeding programme is about 60%. The challenges to the

reseeding programme are the low germination rate which is associated with planting non-viable seeds, erratic rains and lack of protection of reseeded areas. The communities require capacity building on grasses management, support with certified grass seeds; fencing and managing reseeded areas; pasture production; harvesting; and bailing equipment.

Crop production and marketing

On average 19% of the interviewed households in all the seven wards were engaged in crop production. The proportion of households growing crops varies from 41% in Chari ward to 2% in Sericho ward. The types of crops grown include maize, beans, green grams, water melon, onions, tomatoes, kales, spinach, capsicum and sweet potatoes. Crop farming is largely a subsistence enterprise due to limited access to water for irrigation and none of the households surveyed sold their produce.

Poultry, camel milk, honey

Poultry, camel milk and honey are subsistence enterprises largely undertaken by women. Therefore, their value chains remain under-developed. However, because of their proximity to the urban market, there are a few commercial poultry producers in and around Isiolo Town.

Community/farmer organizations

Generally, the people of Isiolo are organised in cooperative societies. Women, youth and PWD groups undertake a variety of activities which vary among the institutions and wards, including: livestock trade, farming, savings & credit, camel milk marketing, *Merry Go Rounds*, bee-keeping, table banking, boda boda services, small trade, butchery, tailoring and agribusiness.

Climate change and coping strategies

Climate change manifests itself in alternating droughts and floods, phenomena reported to be occurring more frequently than in the past. For the last ten years, drought has been experienced across all the seven wards¹. The adverse effects experienced by virtually all the households which were interviewed, were loss of human lives; death of livestock; and loss of crops.

The main drought coping strategies reported by households are food aid from NGOs, migration to other areas, and assistance from family members. Additional strategies include national Government assistance in destocking to minimize losses of livestock and restocking after drought; support from social groups; sale of assets; and taking insurance cover over livestock.

In the past ten years, 49% of households in all the wards reported experiencing floods while 51% said they had not experienced floods. The adverse effects of floods include loss of livestock, loss of household assets, loss of income, loss of crops and loss of human lives.

¹ Ending Drought Emergencies: Common Programme Framework for Drought Risk Management in Kenya, 2014

The strategies employed in management of floods include assistance from family members; migration to safer areas; food aid from NGOs; assistance from the Government in terms of destocking and restocking livestock; support from social groups; sale of assets; and insurance.

Climate smart practices

Households reported adopting various climate smart practices to cope with the adverse effects of climate change. The climate smart agriculture activities in Isiolo County as a whole include:

- a) Food crop production for livelihood diversification on focus on drought tolerance crops (green grams, cowpea, sorghum orange fresh sweet potatoes);
- b) Promotion of nutrition sensitive agriculture appropriate technologies e.g kitchen gardens;
- c) Promotion of technology innovation management practices;
- d) Soil and water management practices;
- e) Promotion of agro forestry;
- f) Promotion of energy saving devices, e.g jiko liners, fireless cookers;
- g) Use of solar to support irrigation;
- i) Capacity building value chain actors.

These activities are undertaken mostly by farmers groups, self-help groups, women groups, youth groups, village savings and loaning associations and also common interest groups.

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Management and use of community resources

Households reported being organized in grazing land and resource management committees to manage the use of common resources such as communal grazing lands, and water sources such as community boreholes. Several challenges were cited as disablers to accessing common resources. These include but were not limited to poor pasture, invasion by the poisonous *Prosopis Species*, encroachment of land and settlement by 'outsiders', competition due to increased number of users, conflict with other communities, and remoteness to resources. Challenges were various and varied among the wards. However, the main challenges which cut across all the seven wards are increased number of users accessing the common resources, and conflicts with other communities over the resources.

Conflicts resolution/peace initiatives

Households reported facing various conflicts including grazing land, water points, cattle rustling and human-wildlife conflicts, which often result in loss of human life the most notable being the prolonged Garissa-Isiolo south border conflict which has resulted in human and livestock deaths. There are conflict hotspots are in Garbatulla, Kinna, Cherab, Chari, Oldonyiro and Sericho Wards.

These conflicts were managed through negotiations either by community elders, peace committees, grazing committees or the warring youths. In some cases the government and politicians get involved. In case of death, the communities in some areas employ extra judicial traditional methods of compensation such as payment of Sh. 1 million as recompense to the aggrieved family or community.

Often, administrative units particularly the County Commissioner and the political leaders get involved in the conflict resolution/peace initiatives. The urgent need for police posts was expressed by every community interviewed during the survey. There are very few police posts, which are understaffed and under resourced especially in the face of attacks by large groups.

Off-farm sources of household income

Apart from earning income from livestock and cropping enterprises on-farm, a few (20%) households across the wards reported earning income from a number of off-farm activities. By far the two most important sources of off-farm income are small businesses such as shops or handcraft, 56% of the households, and salary from employment cited by 26% of the households across the wards. Other off-farm income sources mentioned by a few households across wards include sale of forest products such as charcoal, gift/food aid, remittances from family members and pension.

Household expenditure

The average amount of annual expenditure per household across the wards is KES 191,000. The highest amount of expenditure per household of KES 247,000 was recorded in Ngaremara, and the lowest, KES 133,000 is in Chari ward. The four most important items of

expenditure by households on average in all the wards are children's school fees, household food, fuel for transport, and household clothing.

Household dietary diversity score

Household dietary diversity score (HDDS) was measured in terms of the number of different types of food groups (both protein and carbohydrate sources) eaten by a household within the past 24 hours. Kinna, Garbatulla, Ngaremara and Oldonyiro wards seem to be relatively better off in terms of household dietary diversity as more than half of the households in the said wards reported consuming six food groups or more. The other wards which were consuming less than six food group types indicate that their dietary diversity is relatively poor. According to the SMART survey of 2020, household dietary diversity for this group of households deteriorated from 6.3% in 2019 to 35.1% in 2020. The households with low dietary diversity score (≤ 3 food groups) were commonly consuming cereals and milk only, which are the only food types commonly consumed amongst all the three tertiles. The food types that are also commonly consumed by households with high dietary diversity score (≥ 6 food groups), rarely consumed in other tertiles, are white roots, tuber and plantains, eggs and oils.

Dietary diversity score for children between the age of 6 months and 5 years

There is a significant number of households whose children are not able to acquire more than five food types out of the recommended twelve. This mirrors the findings of the SMART Survey of 2020 which shows that global acute malnutrition (GAM) rose from 9.2% in 2019 to 16.7% in 2020 while severe acute malnutrition (SAM) rose from 0.7% in 2019 to 1.5%.

Household food insecurity and vulnerability

Household food insecurity and vulnerability was measured in terms of the average household food insecurity access score (HFIAS). The maximum score for a household is 27, and the minimum score is 0. The higher the score, the more food insecure the household is, and the minimum score is 0. The lower the score, the less food insecurity (access) a household is experiencing. The average HFIAS for all the seven wards is 10.73, meaning that households within the county are moderately food insecure. However, food insecurity varies among the wards. While Cherab and Garbatulla wards have a score of just under 10.0, and therefore the least food insecure, Ngaremara, Chari, Kinna, Oldonyiro and Sericho wards have a score of 10 or more, indicating higher food insecurity.

Sanitation

On average, for all the seven wards, only 44% of the households have a latrine. Hence the majority of households do not have latrines. It can therefore be inferred that maintenance of household hygiene is problematic. In addition, schools do not have adequate latrines in disregard of the recommended toilets per student population, and posing a health risk to the children. It is also a missed opportunity in socializing the students on hygiene standards.

However, the County Government has planned to construct toilets for 10 schools in the next one year.

Effect of Covid-19 on households

The Covid-19 global pandemic is affecting households in Isiolo County in a variety of ways. It is affecting crop and livestock production, household access to food, and household income. Sixty percent of the households surveyed reported that they are facing livestock and/or crop production challenges due to Covid-19. The two most critical challenges the households are facing are high transport costs due to restriction of movement and limited markets for their livestock and crop products. A few households also reported that due to the outbreak, it has become difficult to access extension service agents as they are affected by the containment measures, particularly restriction of movement.

There is also a significant number of households who reported that the outbreak has resulted in lack of farm inputs such as pesticides and other drugs for livestock due to restriction of movement and hence disruption in the supply chains. About, 36 % of the households indicated that they are finding it difficult to purchase farm inputs due to the pandemic. The main reasons for them not being able to purchase farm inputs are: restriction of movement, lack of government support and high cost of farm inputs.

About 37 % of the households reported that they have not been able to feed their families as compared to before Covid-19. The main reasons why the households' feeding habits have changed due to Covid-19 are that markets are closed, making it difficult to access food for purchase, lack of money with which to buy food, and the rapidly escalating prices of food making it virtually unaffordable. In addition, suppliers are not being able to stock food because of its scarcity and restriction of movement due to the pandemic.

On average, 20 % of the households surveyed, reported that their household income has been reduced or totally lost due to the outbreak of Covid-19. The main reasons for the reduction or loss of household income are the closure of businesses, lack of produce to market, the lock-down/restriction for travel, night curfew and loss of job by a family member.

Wealth Status of Households

Asset-based approach was used to develop an index of wealth using data from the household survey. Data used for calculation of the index were the value of the stock of livestock owned including cattle, sheep, goats, camels and poultry, and the value of household assets owned including farm machinery and equipment, vehicles and household assets. Needless to say, land, which is communally owned was not included as an asset. The selected variables were aggregated into a wealth index through the application of the Principal Component Analysis (PCA). It was found that nearly 76% of the households surveyed are poor, 23% are moderately wealthy and less than 2% are classified as rich. This high poverty rate implies

that most households are food insecure and vulnerable to the adverse effects of climate change. Therefore, they require assistance to build resilience for sustainable livelihoods.

Baseline Indicators

The key baseline indicators were derived from the overall project objective, the specific objectives and the project outputs. The derived indicators portray the current or existing value. The following are the key baseline indicators for the overall project objective and the specific objective

1. Project Objective	2. Key Indicators	3. Current Status	4. Explanations/Source
Overall Project Objective: To contribute towards increased resilience to droughts and other negative impact of climate change for vulnerable groups and reduce number of children under 5 years who are stunted in Isiolo County by 2025	1. Isiolo County Food Poverty Rate (%)	76	Food poverty is closely linked to the poverty rate, which is 76% from the baseline data.
	2. Percentage of Children Under 5 years Stunted	13.8	This was measured in terms of the average household food insecurity access score (HFIAS) from the baseline data
	3. Incidence of Household Vulnerability and Food Nutritional Security	10.73	This indicator was measured using HFIAS
Specific Project Objective: To enhance Food and Nutrition Security (FNS) for vulnerable Pastoralist and Agro-pastoralist communities in Isiolo County, generating sustainable livelihoods, protecting productive assets and improving climate smart County service delivery	4. Women Dietary Diversity Index	23.6%	The Women Dietary Diversity Score was measured in the Isiolo Integrated SMART Survey, 2020
	5. Citizens Drought Coping Strategy Index	11.1	From Isiolo County Drought early warning bulletin for August 2020
	6. Women Empowerment in Agriculture Index	0.9101	Considering that the LogFrame indicator was calculated in 2018 and very little has changed in terms of empowering Isiolo women, we opted to retain the same index value.

Together with the key output indicators derived, these baseline indicators provide good benchmarks for the organisations to use for monitoring the progress and evaluation of the performance of the DRIC project.

- i. The baseline survey indicators established give good benchmarks for the organisations to use for monitoring the progress of the DRIC project. In measuring Incidence of Household Vulnerability and Food Nutritional Security the Consultants recommend adoption of the average household food insecurity access score (HFIAS) for tracking the progress of this indicator in view of the fact that all the family members eat the same food.
- ii. The needs on the ground are overwhelming and there are also a number of players giving support to the communities. The Consultants recommend that the

consortium members take seriously the expressed needs of the communities and discuss them with them before undertaking some of the activities.

- iii. A few changes have taken place in some of the schools within the targeted wards as a result of the recent flooding. Floods destroyed toilets in some schools. Hence the Consultants suggest a review of targeted schools for construction of VIP toilets to ensure support is prioritized for schools in dire need of the facilities.
- iv. The Consultants recommend a mid-term review to determine whether or not adjustments need to be made to ensure achievement of the Project goals and for consolidating learning as the project progresses.

Conclusion

The Consultants are of the opinion that the Baseline Report provides reasonable indicators and baseline needs of the target population to enable adequate and effective monitoring and evaluation of the DRIC project implementation.

CONSULTANCY PARTICULARS

PROJECT TITLE	Building Drought Resilience in Isiolo County Through Sustainable Livelihoods (DRIC)
PROJECT NUMBER	ISIOLO DRIC: FED/2019/409-181
CONSULTANCY ASSIGNMENT	Conduct a Baseline Survey for the Project
CONSULTANCY OBJECTIVE	Gather and analyze quantitative and qualitative data in Oldonyiro, Ngaremara, Chari, Cherab, Kinna, Sericho and Garbatulla wards in Isiolo County to establish the baseline measures for the project indicators of food and nutrition security in Isiolo County against which project progress will be measured.
CONSULTANCY OUTPUT	A Report of The Baseline Survey for the Project on Building Drought Resilience in Isiolo County through Sustainable Livelihoods (DRIC)
CONSULTANCY DURATION	28 th July to 31 st August 2020

ABBREVIATIONS

ASAL	Arid and Semi-arid Land
BFCI	Baby Friendly Community Initiatives
CCM	Comitato Collaborazione Medica
CHEW	Community Health Workers
CHV	Community Health Volunteers
CLTS	Community Led Total Sanitation
CSA	Climate Smart Agriculture
CSI	Citizens Drought Coping Strategy Index
DRIC	Drought Resilience in Isiolo County Through Sustainable Livelihoods
E4I	E4IMPACT Foundation
EU	European Union
FGD	Focus Group Discussion
GAM	Global Acute Malnutrition
HDDS	Household Dietary Diversity Score
FNS	Food and Nutrition Security
HFIAS	Household Food Insecurity Access Score
HH	Household
HiNi	High Impact Nutrition interventions
iCCM	Integrated Community Case Management
IFA	Iron and Folic Acid
KES	Kenya Shilling
KII	Key Informant Interview
LF	Log Frame
M&E	Monitoring and Evaluation
MoALF	Ministry of Agriculture, Livestock and Fisheries
MoH	Ministry of Health
MUAC	Mid Upper Arm Circumference
NDMA	National Drought Management Authority
NEMA	National Environmental Management Authority
NGO	Non-Governmental Organization
NRT	North Rangeland Trust
ODF	Open Defecation Free
PWD	People with disability
SAM	Severe Acute Malnutrition
SMART	Standard Monitoring and Assessment of Relief and Transitions
SOMIRENEC	Social Ministry Research Network Centre
SPSS	Statistical Package for Social Scientists
SUN	Scaling Up Nutrition
TB	Tuberculosis
VSF-Suisse	Veterinaires Sans Frontieres - Suisse
WASH	Water, Sanitation and Hygiene
WDDI	Women Dietary Diversity Index
WEIA	Women Empowerment in Agriculture
WFP	World Food Programme
WW	WeWorld Onlus

1.0 BACKGROUND

Isiolo County is one of the 23 counties in the Arid and Semi-Arid Lands (ASAL) of Kenya, an area that is greatly impacted by climate change. Isiolo County covers an area of 25,336.1Km² and has a population of 268,002 (KNBS 2019). The local topography is a mixture of arid and semi-arid low plains, which receives an average of between 150mm and 650 mm of rainfall per annum. The perennial Ewaso Nyiro River that flows through the County provides a much needed lifeline for crop and livestock production.

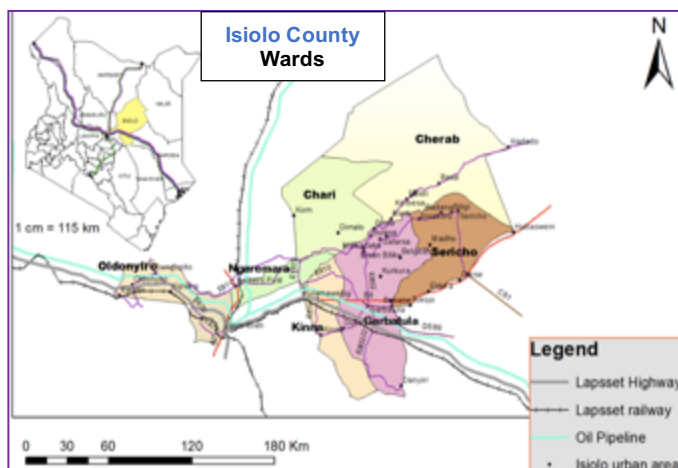


Figure 1: The Map of Isiolo County

It is against this backdrop, that the European Union (EU) has, under an EU funded 48-months project titled 'Building Drought Resilience in Isiolo County through Sustainable Livelihoods (DRIC), sponsored a consortium (the Consortium) of 5 multisector NGOs, namely: VSF Suisse; WeWorld Onlus (WW); Comitato Collaborazione Medica (CCM); E4IMPACT Foundation (E4I); and Social Ministry Research Network Centre (SOMIRENEC); to enhance the capacity of Isiolo County to mitigate the challenges of climate change. The Project will employ the *one health approach* which integrates human health, animal health and environmental management. The specific objective of the project is to enhance Food and Nutrition Security (FNS) for vulnerable Pastoralist and Agro-pastoralist communities in Isiolo County by generating sustainable livelihoods while all the time managing their fragile ecosystem; protecting productive household and community assets; and improving climate smart service delivery practices.

In order to measure the Project outcomes efficiently, the Consortium engaged Consultants (annex 1) to establish benchmarks on the ground, against which to measure such outcomes.

2.0 OVERVIEW OF THE ASSIGNMENT

The Consultants were tasked to conduct a baseline survey in seven wards of Isiolo County to provide benchmarks for measuring the following outputs as per the terms of reference (TORs) (annex 2): -

- Enhanced drought resilience and nutrition sensitive agriculture/livestock production, integrated with conflict resolution and peace building strategies;
- Sustainably built and resourced productive household assets and community establishments to withstand recurrent droughts;
- Enhanced skills and capacities of Isiolo residents to address food security and nutrition (FNS) issues utilizing indigenous and acquired knowledge; improved data collection

system; cross-sectoral collaboration particularly with policy makers; buy-in local political commitment; and awareness raising.

The Consultants carried out the baseline survey in Oldonyiro, Ngaremara, Chari, Cherab, Kinna, Sericho and Garbatulla wards of Isiolo County (Annex 3). A broad base of 584 (Annex 9) participants contributed to the assessment through focus group discussions, virtual key informant interviews, structured key informants, and household questionnaires. Observations of specific sites in the target wards, except for Sericho, were made to support data generated from focus group discussions.

3.0 APPROACH AND METHODOLOGY

The Consultants used a mixed methods and participatory approach in conducting the baseline cross-sectional survey to collect and analyze data to determine the baseline measures of food and nutrition security in the drought prone semi-arid County of Isiolo. The Consultants worked closely with the consortium partners, relevant county government ministries, health centres, pastoralists and agro-pastoralists, women groups and community members in the 7 target wards of Isiolo County in collecting data using developed and pretested survey questionnaires (Annex 4-6). The data was collected through literature review, key informant interviews, household interviews, focused group discussions and field observations. Trained enumerators (Annex 11) conducted household interviews on a randomized sample of 420 households (Annex 10) spread proportionately across the seven purposively selected wards under the guidance of a data manager.

Both quantitative and qualitative data was collected and synthesized to produce the key findings of the survey. Following data coding, data were analyzed using SPSS to produce descriptive statistics comprising means, standard deviations, frequency distributions and percentages. Data from various sources was triangulated and synthesized to give an overall baseline position for each indicator. The results are presented in tables and charts, along with summary descriptions.

4.0 RESULTS, DISCUSSION AND CONCLUSIONS

4.1 Household Demographics

The survey showed that the average household size in the county is 6 members (3 males and 3 females). Nearly 50% of these households have on average 3 children who are between the age of 12 months and 5 years. The average age of the household heads is 49 years.

Approximately 83% of the households surveyed were male headed while only 17% were female headed. Approximately 56% of the household heads surveyed have no formal education while 9% have attained secondary level education as shown on figure 2 below

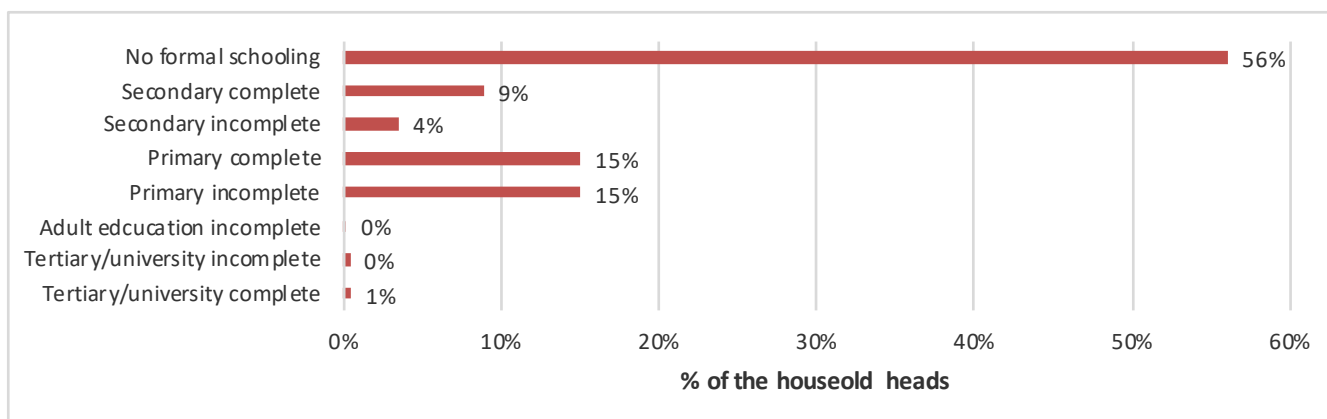


Figure 2: Level of education attained by the heads of households in the DRIC target wards

4.2 Household assets

Land in Isiolo County is communally owned and is accessible to the whole community. Hence none of the households surveyed owned their own land. With regard to accessibility among different members of the society, youths, women, men and groups, most of the chiefs surveyed (65%) indicated that it was relatively easy for any group to acquire land for crop production. Furthermore, the land can be leased for fodder production, processing of maize into feed and grass seeding. The main challenge reported in relation to crop farming was insufficient water.

The survey found that the communities owned various productive assets such as livestock and businesses. Data was generated on these assets and valued by ward, as shown on Table 4.1. The average total value of assets per household was KES 97,943. However, the total value of household assets varied widely among the wards, with Ngaremara ward having the highest value at about KES 202,631, while Oldonyiro ward had the lowest value at KES 50,000.

Table 4.1: Average value of household assets owned by ward

Ward	Estimated Average Value of the Assets Owned in KES
Chari	84,541
Cherab	64,721
Garbatulla	88,802
Kinna	136,046
Ngaremara	202,631
Oldonyiro	48,997
Sericho	59,866
Average Total	97,943

4.3 Livestock production and marketing

4.3.1 Types of livestock kept

Survey findings show that 87% of the households in Isiolo County practise livestock farming. This is a clear indication that it is the main livelihood activity in the region. The main type of

livestock reared across all the seven wards surveyed were sheep and goats (shoats) as shown in figures 3 and 4, and table 4.2. The residents indicated that they prefer shoats to other animals based on their relative tolerance to harsh climatic conditions such as drought.



Figure 3: Cattle, shoats and camels in Oldonyiro ward

Out of the seven wards surveyed, cattle are mainly kept in Kinna and Cherab wards; and only few households practice cattle rearing in Chari and Sericho wards. During the focus group discussions, individuals in Chari claimed they prefer to rear sheep and goats, and rarely keep cattle, since the grass in the region is of poor quality. Hence, they prefer to rear sheep and goats. The findings further show that camel keeping is not common in the region. Of the seven wards surveyed, Kinna and Oldonyiro had the highest number of households (21% and 23% respectively) owning camels while Cherab and Ngaremara had the least number of households (1% and 0% respectively) owning camels. This situation is changing rapidly due to the frequent droughts that seem to favour camel rearing as opposed to cattle keeping. Furthermore, an earlier VSF Suisse project had introduced camels to several wards including Chari Ward. The respondents from Chari Ward expressed the desire to have another round of camel restocking, but using pregnant or mature camels ready for breeding, with goats to cushion the poor as they wait for the camels to calve.

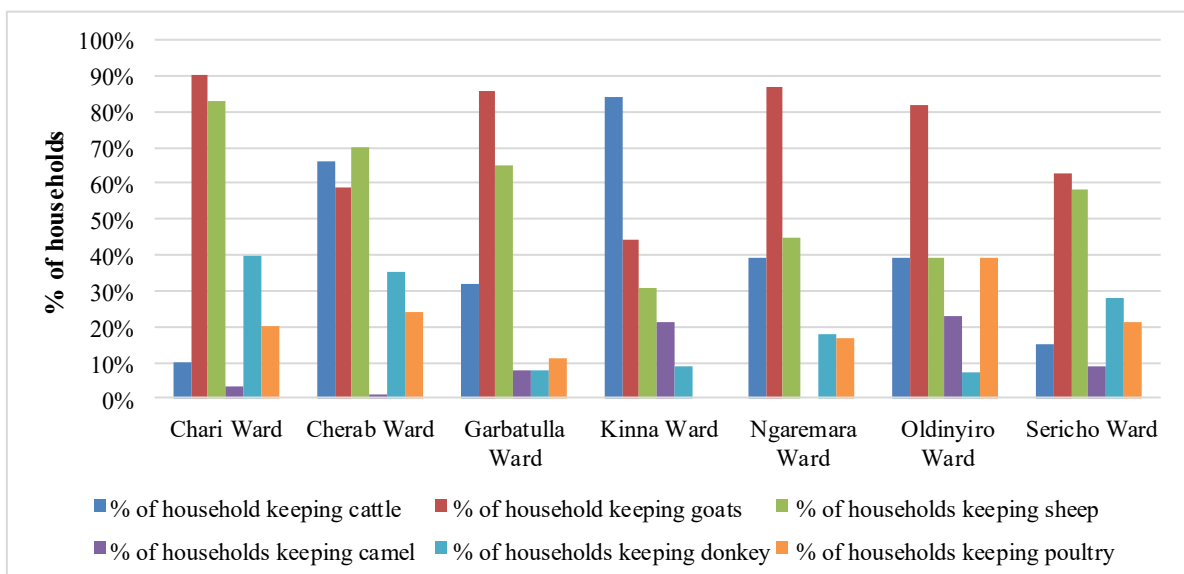


Figure 4: Types of livestock kept in the 7 DRIC target wards

Table 4.2: Types of livestock kept by Ward

Ward	% of household keeping the livestock					
	Cattle	Goats	Sheep	Camel	Donkey	Poultry
Chari	10%	90%	83%	3%	40%	20%
Cherab	66%	59%	70%	1%	35%	24%
Garbatulla	32%	86%	65%	8%	8%	11%
Kinna	84%	44%	31%	21%	9%	*0%
Ngaremara	39%	87%	45%	0%	18%	17%
Oldinyiro	39%	82%	39%	23%	7%	39%
Sericho	15%	63%	58%	9%	28%	21%

* The number of poultry reared in Kinna is very low.

4.3.2 Number of livestock kept

On average, in each of the seven wards, households kept more goats and sheep compared to cattle. The average number of sheep, goats, and cattle owned per household for the whole sample is 70, 84 and 39 respectively. The average number of shoats owned per household is 154, ranging from the highest number of 243 in Ngaremara ward to the lowest number of 84 in Sericho ward. The highest number of cattle owned per household is 69 in Kinna ward, and the lowest number is 21 in Ngaremara ward (figure 5). With regard to camel that are reared by very few households in the priority wards, most families own one camel.

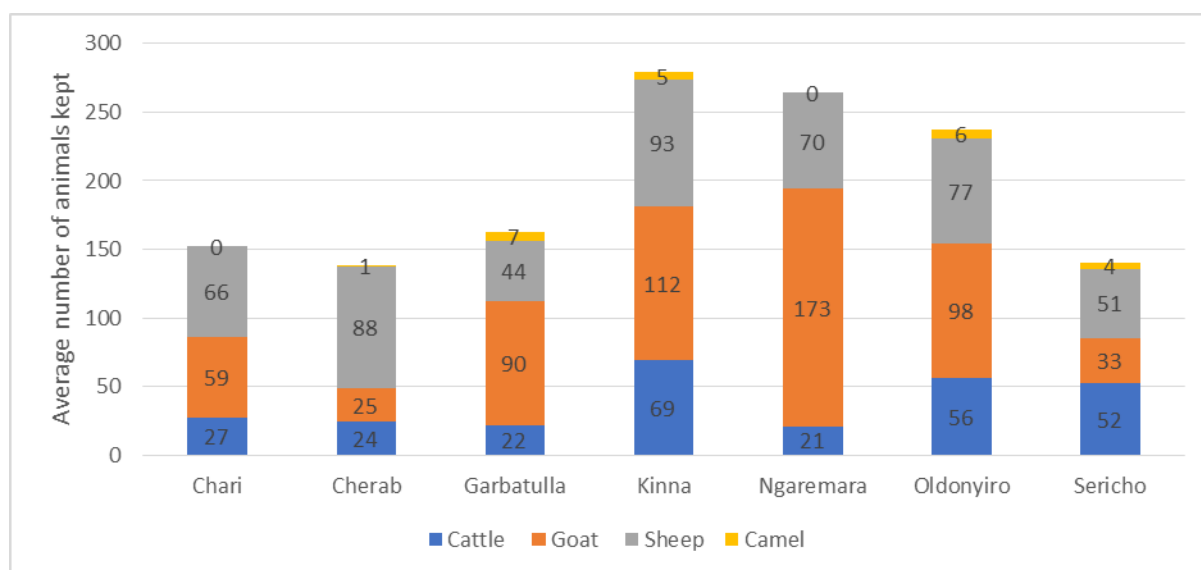


Figure 5: Average number of livestock kept per household per ward

4.3.3 Livestock marketing

Livestock are sold to meet household needs. These are sold at the household level, local markets, and at regional markets such as Isiolo town and Maua in the neighbouring county. Farmers experience price fluctuations for their livestock. Some attribute this to drought which leads to their animals losing a lot of weight.

Table 4.3 shows that cattle keeping households sell on average 3 cattle per household annually at an average price of KES 29,338 per animal. On average, households in

Garbatulla and Sericho sell 4 cattle per household annually as compared to those in Chari who sell 1 animal and those in Cherab and Oldonyiro who sell 2 animals per household. The goat keeping households sell on average 12 goats annually at an average price of KES 4,168 per goat. Households that own sheep sell an average of 9 sheep per year at an average price of KES 2,948 per sheep. Camels are rarely sold and the few individuals who sold them did so at an average price of KES 47,663 per camel.

The total income per household from sale of livestock stands at KES 214,000 per annum, with the highest income of KES 293,000 in Ngaremara ward and lowest KES 87,000 in Chari ward. It is important to note that not all wards visited have active livestock markets. For example, Ngaremara livestock market had not been officially opened by the time of the baseline survey, while Cherab cattle owners depended on the Lewa Conservancy as their main market. The conservancy purchases over 1000 cattle per year.

Poultry Production and Marketing in Isiolo County

Poultry production as shown in table 4.2, is rarely practiced in the county. Majority of the households in the county, particularly the men, do not value it as much as they value other livestock such as cattle, goats, sheep and camel. The type of poultry kept particularly in the rural areas is indigenous chicken and all the households keeping them claimed they were practising free range. Also, as shown in table 4.3, on average, the poultry keepers are able to sell 3 chickens annually at an average price of KES 443 and their main customers are fellow neighbours. Majority of the households mainly sell their poultry either to middlemen/brokers or take them to the market and sell them direct to the customers as shown in figure 6.

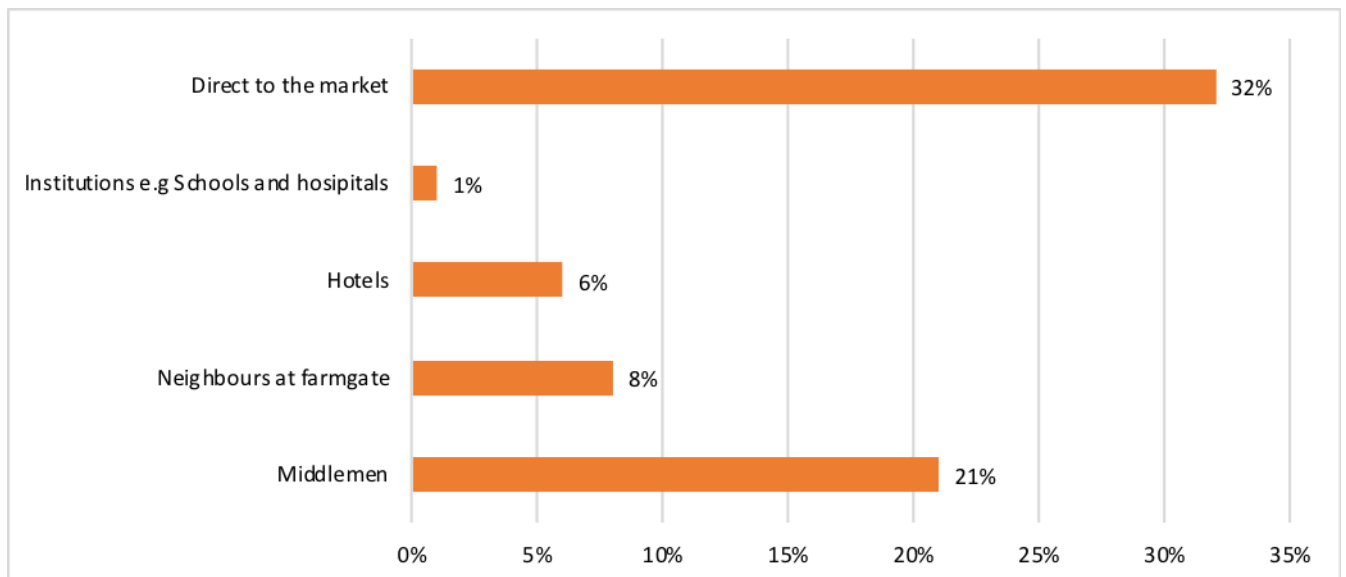


Figure 6: Main point of sales for poultry farmers

During focused group discussions, women, across all the seven wards, said they were interested in poultry keeping as a commercial activity, because this is the only way they could acquire their own income independent of their husbands who are never interested in poultry. However, the main challenge, according to the women and other key informants was inability to undertake commercial poultry production and lack of knowledge pertaining to poultry diseases.

Table 4.3: Average number of livestock sold annually per household by wards

Ward	Cattle	Average Price Cattle	Goat	Average Price Goat	Sheep	Average Price Sheep	Camel	Average Price Camel	Poultry	Average Price Poultry	Total Income
Chari	1	24,166	8	4,350	9	2,983	0	0	5	300	87,313
Cherab	2	37,953	3	4,452	7	2,830	0	0	2	329	109,730
Garbatulla	4	30,500	15	4,419	6	3,590	1	46,400	3	641	258,148
Kinna	3	23,000	10	3,903	8	2,395	2	34,250	0	0	195,690
Ngaremara	3	28,200	30	4,603	20	3,461	0	0	1	700	292,610
Oldonyiro	2	36,214	9	3,212	8	1,846	1	60,000	2	321	176,746
Sericho	4	25,333	7	4,242	8	3,531	1	50,000	4	364	210,730
Total Average	3	29,338	12	4,168	9	2,948	1	47,663	3	443	213,554

4.3.4 Decision making for livestock sales

Livestock are sold to meet household needs or in case of an impending drought, to destock as a way of mitigating loss. The person authorizing the sale of livestock varies from household to household. The current practice indicates that for 50 % of the households, the decision to sell livestock is made by the male household head, while women household heads make similar decisions for only 15% of the households. About 35 % of the households said the decision to sell and how to utilise the revenue thus raised, was a joint decision between the household head and the spouse (figure 7). However, in the case of poultry marketing (figure 8) the decision to sell was either a joint decision (as reported by 38% of the households surveyed) or the decision of the household head who in this case were female heads, meaning that poultry is kept more by women (particularly the widows).

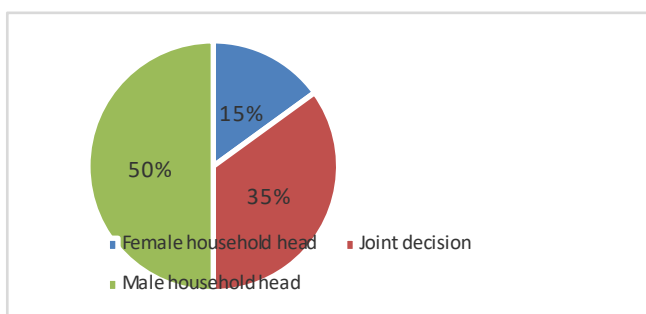


Figure 7: The main decision makers regarding sale of sheep, goats, cattle and camels.

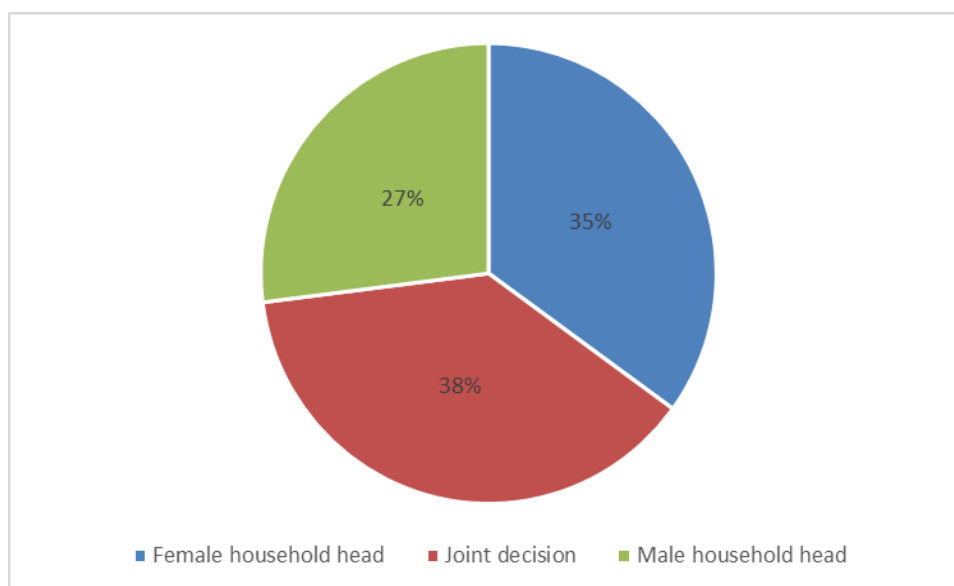


Figure 8: The main decision maker regarding poultry sales and revenue use

4.3.5 Income from other livestock products

The main livestock product of economic importance is milk. Nearly all the livestock keepers sell milk to enhance household income especially during the wet season. Milk

marketing is primarily done by women. Approximately 29% of them practise milk hygiene right from milking stage to the market (figure 9). A few of them (35%) are involved in milk processing into various products such as sour milk, yoghurt and ghee. The value addition is carried out when milk is in plenty. The women who do not engage in value addition said they lack the technical know-how and the machines required for processing.

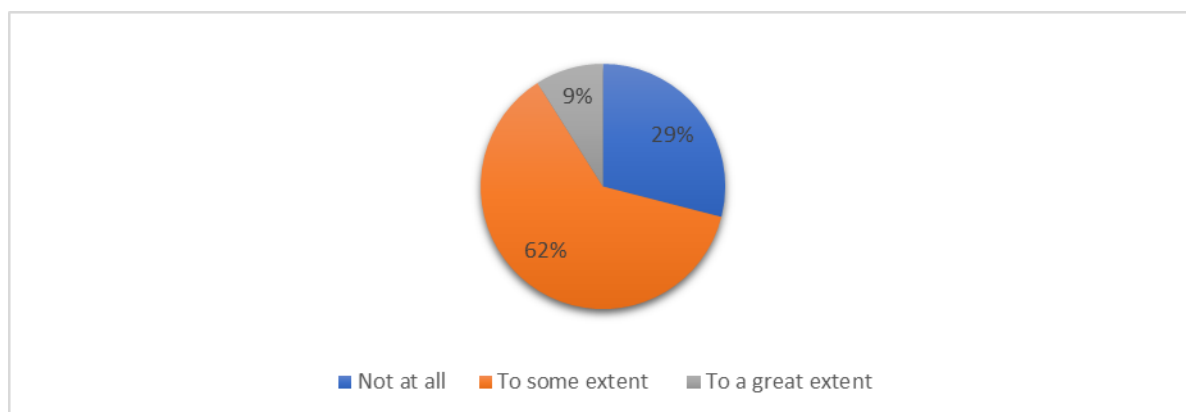


Figure 9: Extent of milk hygiene practice within the community

4.3.5.1 Camel Milk

The Baseline Survey findings showed that only 8% of households in Isiolo County were selling camel milk. The profitability of camel milk was not affected by hygienic standards exhibited by the vendors. But the amount of camel milk available for the market varies depending on the season and breed of camel. During the wet season, the Somali camel can produce 6 – 10 litres of milk per day, while the same animal can yield as little as 2-6 litres per day during the dry season.

Cherab Ward

For the few households in Cherab Ward who produce camel milk, their average production is 6 litres per day per household, of which they sell 4 litres at an average price of KES 40 per litre. The remaining 2 litres is consumed in the household. From the sales, the households in Cherab Ward are able to earn an income of KES 28,800 annually per household that produces camel milk.

Garbatulla Ward

In Garbatulla Ward, households produce an average of 4 litres of camel milk per day per household, of which they sell half at an average price of KES 40 per litre and the other half is consumed in the household. The average annual revenue earned from camel milk sales is KES 14,400 per household.

Kinna Ward

On average, households in Kinna produce 19 liters of camel milk per day per household, of which they sold 14 litres at an average price of KES 60 per litre. Annually, a household earns KES 75,600 from camel milk sales.

Oldonyiro Ward

On average, households which own camels produce 5 litres of milk per day per household, of which they sell 3 litres at an average price of KES 55 per litre. As a result of the camel milk sales, the camel owners in the ward earn an average annual income of KES 29,700.

Sericho Ward

In Sericho Ward, households which keep camels reported to be producing an average of 4 litres per day per household, of which they sell 2.5 litres per day at an average price KES 56 per liter. With regard to revenue earned from camel milk sales, Sericho camel owners earn a revenue of KES 24, 750 annually.

Chari and Ngaremara Wards

There were no camel milk sales reported in Ngaremara and Chari Wards. Ngaremara and Chari Wards are inhabited by pastoralists who prefer cattle rearing to keeping camels. Although in their previous restocking AVSF Suisse introduced camels into Chari, some of the camels have not calved yet.

4.3.5.2 Cattle Milk

Chari Ward

Households which keep cattle in Chari Ward produce an average of 2 litres of milk per day per household. They reported selling on average 0.5 litres per day at an average price of KES 43 per litre, as the rest of the milk was utilized for household consumption.

Cherab Ward

Cattle owning households in Cherab Ward produce an average of 4 litres of milk per day per household, of which they sell an average of 1.5 litres per day at an average price of KES 40 per litre.

Garbatulla Ward

In Garbatulla, cattle owning households produce an average of 6 litres of milk per day, of which they sell 4 litres per day at an average price of KES 20 per litre.

Kinna Ward

Kinna households owning cattle produce an average of 7.5 litres of dairy milk per day per household, of which they sell an average 3.8 litres per day at an average price of KES 35 per litre. Respondents in FGDs reported that the market for cattle milk is not always guaranteed since almost every household in the region produces milk during the wet season and none or very few households produce milk during the dry season. This seems to be the trend in the whole of Isiolo County.

Ngaremara Ward

In Ngaremara, households which keep cattle produce an average of 5 litres of milk per day per household, of which they sell 1 litre at an average price of 32 per litre. FGDs respondents indicated that they sell very little proportion of their milk since there is not a lot of demand for their milk locally, as almost each household produces some milk, either from cattle or camels.

Oldonyiro Ward

On average, cattle owning households in this ward produce 7.5 litres of milk per day, of which they sell an average of 2 litres at an average price of KES 39.5 per litre. This shows that the larger proportion of the milk is consumed by the household.

Sericho Ward

In Sericho Ward, households which own cattle produce an average of 3 litres per day per household, and none of the households surveyed reported to be selling any milk.

4.3.5.3 Honey and fish production

Honey production was mainly reported in Chari Ward where 6.9% of the households surveyed were engaged in honey production, averagely owning 4 beehives each, with the maximum number of beehives owned by a single household being 5 and the least being 3. On average, households produce 142 litres of honey per annum, of which they sell approximately 125 litres at an average price of KES 800 per litre. All the households involved in honey production sell it directly to customers during market days. Honey production is mainly controlled by male household heads who determine the sale price of honey and how the revenue generated is utilized. The main challenge reported by the honey producers was theft particularly from the youths. However, it has to be noted that during focused group discussions across different wards, many youths said they are really interested in the honey production activity and all they need is the knowledge on how it is done and also support to acquire basic materials such as the beehives.

Fish production was mainly found in Cherab Ward, where households use Ewaso Nyiro River for fish production. However, very few households were involved in this livelihood activity (less than 1% of the households surveyed). On average, households harvest 800 fish annually. These are sold direct to the market during the market days at an average price of KES 120 each.

4.3.5.4 Major buyers of livestock and livestock products

Livestock producers sell their product direct to retailers and/or brokers. Very few of the producers sell to wholesalers as shown in figure 10.

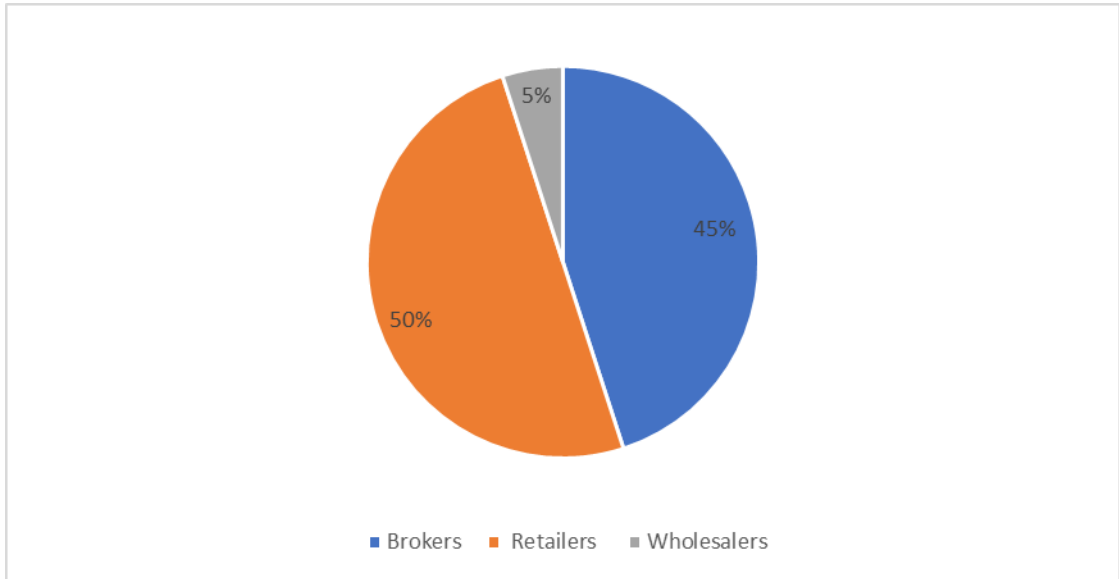


Figure 10: Major buyers of livestock and livestock products

Livestock products are sold at the household level, local markets, and even at regional markets such as Isiolo town and Maua in the neighboring county. The sale prices fluctuate depending on the body condition of the animals and quantities of the commodity being offered for sale. The prices for live animals tend to drop during dry season/ drought while the milk fetches more money due to high demand.

4.3.5.5 Cooperatives Associations and Groups

There are cooperatives in rural areas of Isiolo. These were originally formed by groups involved in fodder and livestock marketing. Most of the cooperatives were not active at the time of this Baseline Survey. The Consultants were informed that the main reason behind inactivity of the cooperatives was lack of awareness. The few which existed were dealing with livestock marketing and fodder production. For instance, Isiolo town has Anolei Camel Milk Cooperative while men tend to be part of cooperatives formed by livestock traders.

Table 4.4 provides a list of cooperatives in the seven surveyed wards as provided by the Isiolo County Directorate of Cooperatives. It is apparent that the cooperatives targeted a variety of activities including: livestock trade, farming, savings & credit, and camel milk marketing.

Table 4.4: List of cooperatives registered in surveyed wards, Isiolo County

Ward	Cooperatives
Chari	a) Biliqo Bada Sacco - livestock traders
Cherab	a) Merti Livestock - livestock traders
Garbatulla	a) Chafa Gafarsa (farm produce)
Ngaremara	a) Kingdom International Sacco - savings and credit
Kinna ward	a) Kinna Livestock -livestock traders b) Walqabana Sacco - marketing camel milk c) Nasole Cooperative - agricultural produce
Oldonyiro	a) Oldonyiro Livestock Sacco - livestock market traders b) Lbene Lang Sacco - savings and credit
Sericho	a) Ibsemo Sacco - livestock traders

Information from the Isiolo County Ministry of Education, Youth, Sports, Gender and Culture shows that the Youth, Women and Persons with Disabilities (PWD) Enterprise Development Fund scheme is active in all the wards in Isiolo County. For instance in Kinna Ward alone, there are 25 Youth Groups, 74 Women Groups and 4 PWDs supported. The Fund supports these groups to undertake the following business activities:

- livestock; butchery; poultry; sale of eggs; bee-keeping
- farming – in general; agribusiness
- table banking; merry go round
- boda boda services, small trade; tailoring
- cultural

Similar information was availed to the consultants by the Ministry on existence and support for Groups in Wabera, Burat and Bulapesa wards.

4.4 Livestock diseases and their management

4.4.1 The main livestock diseases

Nearly 74% of the households surveyed in the seven wards indicated that their livestock had been affected by diseases in the past one year. The main diseases (annex 7 provides local/English names of the diseases) affecting livestock reported by wards are as follows:

- **Chari Ward:** *Kurtubale, kanich, gogos, dhumma. Gasdor, Oyale, Buut, Sirgo and Gandhi* – local dialects for foot and mouth disease.
- **Cherab Ward:** *Gasdor (mainly affecting goats), kurtubale, oyale, silisa, Tuma* – local dialects for foot and mouth disease.

- **Garbatulla Ward:** Anthrax, *Homa* (for Camels), *Diego* (Homa ya Mbuzi), *Hoyale*, *Kurtubale*, Trypanosomiasis, Sheep pox and ringworms
- **Kinna Ward:** *Shiritho*, *Gandhi*, *Gasdor*, Trypanosomiasis, Nagana and Brucellosis
- **Ngaremara Ward:** *Suruko*, joints swelling (goats), *Loukoi* (lung disease), worms, blinding in chicken, foot and mouth, *kurtubale* (boil like things appear on animals' body)
- **Oldonyiro Ward:** *Baridi* (affects goats during rainy season), *Lkipei*, foot and mouth disease, camels having difficult to stand and walk
- **Sericho ward:** Anthrax, bloats, chicken box, foot and mouth disease, *gasdor*, *Kurtuballe*.

4.4.2 Livestock disease management

Households in the various wards use various methods for management of livestock diseases (figures 11 to 17). The methods used include conventional drugs, traditional treatments, or nothing at all. By far the majority of households (about 70%) use purchased drugs whereas about 23% use traditional treatment methods. While some percentage of households indicated reporting disease occurrence in their livestock to a county or private animal health officer, or to a local community leader, especially in Garbatulla Ward, a small proportion (about 6%) of the households chose to do nothing about the diseases.

A number of wards reported failure by the County to respond swiftly upon receipt of report of disease. However, when a serious outbreak occurs, the County Veterinary Department acts quickly. They also complained of laxity in vaccinating animals. For example, livestock in Cherab Ward have not been vaccinated since 2017.

Chari Ward

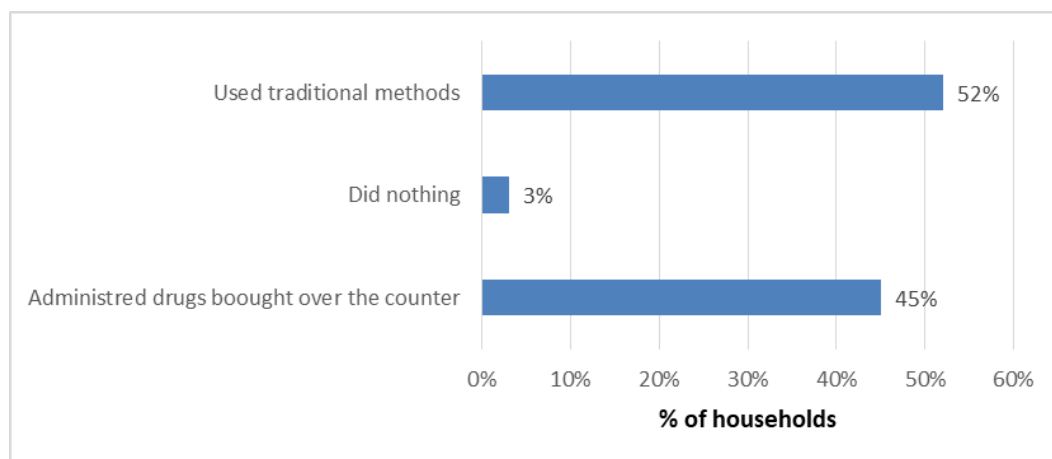


Figure 11: Methods of livestock disease treatment in Chari Ward

Cherab Ward

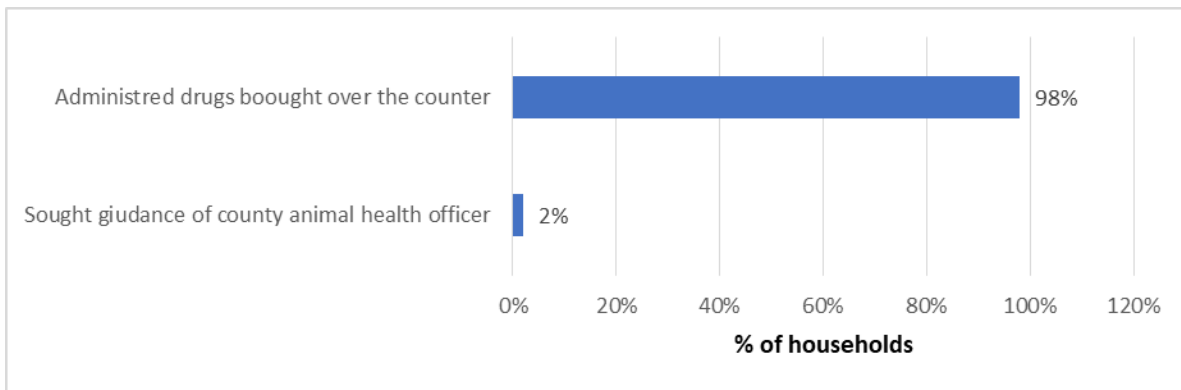


Figure 12: Methods of livestock disease treatment in Cherab Ward

Garbatulla ward

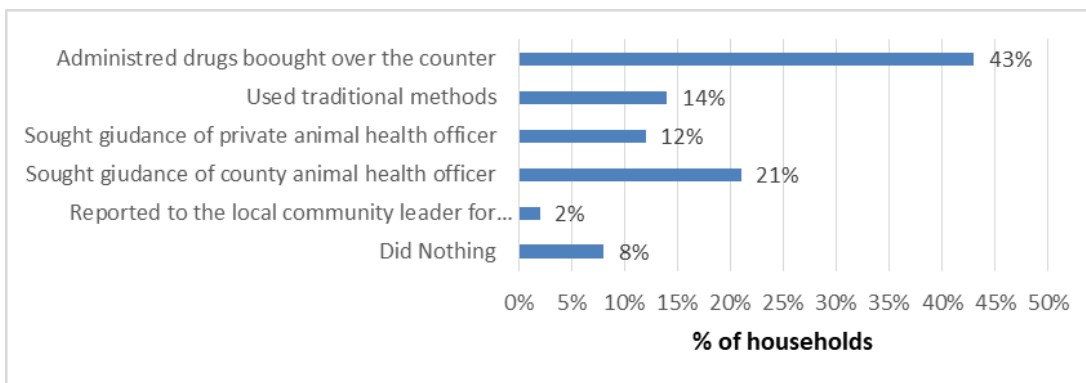


Figure 13: Methods of livestock treatment in Garbatulla Ward

Kinna ward

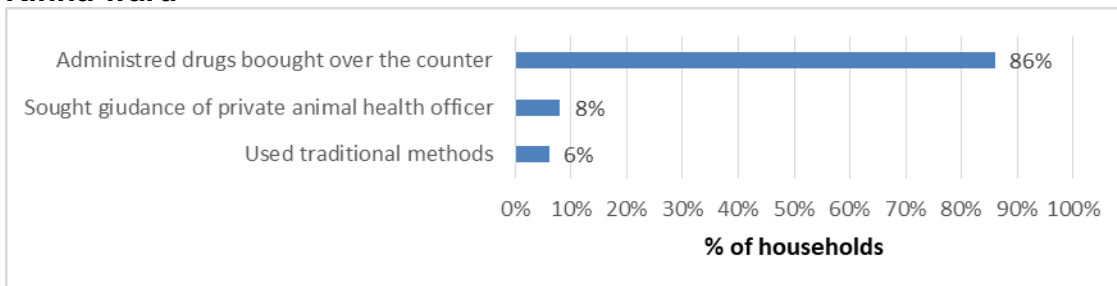


Figure 14: Methods of livestock disease treatment in Kinna Ward

Ngaremara ward

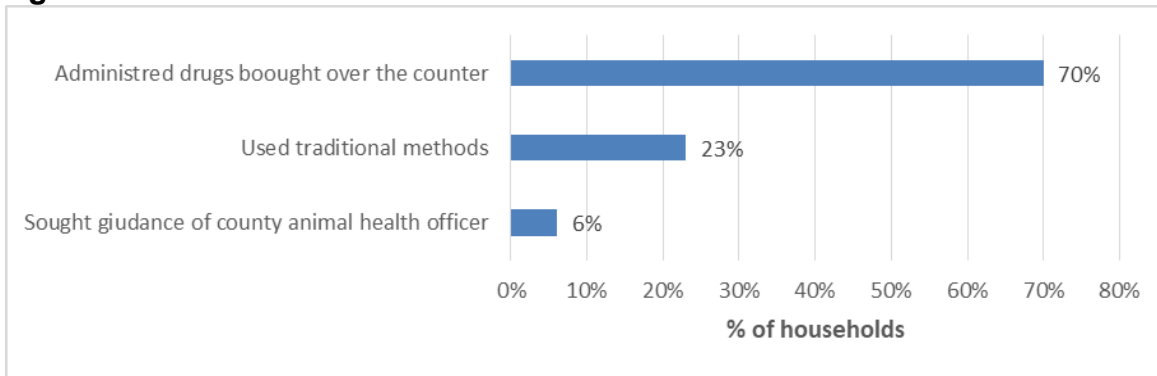


Figure 15: *Methods of livestock disease treatment in Ngaremara ward*

Oldonyiro ward

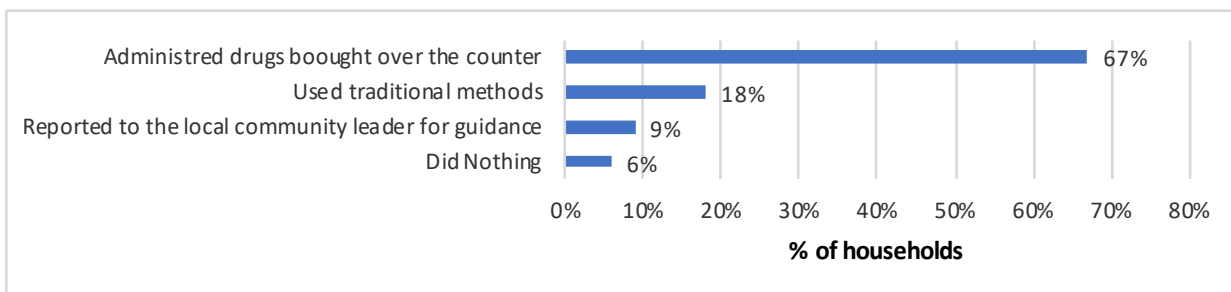


Figure 16: *Methods of livestock disease treatment in Oldonyiro Ward*

Sericho ward

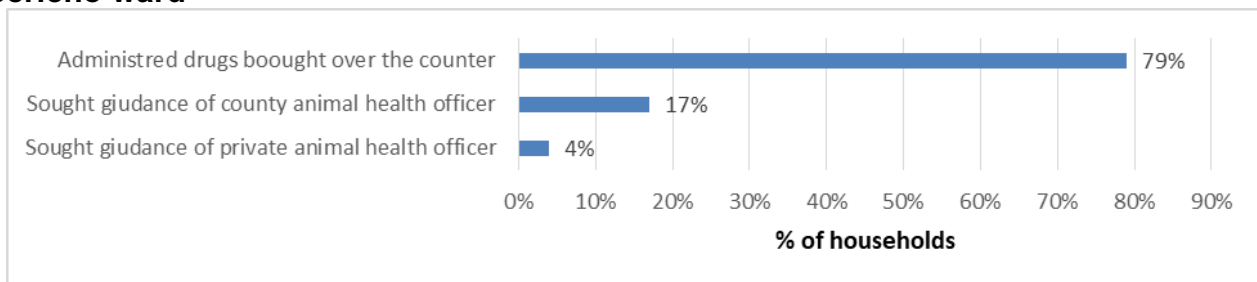


Figure 17: *Methods of livestock disease treatment in Sericho Ward*

4.4.3 Zoonotic Diseases

4.4.3.1 Awareness about zoonotic diseases

All the wards visited were aware of the existence of zoonotic diseases which affect both humans and animals. Some of the diseases cited were Brucellosis, Rabies and Rift Valley Fever. This notwithstanding, findings of the focus group discussions, showed that not many individuals are aware of the prevalence of zoonotic diseases. On average, only 20% (figure 18) of the households reported to be aware of the livestock diseases that could be transmitted from animals to humans.

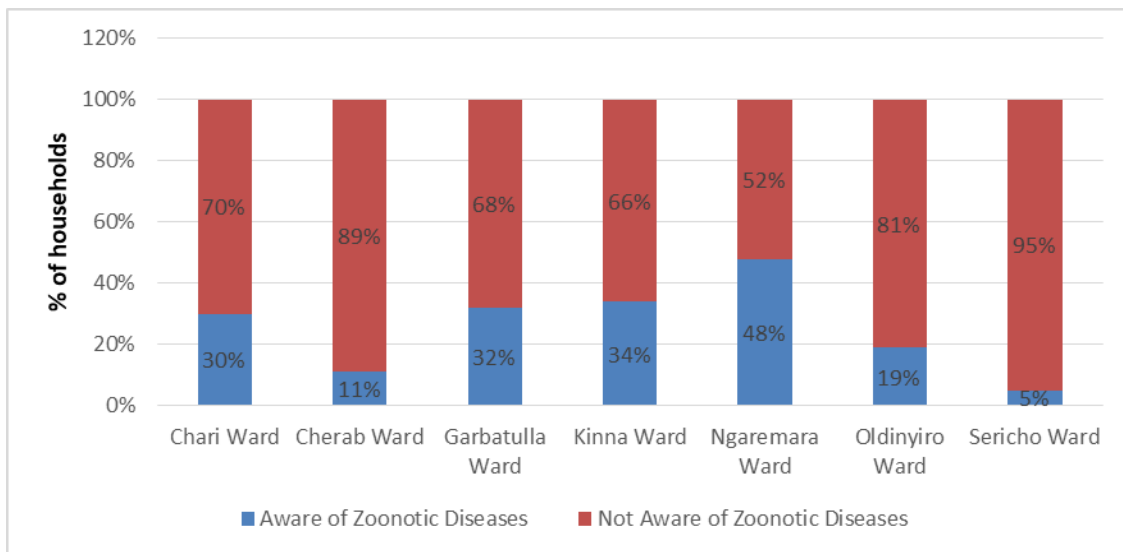


Figure 18: Percentage of household awareness about zoonotic diseases in various wards

4.4.3.2 Types of diseases believed to be transmitted from animals to humans

The following are the types of zoonotic diseases reported by households in the different wards:

- **Chari Ward:** Anthrax, Chiith and gogosa;
- **Cherab Ward:** Brucellosis, Chiith;
- **Garbatulla Ward:** Anthrax and Brucella;
- **Kinna Ward:** Brucellosis and Foot and Mouth;
- **Ngaremara Ward:** Brucellosis, Chiith, Tuberculosis and Kurtubale;
- **Oldinyiro Ward:** Brucellosis, Ndis, Ne kule;
- **Sericho Ward:** Brucella and Anthrax.

4.4.3.3 Transmission methods believed

The majority of the respondents believe that a person could get infected with zoonotic diseases by drinking raw milk. Very few individuals think that one could acquire the diseases through poorly cleaned animal houses (figure 19).

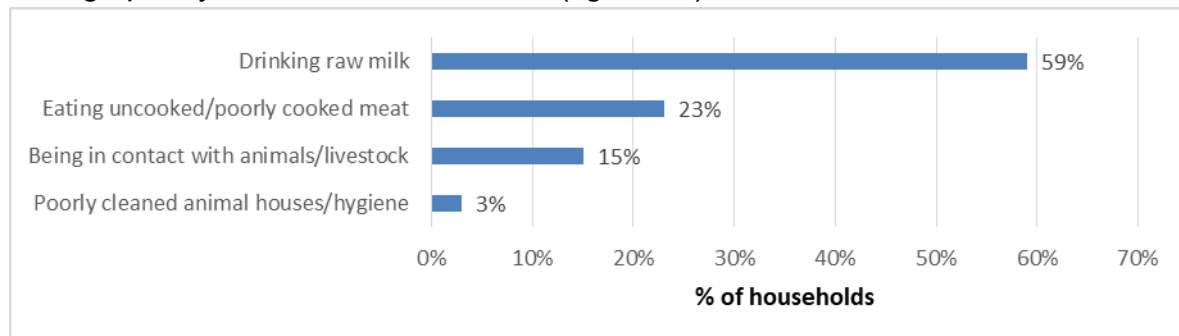


Figure 19: Methods of zoonotic disease transmission in various wards

Approximately 21% of the households which were aware of zoonotic diseases, indicated that at least a member of their household had been infected. When asked what steps they took, on average, a majority (65%) of the households took the sick person to a hospital, while 25% treated the sick member using traditional methods (figure 20).

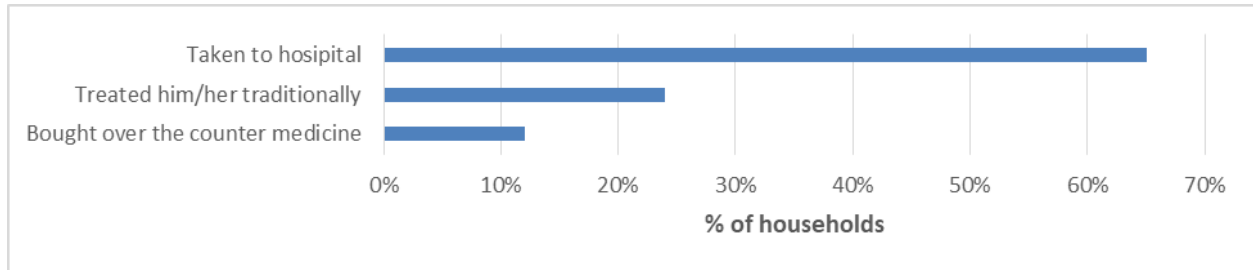


Figure 20: Methods of zoonotic disease treatment in various wards

4.4.3.4 Milk hygiene

Discussions with women brought out the fact that, although people are aware of the need to handle milk hygienically, they rarely do so, even the basics such as cleaning the udder and milking equipment. On average 76% of households are aware about milk hygiene practices, with Chari Ward having the highest degree of awareness at 93% of the households, while Sericho Ward has the lowest awareness rate at 58% of the households. The hygiene practices implemented vary among the wards as shown in figures 21 to 27. In Chari ward, 93% of the households are aware of milk hygiene practices. Figure 21 shows the common milk hygiene practices in Chari.

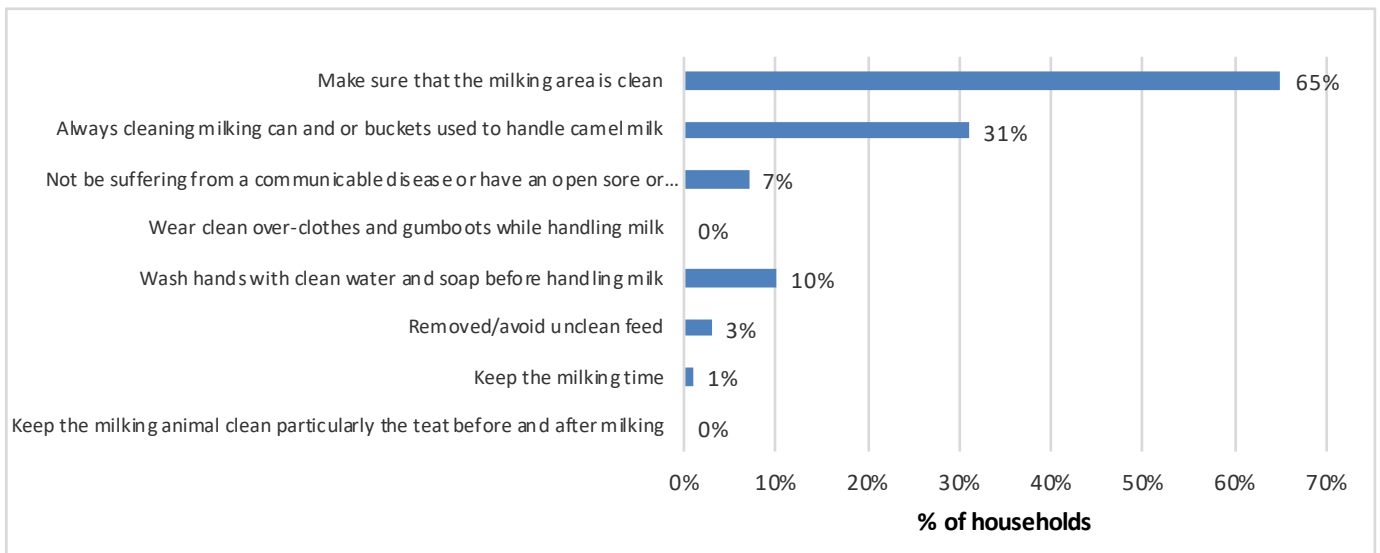


Figure 21: Milk hygiene practices in Chari Ward

Cherab Ward

Sixty three (63%) percent of the households in Cherab Ward are aware of milk hygiene practices. Figure 22 shows the commonly milk hygiene practices in the ward.

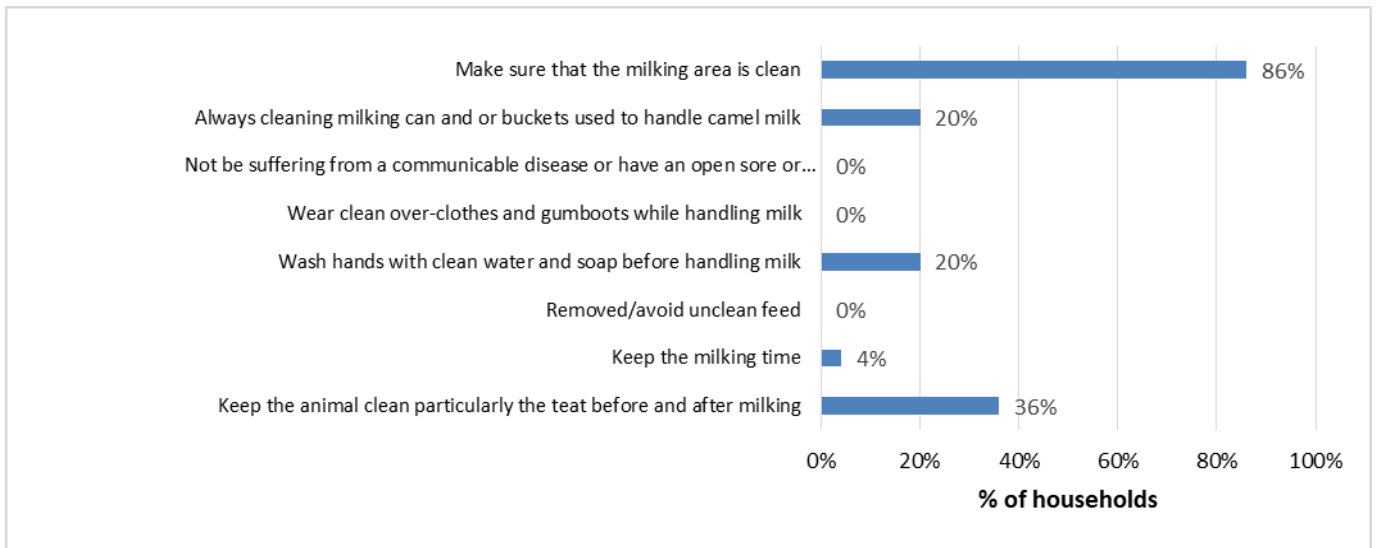


Figure 22: : Milk hygiene practices in Cherab Ward

Garbatulla

In Garbatulla ward 64% of the households are aware of milk hygiene practices. However, as shown in Figure 23, they practice only a few of them.

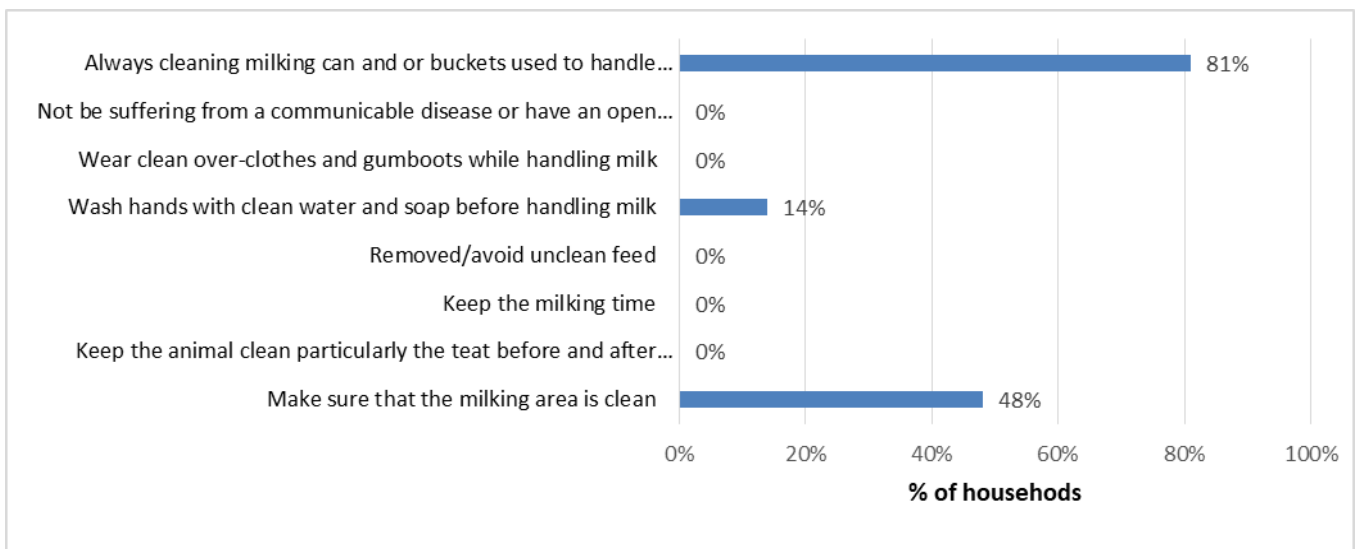


Figure 23: Milk hygiene practices in Garbatulla Ward

Kinna

In Kinna ward, the household survey showed that as high as 95% of households are aware of milk hygiene practices. Figure 24 shows the hygienic measures the households in the ward commonly practice.

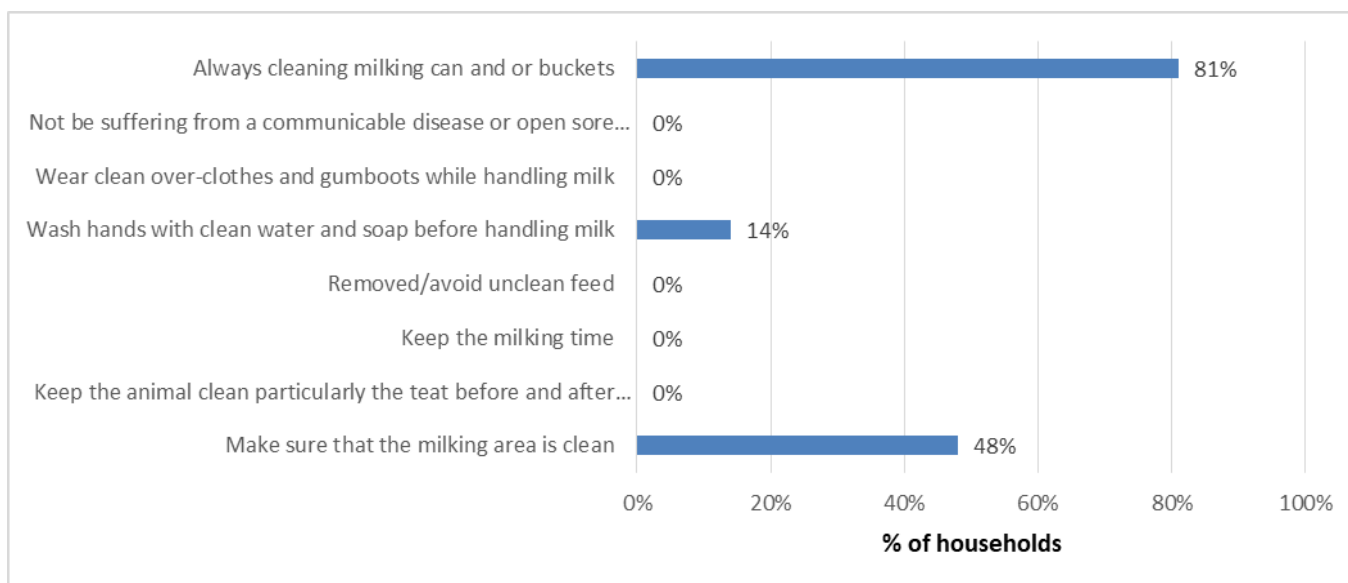


Figure 24: Milk hygiene practices in Kinna Ward

Ngaremara Ward

In Ngaremara ward 65% of households are aware of the milk hygiene practices. Figure 25 shows the common practices the residents are practicing in the ward.

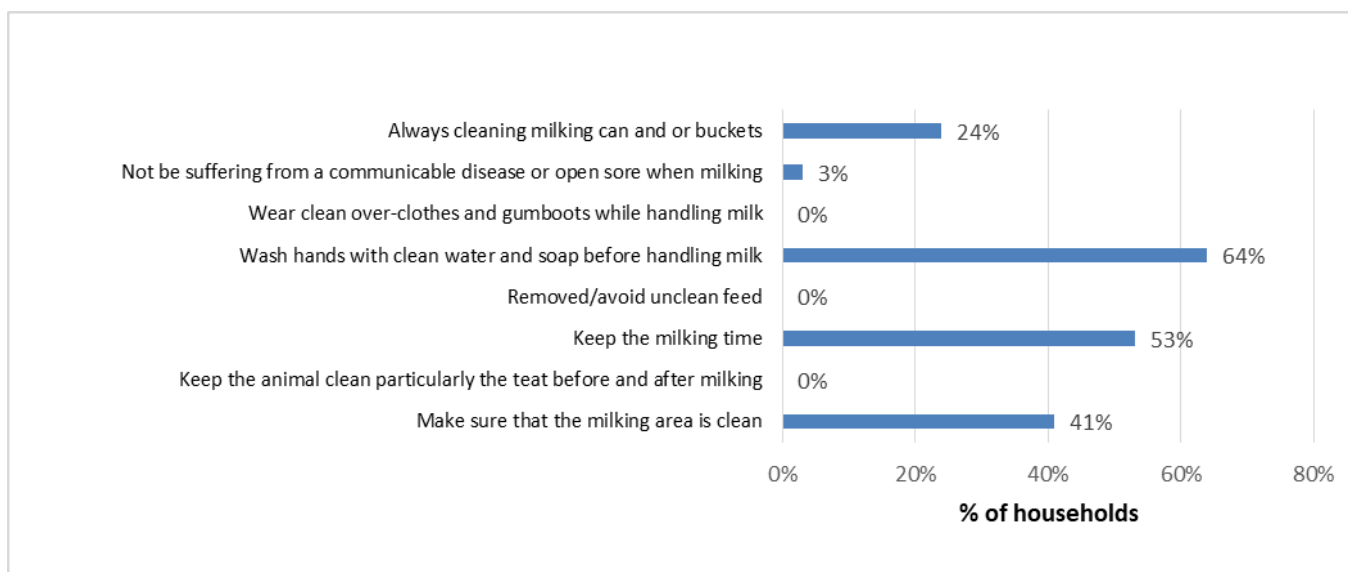


Figure 25: Milk hygiene practices in Ngaremara Ward

Oldonyiro Ward

As high as 92% of the households in Oldonyiro Ward are aware of milk hygiene practices. Figure 26 shows the common practices in the ward.

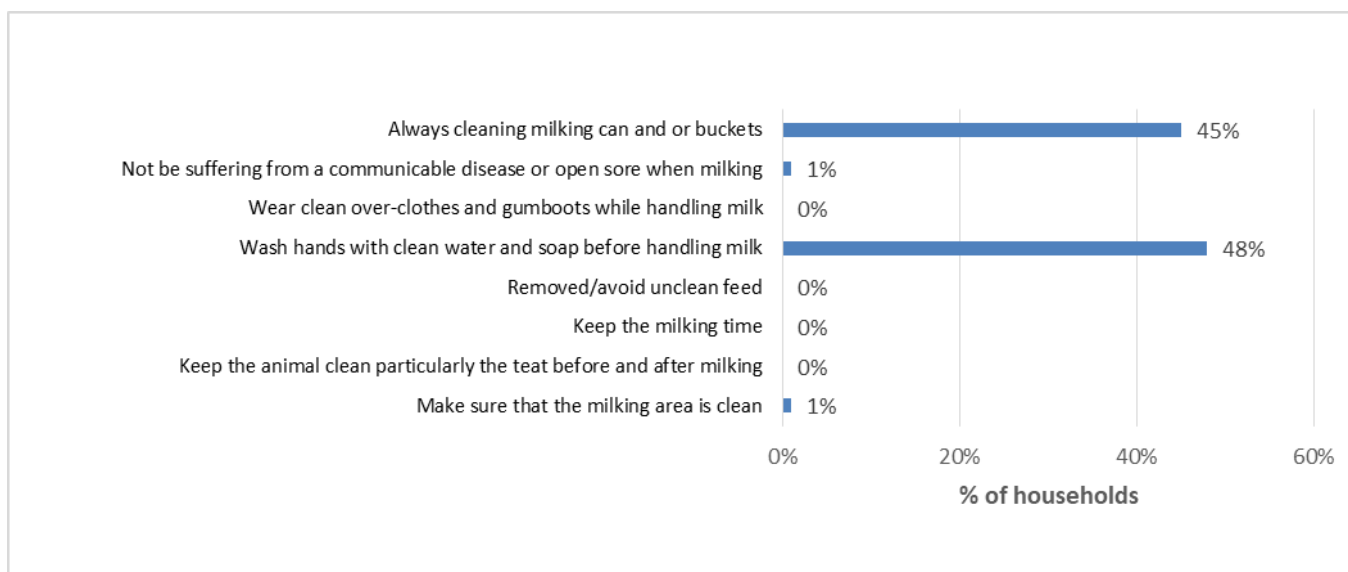


Figure 26: Milk hygiene practices in Oldonyiro ward

Sericho Ward

In Sericho ward 58% of households are aware of milk hygiene practices. Figure 27 shows the common milk hygiene practices practiced in the ward.

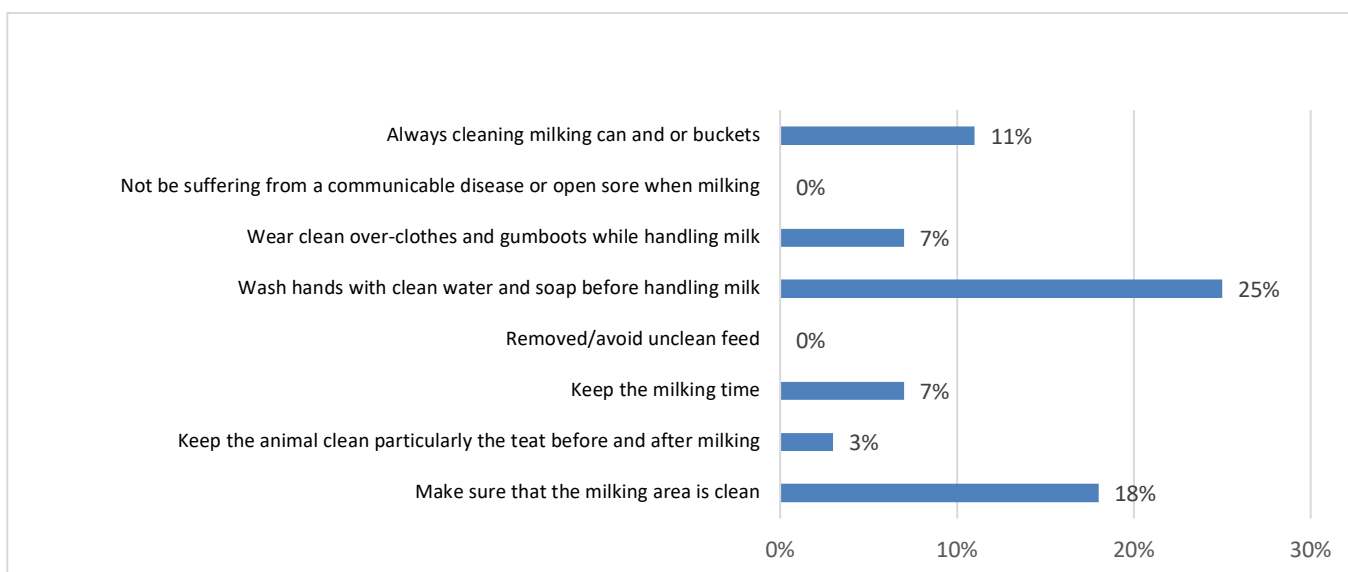


Figure 27: Milk hygiene practices in Sericho Ward

4.4.3.5 Zoonotic Disease Unit (ZDU)

The veterinary department has a zoonotic disease unit (ZDU) desk that collects information on zoonotic diseases and, where deemed necessary, they collect samples and send them to Kabete for diagnosis. It takes a long time to receive the results.

Despite the existence of the zoonotic disease desk in Isiolo County, the personnel in the Ministry of Health were not aware of it, indicating lack of collaboration. Furthermore, the Consultants discovered that there are many players involved in the One Health Approach.

These include WHO, ILRI, FAO and Colorado State University. The primary reason given for lack of collaboration between the ZDU desk and Ministry of Health was the high staff turnover at the Ministry of Health. Hence, there is urgent need for a multi-stakeholder approach to bring about coordination amongst these multiple players to avoid duplication of efforts.

4.5 Challenges faced by livestock keepers

The challenges facing livestock keepers across the seven Wards are presented in figure 28. The main challenges reported by the majority of the households include the high cost of feeds, lack of markets for their animals and livestock products such as milk, and poor prices for their livestock. The severity of the challenges varied across the wards.

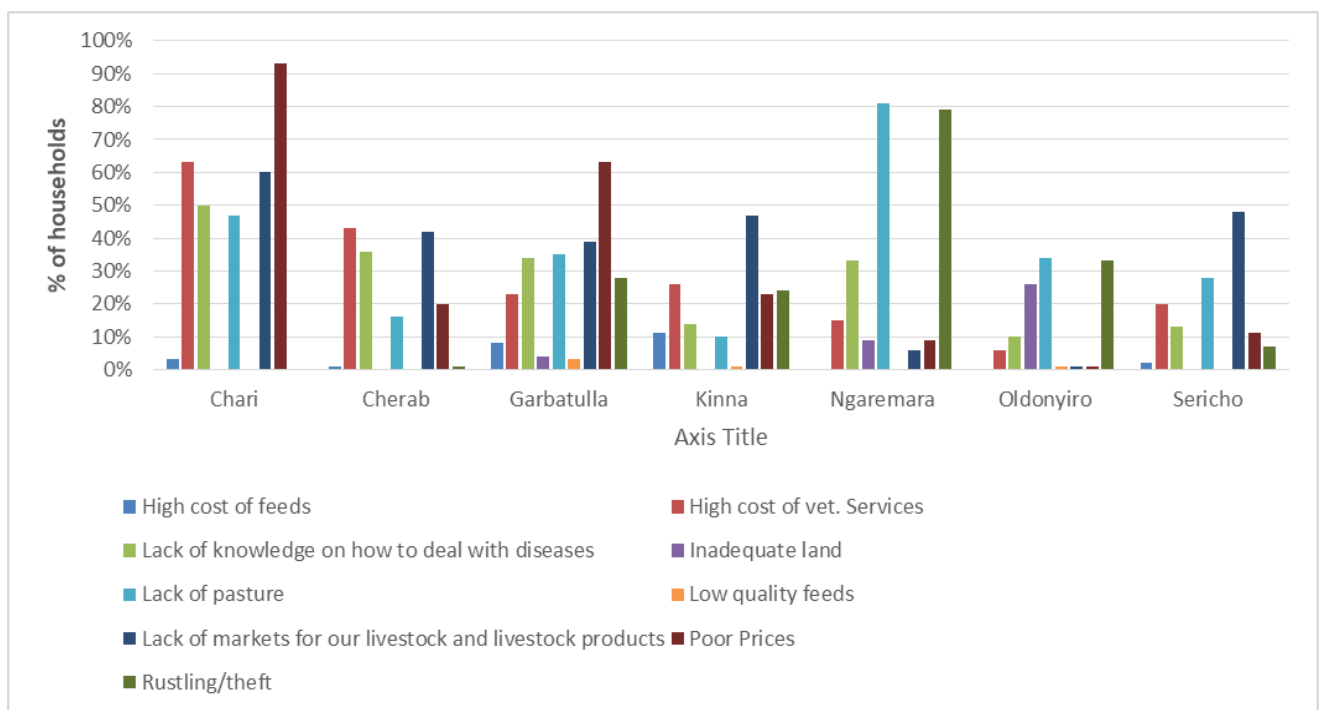


Figure 28: Challenges facing livestock farmers by ward

4.6 Livestock feed and fodder

4.6.1 Communal grazing and fodder groups

The main source of livestock feed in all the seven wards is communal grazing lands. All the households surveyed reported communal grazing to be main source of feed for their animals. Only 3% of the households reported that besides utilizing the communal grazing lands, they also buy fodder, particularly during the dry season to feed their weak animals as they migrate with the rest in search of pasture.

In Kinna ward the community harvest fodder during rainy season.



Figure 29: Fodder store in Kinna Ward

a. Kinna location has a group which comprises of 11 women and 1 man. The group has been trained on how to produce fodder, and they have already succeeded in by getting their first harvest. They even got a space for storage in a common store (figure 29)

Key informants, mostly chiefs, claim that fodder produced could sustain milking cows and or weak cows in a household for at least three months. Beyond that, the pastoralists has to seek alternative source of feed or migrate to where pasture can be found.

The group, however, faces challenges such as:

- Competition from other individuals who sell fodder from other regions. The competitors' fodder quality is not as good as the fodder from the group but it is more in quantity.
- During the dry season, livestock farmers prefer quantity of fodder rather than quality.
- Lack of machines for harvesting grass.

b. Rapsu location has a fodder group that produces on individual basis. Their challenge is lack of storage facility. Hence the fodder is left in the open (figure 30) and can get spoilt. The rain water makes it rot, the sunshine destroys nutrients and distorts the appearance of hay, while termites have a field day eating the fodder.



Figure 30: Fodder placed on open rack in Rapsu

Fodder groups are not common in Isiolo County. Only 2 % of the surveyed households were participating in fodder group activities. The majority (85%) of the group members said they were made aware of the group's existence by their neighbors and or friends, and the other 15% said they were facilitated to join the fodder groups through sensitization by the NGOs. The main purpose of joining fodder groups as reported by the members was to produce and sell fodder.

On average, fodder groups are made up of 38 members of which on average 18 are youth. In addition, with regard to gender composition of the groups, on average they consist of 27 women and 11 men. Thus, this is a clear indication that women are more involved than men in fodder group activities.

4.6.2 Challenges faced by fodder groups

Respondents reported that fodder groups in various wards face a number of challenges, including mismanagement of resources, high membership fee particularly for one to continue being a member, and ethnic discrimination (figure 31).

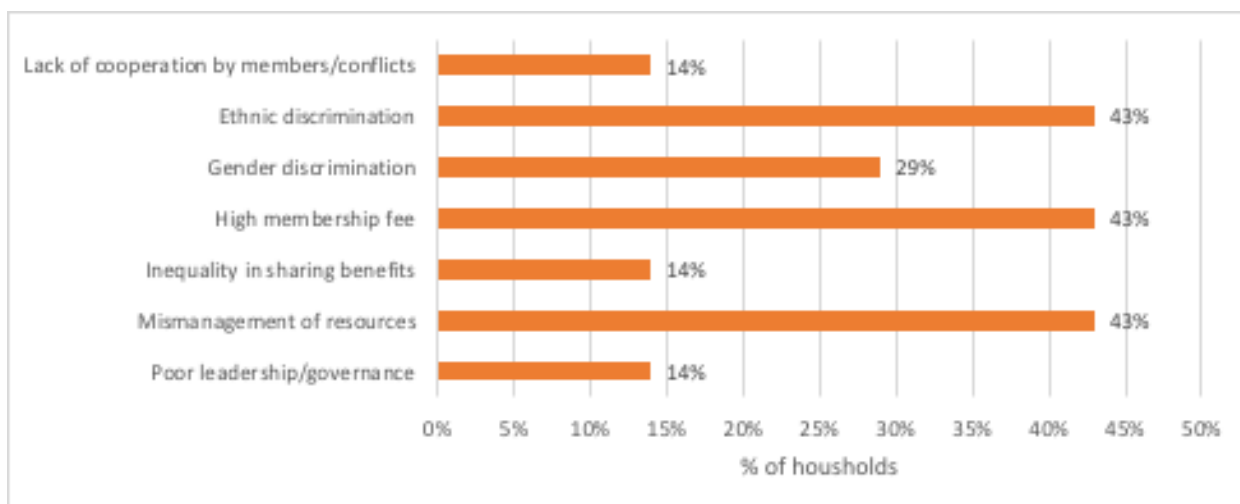


Figure 31: Challenges faced by fodder group members in various wards

4.6.3 Reseeding of Rangelands

Being an ASAL area, Isiolo County prioritises rangeland management, and has embarked on rehabilitation of rangeland degraded areas through small scale reseedling. Reseeding has been done almost in all wards in the County apart from Bulapesa and Wabera which are within the Isiolo Township. The reseedling work has been supported by different agencies, development partners and the government. The recent reseedling programmes has been undertaken by Northern Rangeland Trust (NRT) which managed conservancy units in the year 2020. The units are in Oldonyiro, Ngare mara and Chari wards. The NRT work directly with the communities.

The most commonly used grass species are *Cenchrus ciliaris* and *Eragrostis superba*, which are highly adaptable and naturally available in the County. It is hard to estimate how much land has been committed to this exercise so far. However, large chunks of the range lands in the County are degraded and require interventions like reseedling and gullies control among others.

The grass is intended for supplementary feeding for both breeding stock and regular grazing when supply allows. This is because as livestock migrate during drought in search of pasture and browse, the milking herds stay behind thus requiring feed interventions.

According to information made available to the Consultants by the Department of Livestock Production, the success rate of the reseedling programme is about 60%. A major challenge to the reseedling program is low germination rate, which is associated with planting of non-viable seeds, erratic rains, and lack of protection of reseeded areas.

There are gaps in the program requiring support among all the seven surveyed wards. The possible support needed includes:

- Capacity strengthening of communities with trainings on grasses management;
- Support the communities with certified grass seeds;

- Provide logistical support to grazing committees to enable them to continuously monitor the reseeded areas in order to minimize invasion by non-cooperative community members;
- Support in the fencing of the reseeded areas;
- Support communities with pasture production, harvesting and bailing equipment.

4.7 Crop production and marketing

4.7.1 Types of crops grown

On average 19% of the households in all the seven wards reported growing crops. The proportion of households growing crops varies from the highest of 41% in Chari ward to the lowest of 2% in Sericho ward. The types of crops grown included include maize, beans, green grams, water melon, onions, tomatoes, kales, spinach, capsicum and sweet potatoes. Figures 32 to 36 show the various types of crops grown by the different wards.

Chari Ward

In Chari Ward 41% of households practise crop farming. The average land on which each household grows crops is 1.3 acres, with the smallest land size reported by a single household being 0.5acres and the largest being 4 acres. The majority of the households which grow crops mainly cultivated maize, onions and kales both during the short and long rains (figure 32).

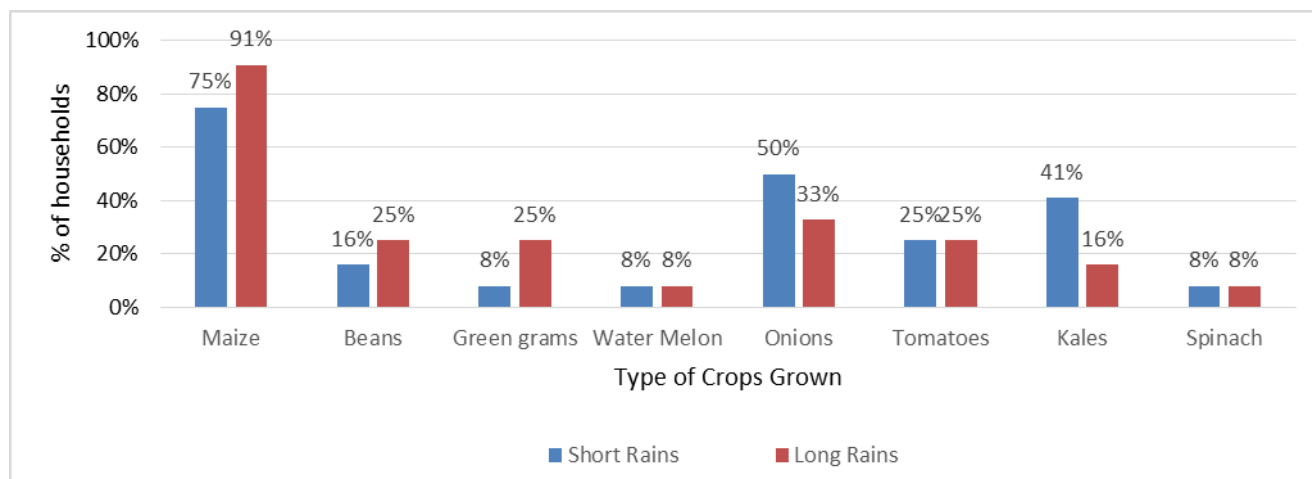


Figure 32: Types of crops grown in Chari ward in the short and long rains seasons

Cherab Ward

In Cherab Ward, only 14% of households reported to be practising crop farming. The average land size used by each household to grow crops is 1.2 acres. Figure 33 and 34 shows the types of crops cultivated by the farmers in the ward both in the short rains and long rains seasons.

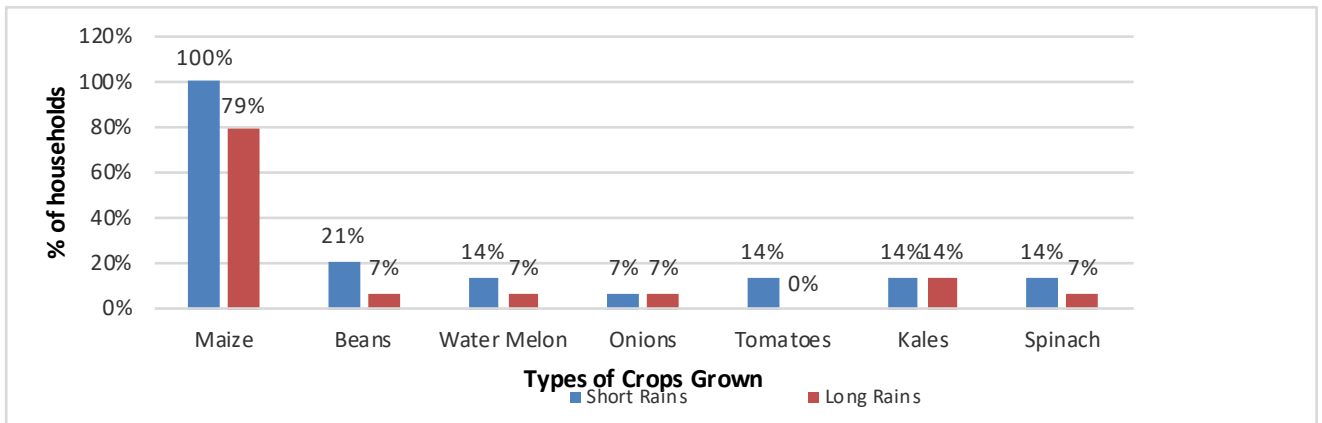


Figure 33: *Types of crops grown in Cherab ward in the short and long rains seasons*



Figure 34: Crop production along Ewaso Nyiro River at Cherab

Garbatulla ward

In Garbatulla Ward, 21% of households grow crops. The types of crops grown in the ward in both the short and long rains seasons are maize, beans and tomatoes (figure 35).

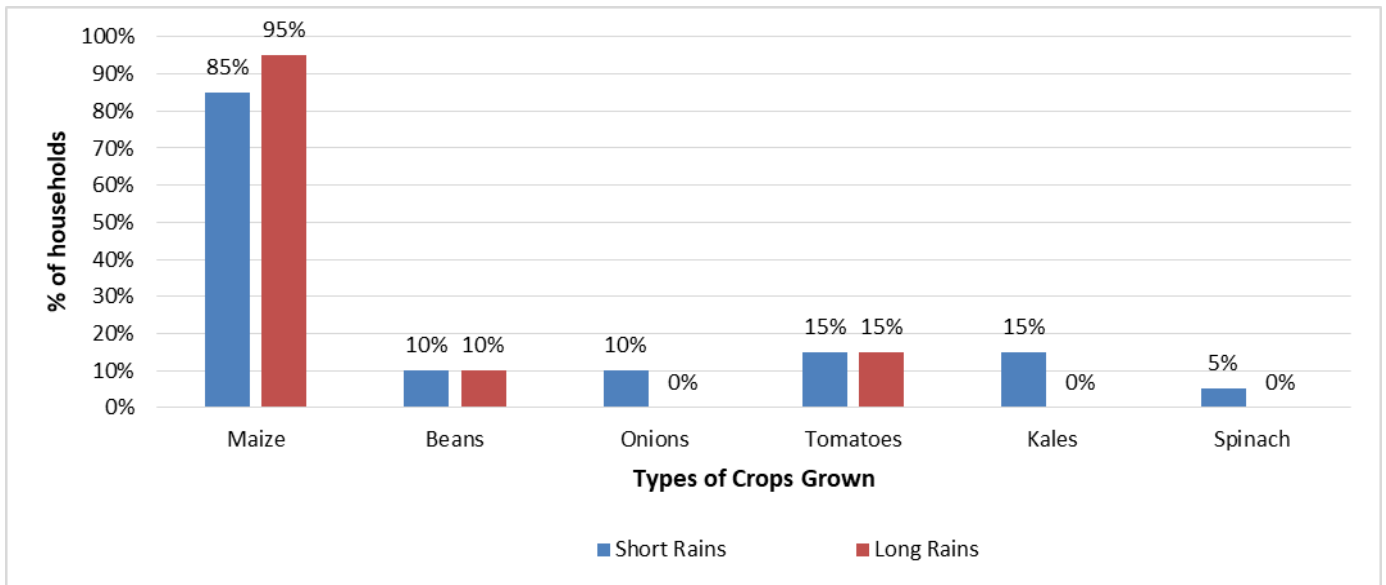


Figure 35: Types of crops grown in Garbatulla ward in the short and long rains seasons

Kinna ward

The proportion of households that grows crops in Kinna ward is 21%. Figure 36 shows that the main crops grown in the ward are maize, onions, tomatoes and kales.

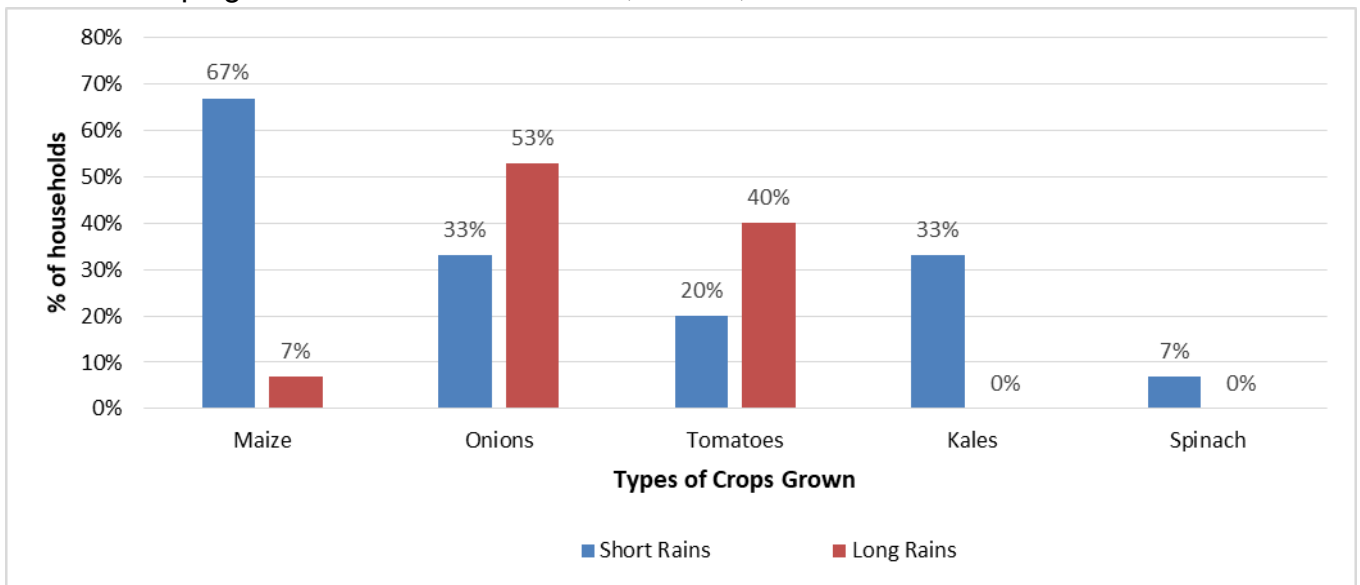


Figure 36: Types of crops grown in Kinna ward in the short and long rains seasons

Ngaremara Ward

In Ngaremara Ward 33% of households practise crop farming. The main crops cultivated in the ward are maize, beans, tomatoes and kales (figure 37). Farmers in this ward grow crops mainly during the short rains season, which was reported to be more reliable than the long rains season.

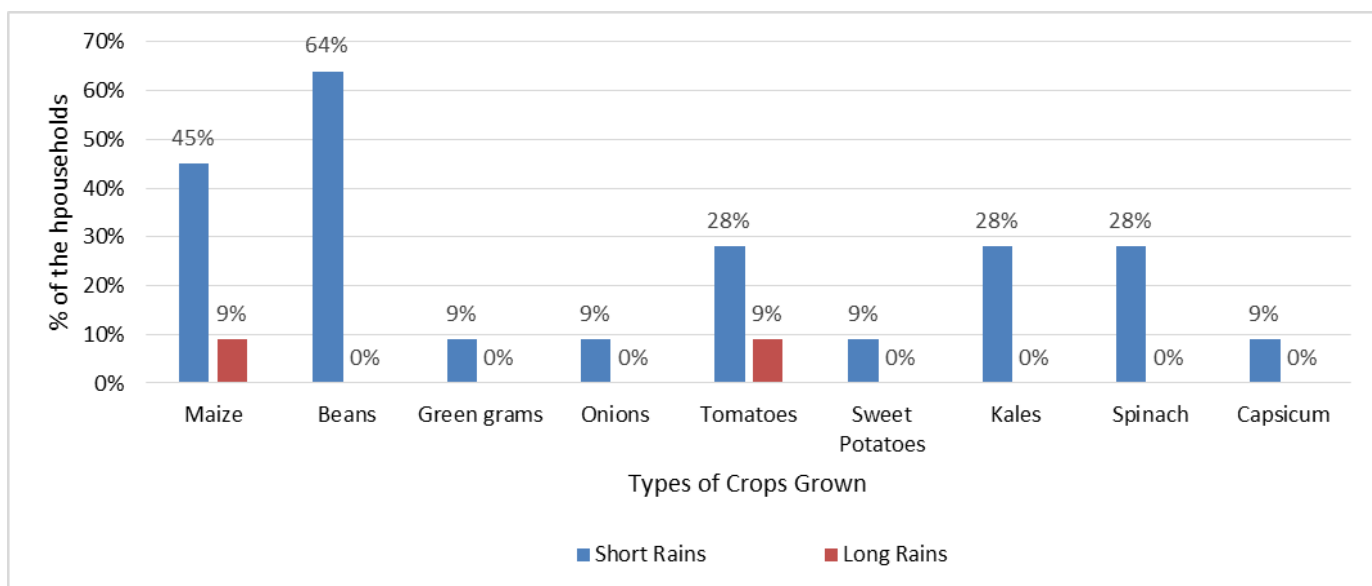


Figure 37: Types of crops grown in Ngaremara ward in the short and long rains seasons

Oldonyiro Ward

Crop farming is rare in Oldonyiro ward. Out of the 66 households surveyed in the ward only 3 of them (4%) were engaged in crop farming. The 3 households reported to be growing maize, beans and tomatoes.

Sericho Ward

In Sericho Ward, out of the 46 households surveyed, only one household reported to be practising crop farming but there were no reported crop sales for the whole sample, and thus no income reported from crop sales.

4.7.2 Value Chains

The crops grown by most of the pastoralists and agro-pastoralists are meant to meet the family needs. However, there are a few who grow vegetable such as tomatoes for sale. A few of the entrepreneurs listed in annex. 9 may be dealing with middlemen or are engaged in value addition for farm produce

4.8 Climate change and coping strategies

Climate change manifests itself in alternating droughts and floods, phenomena reported to be occurring more frequently than in the past. Some of the communities, for instance the Ngaremara, were able to predict these weather changes, using traditional methods such as use of intestines of slaughtered livestock as weather gauges.

4.8.1 Drought effects

For the last ten years, drought has been experienced across all the seven wards. Figure 38 shows the adverse effects the households in each ward have experienced as a result of the

drought. The death of livestock, and loss crops and human lives are the most adverse effects experienced by almost all the households.

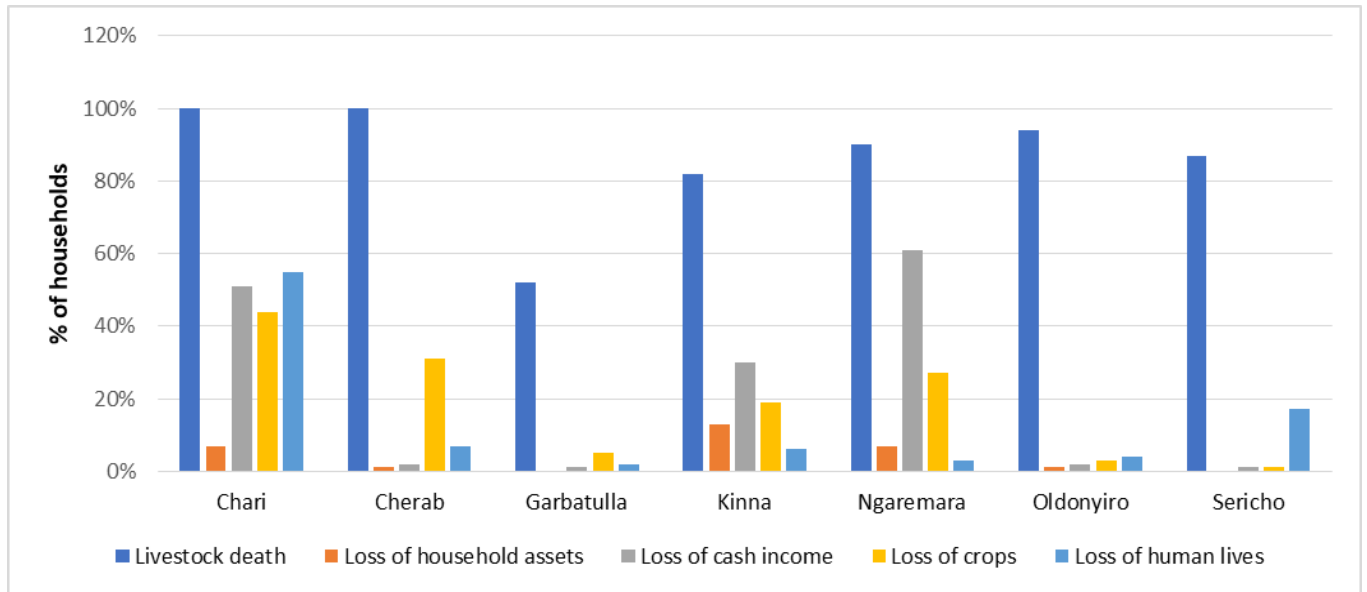


Figure 38: The adverse effects of drought in various wards

4.8.2 Drought management strategies

Figure 39 shows how households deal with drought occurrences. The majority reported food aid from NGOs, migration to other areas, and assistance from family members as the most common strategies for drought management. However, Government assistance in destocking to minimize losses of livestock and restocking after drought, as well as support from social groups, sale of assets and livestock insurance are additional strategies adopted in dealing with drought.

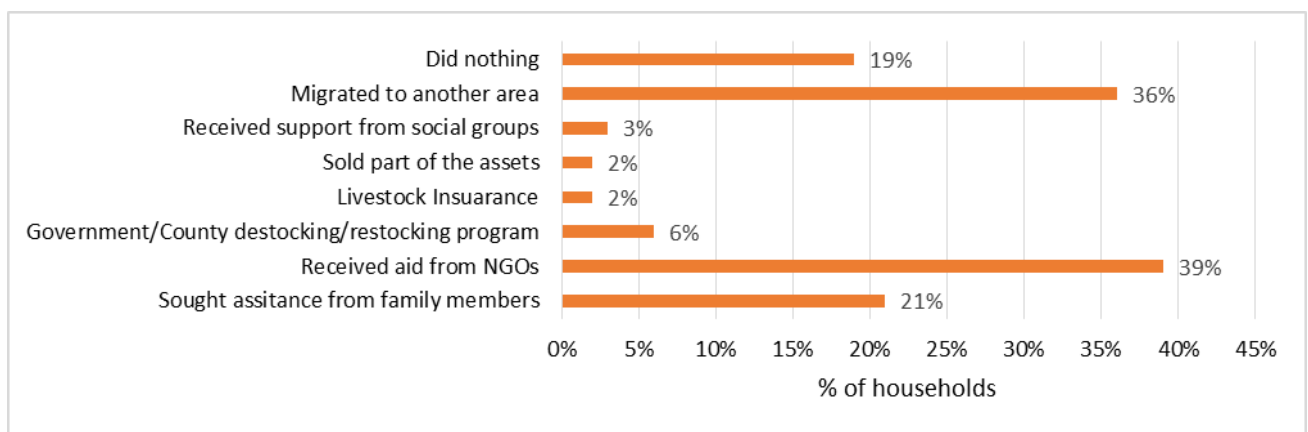


Figure 39: Drought management strategies in various wards

4.8.3 Flood experiences

In the past ten years, 49% of households in the 7 target wards were flooded, while 51% did not experience any flooding. Wards which experienced floods were Sericho, Cherab, Kinna and Chari. In Kinna, Chari and Oldonyiro, almost half the households were flooded (figure 39).

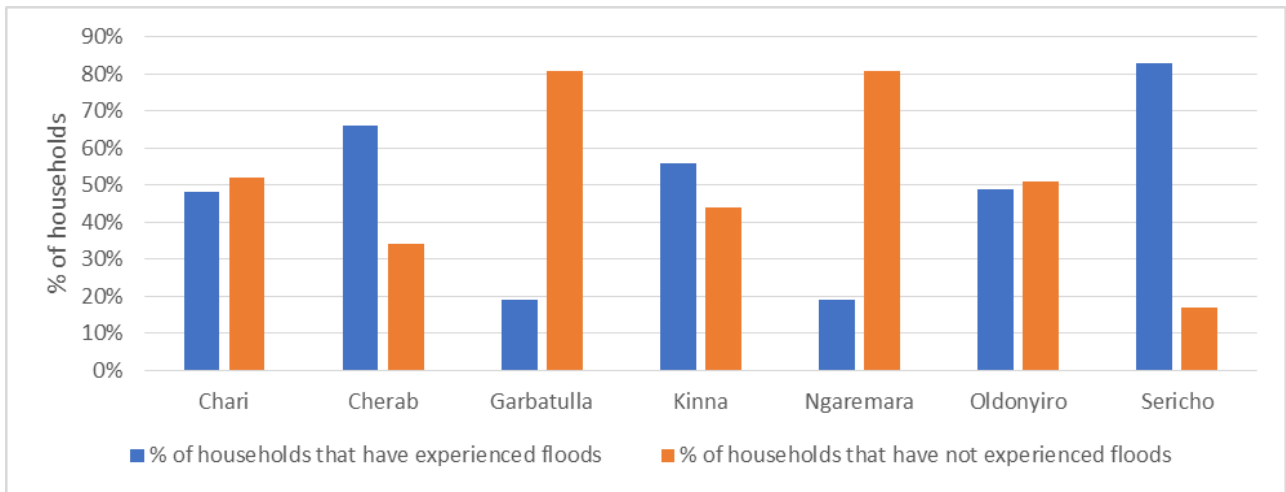


Figure 40: Proportion of households experiencing floods over the past ten years in various wards

4.8.4 Adverse effects of floods

The adverse effects of floods mentioned by households include loss of livestock, loss of household assets, loss of income, loss of crops, and loss of human lives (figure 41).

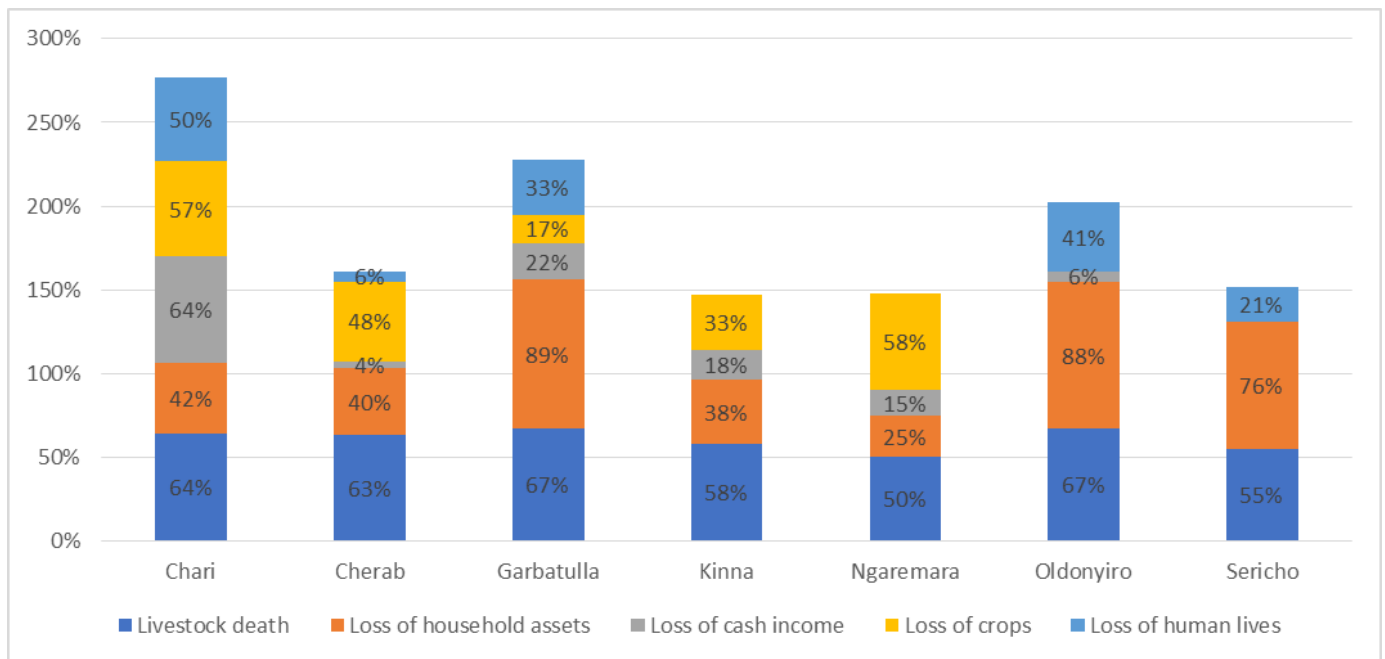


Figure 41: Adverse effects of floods in various wards

4.8.5 Flood management strategies

Figure 42 shows the strategies which various households employed to manage floods. The three most commonly mentioned strategies include assistance from family members, migration to safer areas, and aid from NGOs. Assistance from the Government in terms of destocking and restocking livestock, support from social groups, sale of assets and insurance were also mentioned as coping mechanisms.

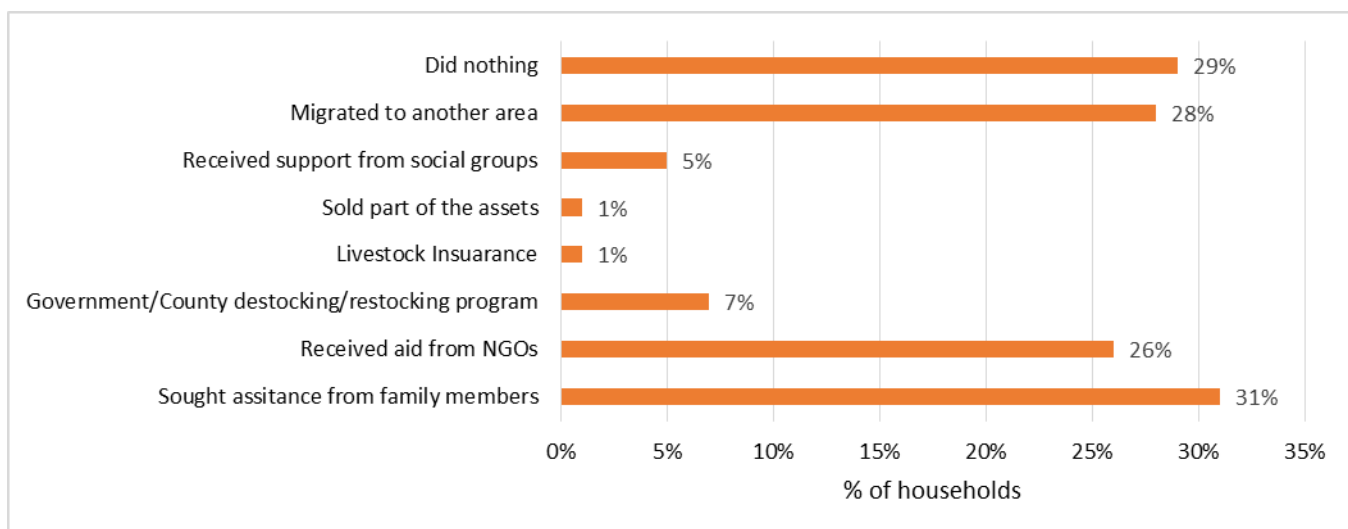


Figure 42: Flood management strategies in various wards

4.8.6 Climate smart practices

Recognizing that 75% of Isiolo County is occupied by agro-pastoralists and pastoralists, the climate smart practices would naturally address both livestock and crop farming. Available information from the Isiolo County Agriculture Directorate indicates that the climate smart agriculture activities in Isiolo County as a whole include:

- a) Food crop production for livelihood diversification on focus on drought tolerance crops (green grams, cowpea, sorghum, orange flesh sweet potatoes);
- b) Promotion of nutrition sensitive agriculture appropriate technologies e.g kitchen gardens;
- c) Promotion of technology innovation management practices;
- d) Soil and water management practices;
- e) Promotion of agro forestry;
- f) Promotion of energy saving devices, e.g jiko liners, fireless cookers;
- g) Use of solar to support irrigation;
- i) Capacity building value chain actors.

These activities are undertaken mostly by farmers groups, self-help groups, women groups, youth groups, village savings and loaning associations and also common interest groups.

From the baseline survey, only 18% of households engage in crop farming. Of these crop famers, 27% exercise drought resilience practices. As shown in figure 43 below, the number of crop farmers engaged in this drought resilience practices are very few. Some of these farmers have adopted at least 1 good practice of drought resilient and nutrition sensitive agriculture production.

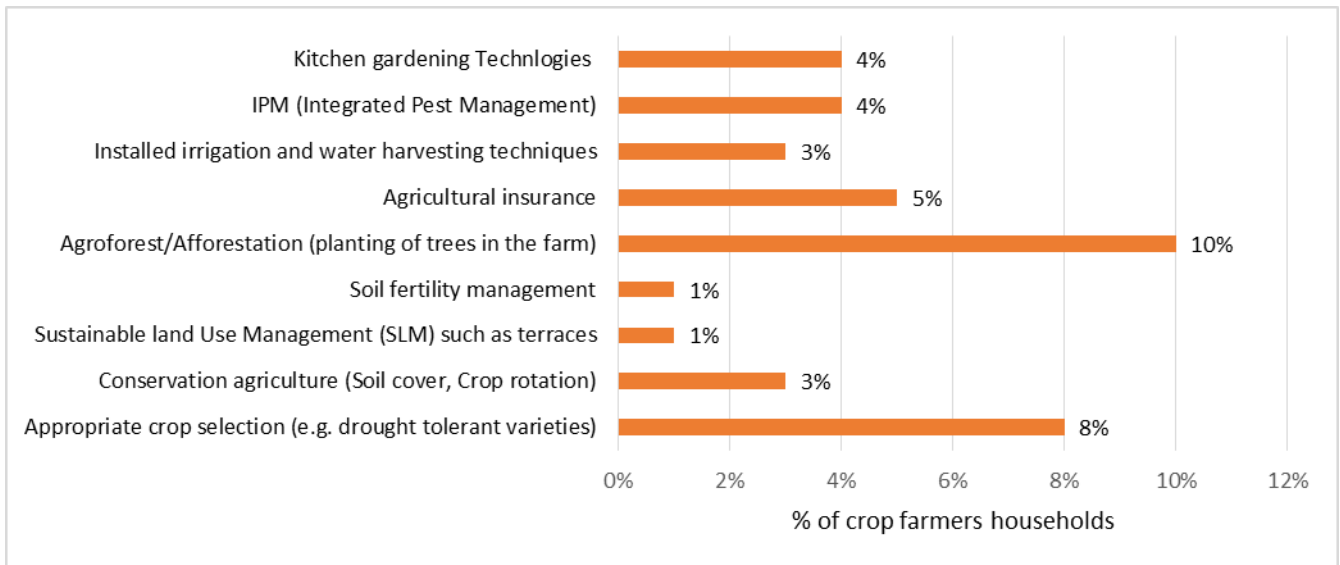


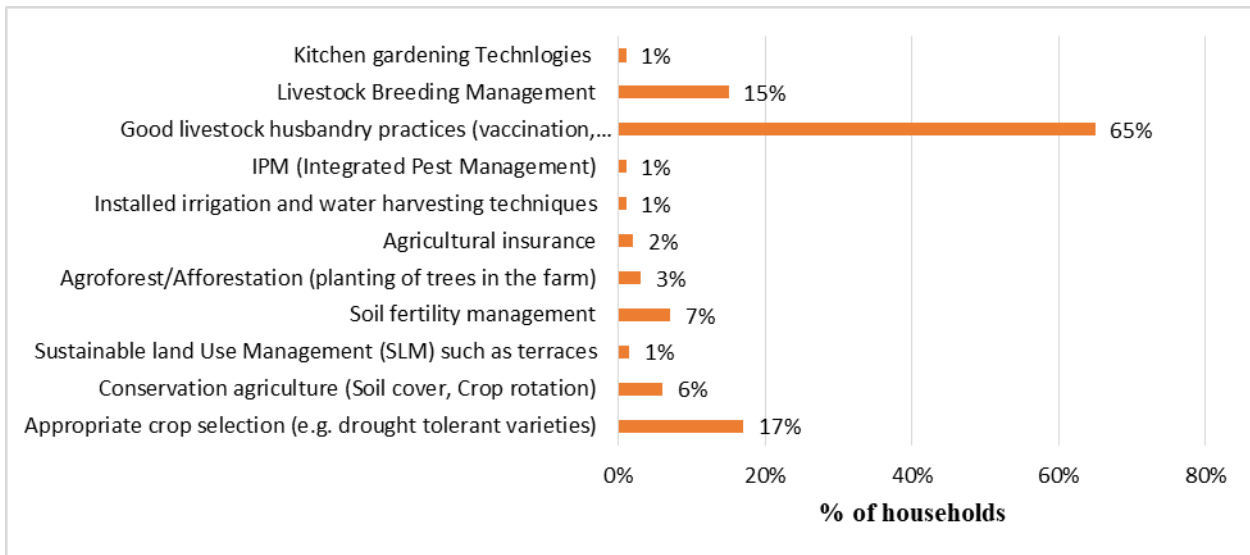
Figure 43: Crop farmers engaged in drought resilience practices in Isiolo County

In the 7 target wards for the DRIC project, the households have adopted various climate smart practices to cope with the adverse effects of climate change (table 4.5). Households in all wards mentioned adopting good livestock husbandry practices promoted by the government extension service. For households involved in crop farming especially in Chari, Cherab, Kinna and Garbatulla wards, they select appropriate crops, undertake conservation agriculture, and soil fertility management to enable them cope with the adverse effects of climate change.

Table 4.5: Climate smart practices in various wards

Climate smart practice	% of households adopting climate smart practices						
	Chari	Cherab	Garbatulla	Kinna	Ngaremara	Oldonyiro	Sericho
Appropriate crop selection	50%	85%	20%	87%	0%	0%	0%
Conservation agriculture	0%	7%	10%	54%	9%	0%	0%
Sustainable land Use Management	0%	7%	0%	6%	9%	0%	0%
Soil fertility management	25%	7%	10%	33%	18%	0%	0%
Agroforest/Afforestation	0%	7%	4%	0%	0%	0%	4%
Agricultural insurance	7%	0%	0%	1%	0%	0%	0%
Installed irrigation & water harvesting techniques	3%	0%	0%	0%	3%	0%	0%
IPM (Integrated Pest Management)	0%	0%	0%	0%	0%	0%	0%
Good livestock husbandry practices	72%	11%	5%	40%	48%	37%	65%
Livestock Breeding Management	45%	0%	0%	3%	0%	19%	4%
Kitchen gardening Technologies	0%	0%	0%	0%	0%	0%	0%

Overall, the survey findings showed that 49% of the households within Isiolo County are practicing at least one climate smart agricultural practice. The common practices amongst the households were good livestock husbandry practices such as vaccination, controlling overcrowding of animals and quarantining sick animals as shown in figure 44. However, the findings clearly show that drought resilient practices related to crop production are rarely practiced. For instance, only 1% of the households surveyed were practicing kitchen gardening technologies.



4.9

Figure 44: Type of good climate smart agricultural practices practiced in Isiolo County Management and use of community resources (Grazing and Water)

4.9.1 Grazing land and Grazing Committees/Resource Management Committees

Households surveyed in all the seven wards confirmed the existence of grazing committees.

4.9.2 Water Sources

Seven sources of water for domestic and livestock use and for crop production were variously mentioned by the households in various wards. The two most commonly mentioned water sources are community boreholes and rivers. Other sources mentioned are springs, sand dams, shallow wells, rain water, and water pans. Households in different wards mentioned different sources of water (figures 44 to 50).

Chari Ward

The main water sources for households in Chari Ward (figure 44) are community boreholes, river (Ewaso Nyiro River) and Sand Dams. The average distance from the water source for the households in Chari is approximately 3 Kilometers.

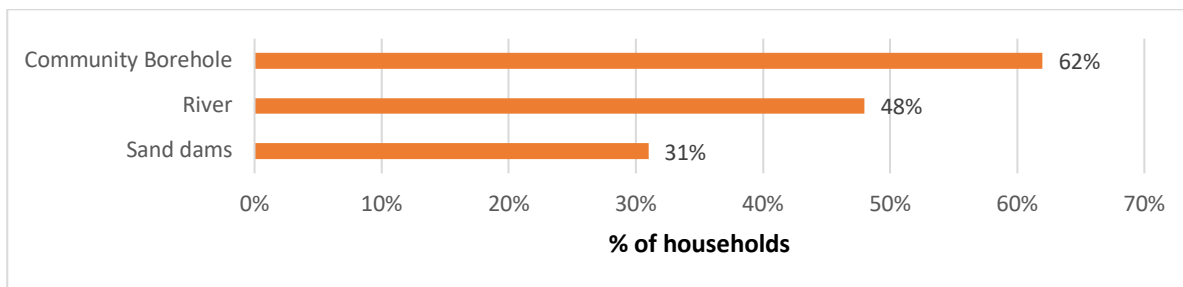


Figure44: The main water sources in Chari ward

Cherab ward

In Cherab Ward, the majority of households access water mainly from either water pans and / or community boreholes (figure 45). The average distance from the water source for the households in Cherab is approximately 1.7 Kilometers.

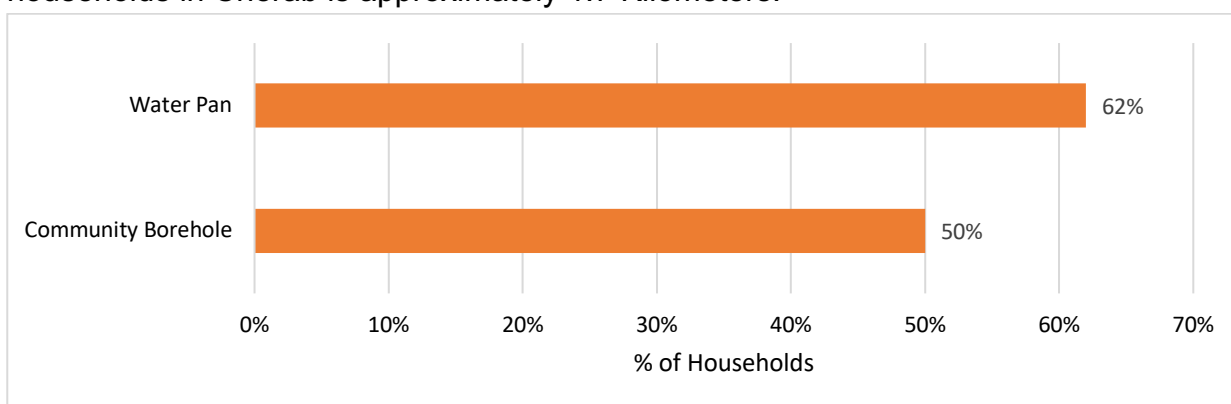


Figure 45: The main water sources in Cherab ward

Garbatulla Ward

Households in Garbatulla ward access water mainly from community boreholes, springs and river (figure 46). The average distance from the water source for the households in Garbatulla is approximately 5 Kilometers.

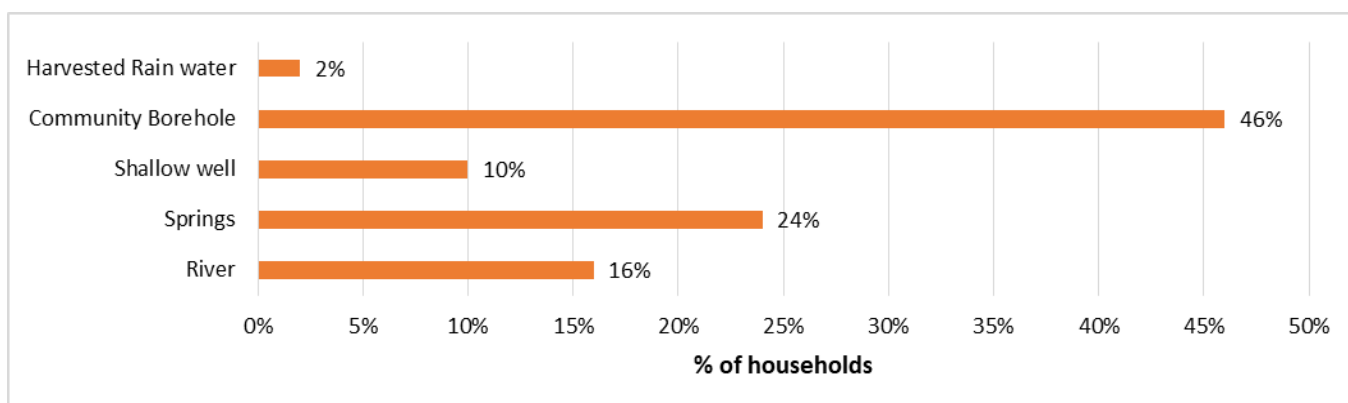


Figure 46: The main water sources in Garbatulla ward

Kinna Ward

The majority of households in Kinna ward access water from community boreholes and wells (figure 47). The average distance from the water source for the households in Kinna is approximately 4.8 Kilometers.

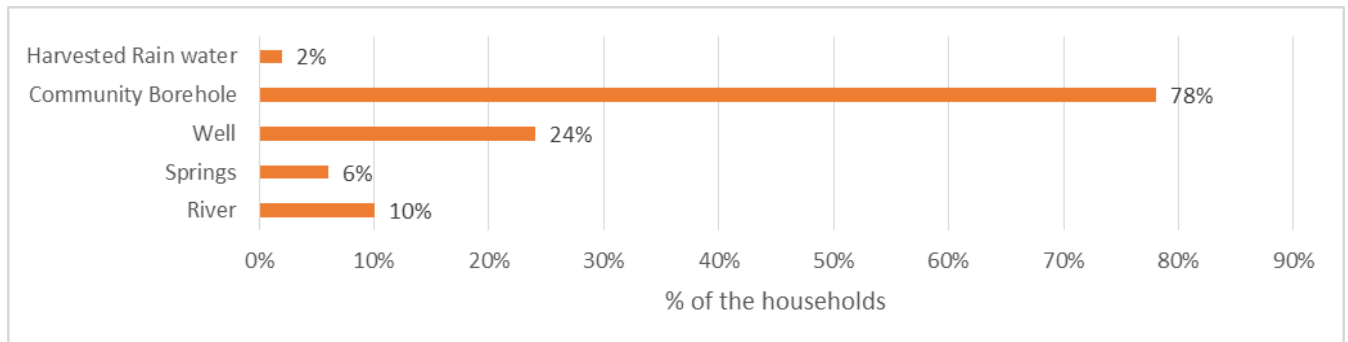


Figure 47: The main water sources in Kinna ward

Ngaremara ward

In Ngaremara Ward, the households access water mainly from the river and shallow wells (figure 48). Few households (12%) reported to be accessing water from a community borehole. The average distance from the water source for the households in Ngaremara is approximately 1.8 Kilometers.

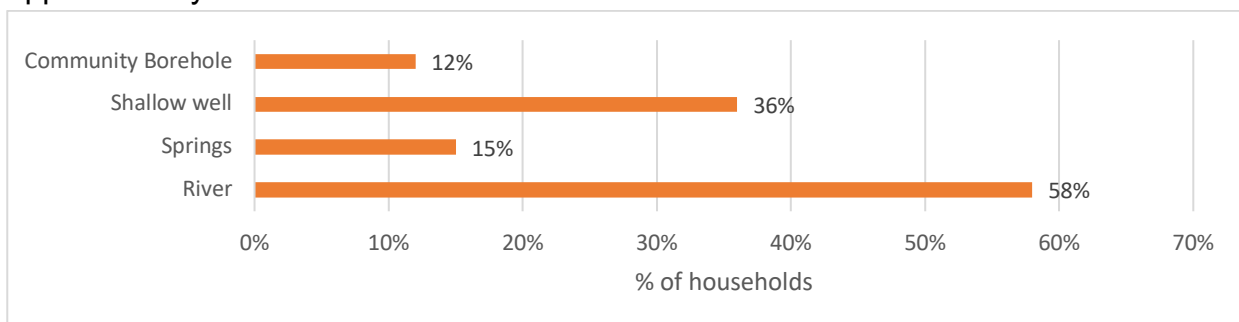


Figure 48: The main water sources in Ngaremara ward

Oldonyiro Ward

The majority of households in Oldonyiro ward access water mainly from sand dams and a community borehole (figure 49). The average distance from the water source for the households in Oldonyiro is approximately 1.7 Kilometers.

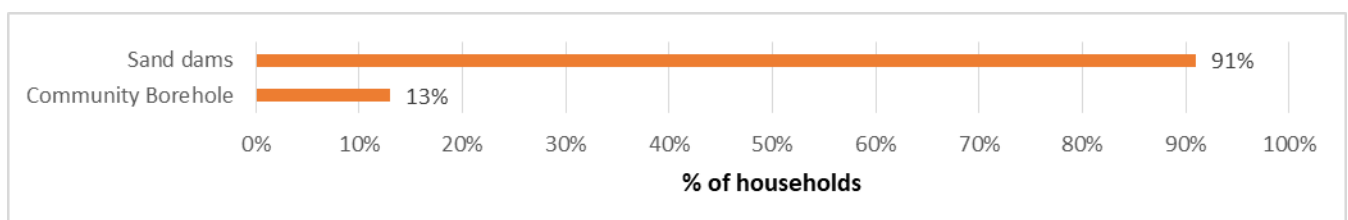


Figure 49: The main water sources in Oldonyiro ward

Sericho Ward

In Sericho ward most of the households access water from community boreholes. A good proportion access water from the river and sand dams (figure 50). The average distance from the water source for the households in Sericho is approximately 10 Kilometers.

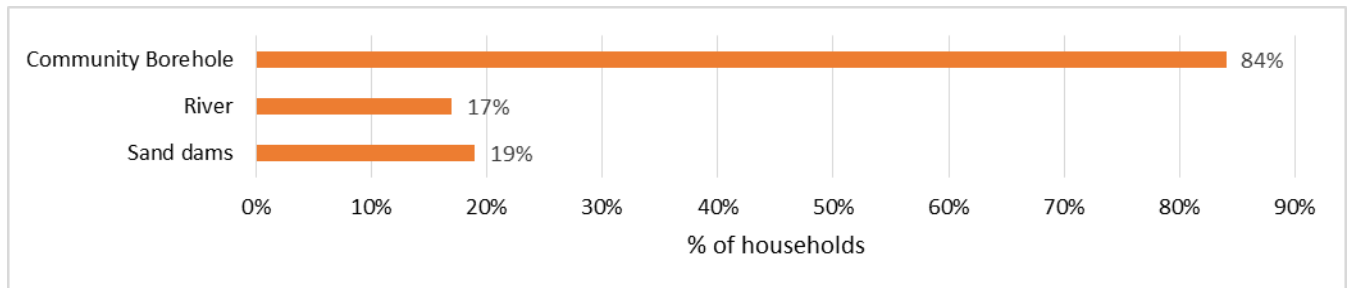


Figure 50: The main water sources in Sericho ward

4.9.3 Challenges for access to common resources

Five challenges were mentioned to be facing households in their attempt to access communally owned grazing lands and water sources. These challenges are poor pasture, settlement by other people, competition due to increased number of users, conflict with other communities and long distances to resources (figure 51). The proportion of households mentioning the various challenges varies among the wards. However, the main challenge that seems to cut across all the seven wards is increased number of users accessing the common resources and conflicts with other communities over the resources.

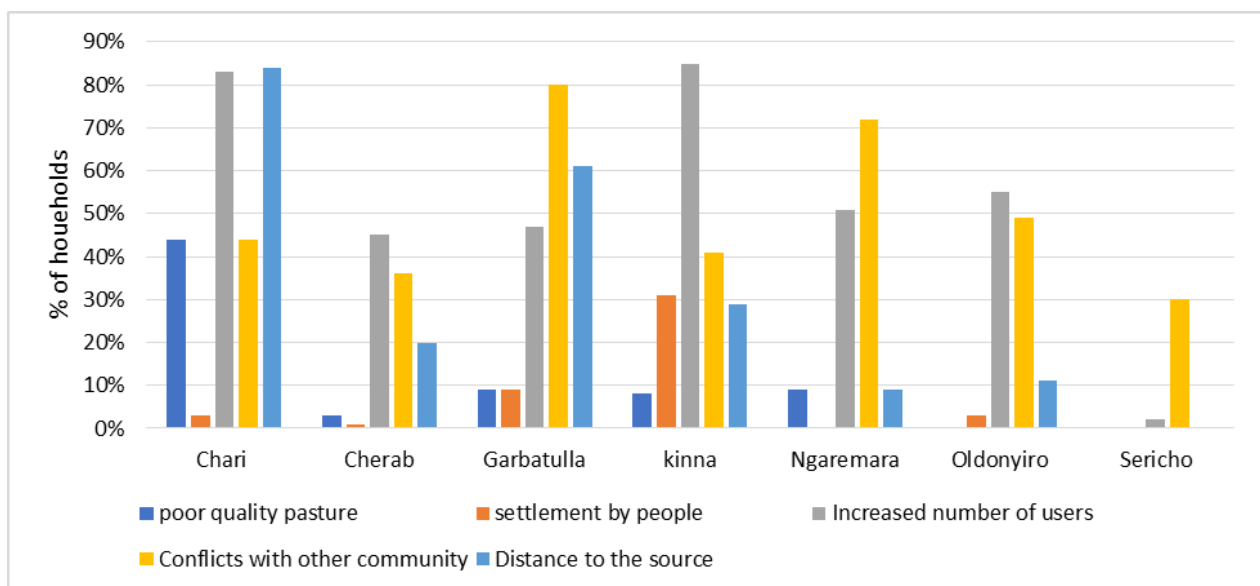


Figure 51: Challenges for access to common resources in various wards

4.10 Conflicts and resolution mechanisms

Isiolo County, like other ASAL Counties experience conflicts amongst communities and the neighbouring Counties primarily based on resource sharing. The conflicts are usually over grazing land, water access, and cattle rustling.

4.10.1 Grazing land conflicts

Figure 52 shows the main types of conflicts experienced over access to grazing lands in different wards. Clan/ethnic conflicts are most prevalent in the wards, followed by inter-county/border conflicts. The clan/ethnic conflicts were reported by all the households in Chari, and as high as 97%, 96% and 91% of the households in Oldonyiro, Cherab and Kinna wards respectively. In Cherab, Garbatulla and Ngaremara wards, inter-county/border conflicts with neighbouring counties were reported by a high proportion of households.

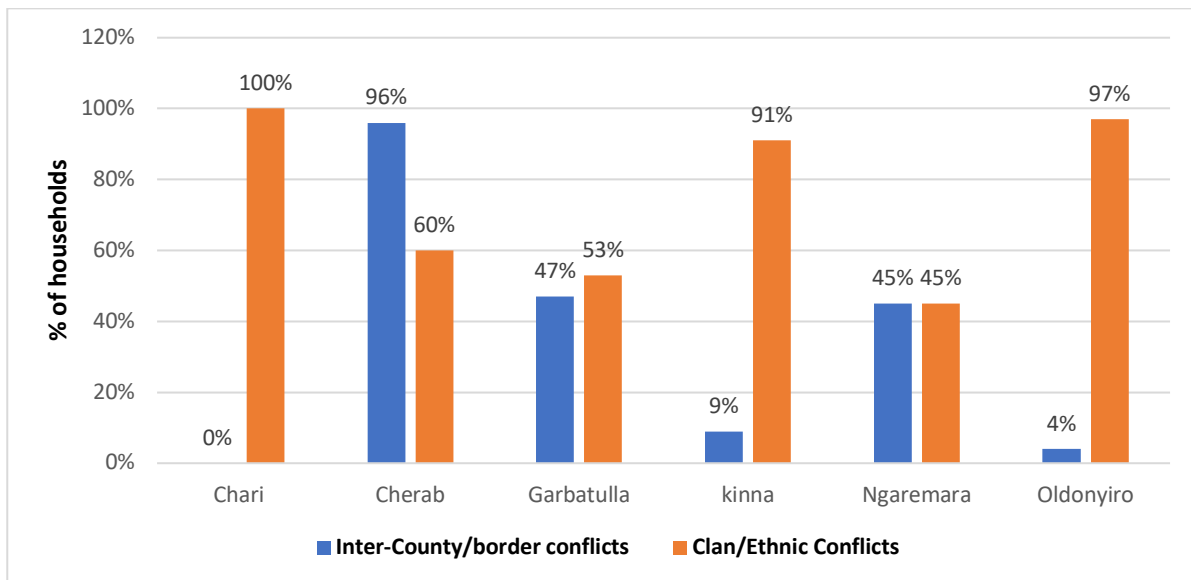


Figure 52: *Grazing land conflicts in various wards*

4.10.2 Cattle rustling

Every ward is affected by cattle rustling, and as shown in figure 53, Chari, Ngaremara and Oldonyiro wards are more affected as compared to other wards. About 74% of the households who have been victims of cattle rustling, reported that apart from loss of their livestock, the most adverse effect they have ever experienced is loss of human lives.

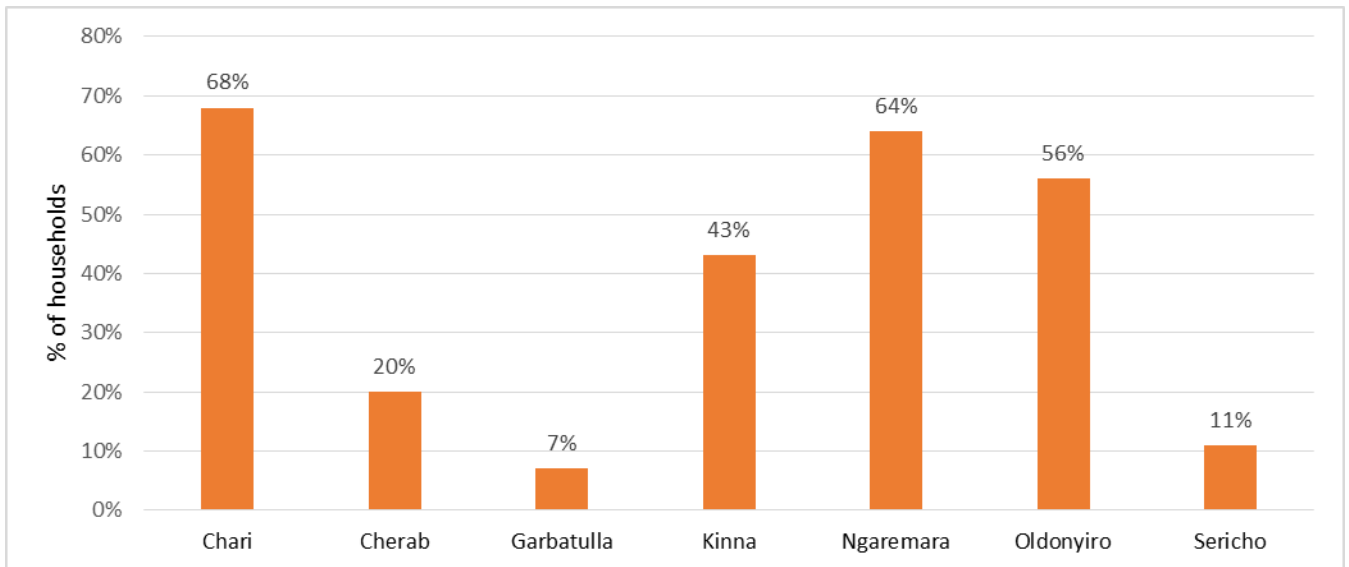


Figure 53: The proportion of households experiencing cattle rustling over the last ten years in various wards

4.10.3 Human-wildlife conflicts

Wards that are mostly affected by human-wildlife conflicts are Chari, Ngaremara, Oldonyiro and Cherab, with Sericho being the least affected (figure 54). Due to this conflict, 92% of the households claimed that it has resulted to the death of their livestock and 27% of the households reported that wildlife conflict has resulted in the loss of their family members.

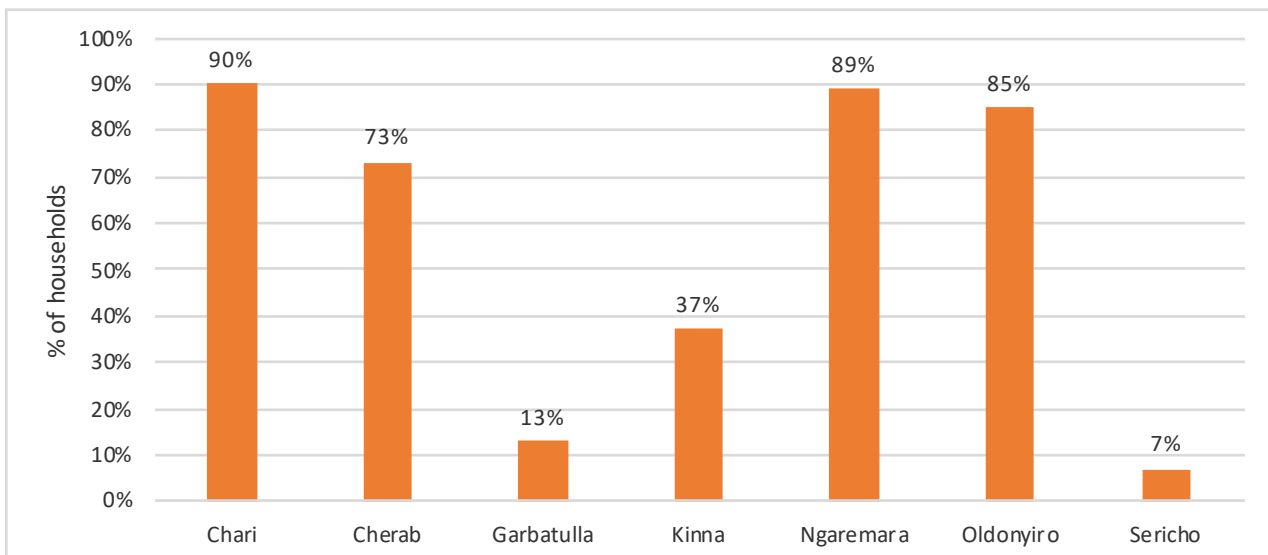


Figure 54: The proportion of households experiencing human-wildlife conflict over the last ten years in various wards

4.10.4 Conflict Resolution/Peace Initiatives

When asked to explain how they resolved the conflicts, households in all the wards said there are a number of peace initiatives/activities in place supporting peaceful co-existence among the different ethnic communities. The conflicts are managed through negotiations either by:

- community elders / peace committees,

- grazing committees or
- the warring youths.
- In some areas, the communities employ extra judicial traditional methods of compensation such as payment of Sh. 1 million as recompense to the aggrieved family or community.

Often, administrative units particularly the County Commissioner and the political leaders get involved in the conflict resolution/peace initiatives.

There are several hotspots in Garbatulla, Kinna, Cherab, Chari, Oldonyiro and Sericho Wards.

Every community that was interviewed decried lack of police presence in their areas. There are very few police posts, all invariably understaffed and under-resourced, hence unable to cope with attackers who usually come in their thousands.

4.11 Off-farm sources of household income

Apart from earning income from livestock and cropping enterprises on-farm, few (20%) households across wards reported earning income from a number of off-farm sources. Most of the households (80%) depend on livestock as their main source of income. In all the seven wards, the highest proportion of households reporting off-farm sources of income are in Kinna, Ngaremara, Garbatulla and Sericho wards. Both Chari and Cherab wards had the least percentage of households reporting off-farm sources (figure 55).

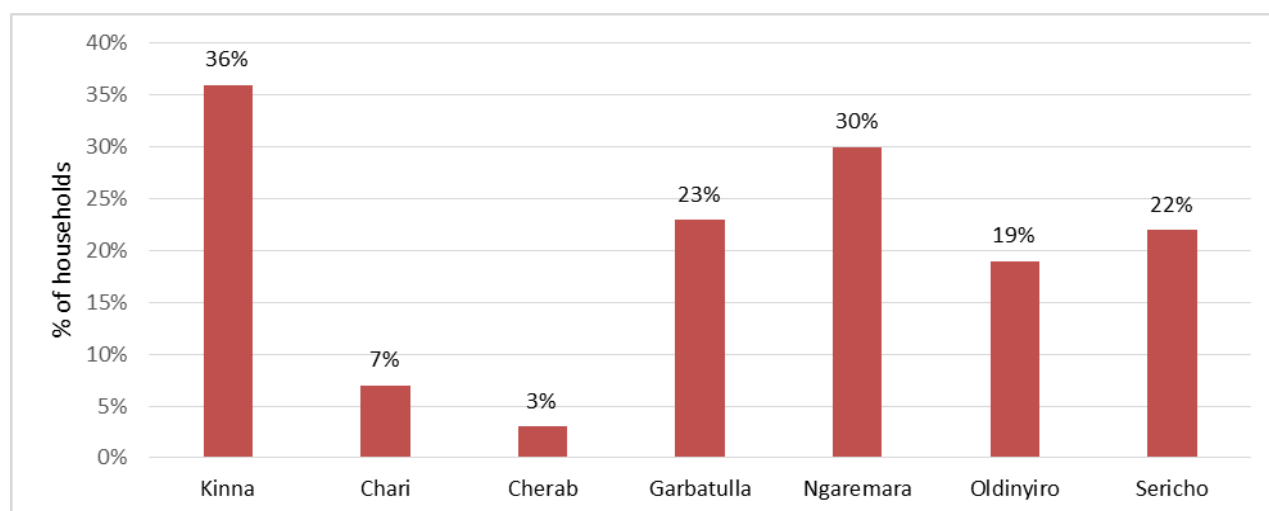


Figure 55: The proportion of households reporting off-farm sources of income in various wards

Figure 56 presents the sources of off-farm income for the seven wards. By far the two most important sources of off-farm income are small business such as shops or handcraft, mentioned by on average 56% of the households, and salary from employment mentioned by 26% of the households across the wards. Other off-farm income sources mentioned by a

few households across wards include sale of forest products such as charcoal, gift/food aid, remittances from family members and pension.

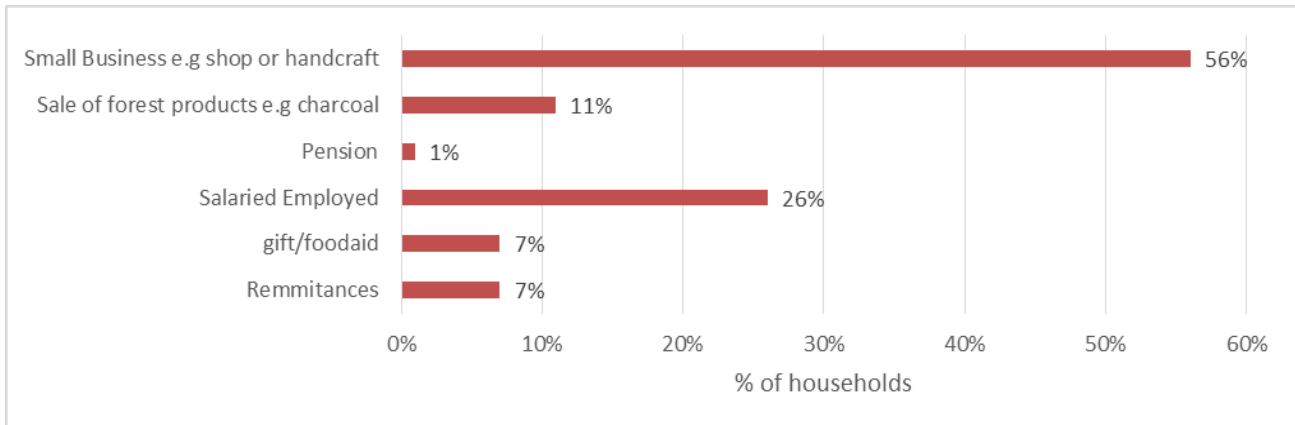


Figure 56: Sources of off-farm income across wards

Table 4.6 presents the average amount of income earned from off-farm sources per reporting household, and the members in the household usually involved in the off-farm activity. Most of the income generated from off-farm sources is mainly sourced by male members of the household. However, women especially widows are more involved in small business income generating activities.

Table 4.6: Off-farm sources of income and gender participation

Off-farm income source	Average annual income – KES	Member of the household mainly Involved
Remittances	65,333	Son(s) of the household
Gifts/Food Aid	25,000	National or County Government and NGOs
Salaried employed	461,613	Male household head
Small business e.g. small shop	117,285	Female household head (widows)
Sale of forest products	31,911	Son(s) of the household

4.12 Household expenditure

Table 4.7 presents estimated annual expenditure per household in the seven wards. The average amount of expenditure per household across the wards is KES 190,555. The highest amount of expenditure per household is in Ngaremara ward, closely followed by Kinna ward. The lowest amount is in Chari, followed by Cherab.

Table 4.7: Estimated total annual household expenditure by ward

Ward	Total annual expenditure – KES
Chari	133,315
Cherab	146,586
Garbatulla	179,142
Kinna	261,676
Ngaremara	246,665
Oldonyiro	175,636
Sericho	190,863
Average Total	190,555

Table 4.8 presents the main items of expenditure by the households. The four most important items of expenditure by households on average in all the wards are children’s school fees, household food, fuel for transport and household clothing. On average, the annual amount of itemized expenditure per household is KES 121,490. However, since the average total expenditure per household in table 4.7 is KES 190,555, the itemized expenditure leaves unexplained balance of KES 69,065. This could be due to error in underestimating itemized expenditure or due to expenditure on items the households are unwilling to divulge.

Table 4.8: Estimated average annual amount of expenditure per household

Expenditure item	Estimated annual amount spent – KES
Food expenses (per month then convert in year)	42, 572
Children school fees	51,900
Other educational expenses	7,583
Entertainment (games, cigarettes, tobacco, alcohol, etc.)	3,838
Rent (House and other rented items)	907
Clothing	14,118
Housing remittance	1346
Light/electric power	1802
Fuel	16,186
Pharmaceutical products	2,731
Expenditure on health (Traditional and modern medicine)	5,923
Financial assistance/monetary gifts (present)	1,150
Voluntary contributions (gifts, remittances, transfers)	670
Functions (marriage, funeral, local festivities)	4,039
Trips (travel cost)	3841
Contributions to associations and groupings	2,123
Water	3,333
Average Total	121,490

4.13 Household dietary diversity score

Households in Isiolo County find it difficult to access diversified diet during dry season according to data obtained from key informants and household survey. A number of foodstuffs are not easily accessible to families living in rural areas. For example, fruits and vegetables are found in plenty in Isiolo town, but most of them are brought from the neighbouring countries. This, in effect means that foodstuffs rich in vitamins and minerals are

not ease to get. These findings were corroborated by the results of the Household dietary diversity Score (HDDS) assessment.

HDDS is a qualitative measure of food consumption that reflects household access to a variety of foods. The HDDS was used as a proxy indicator of nutrient adequacy of rural people. The same indicator is often applied in the measuring the average number of different food groups consumed by women of reproductive age (15 - 49 years) the previous day or night. This is essential in determining the changes in the micronutrient adequacy of women's diets, one important dimension of diet quality.

In this Baseline Survey, the HDDS was measured in terms of the number of different types of food groups (both protein and carbohydrate sources) eaten by the households within the past 24 hours. Figure 57 shows that Kinna, Garbatulla, Ngaremara and Oldonyiro wards seem to be relatively much better off in terms of household dietary diversity as more than half of the households in the said wards reported consuming six food groups or more. Only 37% of households in Cherab ward were consuming more than six food types, a clear indication that household dietary diversity in the ward is relatively poor.

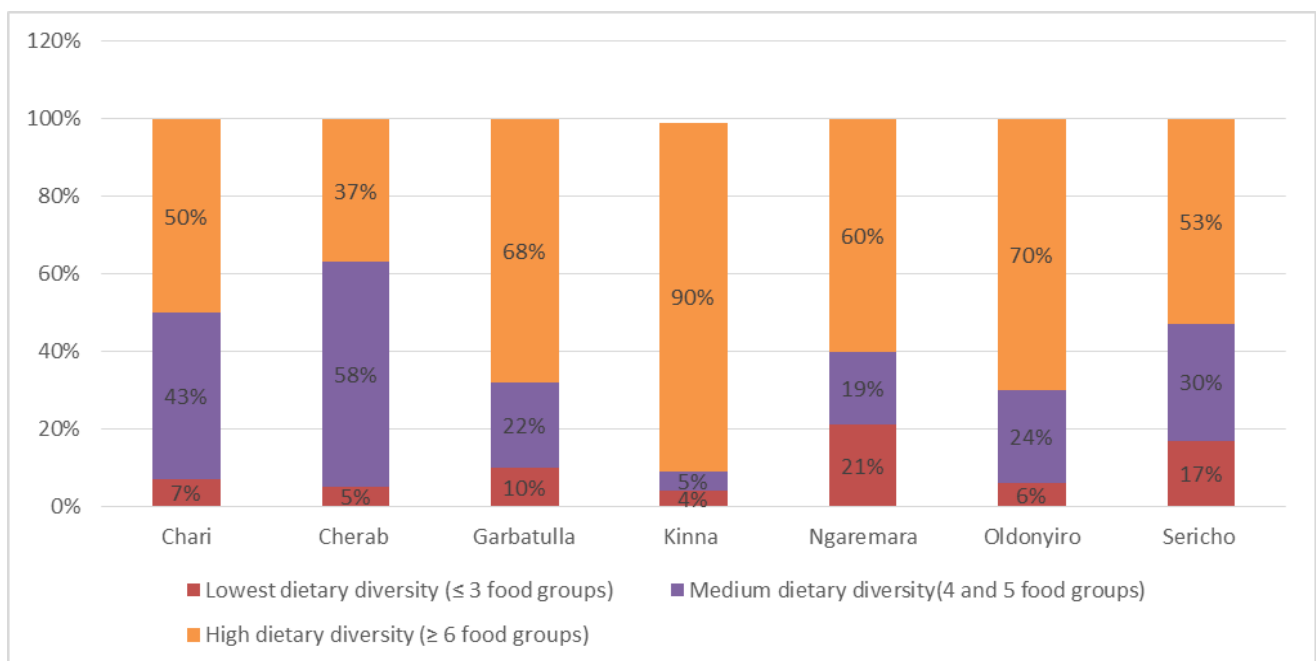


Figure 57: Household dietary diversity score in various wards

Table 4.9 shows that households with low dietary diversity score (≤ 3 food groups) were commonly consuming cereals and milk only, which are the only food types commonly consumed amongst all the three tertiles. The food types that are also commonly consumed by households with high dietary diversity score (≥ 6 food groups) rarely consumed in other tertiles are white roots, tuber and plantains, eggs and oils.

Table 4.9: Food groups consumed by $\geq 50\%$ of households by dietary diversity tertile in various wards

Lowest dietary diversity (≤ 3 food groups)	Medium dietary diversity (4 and 5 food groups)	High dietary diversity (≥ 6 food groups)
Cereals	Cereals	Cereals
Milk	Milk	Milk
	Meat	Meat
	Legumes, nuts and seeds	Legumes, nuts and seeds
	Green leafy Vegetables	Green Leafy Vegetables
		White roots, tubers and plantains
		Eggs
		Oils

4.14 Dietary diversity score for children between the age of 6 months and 5 years

4.14.1 Data from Household Survey

Even though in almost all the wards except Cherab, more than half of the households are able to feed their children with six food types or more per week, there are still a significant number of households whose children are not able to acquire more than five food types out of the recommended twelve as shown in figure 58.

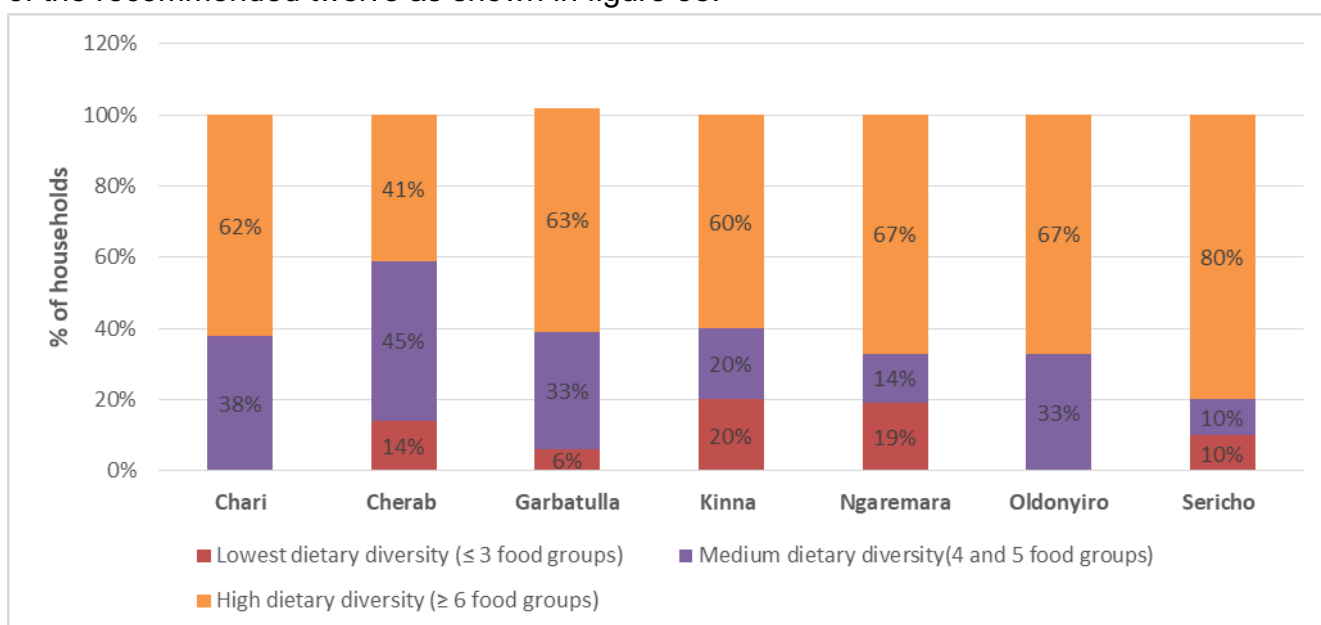


Figure 58: Dietary Diversity Score for child between the age of 6 months and 5 years in various wards

4.14.2: Nutrition Status of Children of 6-59 Months in Isiolo from SMART Survey of 2020

Studies conducted in Isiolo County to determine the nutritional status of children of 6-59 Months of age in February 2020 clearly showed that there is a significantly increase in GAM prevalence from 9.2% in 2019 to 16.7% (p value-0.0015) indicating a critical food nutrient deficiency. This can be attributed to poor household dietary diversity and food consumption (SMART Survey 2020). Even the level of severe acute malnutrition has doubled within one

year from 0.7% in 2019 to 1.5% in 2020 (figure 59) while the stunting rate had reduced minimally from 13.9% in 2019 to 13.8% in 2020 (figure 60).

4.14.3 Individual Dietary Diversity – WRA (SMART Survey 2020)

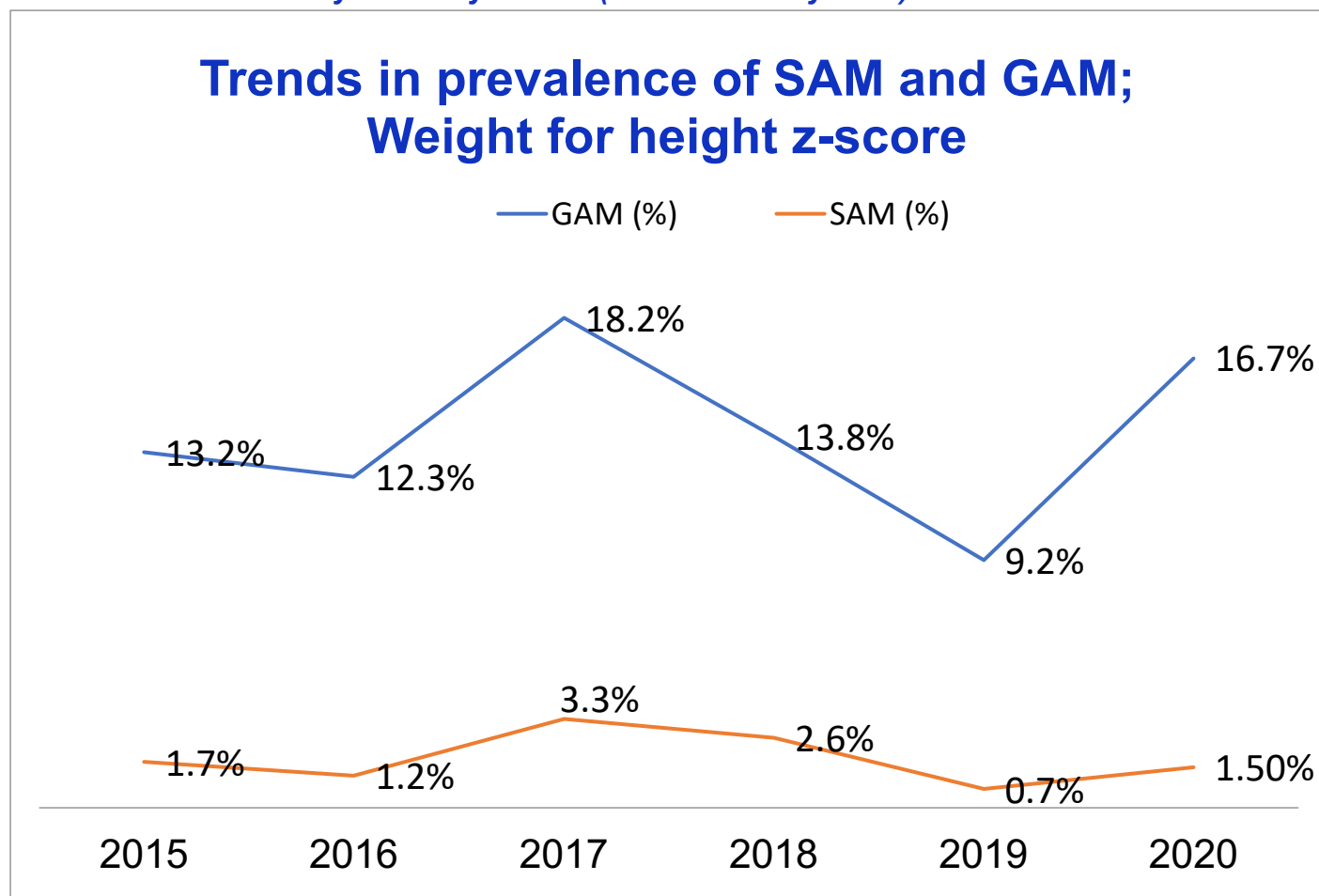


Figure 59: The prevalence of global and acute malnutrition in Children of 6-59 months

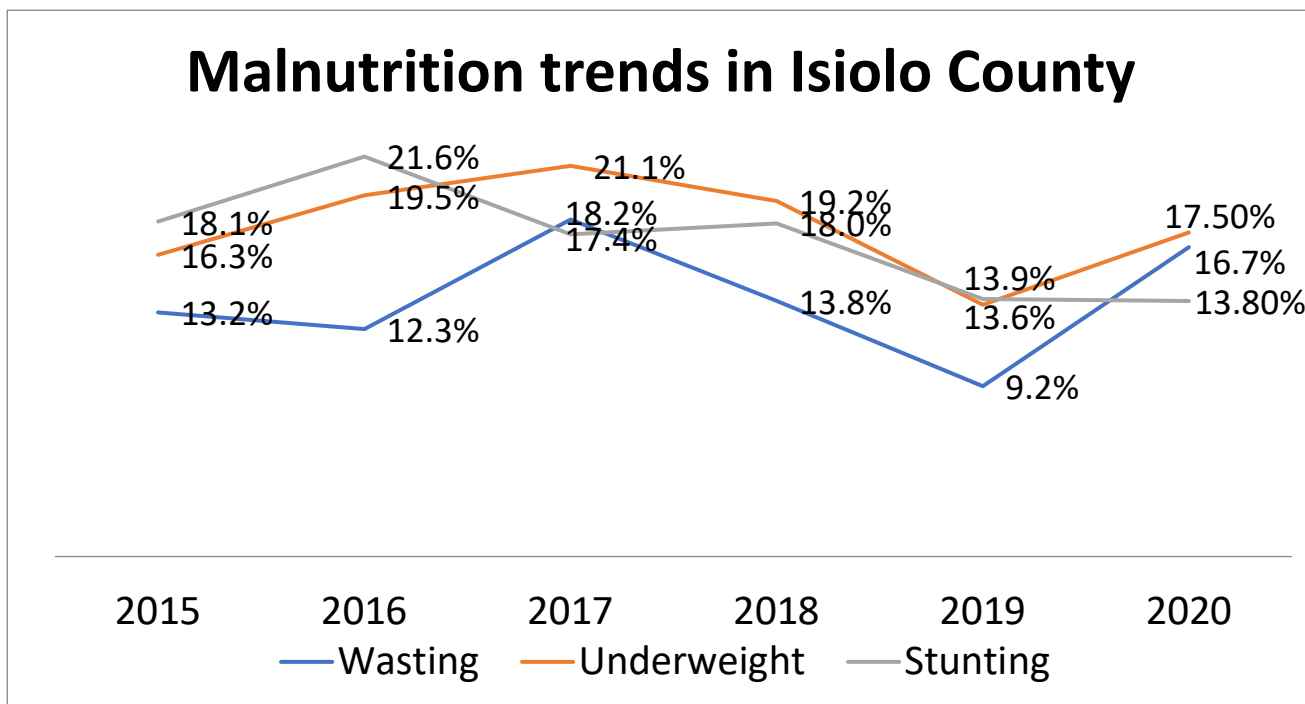


Figure 60: Malnutrition Trends in Isiolo County

There is a notable decrease in proportion of women consuming more than 5 food groups from 34.5% in 2019 to 23.6% in 2020. This is attributed to the effects of drought that led to shrinking of livelihoods, High food prices and low purchasing power of the community, Knowledge gap on dietary diversity and Culture of the population consuming protein based foods and not vegetables. Even where there are groups growing vegetables along Ewaso Nyiro River, not much of the produce is for sale. This leaves a high proportion of pastoralists without access to vegetables and fruits.

Notwithstanding the aforementioned, SMART Survey further showed that there is a slight improvement of WRA having MUAC great than 23 cm between the year 2019 and the year 2020 as shown in the figure 60 below.

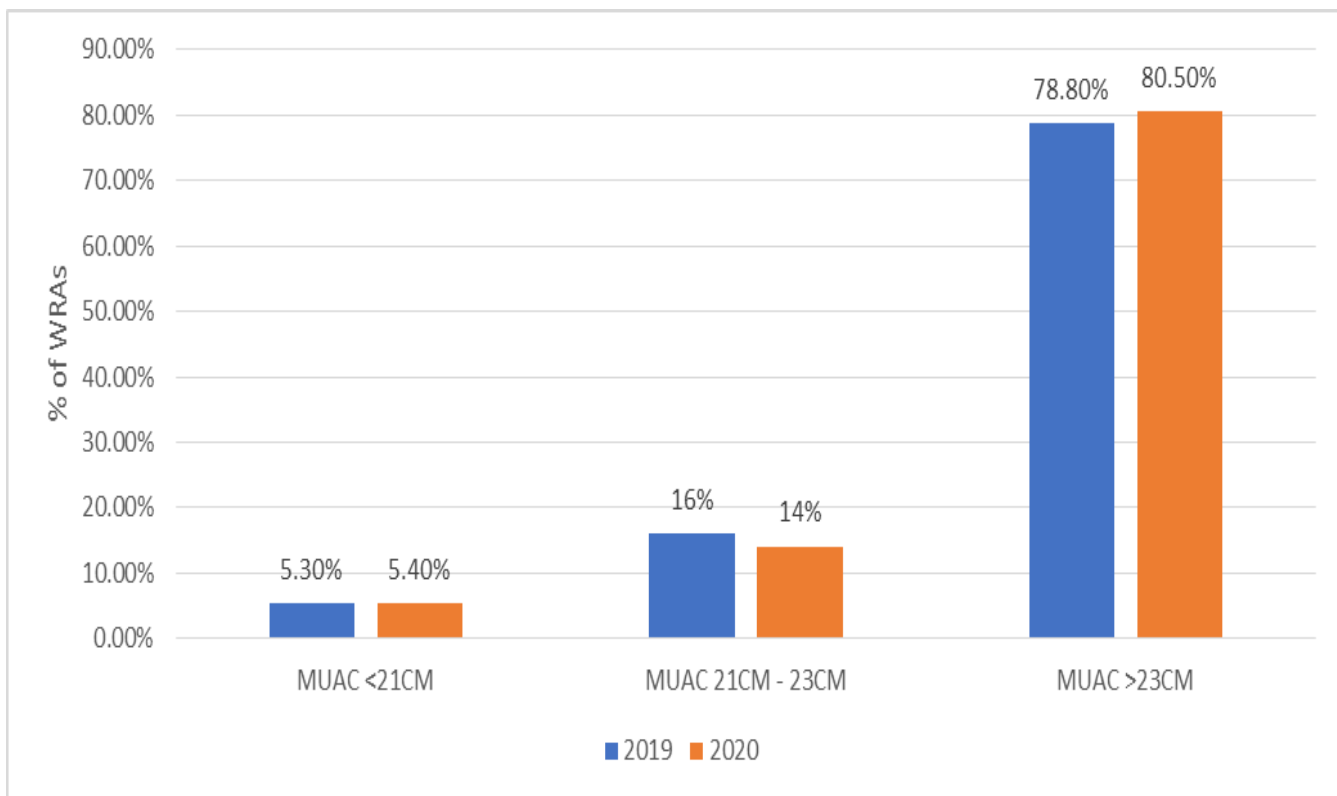


Figure 61: Nutrition status of women of all reproductive (WRA) age (Source: Smart Survey 2020)

The Smart Survey also assessed consumption of iron and folic acid supplements during pregnancy among women with children below 24 months. From the survey, it was found that although 71.6% mothers of children under two years were supplemented with iron and folic acid during their immediate previous pregnancy, the proportion that consumed iron and folic acid remains quite low. There was increase in proportion of pregnant women taking IFAS for more than 90 days from 6% in 2019 to 19.3% as shown in figure 62. This has been attributed to behaviour change interventions including BFCl, community dialogues and ongoing ICCM.

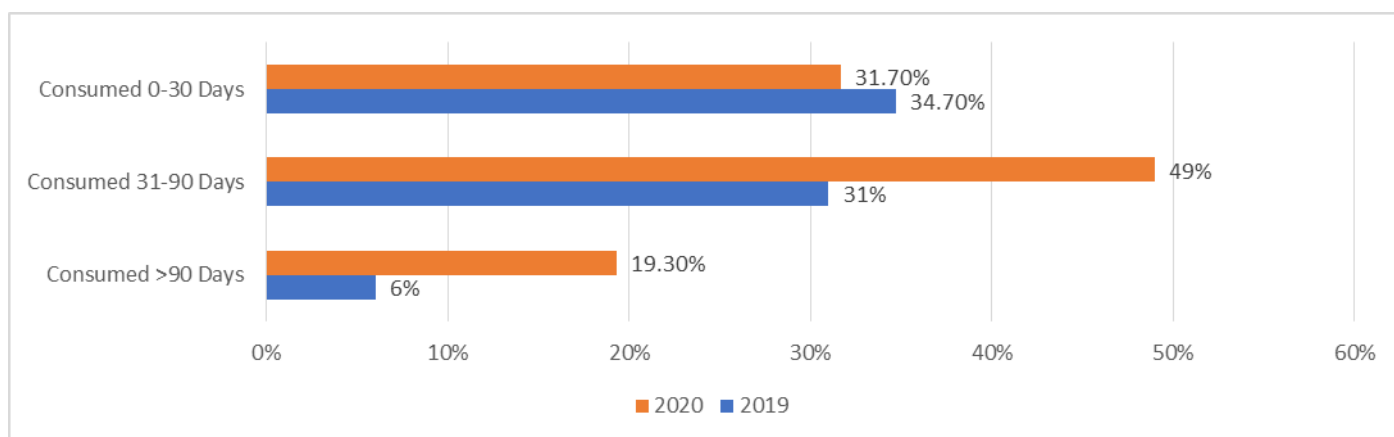


Figure 62: Iron and Folic Acid (IFA) supplementation for pregnant mothers in Isiolo County (Source Smart Survey 2020)

4.15 Household food insecurity and vulnerability

Household food insecurity and vulnerability was measured in terms of the average household food insecurity access score (HFIAS). The HFIAS was calculated using a formula developed by (Coates et al., 2007). Using the authors' formula, the maximum score for a household is 27, and the minimum score is 0. The higher the score, the more food insecure the household is. The lower the score, the less food insecurity (access) a household is experiencing. The average HFIAS for all the seven wards is 10.73, meaning that households within the county are moderately food insecure. However, food insecurity varies among the wards (figure 63). While Cherab and Garbatulla wards have a score of just under 10.0, and therefore the least food insecure, Ngaremara, Chari, Kinna, Oldonyiro and Sericho wards have a score of 10 or more, indicating higher food insecurity.

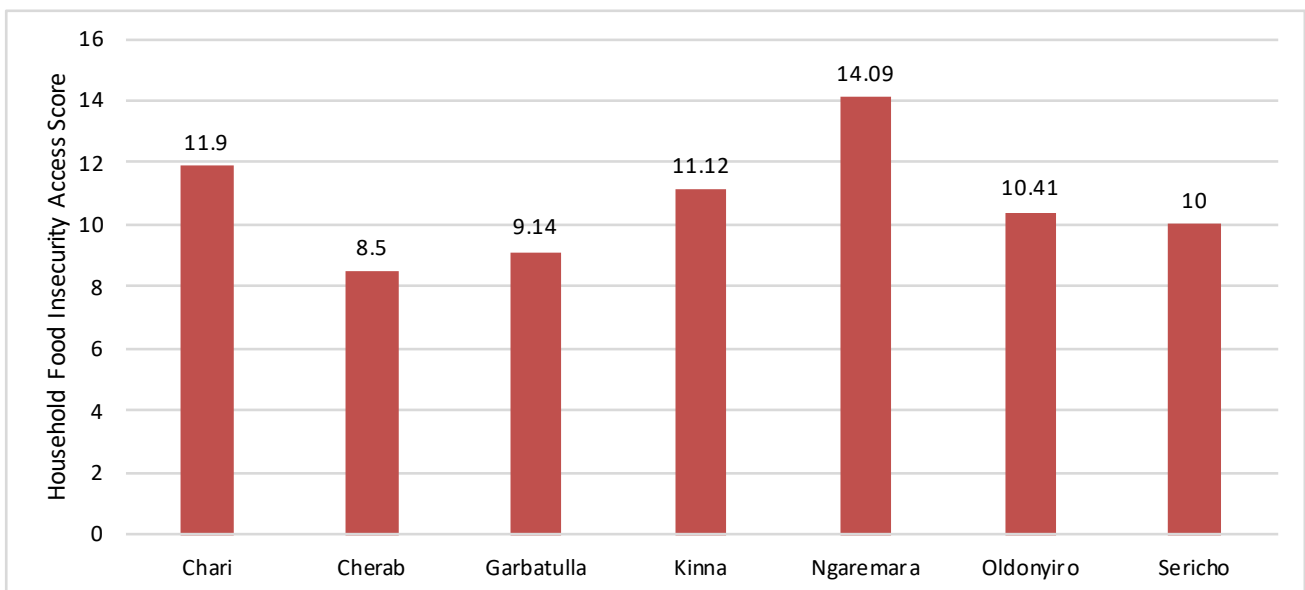


Figure 63: Household Food Insecurity Access Scale Score by Ward

4.16 Women's Involvement in Governance and Income Generating Activities

4.16.1 Extent of Women's Involvement in Leadership Activities

According to data obtained through the key informant interviews, it was reported that women, to some extent, are involved in leadership activities as shown in figure 64.

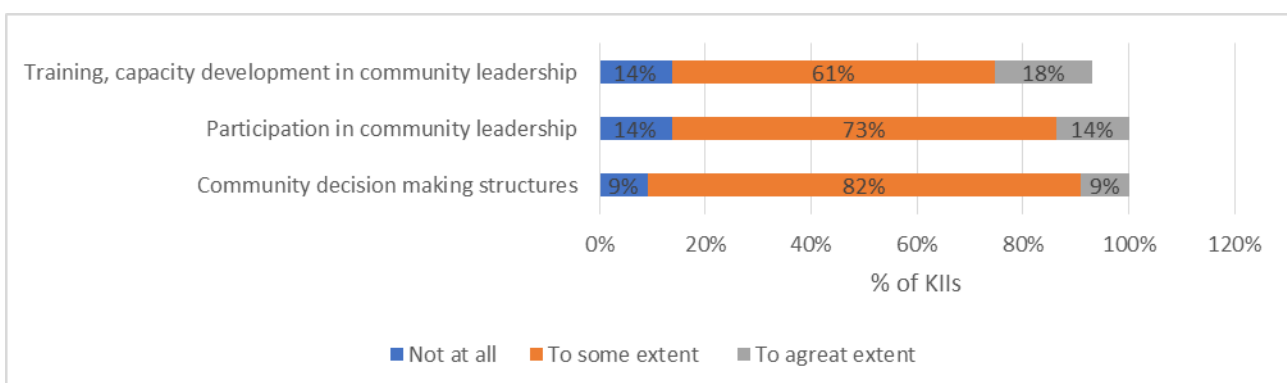


Figure 64: Extent of Women Involvement in Leadership Activities

4.16.2 Access and Involvement of Income Generating Activities (IGA) by Women

Women are more involved in the sale of goats and not heavily involved in trade of forest products as shown in figure 65 below. Additionally, 69% of the women access trainings and finance for the development of their income generating activities.

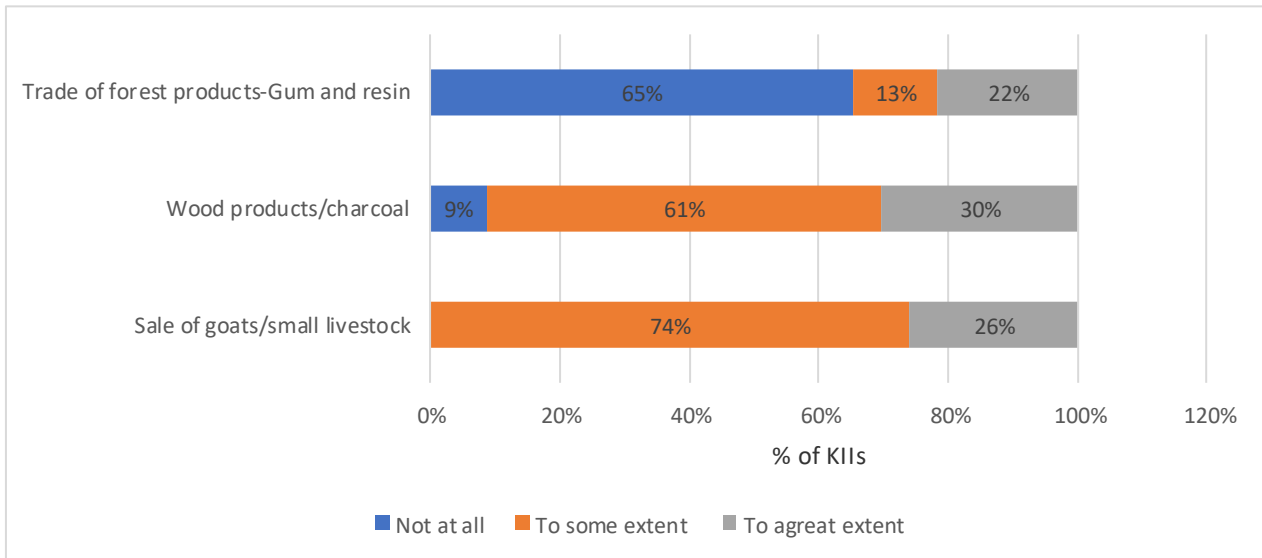


Figure 65: Involvement of women in Income Generating Activities (IGA)

4.17 Water, Hygiene and Sanitation

4.17.1 Water:

The main source of water for Isiolo County are River Ewaso Nyiro, River Isiolo, and River Bisanadhi (refer 4.9.2). These rivers are the source of water for livestock as well as for crop irrigation. Apart from these rivers there are major aquifers that serve Isiolo County such as the Isiolo-Nyambeni-Mount Kenya aquifer, Merti aquifer and Garbatulla-Modagashe aquifer. The aquifers have relatively clean water that are drilled to provide water for communities living far from the rivers. Unfortunately, some of the underground water is salty as was the case at Kipsing where the community was complaining of the concentration of salt in water. According to Isiolo County Integrated Development Plan of 2018-2022, 58% of the water sources are saline.

At the time of the baseline survey, a number of people were using flood irrigation to grow crops along Ewaso Nyiro river (figure 66) while the majority were using borehole water. Recognising that the Isiolo County greatest desire is to improve life through soft water, hygiene and sanitation, the DRIC project developed water infrastructure – rainwater harvesting (provision of gutters, water tanks in schools) and infrastructure of selected schools by constructing and



Figure 66: Flood irrigation along River Ewaso Nyiro

rehabilitating permanent water sources for school domestic and agricultural use for the kitchen gardens. This need was highlighted by the parents during focus group discussions. In some cases mothers have been giving children drinking water to carry to school. Even where there are water tanks, it was reported that they were inadequate to cater for the school population. Even though the time allocated for field work was inadequate for personal observations, the assessment conducted by We World in September 2020 clearly indicates the need improve water infrastructure in schools. The Consultants visited 2 primary school which had empty water tanks in Kinna and Cherab.

4.17.2 Hygiene

The community uses water which is not treated for household consumption. To mitigate the incidences of contracting water-borne diseases, some are provided with tables for purifying the water. Some of the women indicated that this reduces diarrhoea in children. The 3 schools visited by the Consultants had no provisions for handwashing areas after using the latrines. This gives credence to We World September 2020 seeking to establish hand washing stations in the target primary schools to enhance hygiene.

4.17.2 Toilets

On average, for all the seven wards, only 44% of the households were reported to own a latrine. Only in Chari Ward does the proportion of households owning a latrine exceed 50%, at 59% (figure 67). The ownership of latrines is below 50%, at about 36% for all the other wards. The households who had no latrines indicated that they make use of either bushes or their neighbours' latrines. Over 74% of the latrines owned are made up of cemented floors, iron sheet wall and roofs. It can therefore be inferred that maintenance of household hygiene is problematic in households without latrines.

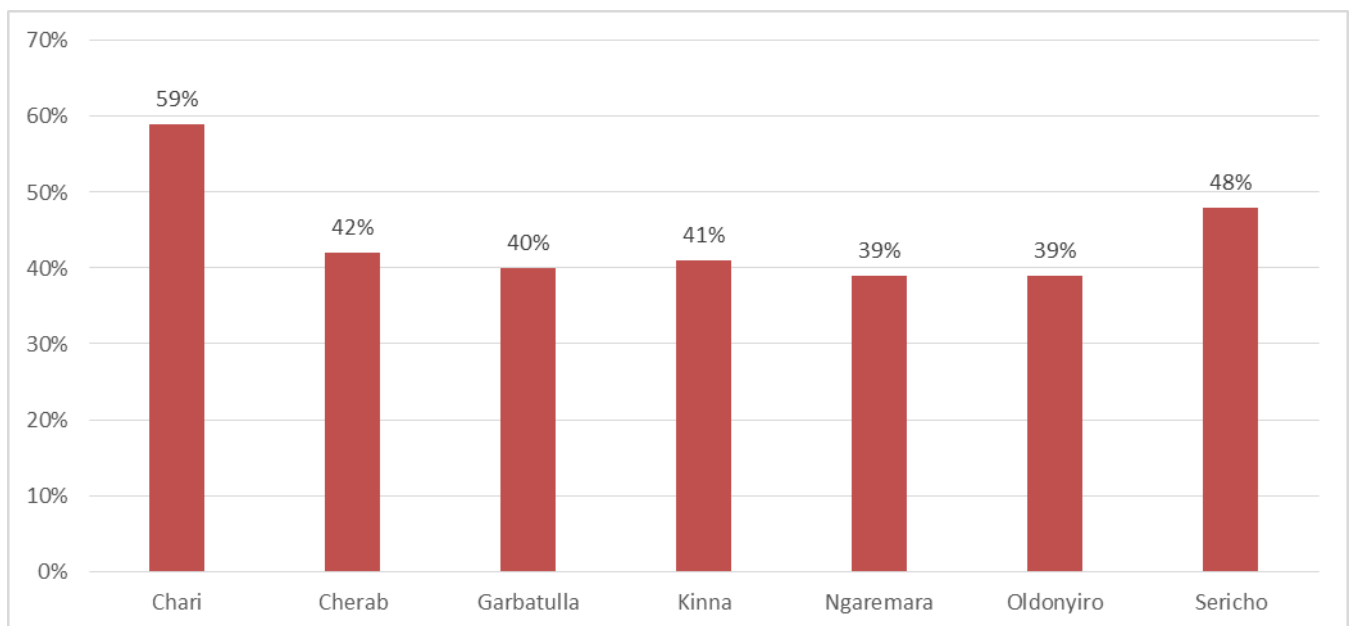


Figure 67: The proportion of households owning latrines in various wards

According to SMART Survey of 2020, 24.4% of households are still practicing open defecation. The study identified 11 settlements that require assistance in establishing latrines. These are Basaa, MalkaGalla and Korbesa in Cherab Ward; Iresaboru in Sericho ward; Gafarsa in Garbatula Ward; Kinna in Kinna Ward; Tupendane in Bula pesa ward; Daaba and Ngaremara in Ngaremara Ward; and finally Oldonyiro and Kipsing in Oldonyiro Ward.

Additionally a joint meeting between We World (DRIC), NDMA and Isiolo County Authorities (Minutes, 7 May 2020), identified schools requiring VIP toilets based on the following criteria:

- Schools served with closure notices from the Public Health Department
- Schools with inadequate latrine facilities
- Schools with Dilapidated latrine structures
- The geographic distributions of the institutions with sanitation facilities below the required standards.
- Priority wards for the DRIC project.
- High volume public primary schools

Table. 4.4 below gives a list of priority primary schools to be assisted to construct VIP Toilets under the DRIC project.

Table 4.4: The list of target schools for VIP latrines in Isiolo County

Sub- County, Wards, Locations, Sub-location and Schools					Student Population		Total student population
Sub-county	Ward	Location	Sub-location	School name	ECDE enrolment	Primary enrolment	
Isiolo	Burat	Burat	Burat	1. Uhuru Primary	251	1004	1255
		Burat	kilimani	2. Kilimani Primary	129	589	718
		Burat	Leparua	3. Lebarua Primary	83	252	335
Garba - tula	Kinna	Kinna	Kinna South	4. Galma Dido Primary	151	511	662
		Kinna	Kinna south	5. Algani Girls	157	414	414
	Garbatula	Gafarsa	Gafarsa	6. Gafarsa Primary	96	303	399
	Sericho	Iresaboru	Iresa Aboru	7. Iresa Aboru Primary	118	239	357
		Iresaboru	Iresa Aboru	8. Malka Mansa Primary	108	209	317
Merti	Charri	Bulesa	Bulesa	9. Bulesa Primary	191	301	492
		Bulesa	Goda	10. Goda Primary	116	233	349

4.18 Effect of Covid-19 on households

The Covid-19 global pandemic is affecting the household of Isiolo County in a variety of ways. It is affecting crop and livestock production, household access to food and on household income.

4.18.1 Covid-19 effect on crop and Livestock production

Sixty percent (60%) of the households surveyed reported that they are facing livestock and/or crop production challenges due to covid-19. Figure 68 shows that the two most critical

challenges the households are facing are high transport costs due to restriction of movement and limited markets for their livestock and crop products. A few households also reported that due to the outbreak of the pandemic, it has become difficult to access extension service agents as they are not coming to the ground as before.

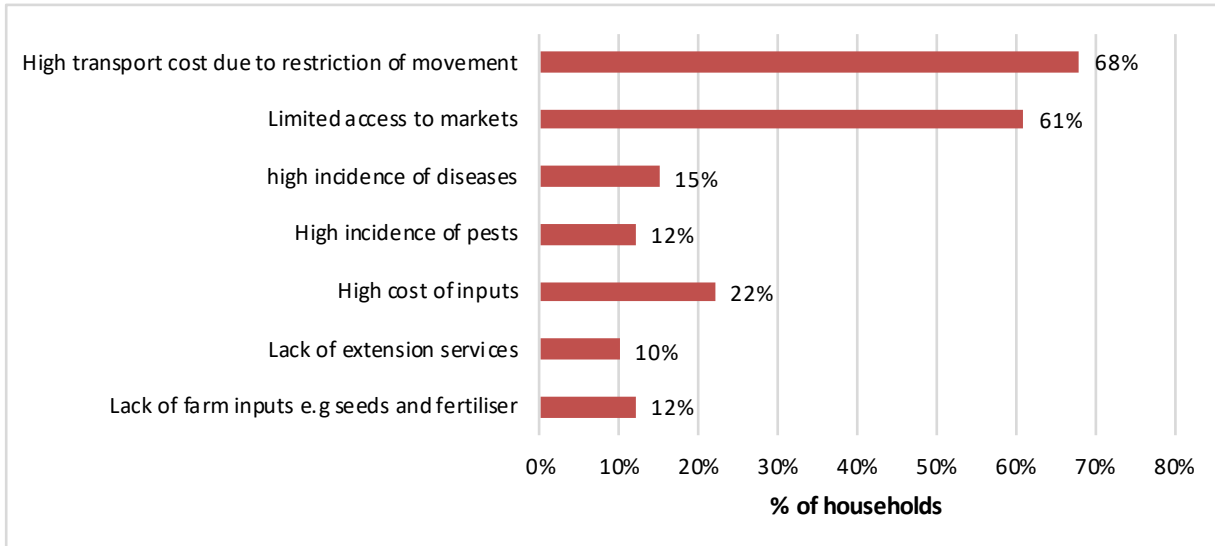


Figure 68: Crop and livestock production challenges due to the COVID-19 Pandemic

There is also a significant number of households who reported that the outbreak has resulted in lack of farm inputs such as pesticides and other drugs for livestock due to restriction of movement and hence disruption in the supply chains.

Also, 36 % of the households indicated that they are finding it difficult to purchase farm inputs due to the pandemic. Figure 69 shows that the main reasons for them not being able to purchase farm inputs are: restriction of movement, lack of government support, and high cost of farm inputs.

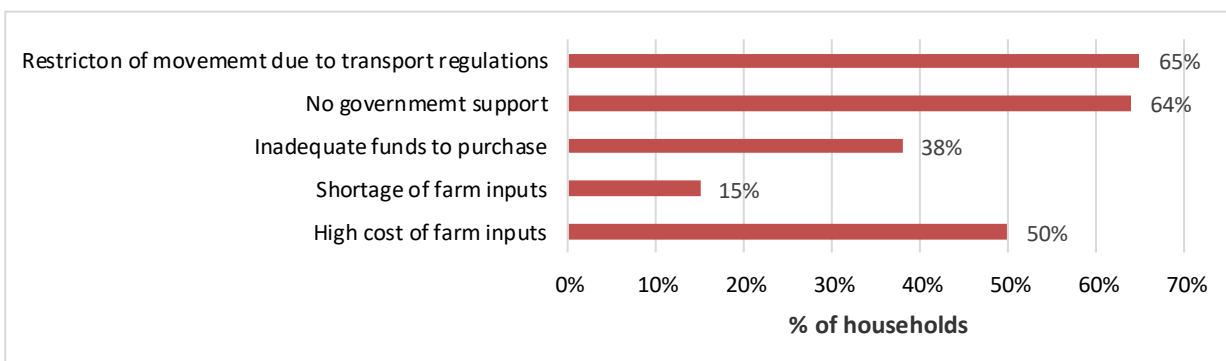


Figure 69: Factors restricting access to farm input due to COVID-19

Approximately, 35% of the households reported that the outbreak of Covid-19 has brought about labour challenges in their households, with the majority of them (90%) indicating

reduction in hired labour. This is due to inadequate funds available to pay workers since the outbreak of the pandemic. While the remaining 10% said that labour has increased due to closure of schools which has resulted in children staying at home and therefore supplying labour for household activities.

Over 30 % of households reported that they have been made to adjust the amount they spend on farming due to the Covid-19 pandemic. The majority of the households who indicated to have adjusted the amount of money they spend on farming said that they have to do this so as to conserve money for the all-important expenditure for household food. This is probably due to the increase in the number of household members at household level due to closure of schools, as well as due to some family members moving back home due to loss of jobs in towns.

4.18.2 Effect of Covid-19 on family access to food

About 37 % of the households reported that they have not been able to feed their families as well as before Covid-19. Figure 70 shows the main reason why the households' feeding habits have changed due to Covid-19. The three most important reasons are that markets are closed making it difficult to access food for purchase, lack of money with which to buy the food, and the fact that food prices have risen to unaffordable levels. Furthermore, the suppliers are not able to stock food, as well as the fact that people are fearful of going out to look for or to buy food due to the pandemic.

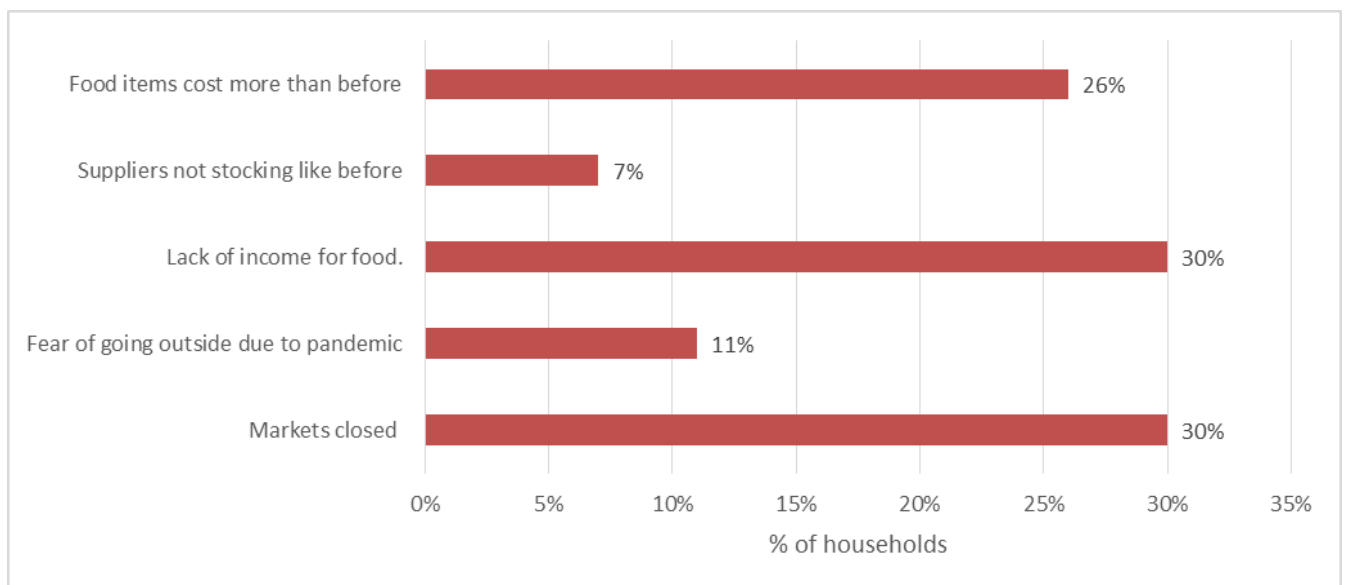


Figure 70: Factors restricting access to food due to Covid-19 pandemic in various wards

4.18.3 Effect of Covid-19 on household income

On average 20 % of the households surveyed reported that their household income has been badly affected due to the outbreak of Covid-19 in terms of reduction or loss completely. Figure 68 shows the main reasons for the reduction or loss of household income. The two most important reasons are the closure of businesses and lack of produce to sell. Other reasons include the lock-down/restriction for travel, curfew measures and loss of job by a family member.

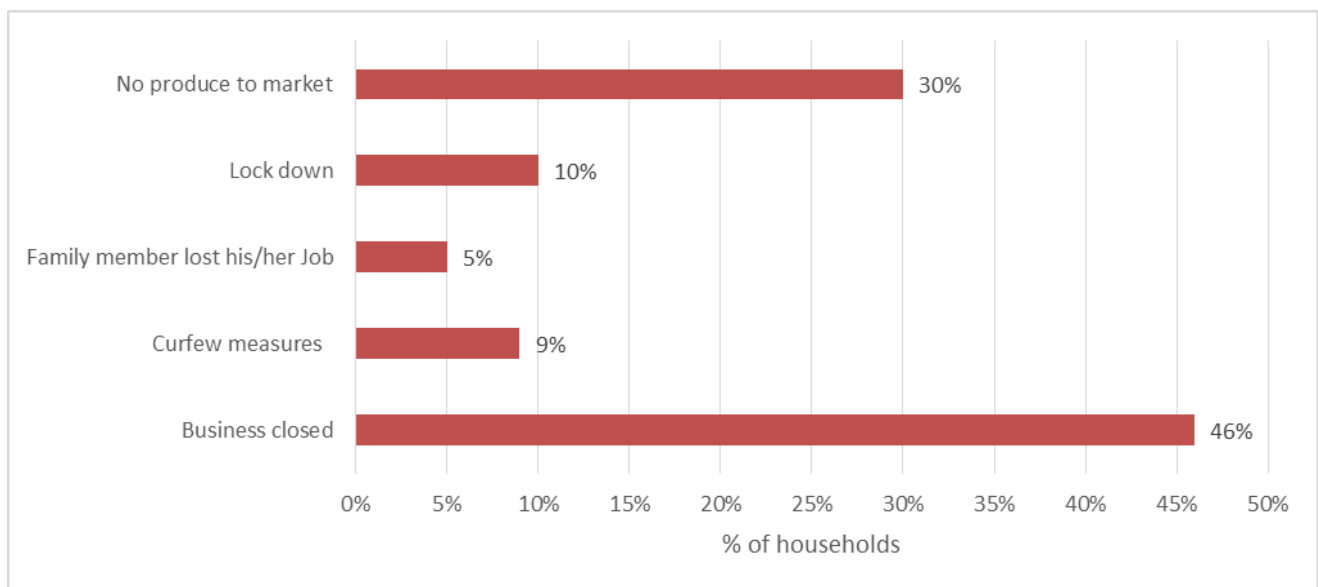


Figure 71: Factors causing reduction or loss of household income due to Covid-19 in various wards

4.19 Gender Violence

There is gender-based violence in the county as well as teenage pregnancies. The leaders believe that these challenges can be resolved, through community dialogue or by members of the community who have been trained to handle gender based violence and teenage pregnancies issues. Nevertheless, there is a feeling that the impact of these trainings is still low.

4.20 Wealth Status of households

Asset-based approach was used to develop an index of wealth using data from the household survey. Data used for the calculation of the index were the value of the stock of livestock owned including cattle, sheep, goats, camels and poultry from the Household questionnaire section 3, and the value of household assets owned including farm machinery and equipment, vehicles and household assets from the household questionnaire section 12. Land was not included as it is communally owned.

The selected variables were aggregated into a wealth index through the application of the Principal Component Analysis (PCA) (Montgomery et al., 2000). PCA was used to transform a set of correlated variables into a set of uncorrelated components. The first principal

component was selected as the linear index of all the indicators that captured the largest amount of information common to all the indicators which was then used as the wealth index (McKenzie, 2005, and Córdova, 2009). The variables were carefully chosen based on literature review of asset-based indicators in which variables such as livestock owned, and farming equipment were selected. A wide range of indicators were chosen so as to avoid challenges associated with clustering and truncation (McKenzie, 2005).

From the analysis, it was shown that 76% of the households surveyed are poor, 23% are moderately wealthy and less than 2% of the households can be classified as rich (figure 72).

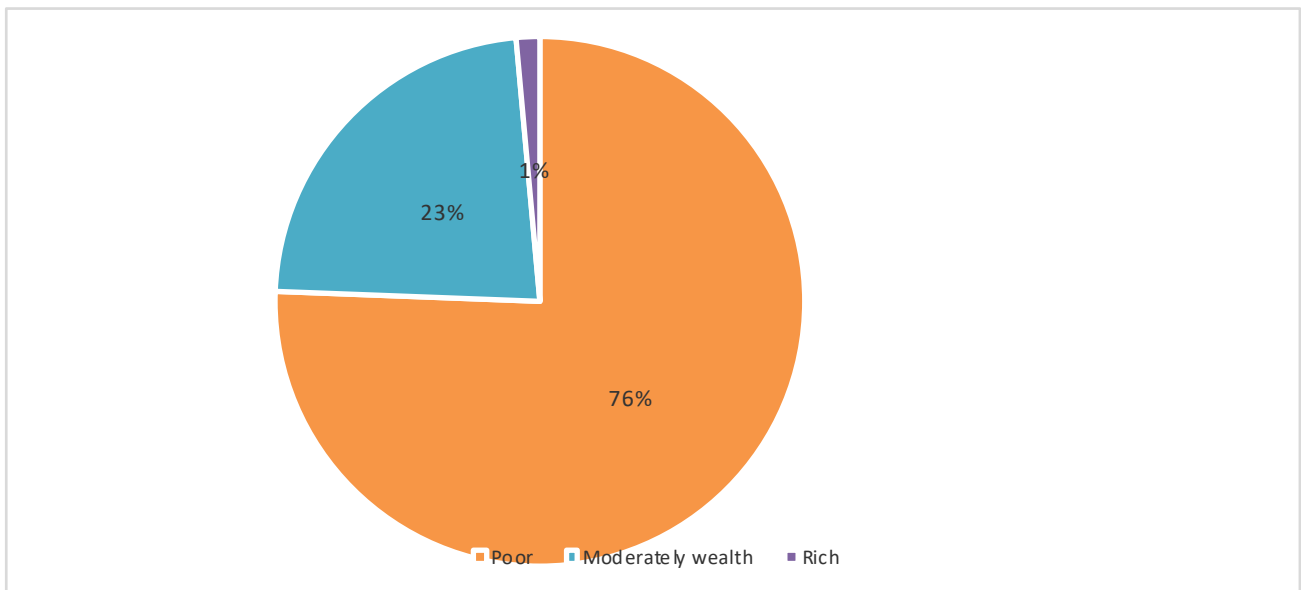


Figure 72: Wealth Status of households Surveyed

5.0 THE STATUS OF BASELINE INDICATORS

Having obtained the data, the Consultants derived the key indicators as provided by the project log frame for the overall project objective, the specific objective and the project outputs (Table 5.1). Column 3 of the table provides the indicator values as per project LogFrame, column 4 provides the derived indicator values, while column 5 provides brief explanations or sources of the derived indicators. The derived indicators portray the current or existing values, without due regard to the phrase “ ..with the support of this action..”attached to the specification of the indicators in the LogFrame, The consultants interpreted this phrase to mean “as a result of project implementation”, which is yet to happen.

In addition, the Consultants discussed with the communities about their felt needs, and what type of assistance they wish the DRIC project would offer them. This information is contained in the Table 5.2.

Table 5.1 Summary of Project Objectives and Outputs, Key Indicators, Current Status and Methods of Collection and Analysis

1. Project Objective / Output	2. Key Indicators	3. Baseline LF Value	4. Current Status	5. Explanations/Source
Overall Project Objective: To contribute towards increased resilience to droughts and other negative impact of climate change for vulnerable groups and reduce number of children under 5 years who are stunted in Isiolo County by 2025	1. Isiolo County Food Poverty Rate (%)	77	76	Food poverty is closely linked to the poverty rate, which from the baseline data.
	2. Percentage of Children Under 5 years Stunted	18	13.8	This was measured in terms of the average household food insecurity access score (HFIAS) from the baseline data
	3. Incidence of Household Vulnerability and Food Nutritional Security	HFIAS	10.73	This indicator was measured using HFIAS
Specific Project Objective: To enhance Food and Nutrition Security (FNS) for vulnerable Pastoralist and Agro-pastoralist communities in Isiolo County, generating sustainable livelihoods, protecting productive assets and improving climate smart County service delivery	4. Women Dietary Diversity Index	27.4%	23.6%	The Women Dietary Diversity Score was measured from Isiolo Integrated SMART Survey, 2020
	5. Citizens Drought Coping Strategy Index	21.3% B	11.1	From Isiolo County Drought early warning bulletin for August 2020
	6. Women Empowerment in Agriculture Index	0.9101	0.9101	Considering that the LogFrame indicator was calculated in 2018 and very little has changed in terms of empowerment of Isiolo women, we opted to retain the same index value

1. Project Objective / Output	2. Key Indicators	3. Baseline LF Value	4. Current Status	5. Explanations/Source
Output 1: Improved drought resilient and nutrition sensitive agriculture/ livestock production, integrated with conflict resolution and peace building strategies.	7. % of HHs implementing at least 1 good practice of drought resilient and nutrition sensitive agriculture production with the support of this action	0	49	From hh survey data (see figure 43)
	8. Number of months per year of livestock feed security (for core breeding and milking stock) due to fodder activities.	0	3	From KII/FGD survey data
Output 1: (Continued) Improved drought resilient and nutrition sensitive agriculture/ livestock production, integrated with conflict resolution and peace building strategies.	9. Number of peace initiatives/activities in place supporting peaceful co-existence among the different ethnic communities	0	3	From FGD/KII data (Peace Committee, Grazing Committee and Government Administration)
	10. % of milk producers and traders reporting increased profits from sale of increased quantities of hygienic camel milk and milk products segregated by gender with support of this action	0	8%	From hh survey
	11. Number of camels and goats procured, distributed in this action still surviving and calving/kidding	0	535 Camels 2110 goats	From previous restocking activities of VSF Suissie
	12. Number of disease reports acted on timely manner by veterinary authorities with support of this action	3 (Anthrax, Babesiosis and RVF)	0	From FGD/KII – although there were a number of diseases reported to Veterinary department, none was acted on promptly
	13. Number. of satellite technologies and aerial surveys implemented for rangeland management for sustainable livestock production with support of this action	0	3	Source NDMA Isiolo County Drought Early Warning Bulletin, August 2020 = Vegetation index and rainfall estimates; Aerial survey of locust swarms
	14. Number of crop farmers/cooperatives adopting climate smart agricultural practices with support of this action	0	27 1	From hh questionnaires – there are agro-pastoralists practicing climate smart agriculture
	15. Number of schools integrating school gardens and tree planting with support of this action	0	16	5 in Ngaremana, 6 in Oldonyiro, 2 in Cherab, and one each in Garbatula, Kinna, and Chari; none in Sericho. (source: Isiolo County Directorate of Education, Annex 8)

1. Project Objective / Output		2. Key Indicators	3. Baseline LF Value	4. Current Status	5. Explanations/Source
Output 2: Key productive HH assets and community investments are sustainably built and recovery capacities against recurrent droughts are strengthened, with a particular focus on Women's Economic Empowerment	16. Number of cooperatives trained to develop sustainable business models on the value chains of fodder, beef, camel milk and animal by-products with support of this action	30 -dairy 7 - meat 0	0	0	From FGD/KII there are no active crop – cooperatives in the target wards.
	17. Number of cooperatives/ entrepreneurs trained on peace initiatives from different ethnic communities	0	0	0	From FGD/KII there was information on Cooperative dealing with peace
	18. Number of water infrastructure built/ rehabilitated with support of this action (water pans, springs, rehabilitation of boreholes, roof rain water harvesting structures)	0	0	0	Based on FGD, none of the boreholes or water pans have been rehabilitated
	19. Number of Community Led Total Sanitation Session held and adopted in the target villages through this action.	0	1	1	Current number of Community Led Total Sanitation Sessions held and adopted in the target villages
Output 3: Isiolo County is empowered in addressing Food and Nutrition Security (FNS) issues, improved data collection system and cross-sectoral collaboration to facilitate local political commitment and awareness raising	20. Isiolo County nutrition sensitive multi-stakeholder platform action plan developed to address FNS issues	0	1	1	From KII there is an action plan in place for Isiolo County
	21. Isiolo County Integrated Development Plan mainstream evidence-based good practices experienced in the project about Climate Change Adaptation, Smart Agriculture and peace building. Establishment of SUN CSA County Chapter	0	0	0	There is no evidence of a plan incorporating the 3 actions
	22. Number of coordination meetings supported for policy decision making on the enactment of the pending policies relevant to the action e.g. the rangeland policy, peaceful coexistence bill.	A draft rangeland policy is available	1	1	DRIC supported the formulation and drafting of the Rangeland Policy
	23. Number of county legislation/policy initiatives to adopt climate smart agriculture	0	0	0	Current number of county legislation/policy initiatives adopted for climate smart agriculture
	24. Creation of Zoonotic Disease Unit	0	1	1	There is a zoonotic desk but not active
	25. Number of traditional/ religious leaders/other stakeholders engaged in training activities and project - related community events	0	7	7	There is evidence from KII that there are groups of religious/traditional leaders, at least one in each ward, that serve as agents of change

5.2 The Expressed Community Needs

NEED		ISILO COUNTY WARDS		
		CHARI	CHERAB	GARBATULLA
Livestock Diseases		<ul style="list-style-type: none"> Assistance in managing animal diseases in view of delays of the County animal health care providers to respond upon receipt of reports on disease occurrence except when a serious outbreak occurs. Routine vaccination for diseases such as FMD 		
CDR		-	Requested for a refresher course	-
Camel Restocking + goats		Seeking for a second round of restocking with camels + goats	FGD participants in Korbessa did not express interest in rearing camels	-
Poultry Production		Utamaduni group + individuals are engaged in poultry production and are interested in increasing production.	To improve poultry rearing and disease management	<ul style="list-style-type: none"> Poultry produced individually but are requesting for training on poultry management and improvement of local chicken to enhance productivity Require skills for poultry marketing
Honey Production		Enhancement of honey production	Started but failed	Honey production was introduced by ICIPE and they would like to continue
Fishing		Require skills in fish production	Require skills in fish production	-
Pasture reseeded		-	-	-
Pasture Harvesting		-	<ul style="list-style-type: none"> Skills for harvesting pasture There is Hay store in Chari but not in use 	Individual women collect bird nests and pods of Acacia trees for feeding breeding stock during dry season
Fodder Production		<ul style="list-style-type: none"> Ready to learn and produce fodder; Hay store in place between Chari 	-	Not possible to grow fodder due to competition for river water
Livestock Marketing		<ul style="list-style-type: none"> Low pricing of livestock at the local markets: Hence requesting for facilitation to access well-paying external markets 		
		<ul style="list-style-type: none"> They have a market but not fully utilized partly due to insecurity - Assist in managing Security 	<ul style="list-style-type: none"> Strengthen livestock cooperative in Merti Require help in the marketing of cattle 	Asking for a common livestock market with their warring neighbors
Crop production		Request for enhancement of Vegetables	Grow Maize and vegetables- - They require assistance with irrigation along Ewaso Nyiro river	Require enhanced water irrigation along Ewaso Nyiro river and farming skills.
Water Sources	Boreholes	Reinstate pipes+ solar pump for a borehole in Bulesa	<ul style="list-style-type: none"> Request for boreholes at Matasadan, Wilthri and Madomolu grazing areas; Domestic use currently they depend on Merti borehole& Ewaso Nyiro river. Hence need 1borehole at Diliki 	Need assistance since the existing Boreholes tend to dry up during dry season.
	Water pans	-	<ul style="list-style-type: none"> Rehabilitation of Dry water pan 	Kori Grazing area needs a water pan

			• Women need help with development of water pan for irrigation	
	Dams	-	Request for water dam	-
Latrines	Schools	Taqwa Primary school requires VIP toilets since the existing toilets are in poor state.	Inadequate number of latrines – hence need more latrines	Garbatulla Day Girls School = doesn't have adequate number of latrines and the school require VIP toilets
	Community	59% have toilets	42% have toilets	40% have toilets
One health – Diseases & Milk Hygiene and processing		The following diseases exists in the ward: • Anthrax, Chiith and gogosa; • Require training on milk processing	The following diseases exists in the ward: • Brucellosis, • Chiith	The following diseases exists in the ward: • Tuberculosis and Brucellosis • Diarrhea during rainy season
Peace issues and Hotspots requiring attention		• Conflict with neighbors • Cattle rustling • Inter clan/ethnic	• Conflict with Rendille & Samburus • Members of the Peace Committee to be introduced to the community;	• Border disputes • Inter clan/ethnic conflicts • Request: development of shared resources with warring neighbors
Health facility		Requesting for maternity ward	-	-
Malnutrition and Stunting of 6-59 m children		13.8% (SAMART Survey of Isiolo, 2020)		
Women & Youth Entrepreneurship		The women are involved in: • Rental houses • Livestock Trade; • Mitumba; Charcoal • Sticks or firewood • Gum Arabic during dry season	The women are involved in: • Livestock Trade • Fish farming	The women are involved in: • groceries, • hotel/restaurant • Garbatulla Handcraft Self Help Group require marketing skills
		Youth need assistance in:- • honey production, • fish production, • livestock trading, • boda-boda and or poultry farming	• Youth engaged in Boda boda	Youth are engaged in: • Boda boda business is what most youths are involved in. • Agriculture: Ires Kunno Youth -20ha of land. • Harvesting of gum arabica during dry season

ACTIVITY	ISIOLO COUNTY WARDS			
	KINNA	NGAREMARA	OLODONYIRO	SERICHO*
Livestock Diseases	<ul style="list-style-type: none"> Require assistance in managing animal diseases in view of delays of the County animal health care providers to respond upon receipt of reports on disease occurrence except when a serious outbreak occurs. Seeking for routine vaccination for diseases such as FMD through the Veterinary department 			
CDR	CDRs are active in disease reporting but not well connected with the veterinary department.	<ul style="list-style-type: none"> Refresher course needed for CDRs; Assist in establishment of community pharmacy; Be assisted with animal vaccinations. Assistance in establishing a community drug store 	CDRs trained by CARITAS and ILRI but not equipped for disease reporting. Hence are requesting for: <ul style="list-style-type: none"> Refresher courses for the CDRs and CHVs Institute disease reporting channel between CDRs and the Vet. Officers Require CDR and CHV for every village. 	-
Camel Restocking + goats	-	-	-	-
Poultry Production	<ul style="list-style-type: none"> Burkoke poultry group require business skills. 	Would like to enhance poultry production	Would like to enhance poultry production	Would like to enhance poultry production
Honey Production	<ul style="list-style-type: none"> Tulkinnisa women group 	Would appreciate assistance in getting the County to operationalise the public health facility	-	-
Fishing	<ul style="list-style-type: none"> BashBash women group - Require skills in fish production and processing 	-	-	-
Pasture reseeding	-	-	-	-
Pasture Harvesting	Already trained in harvesting grass by VSFS but want to enhance harvesting	-	They harvest Acacia pods but have not expressed the need to harvest pasture	-
Fodder Production	<ul style="list-style-type: none"> Seeking support to procure a machine for harvesting grass; Have a hay storage in Kinna but none in Rapsu. 	Desire to enhance fodder production	-	-

Livestock Marketing		<ul style="list-style-type: none"> • Low pricing of livestock at the local markets: Hence requesting for facilitation to access well-paying external markets 			
		<ul style="list-style-type: none"> • Kinna market is non operational awaiting launching by County 	Training on Business skills	Vibrant livestock trade	-
Crop production		Vegetable farming		Nanapa group grows vegetables	Rare, only 1 out of 46hh
Water Sources	Boreholes	<ul style="list-style-type: none"> • Rapsu borehole – overhead water storage tank did burst due to heat; • Moliti borehole is non -functional at the moment. Request for a borehole in Duse	<ul style="list-style-type: none"> • Most of the water is from the river, • Spring water; • Shallow wells; • 1 borehole in the center - inadequate water supply. 	<ul style="list-style-type: none"> • One borehole is functioning but not used because the water is too salty. • One less salty water borehole but it is broken down. Request: To pipe fresh water from Lengroma to supply the whole location	Require more Boreholes
	Water pans	-	-	-	-
	Dams	5 water dams in Kinna ward	1 dam with plenty of water.- Community require assistance in distribution of water	Sand dams	Sand dams and River
Latrines	Schools	Algane girls, Dabasiti & Dida Bakir Primary Schools are requesting for VIP toilets for girls	Inadequate latrines	The schools had adequate number of toilets	-
	Community	41% have toilets	39% have toilets	39% have toilets	48% have toilets
One health – Diseases & Milk Hygiene and processing		The following diseases occur in the ward: <ul style="list-style-type: none"> • Brucellosis • Camel diarrhoea disease. 	The following diseases occur in the ward: <ul style="list-style-type: none"> • Brucellosis Human Diseases Associated with Climate/Environment = <ul style="list-style-type: none"> • Respiratory diseases during cold season. 	The following diseases occur in the ward: <ul style="list-style-type: none"> • Rabies • Community has observed that if pregnant women drink milk from FMD or LSD cow they hve a miscarriage or the child is born blind. 	The following diseases occur in the ward: <ul style="list-style-type: none"> • Brucellosis and • Anthrax
Peace issues and Hotspots		<ul style="list-style-type: none"> • Inter clan/ethnic conflicts especially Kulamawe; • Cattle rustling. • Inadequate no. of police posted to Korbasa 	<ul style="list-style-type: none"> • Border disputes; • Inter clan/ethnic conflicts. The committee is weak and ineffective due to disagreement amongst the members- Require training on governance	<ul style="list-style-type: none"> • Inter clan/ethnic conflicts – minimal The way forward: <ul style="list-style-type: none"> ▪ Train the Morans to change their culture; ▪ Establish a police post in Kipsing. Land has already been set aside for the same. ▪ Reinstate Kenya Police Reservists. 	Inter clan/ethnic conflicts

Health facility	<ul style="list-style-type: none"> • Korbesa has none; • Rapsu has health centre with no maternity ward 	have a public health facility and they rely on private facility	Request that the health centres be equipped with refrigerators and anti-rabies and anti-venom drugs	-
Malnutrition and Stunting of 6-59 m children	13.8%			
Women Entrepreneurship	<p>The following women groups undertake:</p> <ul style="list-style-type: none"> • Tulkinnisa group;- merry-go round; fodder production and bee keeping; • BashBash – fish production. • Burkoke poultry group –sell eggs and bird meat • Group farms in Kulamawe are: i) Shable farmers group; ii) Bakasa group; and iii) Girisa group • Walqabana Milk Cooperative (Kulamawe) but require training on preparation of milk powder. 	<p>Types of Businesses in the area</p> <ul style="list-style-type: none"> • Salon • Vegetable/groceries • Sale of foodstuff • Sale of clothes <p>Areas women are Interested in</p> <ol style="list-style-type: none"> 1. Livestock trade. 2. Poultry farming – major challenge is New Castle Disease 3. Rearing of dairy goats 	<p>Request: Processing of milk into powder.</p> <p>The majority of women are engaged livestock trade. These are:</p> <ul style="list-style-type: none"> • Asekon Women Group • Ntepes Namayana Group; • Sieku Women Group; • Nalipo Women Group; • Nkudumu Women Group; • Pamongo Women Group; • St. Felix Women Group. • Naapunye Kipsing Women Group 	<p>Challenge:</p> <ul style="list-style-type: none"> • high cost of feeds, • lack of market for their animals and livestock products
Youth Entrepreneurship	<p>Girls are seeking support to set up</p> <ul style="list-style-type: none"> • Counselling business; • Hair saloons 	<p>Assist the youth in:</p> <ul style="list-style-type: none"> • crop farming by enhancing water availability. • Require business skills in:- Livestock trade and capital to improve their business. • Support youth groups. 	<p>Youth are engaged in:</p> <ul style="list-style-type: none"> • Livestock trade • Boda boda riders 	-

*The team in the field did not visit Sericho and hence no Focus Group Discussions were conducted to enable the community express their needs. - Means the community did not express a need in the specific area

6.0 LIMITATIONS

The baseline survey was conducted during a period when COVID-19 pandemic restrictions were still in place. This reduced the number of people the Consultants met face to face. This impacted the field observations and the number of participants in focus group discussions. Most of the meetings with the client and key informants were conducted online and questionnaires were sent by email. For example, the Consultants could not meet the children aged 6-59 months and take MUAC measurements for health reasons. In addition, the schools were closed and the school gardens were barely visible. Although the team met a lot of people during the assessment, access to some respondents was limited by the COVID-19 situation and hence there are some gaps in the report. These challenges notwithstanding, the Consultants endeavoured to do their best under the circumstances.

7.0 RECOMMENDATIONS

- i. The baseline survey indicators established give good benchmarks for the organisations to use for monitoring the progress and evaluation of the performance of the DRIC project. In measuring Incidence of Household Vulnerability and Food Nutritional Security, the Consultants recommend adoption of the average household food insecurity access score (HFIAS) for tracking the progress of this indicator in view of the fact that all the family members eat the same food.
- ii. The needs on the ground are overwhelming and there are also a numbers players giving support to the communities. The Consultants recommend that the expressed needs of the communities be taken seriously, and be discussed with the concerned communities before some of the remedial activities are undertaken.
- iii. A few changes have taken place in some of the schools within the targeted wards as a result of the recent flooding. Floods did destroy toilets in some schools. Hence the Consultants suggest that targeted schools for construction of VIP toilets be reviewed to ensure that support is accorded to schools in dire need of the facilities.
- iv. The Consultants however, recommend a mid-term review to determine whether or not adjustments need to be made to ensure achievement of the Project goals.

8.0 CONCLUSION

In conclusion, the Consultants are of the considered view that the Baseline Report provides sufficient indicators and baseline needs of the target population to enable adequate and effective monitoring and evaluation of the DRIC project implementation.

9.0 LIST OF REFERENCES

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3. **Integrated SMART Survey Report Isiolo, KENYA (2020)**
4. Kenya National Bureau of Statistics (2019)
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7. Report compiled by **(Ministry of Health, Agriculture, Water, Livestock, NDMA among other partners) with technical support from Action Against Hunger. [24th February, 2018];**
8. **Minutes of the joint DRIC, NDMA and Isiolo County Authorities Meeting held on 7th May, 2020.**
9. **NDMA: Isiolo County Drought Early Warning Bulletin for August 2020**

10.0 ANNEXES

ANNEX 1: CONSULTANT TEAM AND ROLES

Consultant	Role
1. Dr. Rachael Masake (RM)	Team Leader; Field data Collection and Management; Data Analysis; Baseline Report preparation and submission
2. Ms. Muthoni Mwangi (MM)	Literature review; Questionnaire design; Key Informant Interviews online; Data analysis; Baseline Report preparation
3. Prof. Adrian Mukhebi (AM)	Literature review; Questionnaire design; Key Informant Interviews online; Data analysis; Baseline Report preparation
4. Mr. Douglas Mesa (DM)	Questionnaire design; Enumerator training; Field Data collection; Data analysis

ANNEX 2: TERMS OF REFERENCE

Terms of Reference

Baseline Survey for the Action: Building Drought Resilience in Isiolo County through sustainable Livelihoods (DRIC) Contract No FED/2019/409-181

Funded by EUROPEAN UNION

1.0 Background Information

Pastoralists and agro-pastoralists form the majority of Isiolo County inhabitants and their livelihoods are impacted by drought and unpredictable rainfall, leading to reduced crop yields, low livestock productivity, high livestock mortality, low income and food and nutrition insecurity. Building Drought Resilience in Isiolo County through sustainable Livelihoods (DRIC) is an EU funded action addressing vulnerability through a multi-sector One Health approach which encompasses human health, animal health and environmental interventions, together with the creation/facilitation of a common platform for coordinating at institutional level and sharing good practice. The project aims at enhancing drought resilient and nutrition sensitive agriculture/livestock production, while incorporating conflict resolution and peace building strategies, alleviating the effects of recurrent drought through strengthening and recovery of sustainable capacities with a particular focus on Women's Economic Empowerment as well as empowering Isiolo County in addressing food security and

nutrition (FNS) issues, improved data collection system and cross-sectoral collaboration to facilitate local political commitment and awareness raising. The project is aligned with the National Drought Management Authority (NDMA) Common Programme Framework (CPF) that operationalizes Kenya's "Ending Drought Emergencies" (EDE) strategy that focuses on the most drought prone counties in Kenya, including Isiolo. The project targets beneficiaries located mainly in 6 priority wards, in Isiolo County.

The project is implemented by a Consortium of 5 experienced NGOs, led by Vétérinaires sans Frontières– Suisse/Kenya (VSF-S/K). The other four organizations include: WeWorld Onlus (WW); Comitato Collaborazione Medica (CCM); E4IMPACT Foundation (E4I) and Social Ministry Research Network Centre (SOMIRENEC). Together, the five organisations have developed a comprehensive 48-months project that will support both pastoralists and agro-pastoralists in Isiolo County.

Objectives of the Action

The **Overall Objective** of the action is: to contribute towards increased resilience to droughts and other negative impact of climate change for vulnerable groups and reduce number of children under 5 years who are stunted in Isiolo County (WHA - Global Nutrition Target 1 for 2025).

The **Specific Objective** of the action is: to enhance Food and Nutrition Security (FNS) for vulnerable Pastoralist and Agro-pastoralist Communities in Isiolo County, generating Sustainable livelihoods, protecting productive assets and improving climate smart County service delivery.

Below, is a summary of the **Project Indicators at the Objective level** as per the Consolidated Logical Framework (which will be provided to the successful consultant(s)/Firm).

Objective	Indicators
Overall Objective	<ul style="list-style-type: none"> • Reduction of Isiolo County food poverty rate • Number of children under 5 years who are stunted in Isiolo County • Incidence of Household vulnerability and Food and Nutritional Security
Specific Objective	<ul style="list-style-type: none"> • Change in Women dietary Diversity Index • Citizens Drought Coping Strategy Index (CSI) • Women Empowerment in Agriculture Index

a. Key Components of the Action

Output 1: Improved drought resilient and nutrition sensitive agriculture/livestock production, integrated with conflict resolution and peace building strategies

The **main activities under Output 1** are:

- Promotion of pasture/rangeland management and commercial fodder production through controlled grazing; pasture, fodder and crop residues conservation; reseeded and introduction of drought tolerant fodder trees, shrubs and grasses
- Peace building initiatives to facilitate peace and reconciliation for sustainable livelihoods
- Improved livestock production (through better herd management-controlled herd size, strategic market offtake, breeding management and livestock insurance).
- Hygienic camel milk production, value addition and marketing
- Restocking with camels and goats as well as Improved poultry production
- Improvement of animal health measures, One Health promotion, disease recognition and reporting, zoonoses management and prevention
- Promoting use of climate services, integrating scientific evidence and indigenous knowledge, for climate- resilient decision making
- Improved nutrition, food security, food production, food diversification and gender mainstreaming through dissemination of a nutrition-sensitive toolkit
- Enhancing food crop production (promotion of good agricultural practices, soil conservation, agro-forestry) and market access to vegetables and fruit production for small scale farmers

Output 2: Key productive household assets and community investments are sustainably built and recovery capacities against recurrent droughts are strengthened, with a particular focus on Women's Economic Empowerment:

The **main activities under Output 2** are:

- Delivery of entrepreneurship and business training and support to value chains
- Promotion of alternative income generating activities, especially for women
- Mainstreaming peace building skills in entrepreneurship through cooperatives
- Promoting sustainable water supply (for crop production, animal and human consumption) and improved sanitation in schools and communities
- Elimination of defecation in the open in 11 villages through the application of the 'Community-Led Total

Sanitation' methodology

Output 3: Isiolo County is empowered in addressing food security and nutrition (FNS) issues, improved data collection system and cross-sectoral collaboration to facilitate local political commitment and awareness raising.

The **main activities under Output 3** are:

- Support to coordination for policy making
- Capacity building of County authorities and Non-State Actors on peace building and conflict management
- Support to grassroots and community-based networks working on resilience building and food and nutrition- sensitive approaches and formation of a county chapter of SUN CSA in Isiolo
- Improving coordination for policy decision-making and implementation at County level on food and nutrition through multi-stakeholder platform
- Strengthening the Nutrition Information Management System
- Establishment of a Zoonotic Disease Unit
- Organization of learning and sharing forums
- Training of traditional/religious leaders and their involvement in training activities during community aggregation events

VSF Suisse/Kenya is seeking to engage reputable organization or individual expert (s) to conduct a baseline survey of the action. The baseline purpose and objectives, scope of work, proposed methodology and duration, deliverables, requirements and experience of the consultant and the application process are highlighted below.

2.0 Baseline Survey Purpose and Objective

A baseline assessment will be completed at the start of the action, with local stakeholders to measure the status of all indicators and to understand the starting point of key elements of the work against which later progress will be measured. This will enable project indicators at output and goal/outcome level to be measured and tracked.

The aim of this baseline survey is to gather and analyze both quantitative and qualitative data in six priority wards in Isiolo County namely **Oldonyiro, Ngaremara, Chari, Cherab, Kinna, Garbatulla..** The data will measure the current status of the stated indicators at both the level of the Project Objectives and Result Areas. This will help in strengthening the monitoring and tracking of the progress and serve as a benchmark for comparison of the changes achieved at the end of the project. Besides, the qualitative data will provide valuable information on the current perceptions, attitude and socio-cultural perspectives that will likely influence the project. The

baseline survey will be conducted in close collaboration with Consortium members and other stakeholders.

Baseline Target Audiences: The baseline is intended for project team, local communities in Isiolo county and stakeholders (government, non-government, etc) as well as other actors to understand the current situation and gaps for improving and enhancing Food and Nutrition Security (FNS) for vulnerable Pastoralist and Agro-pastoralist Communities in Isiolo County, generating Sustainable livelihoods, protecting productive assets and improving climate smart County service delivery. Findings of the baseline survey will be reported to project team and local responsible partners e.g the County Government of Isiolo, GoK line ministries NDMA among others as well as to the donor.

3.0 Scope of Work

The selected consultant(s)/Firm will be expected to carry out the baseline survey covering the following:

Activity 1 – Revision, design and field test of the base line survey instruments:

- Conduct a desk review of the key documents including: the project proposal, Consolidated Logical Framework and relevant secondary data related to the project Overall Objective, Specific Objective and the Results.
- Consultation with stakeholders on baseline survey plans
- Preparation of draft quantitative and qualitative instruments and workplan
- Final draft of the instruments for the survey, field test and adjustments.
- Consultation with the relevant consortium members' staff on modifications to the survey instruments (before and after field testing).
- Develop an inception proposal/report to VSF-S/K for review and refine tools, work plan and budget details as required. The inception report will describe i.e. the approach/methodologies to be used, sampling frame to be utilized, analysis and tools/questionnaires and reporting.

Activity 2A– Sampling:

- Design sampling strategy-based methodology
- Calculate sample size agreed-upon methodologies
- Conduct sampling

Activity 2B– Plan, design, and implement training of enumerators and supervisors:

- Recruitment of sufficient number of enumerators.
- Preparation of training plan, field work protocols according to agreed methodologies.
- Training of enumerators and/or supervisors, including step-by-step

instructions on data collection and guidance on handling problems and questions that might arise during data collection and logistics

- Creation of the data entry and analysis plan, cleaning, and analysis as well as discussions with stakeholders.

Activity 3– Implement and supervise field data collection, data input and cleaning:

- Coordination with all stakeholders
- Preparation of materials and equipment
- Notification to the Consortium, partners and communities
- Deployment of enumerators to the field.
- Conduct data processing: primary processing, comparison and validation of files, cleanfiles, tabulations

Activity 4 –Analyze and synthesize data; and prepare the baseline report and Program Indicator Tracking

- Preparation of initial results in output tables.
- Discussion with consortium members staff and local partners and on the initial baseline results
- Data analysis and synthesis.
- Revision of the draft baseline report, discussions and report preparation

Activity 5 – Conduct final presentation.

- Coordination for final presentation to consortium members staff and partners
- Deliver final baseline report, documents, files, and other materials
- Consultation with stakeholders

4.0 Methodology and Duration of the Assignment

The Consortium proposes that the Consultant(s) apply a number of methodologies in data Collection. The methods of data collection that will be used in combination include (e.g *qualitative, quantitative or mixed methods*):

1. Desk review of relevant project documents e.g. the project proposal, Consolidated Logical Framework and relevant reports.
2. Focus group discussions with key stakeholders, pastoralists, agro-pastoralists and key actors in Isiolo County.
3. Key Informant Interviews with relevant experts in targeted development interventions; County Government authorities and heads of departments from the collaborating actors
4. Use of participatory skills and approaches and field data collection with pastoralists and agro-pastoralists in targeted areas.

The consultant will ensure that the rights of participants are always protected in line with safeguarding policies. The Consortium members will work closely with the consultant(s) and the consultant(s) shall provide regular feedback to the Consortium Manager in order to guarantee quality and adherence to the TOR. The consultant(s) shall have thirty-

five days from the date of engagement to deliver on and complete the entire task and submit the final baseline survey report.

The consultant will undertake the assignment while respecting the government directives and guidelines on preventive measures against the COVID-19 pandemic.

Location and proposed duration of the baseline survey

Location: The assignment will take place in the project areas in Isiolo County. However, the consultant will also meet some of the key stakeholders of the action in Nairobi.

Proposed activity		
Result		Days
1.1	Review of relevant literature, development of methodology, study tools, production of inception report	5
1.2	Field work Focus Group discussions, key informant interviews, household questionnaires, validation meetings	21
1.3	Data entry, analysis and reporting	9

Execution

1. The consultant (s) should provide a detailed work plan and budget of the assignment.
2. The consultancy is expected to be conducted in June/July 2020 and to be completed over a period of 35 days. The anticipated baseline report release date is 06 July 2020.
3. Owing to the fluid COVID-19 disease situation and in order to adhere to Government measures to contain the pandemic, the consultant and VSF-Suisse should maintain a measure of flexibility on the consultancy start and end dates

5.0 Deliverables

The consultant will deliver to VSF Suisse/Kenya the following products:

- a. Data collection instruments

- b. Final instrument for the baseline survey and tracking sheet for entry of baseline data
- c. Field manual for enumerators.
- d. Detailed report on sampling, including specifics on the design, methodology and sample size calculations
- e. Field implementation plan with protocols for the enumerators and supervisors
- f. Data entry and analysis plan
- g. Training of required number of enumerators, supervisors and data entry staff.
- h. Electronic files with all raw data
- i. Two printed and 2 electronic copies of the final report to include:
 - o Executive summary
 - o Background
 - o Description of the objectives of the mission and execution methodology.
 - o Results presented in narrative and tables, using descriptive and statistics
 - o Discussion
 - o Conclusion and Recommendations including for specification of indicators (as per the logframe).
 - o Annexes (e.g. Terms of Reference, questionnaires, sampling elaborations, field locations visited, references etc.)

6.0 Requirements and Experience of the Consultant(s)

The Consultants(s)/consultancy firm must demonstrate the following.

- Demonstrated solid background and experience in conducting livelihoods and environmental conservation Programming, Assessments and Evaluation work, Relevant experience (including food and nutrition security, crops/ livestock-based livelihoods and value chains, peace building initiatives, One Health, WASH, Climate smart technologies, Entrepreneurship skills and marketing)
- Experience in carrying out similar assignments and a proven track record of delivering excellent results.
- Experience in use of participatory skills and approaches among the pastoralists and agro-pastoralists communities.
- Excellent communication skills in both written and oral demonstrated in their ability to write comprehensive reports with in-depth analysis.
- Ability to work in multicultural, multi-religious and rural communities especially in Isiolo County.
- Experience of having conducted a similar job to the expectation for the European Union is an added advantage.
- Working experience in Isiolo County and other Arid and Semi-Arid Lands of Kenya is desirable.

7.0 Management of the Assignment

- The Consultant (s) shall report to the DRIC Consortium Manager who will be the

- manager of the assignment in liaison with consortium partners,
- VSF-Suisse/K will be responsible for the Consultants' travel, per diem and accommodation within Isiolo County during the assignment period,
 - The Consultant shall be responsible for their own medical insurance cover and any essential medications while on this mission.
 - The consultant shall strictly adhere to the government's rules and guidelines on precautionary measures against COVID-19

8.0 Application Process

Interested expert(s) and organizations (s) should prepare and submit to VSF Suisse/Kenya a technical and financial proposal for the assignment. The proposal should indicate qualifications and experience with a detailed baseline survey execution plan and budget (in EURO). The methodology should clearly indicate how the work will be executed in view of the COVID-19 pandemic. The proposals, CV and letter of motivation as well as three (3) referees should be sent electronically to Office.Nairobi@vsf-suisse.org by 31 May 2020; 5:00 PM EAT.

ANNEX 3: ITINERARY FOR FIELD WORK

Annex 3a: Work plan

Date	Day	Activity	Place
30/07/2020	Wednesday	<ul style="list-style-type: none"> • Submission of draft inception report • Development of data collection tools 	Nairobi
31/07/2020	Thursday	<ul style="list-style-type: none"> • Virtual meeting with partners 	Nairobi
04/08/2020	Tuesday	<ul style="list-style-type: none"> • Consultants travel to Isiolo 	Isiolo
05/08/2020-	Wednesday	<ul style="list-style-type: none"> • Courtesy to NDMA, County Project focal person and the county Commissioner • Meeting with consortium Programme field staff for briefing 	Isiolo
06/08/2020	Thursday	<ul style="list-style-type: none"> ▪ Training of enumerators 	Isiolo
07/08/2020	Friday	<ul style="list-style-type: none"> • Training of enumerators and pretesting of the data collection tools 	Isiolo
10/08/2020	Monday	<ul style="list-style-type: none"> • Meeting with Isiolo County Officials 	Isiolo
11/08/2020 to 13/08/2020	Tuesday - Thursday	Travel to the field to Conduct Focus Group Discussions at <ul style="list-style-type: none"> • Kinna Ward (Kinna, Rapsu and Kulamawe) • Garbatulla Ward Participatory resource mapping; Meeting with Community Health Volunteers, Women, the Youth, Community Diseases Reporters etc. and travel back to Isiolo	Garbatulla
	Virtual Meeting	<ul style="list-style-type: none"> • Key Informant Interviews e.g. Chiefs, Ward Administrator, Religious leaders, Elders • Individuals Interviews 	
14/08/2020	Friday	<ul style="list-style-type: none"> • Courtesy Call to County Secretary • Travel to Merti 	Merti
15/08/2020	Saturday	<ul style="list-style-type: none"> • Conduct Focus Group Discussions; Participatory resource mapping; resource mapping; meet Community Health Volunteers and Community Diseases Reporters at Cherab Ward • Korbasa • Mataarba 	Merti
16/08/2020	Sunday	FGD in Chari <ul style="list-style-type: none"> ▪ Bulesa ▪ Biliqo 	Isiolo
17/08/2020	Monday	<ul style="list-style-type: none"> ▪ FGD in Kipsing – Oldonyiro Ward ▪ Debriefing of the VSF Suisse Consortium 	Isiolo
18/08/2020	Tuesday	<ul style="list-style-type: none"> ▪ Courtsey call to the Governors office ▪ Travel back to Nairobi 	Nairobi
19/08/2020 – 31/08/2020	Wednesday to Monday	<ul style="list-style-type: none"> ▪ Data analysis ▪ Preparation of draft report 	Nairobi
03/09/2020 – 15/09/2020	Thursday to Tuesday	<ul style="list-style-type: none"> ▪ Review of the Draft DRIC Baseline Report by the Consortium; ▪ Preparation and submission of final report 	Nairobi

Annex 3b: Gantt Chart

Ser. No.	Activity Description		No. of Days	Duration in Weeks														
				1	2	3	4	5	6	7								
1	Discussion with VSF Suisse		28.07.2020 - 06.08.2020															
2	<ul style="list-style-type: none"> ▪ Desk Review ▪ Development of data collection tools 																	
3	Preparation and submission of a detailed inception report																	
4	Review of field instruments with VSF Suisse & Partners																	
5	Travel to Isiolo		07.08.2020															
6	Recruitment and Training of enumerators; Interview with MoALF, NDMA, NEEMA, WFP, EU		08.08.2020 - 09.08.2020															
7	Field Data collection exercise	Kinna Ward	11.08.2020 - 17.08.2020															
		Garbatulla Ward																
		Ngaremara Ward																
		Cherab Ward																
		Chari Ward																
		Oldonyiro Ward																
7	Travel to Nairobi		18.08.2020															
8	Data analysis & Preparation of draft report		19.08.2020 - 31.08.2020															
9	Incorporation of comments from consortium partners into the final report		03.09.2020 - 15.09.2020															
Total			50															

ANNEX 4: HOUSEHOLD SURVEY QUESTIONNIRE

Section 0: Household ID

Household ID		7	Village Name	
Date of the interview		8	Enumerator Name	
Household Head Full Name				
Cell phone Number				
Ward Name				

Section 1: Household Demographic Information

1.1 Name of the respondent			
1.2 Is the respondent the household head			1=Yes, 0=No
1.3 If No, Name of the household Head			
1.4 Age of the household head?			
1.5. Level of education			Code A
1.6. Household Size:	No of Male	No of female	
1.7 Main Occupation of the household head			Code B
1.8 Are there children under five years in the household?			1=Yes, 0=No
1.9 If yes, Number of children under the age of five years			
1.10 Number of people in the household above 70 years old			

Code A: 1 = No formal schooling, 2 = Primary incomplete, 3 = Primary complete, 4 = Secondary incomplete, 5 = Secondary complete, 6 = Tertiary /university incomplete, 7 = Tertiary/University complete, 8 = Adult education incomplete, 9 = Adult education complete, 10 = Don't know

Code B: 1=Farming (crop/livestock) 2= Formal Employment 3=Informal employment e.g. business, tailoring etc. 4 = Other, specify

Section 2: Land ownership and management

2.1. Do you practice crop farming? (Yes, No)

2.2 Do you practice livestock farming? (Yes, No)

2.3. What is the size area of your land that is for grazing/rearing livestock as of 31st July 2020 (in acres)?

2.4. How did you acquire land that you are currently using for livestock production? (1= *Inherited*, 2= *Leased*, 3= *Bought*, 4= *Allocated by other institutions/people (specify)*, 5= *Communal Land*, 6= *Settlement scheme*, 7= *Other (specify)*)

2.5. What is the size area of your land that is for crop production as of 31st July 2020 (in acres)?

2.6 How did you acquire land that you are currently using for agricultural production? (1= *Inherited*, 2= *Leased* 3= *Bought*, 4= *Allocated by other institutions/people (specify)*, 5= *Communal Land*, 6= *Settlement scheme*, 7= *Other (specify)*)

2.7 Are there any land disputes that you are facing?

2.8 If yes, what type of land disputes/conflicts?

2.9 If Yes, what interventions are you using to solve them?

Section 3 Livestock Production

For the last 12 months (1st August 2019 and 30th July 2020), kindly give details of livestock production and marketing.
(please include animals on the farm last year also those that were later sold or died)

	Animal species	Stock at the beginning of the period (1 st August 2019)		Change over the 12 months				Stock at the end of 31 st July 2020)		Cash expenditure between August 2019 to July 2020 in KES			Who decides sales (Code D)	Who decides revenue use (Code D)	Who decides technology e.g. type of breed to rear and the quantity (Code D)
				Home Consumption and those that died		Sales	Main Buyers & price per unit								
		Unit		Unit	Unit	UNIT		Unit		Vet services	Feed	Supplements	Hired labour		
3.1	Dairy cows/calves														
3.2	Cows/calves														
3.3	Goats														
3.4	Donkeys														
3.5	Sheep														
3.6	Camel														
3.7	Poultry														

For the last 12 months (01. Aug 2019 to 30. July 2020), please give details of production and revenue of the following livestock products?

	23. Animal Product	24. Quantity Produced		25. Quantity sold		26. Quantity Consumed		Main Buyers	27. Price Per Unit	28. Who decides sale (code D)	29. Who decides revenue use (Code D)
		Qty	Unit (Code C)	Qty	Unit (Code C)	Qty	Unit (Code C)				
3.8	Camel Milk										
3.9	Dairy milk										
3.10	Hides and skins										
3.11	Honey										
3.12	Fish										
3.13	Other(specify)										

Code C: 1= Litre, 2= Kilograms, 3= Ox-cart, 4= Number/Piece, 5= Other (specify)

Code D: 1=Male household head, 2= Female household head, 3=Female spouse, 4=Joint decision, 5= Others (specify)_____

- 3.14. In the past one year has any of your livestock been affect by disease? (1=Yes, 0=No)
- 3.15. If Yes, what was the disease(s)?
- 3.16. How did you deal with the situation? (1=Administered drugs/medicine that I bought myself, 2=Sought guidance of private of animal health officer, 3=Sought guidance of county animal health officer, 4=Reported to the local community leader for guidance, 5= Use traditional method to treat the animals, 6=Did nothing, 7=Other(specify).
- 3.17. Are you aware of livestock diseases that can be transmitted by humans?
- 3.18 If yes, kindly name the diseases.
- 3.19. How do you think these diseases are transmitted from animals to humans? (1= Being in contact with animals or livestock, 2= Drinking raw milk, 3=Eating uncooked/poorly cooked meat, 4= Poorly cleaned animal houses/hygiene, 5=Other (specify)
- 3.20. Has any member in your household ever been infected by a disease transmitted through livestock?
- 3.21. If yes, which steps did you take? (1= Taken to hospital, 2=Bought over the counter medicine, 3=Treated him or her traditionally, 4=Did nothing, 5=Other(specify)
- 3.22 Do you face any livestock challenges?
- 3.23. If yes, which challenges do you face? 1=High cost of feeds, 2=High cost of vet. Services, 3=Lack of knowledge on how to deal with diseases, 4= Inadequate land, 5=Lack of pasture, 6=Low quality feeds, 7=Lack of markets for our livestock and livestock products, 8=Poor Prices, 9=Rustling/theft 10=Other (Specify)

Section 4: Crop Production Information

4.1 Which crops do you cultivate during the SHORT RAINS and LONG RAINS?

a. Crop Grow n (Max Three) (Code E)	b. Main Purpos e 1=Food 2= Sale 3=Both	c. Land size under crop.	d. Yield/ Qty harvest ed (Code D)	e. Qty Consume d	f. Qty Sold	g. Price per Unit Sold and the main buyers (Code D)	h. Estimated cost incurred during the season in managing the crop	i. Who decides on technolog y use e.g. variety use?	j. Who decide s on revenu e if your sale?	h. Who mostly decides how much of the total output is consum ed in the house?
a. Short Rains										
b. Long Rains										

Code E: 1=Maize, 2=Sorghum, 3=Cowpeas, 4=Pigeon Peas, 5= Beans, 6= Green Grams, 7= Water Melon, 8= Onions 9=Tomatoes 10=Sweet Potatoes, 11=Kales, 12=Spinach, 13=Bananas 14=Mangoes 15= Other (Specify)

Section 5: Climate Smart Information

5.1. Which of the following climate smart activities do you practice on your farm?

Activity	1=Yes, 0=No
Appropriate crop selection (early maturing, drought tolerant varieties)	
Conservation agriculture (Minimum tillage, Soil cover, Crop rotation)	
Sustainable land Use Management (SLM) such as terraces, reclamation	
Soil fertility management (Application of optimum quantities of recommended fertilizers and manures)	
Agroforest/Afforestation (planting of trees in the farm)	
Diversification of household income	
Agricultural insurance	
Installed irrigation and water harvesting techniques	
IPM (Integrated Pest Management)	
Permaculture	
Good livestock husbandry practices (vaccination, controlling overcrowding, quarantining sick animals etc.)	
Livestock Breeding management	
Kitchen gardening technologies	
None	

5.2. What do you consider as your main source of CSA information? (1=Barazas, 2=Extension workers, 3=Internet/Social media/mobile phones, 4=Other farmers, 5=Print Media (Newspapers etc.), 6= Radio/TV stations, 7=Other (specify)

5.3. If None, what are the reasons?

5.4. Which Community practices do you use in predicting climate change/weather patterns and early warning system? Specify based on local context

Section 6: Use and Management of Community Resources (Grazing land and Water)

6.1. Do you have existing grazing committees and water users' association? (Yes, No)

6.2. Do you have access to the following? (1=Yes, 2=No). If Yes, please fill the table below:

Resources		a. Location/Name of the Area	b. Distance from the household in minutes (one way)	c. Number of years of access	d. Quality/Condition of pasture/water (Code F)	e. Main challenge encountered (Code G)
Pasture	Livestock Grazing					
	Harvesting Grass					

Code F: 1=Very Good, 2=Good, 3=Fair, 4=Poor, 5=Very Poor 6=Not sure

Code G: 1=Poor quality pasture, 2=Settlement by people, 3=Increased number of users, 4=Conflicts with other community, 5= Other (Specify)

Water Source and Use Information

- 6.3. What are the main sources of water in the household? (1=Sand Dams, 2=River, 3=Springs, 4=Well, 5=Community Borehole, 6=Own Borehole,7= Harvested Rain Water, 8=Other(specify))
- 6.4. Average quantity of water used per day in the household (in litres)
- 6.5. Do you have access to common water source?
- 6.6. If Yes, name or location area of the water source
- 6.7. Distance from the household in minutes (one way)
- 6.8. Number of years of access
- 6.9. Quality of water
- 6.10. Main challenges encountered

Section 7: Conservation Information

- 7.1. Do you engage with your local community in land conservation activities? (1=Yes, 0=No)
- 7.2. If Yes, how often do you engage with the local community in any grazing land conservation activities? (1=Frequently, 2=Sometimes, 3=Rarely)
- 7.3. Which of the following conservation activities do you engage in? (1=Maintaining an appropriate herd structure for suitable time, 2=Regulating the frequency of daily livestock movements, 3=Monitoring livestock physical characteristics to evaluate quantity of pasture, 4=Rotation grazing to avoid overgrazing, 5=Closing off degraded pastures for several years to allow regeneration 6=reseeding and seed bulking 7=Other (Specify).
- 7.4. Has the county government put any measures to support management of local grazing land?
- 7.5. If Yes, tick to what extent do you agree with the following as some of the measures.

Measures	Extent of agreeing 1= Not at all, 2=To some extent, 3=To greater extent
Establishment of grazing land development policies	
Control of access of grazing land resources	
Democratization and devolution of power and natural resources	
Providing framework for participation of communities and other stakeholders in grazing land management	
Development of legal frameworks in support of grazing land management	

- 7.6. Are you aware of any existing peace committees in your region?
- 7.7. If Yes, are they effective
- 7.8. If No, kindly explain

Section 8: Fodder Management and Marketing Information.

8.1. What is the source of feed for your livestock? (1= Own Pasture/grazing land, 2=Fodder, 3=Both Pasture and Fodder, 4=Communal pasture/grazing land)

8.2. If 1 in 8.1, kindly fill the table below

i. Type of fodder grown	ii. Main Purpose 1=Own use 2= Sale 3=Both	iii. Land size under fodder.	iv. Yield/ Qty harvested (Code D)	v. Qty Consumed (Own use)	vi. Qty Sold	vii. Price per Unit Sold (Code D)	viii. Estimated cost incurred during the season in managing the crop	ix. Who decides on technology use e.g. variety use?	x. Who decides on revenue if your sale?	xi. Who mostly decides how much of the total output is consumed in the house?
a. Short Rains										
b. Long Rains										

8.3. If choice 2 or 3 in Q.39b, what is the source fodder? (1= Own Production, 2=Purchase, 3=Both Own Production and Purchase).

8.4. If choice 2 and 3 in 39c, kindly fill the table below.

For how long have you been buying fodder? (in years)	In what form do you buy? (Code K)	What is the main source of fodder that you buy? (Code L)	Distance to the market (Walking hrs.)	Quantity bought per month (bales)	Price per bale	How do you pay for it? (Code M)	Do you store fodder you bought? (1=Yes, 2=No)	Key challenges faced. (Code N)

Code L: 1: Market (Specify), 2=My fodder group, 3=Other fodder groups, 4= Traders, 5= Other(specify)

Code K: 1. Freshly cut/green, 2. Baled hay, 3. Unbaled hay, 4= Standing pasture, 5=Other(specify)

Code M: 1: On spot cash, 2=Cash later, 3=Credit, 4=Contractual, 5=Other(specify).

Code N: 1=High prices, 2=Low fodder supply, 3=Poor fodder quality, 4=Distance to the market, 5=Poor road conditions, 6= Lack of storage facility, 7=Other (Specify).

8.5. Do you belong to any fodder group production in your area? (Q skipped direct to the table if the respondent filled choice 3 in 39b) (1=Yes, 0=No). If Yes, please fill the table below.

40a.Name of your fodder group	40b.For how long have you been a member of this fodder group	40c.How did you know about this group (Code H)	40d.How did you join? (Code I)	40e. What type of fodder do you grow if any?	40f.Do you have any personal constraint limiting your involvement in the group activities? (1=Yes, 0=No). If yes, Specify

Code H: 1= Neighbors, 2= Chief, 3= Other Groups, 4=NGOs (Specify), 5= Other (Specify)

Code I: 1=Self organization, 2=Proposed by county government, 3=Facilitated by NGOs, 4=Other (Specify)

Code J: 1=Leader, 2=Committee Member, 3= Ordinary member, 4= Other

8.6. What are the activities/purpose of your fodder group? (1=Fodder production for your livestock, 2=Fodder marketing, 4=Fodder production for both our own livestock and marketing 5=Training/information access, 6=Seed bulking, 7=Animal fattening, 8=Credit provision, 9=Social provision, 10=Other business (Specify_____)).

8.7. If you produce fodder for own livestock production or marketing as a group, how do you store the fodder?

8.8. Does your group work with other fodder groups in your area? 1=Yes, 0=No

8.9. Please rank the reasons that motivated you to join the fodder production group?

Reasons	Rank (1=Highest importance, 2=Average importance, 3=Low importance, 4=Not important)
Need of feeds for my own livestock	
Access external support from County and NGOs	
Income/profit from selling fodder	
Access inputs and extension services	
Low cost of participation	
It was the only way to access aid/assistance	
Help each other socially/social support	
44h.Other(specify)	

8.10. How many members does your fodder group contain?

8.11. How many youths do you estimate are members of your fodder groups? (A youth is anyone below the age of 35).

8.12. How many women are in your fodder group? (Include Female Youth).

8.13. According to you, which of the following challenges does your fodder group face?

Challenge	Rank (1=Strongly Agree, 2=Agree, 3=Neither agree or disagree, 4=Disagree, 5=Strongly disagree)
Poor leadership/governance	
Mismanagement of resources	
Inequality in sharing benefits	
High membership fee	
Gender discrimination	
Ethnic discrimination	
Lack of cooperation by members/conflicts	
Other specify-----	

8.14. Were you producing fodder individually before joining the group?. (1=Yes, 0=No)

8.15. If Yes, which year did you start fodder production?

8.16. What is the main purpose/reason for growing fodder? (1=Own livestock feed, 2=Sale, 3=Lease for income, 4= Other(specify)___

8.17. Where did you learn about fodder production? (1=Neighbors, 2=County Government, 3=Research institution e.g. KALRO (Specify), 4=NGOs (specify), 5= Other Specify.)

8.18. Since joining the group, by how many acres has your fodder production increased? (1=Increased (in acres), 2=Decreased (in acres), 3= Remained the same, 4= Collapsed.

Section 9: Shocks and Coping Strategies

9.1. What kind of shocks did you experience during the last 10 years and how did you cope with them?

Type of Shock	Did you experience this shock in the last 10 years? (1=Yes, 0=No)	Duration of the shock. 1=Less than a month 2=One month 3=More than a month	Frequency in the last one year. (Code Q)	What are the adverse effects of this shock? (Code P)	How did you manage this shock? (Code O)
Drought					
Floods					
Livestock diseases/crop/yields					
Environmental diseases eg Diarrhoea					
Zoonotic diseases					
Inter-community conflicts					
Strong winds					
Cattle rustling					
Human-wildlife conflicts					
Other (Specify)					

Code O: 1=Livestock insurance, 2= Government/County destocking/restocking program, 3=Sold part of the assets, 4=Borrowed form family, 5=Received aid from NGOs, 6=Received aid from County, 7=Received support from our fodder group, 8= Received support from other social groups, 9= Migrated to another area, 10. Did nothing, 11. Other(Specify...)

Code P: 1=Livestock death, 2=Loss of household assets, 3=Loss of cash income, 4= Loss of crops, 5=Loss of human lives, 6=Other (specify)...

Code Q: 1= Once, 2=Twice, 3=Thrice, 4= More than thrice, 5=Other(specify)

Section 10: Household Food Consumption in the past one week and for child above 6months and below 5years

10.1. Did your household consume the following?

	Food category	Description/Examples	Household 1=Yes, 0=No	Child 1=Yes 0=No	Source (Code S)
1	Cereals/Grains	<i>Ugali, Githeri, Porridge, bread, rice, pasta/noodles or other foods made from grains</i>			
2	White roots, tubers and plantains	<i>White potatoes, white yams, manioc/cassava/yucca, cocoyam, taro or any other foods made from white-fleshed roots or tubers, or plantains</i>			
12	Pulses (beans, Peas and lentils)	<i>Beans, pigeon peas, cowpeas, green grams etc.</i>			
12	Nuts	<i>Groundnuts, peanuts</i>			
13	Milk and Milk Products	<i>Milk, cheese, yoghurt or other milk products but NOT including butter, ice cream, cream or sour cream</i>			
8	Organ Meat	<i>Liver, kidney, heart or other organ meats or blood-based foods, including from wild game</i>			
9	Meat and Poultry	<i>Beef, pork, lamb, goat, rabbit, wild game meat, chicken, duck or other bird</i>			
11	Fish and sea food	<i>Fresh or dried fish, shellfish or seafood</i>			
10	Eggs	<i>Eggs from poultry or any other bird</i>			
3	Vegetables	<i>Sukuma wiki, Spider Plant, Black night shade, Amaranth etc</i>			
6	Fruits	<i>Mangoes, banana, Oranges etc</i>			
14	Oils and Fats	<i>Oil; fats or butter added to food or used for cooking, including extracted oils from nuts, fruits and seeds; and all animal fat</i>			
14	Red Palm oil	<i>Red palm oil</i>			
	<i>Savory and fried snacks</i>	<i>Crisps and chips, fried dough or other fried snacks</i>			
15	Sweets	<i>Sugary foods, such as chocolates, candies, cookies/sweet biscuits and cakes, sweet pastries or ice cream</i>			
15	<i>Sugar-Sweetened beverages</i>	<i>Sweetened fruit juices and "juice drinks", soft drinks/fizzy drinks, chocolate drinks, malt drinks, yoghurt drinks or sweet tea or coffee with sugar</i>			
16	<i>Condiments and seasonings</i>	<i>Ingredients used in small quantities for flavor, such as chilies, spices, herbs, fish powder, tomato paste, flavor cubes or seeds</i>			

Code T: 1= Own Production, 2= Purchased, 3= Food Aid from NGOs, 4= Food Aid from County Government, 5=Food Aid from National Government, 6=Other (Specify)

Section 11: Food Nutrition and Vulnerability Information.

	Question	Response Options (1=Yes, 0=No)
11.1	In the past one year, did you worry that your household would not have enough food?	If No skip to 11.2
	How of often did this happen? (Code R)	
11.2	In the past one year, were you or any of your household member not able to eat the kinds of food you preferred because you lack resources	If no Skip to 11.3
	How often did this happen (Code R)	
11.3	In the past one year, did you or any household member have to eat limited variety of foods due to lack of resources?	If no Skip to 11.4
	How often did this happen? (Code R)	
11.4	In the past one year, did you or any of your household member have to eat some foods that you really did not want to eat because of lack of resources to obtain other types of food?	If no Skip to 11.5
	How often did this happen? (Code R)	
11.5	In the past one year, did you or any household member have to eat a smaller meal than you felt you needed because there was not enough food?	If No skip to 11.6
	How often did this happen? (Code R)	
11.6	In the past one year did you or any of your household member had to fewer meals in a day because there was no enough food?	If No skip to 11.7
	How often did this happen? (Code R)	
11.7	In the past one year was there ever no food to eat of any kind in your household because of lack of resources to get food?	If No skip to 11.8
	How often did this happen? (Code R)	
11.8	In the past one year did you or any of your household member go sleep hungry at night because there was not enough food?	If No skip to 11.9
	How often did this happen? (Code R)	
11.9	In the past one year, did your household member go a whole day and night without eating anything because there was no enough food?	
	How often did this happen? (Code R)	

Code R: 1=Rarely (Once or twice in four weeks), 2= Sometimes (Three or ten times in the past four weeks), 3= Often (more than ten times in the past four weeks).

Section 12: Households Assets

As at July 2020, how many of the following assets do you own that are in usable/repairable condition? *(To estimate the value, ask the respondent how much they will be willing to buy the item in its current state if it were being sold to them)*

ASSET	Total Quantity	Estimate total current value of the as if you were to buy in the current state	ASSET	Total Quantity	Estimate total current value of the as if you were to buy in the current state
Tractor			Axe		
Car/van			Panga		
Pickup			Hoes/Jembe		
Motorcycle			Spades/Shovel		
Bicycle			Chemical spray pump		
Television			Treadle pump		
Radio			Powered water pump		
Mobile Phone			Green house		
Solar panels			Water tank		
Generator			Store for farm produce		
Chaff cutter			Wheelbarrow		
Ploughs for tractor			Computer/laptop		
Ox-plough			Biogas digester		
Cart			Main house		
Livestock Kraal			Other (specify)		
Slasher			Other (specify)		

12.2 Does your household own a latrine?

12.3 If Yes, type of latrine

12.4 If No latrine, how do you help yourselves whenever nature calls

Section 13: Households' other sources of income.

13.1. Do you have other sources of income? (1=Yes, 0=No)

13.2. If Yes, kindly fill the table below.

Category (1=Yes, 0=No)	Examples	Member of the household mainly involved in the occupation	Amount received for the past one year (12 months)
Remittances/gifts/food aid			
Salaried employed	Teachers, working in a company		
Pension			
Small business	Construction, grain mill, handcraft, sale in a shop etc.		
Sale of forest products	Sale of firewood, charcoal, sale wild fruits		
Other agric. Income	Leasing out land, sale of crop residues, renting ox for ploughing etc.		
Other (Specify)			

Section 14: Household Expenditure

Please, could you provide information on food expenditures and other household expenses in the last 12 months?

Expenditure source	Amount (KES)	Expenditure source	Amount (KES)
Food expenses (per month then convert in year)		Financial assistance/monetary gifts (present)	
Children school fee		Voluntary contributions (gifts, remittances, transfers)	
Other educational expenses		Functions (marriage, funeral, local festivities)	
Entertainment (games, cigarettes, tobacco, alcohol, etc.)		Trips (travel cost)	
Rent (House and other rented items)		Contributions to associations and groupings	
Clothing		Water	
Housing remittance		Other (Specify)	
Light/electric power		Other (Specify)	
Fuel		Other (Specify)	
Pharmaceutical products		Other (Specify)	
Expenditure on health (Traditional and modern medicine)		Other (Specify)	

Section 15: Effect of Covid-19 on Household

15.1. Have you faced any production challenges for the crops and or livestock farming during this season in relation to COVID 19? (1 Yes, 0= No).

15.2. If Yes, what challenges did you face during this season? [1] =Lack of quality seed [2] =Unfavorable weather [3] =Lack of extension advice [4] =High cost of inputs [5] =High incidence of pests [6] =High incidence of diseases [7] =Inadequate agronomic skills

15.3. Did you face any difficult in the purchase of farm inputs due to Covid 19? (1=Yes, 0=No)

15.4. If yes, what were the challenges? [1] High cost of farm inputs [2] Shortage of farm inputs [3] Inadequate funds to purchase the inputs [4] No government subsidy/support [5] Restricted movements due to transport regulations [6] Other (specify)

15.5. Have you experienced any change in labour due to Covid 19? (1=Reduced, 2=Remained the same, 3=Increased)

15.6. What were the possible causes of change in labour for this season? (you can give multiple answers) [1] No money to pay workers [2] Restricted movement of workers [3] Limited number of laborers [4] Limited labour supply due to increased household activities [5] Increase in family labour 6=Other (specify)

15.7. Have you adjusted the amount you spend on farming in order to adapt to changes brought in by Corona virus disease? [1] Yes, [2] No

15.8. If yes, state how you have adjusted in the amount you spend in farming? [1] Reduced funds dedicated to farming [2] Increased funds dedicated to farming [3] Increase funds spent on food purchase [4] Increased funds dedicated to health [4] Other (specify)

15.9. In your Opinion have you been able to feed your family on similar food types or diets as before the COVID-19 outbreak. 1 Yes 0=No

15.10. Please tell me why? 1. Market closed. 2. Fear of going outside due to pandemic 3. Lack of income for food. 4. Suppliers not stocking like before 5] They cost more than before 6. To be healthy 7 We consume from own production so no change 8. Others (specify)

15.11. As a follow up to the above reasons, what foods have you stopped consuming since COVID-19 pandemic started (1. Meat, 3. Fruits, 4. Vegetables 5. Cereals and pulses)

15.12. What food are you consuming more? (1=Fruits, 2. Animal meat 3. Eggs 4. Vegetables, Cereal and pulses)

15.13. Has the closure of schools affected the children's daily food intake in any way? (1=Yes, 0=No). If Yes, kindly explain.

Has the household combined average income (including remittance) per month between March –June 2020 affected as a result of COVID 19? (1=Yes, 0=No)

15.14. If yes at what extent? (1=Badly affected, 2=somewhat affected, 3=Not affected)

15.15. What is the main reason (List all that apply then rank)? (1. Family member lost his/her Job 2. No produce to market. 3 Business closed 4. Lock down 5. Curfew measures. 6. Sickness 5. Other specify)

15.16. If response "1" in the above question, where was the member working?

15.17. Generally, what are major challenges faced by your household due to Corona Virus.

ANNEX 5: KEY INFORMANT INTERVIEWS GUIDE

1. Name of the KI(s)	
2. Gender	
3. Position/Roles/Responsibilities	
4. Org/Dept/persons represented	
5. Telephone	
6. Email	
7. County	
8. Ward	
9. Physical Location	
10. Date	
11. Interviewer	

DATA QUERIES

1. Land Access, Use, Assets, Income and Expenditure

1.1 Let's start by discussing access to land by all community members.

- List various avenues of accessing land for livestock
- List various avenues of accessing land for crops
- Who is able and who is not able to access land for livestock
- Who is able and who is not able to access land for crops

1.2 Land use during past 12 months.

- For crop production, and types of crops (food, cash crops, fodder)
- For livestock production, and types of livestock
- Land management – reseeding, degradation
- Other

1.3 What are the sources off-farm income for households, and what is total off-farm income as a proportion of total household income for the last one year?

- Employment
- Remittances from family members working elsewhere
- Trade
- Tourism
- Forest products (honey, gum resin, charcoal, other)

1.4 What is the relationship between Community Assets and Community – Food Security?

- Communal water resources
- communal grazing land

2. Food Access, utilization and diversity/nutrition - What is the state of the following?

2.1 HH food access and utilization by children under 5 years past 12 months

- Access to protein

2.2 HH Dietary diversity this season

- Types foods eaten by adults
- Types foods eaten by children under five

- Prevalence and reasons for stunting
- 2.3 HH Dietary diversity during the last seasons
 - Types foods eaten by adults
 - Types foods eaten by children under five
 - Prevalence and reasons for stunting
- 2.4 Participation by Community Members in Community –Driven Food Security Initiatives
 - Cooperatives; savings associations; specific crop groups;
 - Village committees
- 2.5 Isiolo County nutrition sensitive multi-stakeholder platform action plan developed to address FNS issues
 - Existence of such a plan
 - Other related plans

3. Gender

- 3.1 Inclusion of women in the agricultural sector activities. To what extent are women involved in the following decision making regarding:
 - Land access and use
 - Access and use of other household assets
 - Household finances
 - Sale and use of proceeds from livestock
 - Sale and use of crop products
 - Labour supply for crop production
 - Labour supply for livestock production
 - Processing/value addition of farm production
- 3.2 Women involvement in
 - Community decision making structures
 - Participation in community leadership
 - Training, capacity development
- 3.3 Access and involvement in IGA activities for women
 - Off-farm activities (types & extent -ranking)
 - Training, capacity development in IGA
 - Access to finance for IGA
- 3.4 To what extent are the youth involved in the following
 - On-farm crop and livestock production activities
 - Community decision making structures
 - Participation in community leadership
 - Training, capacity development
- 3.5 Access and involvement in IGA activities for the youth
 - Off-farm activities (types & extent -ranking)
 - Training, capacity development in IGA
 - Access to finance for IGA

4. Livestock

- 4.1 Number of months per year of livestock feed security (for core breeding and milking stock) due to fodder activities
 - Current feed resources
 - Current number of months feed secure
- 4.2 Proportion of milk producers and traders reporting increased profits from sale of hygienic camel milk and milk products segregated by gender
 - Prevalence of sale of hygienic camel milk and milk products
 - Gender of seller
- 4.3 Do you practice hygienic milk production and value addition activities? Please explain.
 - Number of camels and goats procured
 - Prevalence of camels and goats in the ward
- 4.4 Number of disease reports acted on timely manner by veterinary authorities with support of this action
 - Current number of disease reports
- 4.5 Number of satellite technologies and aerial surveys implemented for rangeland management for sustainable livestock production with support of this action
 - Presence of above
- 4.6 Zoonotic diseases
 - What is the level of awareness, prevention and management of zoonotic diseases in this community?
 - How is zoonotic disease surveillance and reporting carried out?
 - Is there a zoonotic unit for reporting zoonotic diseases?
 - Do livestock producers have access to web based zoonotic reporting?
- 4.7 Number of traditional/ religious leaders/other stakeholders engaged in training activities and project - related community events
 - Presence of traditional/ religious leaders/other stakeholders engaged in training activities and project - related community events

5. ONE-Health

- 5.1 Validating local knowledge on climate prediction data – discuss community awareness and practices.
 - How does the community predict weather in this community?
 - What are the local drought early warning system in the community?
 - Relationship between local knowledge and scientific knowledge on weather patterns in communities
 - Impact of community knowledge on weather patterns on livestock production
 - Impact of community knowledge on weather patterns on agricultural production
- 5.2 Validating local knowledge on zoonotic diseases. To what extent are communities aware of and practicing the following
 - Existing knowledge on zoonotic diseases among the local people
 - Knowledge on spread of diseases between human beings and animals

- Community awareness of the connection between human and animal diseases (zoonotic diseases)
- Prevalence and effect of zoonotic disease on community
- Current preventative care regarding zoonotic diseases among community members

6. SMART Farming

6.1 Types and prevalence of good practice of drought resilient and nutrition sensitive agriculture production practiced in the project wards. To what extent are communities aware and practicing the following?

- drought resistance crops
- conservation tillage
- processing, preserving and storage of food stuff eg cereal, meat, milk for dry season
- agroforestry – shrubs
- drought tolerant fodder tree, shrubs and grasses
- rangeland reseeding
- restocking with camels
- dry and wet season grazing areas controlled by community elders
- control of water reservoirs for seasonal use
- water harvesting

6.2 Value chain activities. To what extent are communities practicing the following?

- Production and marketing of livestock fodder
- Production and marketing of honey
- Production and marketing of poultry
- Production and marketing of camel milk

6.3 Climate smart agricultural practices with support of this action. To what extent are communities practicing the following?

- Crop farming
- Cropping cooperatives
- Livestock cooperatives
- Access to financial institutions

6.4 Number of schools integrating school gardens and tree planting with support of this action

- Primary
- Secondary
- Progress and impact of the integrated school gardens

6.5 Number of cooperatives trained to develop sustainable business models on the value chains of fodder, beef, camel milk and animal by-products with support of this action

- Prevalence of cooperatives by activities
- Training of cooperatives by type of cooperative and type of training
- Progress and impact of cooperatives
- Constraints to joining cooperatives and participating in training

Information Query	VALUE CHAIN				
	FODDER 1	LIVESTOCK 2	CAMEL 3	POULTRY 4	BEE/HONEY 5
1. What is the size of production for an average producer? 11, 12,...15					
2. What challenges hinder growth in production? 21, 22,.....25					
3. What strengths and weaknesses do producers face?					
4. How can the weaknesses be addressed?					
5. Are there any cooperatives for producers?					
6. Where do producers get input supplies from?					
7. To whom do producers sell produce?					
8. What difficulties do producers face in selling products?					
9. How do producers sell? In organized groups or individually? What groups?					
10. How do producers package products for sale?					
11. How do producers transport produce to markets?					
12. What value addition is done before products are sold?					
13. Are you aware of any insurance services for producers in Isiolo County?					
14. On the scale of 1 to 10, how would you rank the level of involvement of the following actors in the value chain?: a) Producers, b) Traders, c) Processors, d) Transporters, e) Small scale retailers					
15. Are there occasions when producers are adversely affected by climate change (unpredictable weather patterns – e.g. delay in rains, floods, desertification, etc.)?					
16. If producers have been affected by climate change, has there been any entity or organization that has helped them in mitigating the climate change effects? If yes, who, and how?					
17. Are you aware of any policy at the local level for mitigating the adverse effects of climate change?					

7. Household Income, Expenditure and Markets

7.1 Livestock products

- Which livestock products generate most income for your households in this community
- Which products are severely affected by seasonal changes?
- Who are the major purchasers or buyers of livestock products? – brokers, retailers or wholesalers
- What type of markets are livestock and livestock products sold - on farm, rural markets, regional/urban markets.
- What is the impact of the local market on the local economy and how can it be improved?
- Are there important changes in prices by seasons for livestock?
- Does climate change adversely affect the livestock markets and prices?

7.2 Crop Products

- Which agricultural products generate most income for your households in this community
- Which products are severely affected by seasonal changes?
- Who are the major purchasers or buyers of agricultural products? – brokers, retailers or wholesalers?
- What type of markets are agricultural products sold - on farm, rural markets, regional/urban markets?
- Which off farm products are sold and in which markets?
- Are there important changes in prices by seasons for agricultural products?
- Does climate change adversely affect the agricultural markets and prices?

7.3 HH Expenditure past 12 months for most community members by season.

- Food
- Main food and non-food items purchased
- School fees
- Medical expenses
- Animal health
- Clothing
- Other

8. Peace and Conflict Management

8.1 Peace initiatives/activities in place supporting peaceful co-existence among the different ethnic communities.

- What type of conflicts does your community face?
- What peace initiatives have worked in your area in the past?
- Does your area have police post? If yes, does it help in conflict management? If no, do you think it will help resolving conflict?

8.2 What kind of conflicts are indigenous conflict resolution mechanisms applied to among your community members?

- Domestic conflicts
- Inter-communal conflicts
- All conflicts

8.3 Does application of indigenous conflict resolution mechanisms contribute to the following? Explain

- Reduced conflicts
- Increased conflicts
- No influence

8.4 Does your community have a specific method for implementing the outcomes? Please explain.

8.5 If yes, what are the methods mostly applied by your community in implementing the outcomes of indigenous conflict resolution mechanism?

- Modern approach
- Traditional approach
- Both traditional and modern approaches

8.6 Does the method used in implementing the outcomes of indigenous conflict resolution mechanism influence its effectiveness? Please explain

8.7 How can indigenous resolution mechanism among your communities be improved to meet current challenges?

8.8 Gender based violence and teenage pregnancies

- What is the prevalence of gender-based violence
- How are gender-based violence cases resolved?
- What is the prevalence of teenage pregnancies?
- How are teenage pregnancy cases resolved?

8.9 Discuss number of cooperatives/ entrepreneurs trained on peace initiatives from different ethnic communities

- Current number of community members trained on peace initiatives from different ethnic communities
- Impact of such training
- Constraints to joining groups/cooperatives

9. WASH

9.1 Discuss number of water infrastructure built/ rehabilitated (water pans, springs, rehabilitation of boreholes, roof rain water harvesting structures)

- Prevalence/current situation

9.2 Discuss number of Community Led Total Sanitation Sessions held and adopted in the target villages

- Prevalence/current situation

9.3 What is the level of health seeking behavior e.g. visiting hospitals

9.4 What are the existing community support systems and policy environments related to

school health and nutrition?

10. COVID-19

- 10.1 Effects of COVID-19
 - on livestock production
 - on household food access
 - on dietary diversity
 - on nutrition levels in children
 - on markets
 - on household health
- 10.2 Household coping mechanisms against COVID-19

Information to be obtained from Specific Organizations

11. Isiolo County Integrated Development Plan mainstreams evidence-based good practices experienced in the project about Climate Change Adaptation, Smart Agriculture and peace building

- County officials

12. What is the relationship between Community Assets and Community – Food Security?
Communal water resources; communal grazing land

13. Participation by Community Members in Community –Driven Food Security Initiative

- Cooperatives; savings associations; specific crop groups;
- Village committees

14. Isiolo County nutrition sensitive multi-stakeholder platform action plan developed to address FNS issues

- Existence of such a plan
- Other related plans

15. Establishment of SUN CSA County Chapter

- SOMIRENEC

16. Number of coordination meetings supported for policy decision making on the enactment of the pending policies relevant to the action e.g. the rangeland policy, peaceful coexistence bill.

- Current coordination meetings/ regularity for the rangeland policy, peaceful coexistence bill
- Current discussions/progress

17. Number of county legislation/policy initiatives to adopt climate smart agriculture

- Current situation; numbers
- Relevant NGOs

18. Installation of satellite terminals

- NDMA and Kenya Climate Matter

Do you have any questions for me?

ANNEX 6: FOCUS GROUP DISCUSSIONS

a. Semi-structured General Questions for the Community

1. What species of livestock do you rear?
2. What is your selection of species to rear depend on? Does this include climate change?
3. What is your view regarding poultry production as an economic activity? Is it an activity that you could take up and why?
4. How is restocking of livestock done in the community?
5. What are the sources of feed for your livestock during various seasons? (wet season, Dry season and drought).
6. Does the community harvest pasture and if so, how is it done and where is it stored?
7. Is there fodder production in your region and if there is, how is it done - individually or as a group? Is it sold?
8. If there is no fodder production in the community, will they be willing to produce it and what is hindering them from cultivating fodder at the moment?
9. If there are fodder purchases in the region where is it mainly bought from and in what form?
10. What is the impact of rainfall on fodder production?
11. What are other sources of water in your ward?
12. Are there existing rangeland areas in your area? Who manages their use?
13. Do you ever reseed your grazing lands and if you do how do you normally do it?
14. How do you deal with disease outbreaks in this region? From surveillance till the situation is contained?
15. How do you perceive the opinions / advice from your religious leaders on matters concerning livestock?
16. Do you have health facilities? If yes how are services provided?
17. How is the food security situation in your region and what is the major contributor towards that status?
18. What is your take on cattle rustling and how can it be solved?
19. Effects of COVID-19
 - on livestock production
 - on household food access
 - on dietary diversity
 - on nutrition levels in children
 - on market
20. Household coping mechanisms against COVID-19;
21. What other conflicts do you face as a community and how could they be solved?
22. Are there Peace Committees dealing with this?
23. Are there challenges in livestock production and agriculture that either the government or NGOs could be best placed to assist you in solving them?
24. Do you have any question you wish to ask?

b. Semi-structured General Questions for the Women

1. Which are the main economic activities in the region

2. Of these economic activities, which are the activities that women are mainly involved in if any?
3. What is your take on the poultry production? Is the community involved in it? And If yes, who is mainly involved. How can women be supported to participate in poultry rearing and marketing?
4. Is there pasture harvesting in your region? If Yes, who harvests the pasture? If No, why is there no pasture harvesting in the region? Kindly explain?
5. If the group says women are involved in pasture harvesting, is the activity economically viable, or what are the benefits of being engaged in the activity?
6. If not, what is their perception towards fodder production?
7. Is there fodder production in the region? And if there is, who is mainly involved in the production?
8. If women are involved, what is their perception towards it with regard to being a viable economic activity?
9. If no fodder production or women are not involved currently, would they want to participate in this activity? And what are the challenges hindering them at the moment?
10. What practices, if any, do you do to make sure that camel milk is handled hygienically?
11. Do you sell camel milk and if you do, to whom do you sell it to?
12. What are the challenges you are facing as you produce camel milk? And what do you think could be the solution to the challenges?
13. Which disease do you think are transmissible from livestock to human beings if any? And how do you think they are transmitted?
14. Are you able to tell if someone has been infected by a zoonotic disease and if Yes, what action do you normally take?
15. Do all households construct latrines? If not, what is the reason for not building one?
16. What is your take on cattle rustling and how do you think women can be involved to solve the problem?
17. What is your take on food security status in your region and how can it be improved?
18. Have you seen or do you have malnourished children in the community?
19. Are there enough health facilities in your region and are you able to access them easily?
20. Are you aware of any CHVs and what is your relationship/perception towards them?
21. Are there issues with gender-based violence in the region? If Yes, what do you think is the main cause(s).

c. Semi-structured General Questions for the Youth

22. Which are the main economic activities in the region?
23. Of these economic activities, which are the activities that youth are mainly involved in, if any?
24. What is your take on the poultry production and apiculture? Is the community involved in it? And If yes, who is mainly involved. How can youth be supported to participate in poultry production?

25. Is there pasture harvesting in your region? If Yes, who is mainly involved in the harvest of pasture? If No, why is there no pasture harvesting in the region? Kindly explain?
26. If the group says the youth are involved in pasture harvesting, is the activity economically viable, or what are the benefits of being engaged in the activity?
27. If not, what is there perception towards fodder harvesting?
28. Is there fodder production in the region? And if there is, who is mainly involved in the production?
29. If youth are involved, what is there perception towards it with regards to being a viable economic activity?
30. If no fodder production or youth not involved currently, will they love to get involved into the activity? And what are the challenges hindering them at the moment
31. Are they aware of diseases that affect both human beings and animals? If yes, what is the mode of transmission from animals to man and vice versa?
32. Are you able to tell if someone has been infected by a zoonotic disease and if Yes, what action do you normally take?
33. What is your take on the presence of latrines in the region? And how best can the situation be improved if the latrines are inadequate in the area?
34. Are there issues with gender-based violence in the community? If Yes, what do you think is the main cause(s)
35. What is your take on cattle rustling and how do you think youth can be involved in solving the problem?

ANNEX 7: LOCAL NAMES OF LIVESTOCK DISEASES IN ISIOLO

Ward	Local Name	English Name	Local Name	English Name
Chari	<i>Kurtubale</i>	Sheep/Goat Pox	<i>Oyale</i>	FMD
	<i>kanich</i>	Swollen Lyphnod or Caseous Lymphadinitis	<i>Buut</i>	Black quarter
	<i>gogosa</i>	Tetanus	<i>Sirgo</i>	coenurosis
	<i>Dhumma/Tuma</i>	3 day sickness	<i>Gandhi</i>	Trypanosomiasis
	<i>Gasdor</i>	CCPP	Chilith	Anthrax
Cherab	<i>Gasdor</i>	CCPP	<i>Silisa</i>	Black quarter
	<i>kurtubale</i>	Sheep/Goat Box	<i>Tuma</i>	3 day sickness
	<i>oyale</i>	FMD	Nekule	Brucella meltensis
Garbatulla	<i>Homa</i> (for Camels),	Pneumonia	<i>Hoyale</i>	FMD
	<i>Diego</i> (Homa ya Mbuzi)	Pneumonia	<i>Kurtubale</i>	FMD?
Kinna	<i>Shiritho,</i>	Worms in donkey	<i>Gasdor</i>	CCPP
	<i>Gandhi,</i>	Trypanosomiasis		
Ngaremara	<i>Suruko,</i>	-	<i>Loukoi</i>	CCPP Turkana
	<i>kurtubale</i>	Sheep and Goat Pox	Chilith	Anthrax
Oldonyiro	<i>Baridi</i> (affects goats during rainy season)	Pneumonia	<i>Lkipei</i>	CCPP
	<i>Ndis</i>	Anaplasmosis	Ne kule	-
Sericho	<i>gasdor</i>	CCPP	<i>Kurtuballe</i>	FMD

ANNEX 8. LIST OF SCHOOLS WITH AGRICULTURAL ACTIVITIES IN SURVEYED WARDS IN ISIOLO COUNTY

REPUBLIC OF KENYA

MINISTRY OF EDUCATION

State Department of Early Learning & Basic Education

Telegrams 'EDUCATION' Isiolo

Telephone: 064-52049/52069

Fax: 064-52049

When Replying Please quote

County Director Education Office,

P.O. Box 56 - 60300,

ISIOLO.

LIST OF SCHOOLS INVOLVED IN AGRICULTURAL ACTIVITIES IN NGAREMARA , OLDONYIRO, GARBATULLA, SERICHO, KINNA , CHARI AND CHERAB WARDS, ISIOLO COUNTY.

Activities: Agroforestry, Rearing of goats, Bee keeping, annual crops production and hydroponics.

S/No.	Name of school	Ward
1	Manyatta Zebra Primary	Ngaremara
2	Ngaremara Primary	Ngaremara
3	Attan Primary	Ngaremara
4	Ngaremara Girls Secondary	Ngaremara
5	Ngaremara Boys Secondary	Ngaremara
6	Raap Primary	Oldonyiro
7	Oldonyiro Primary	Oldonyiro
8	Lobarishereki Primary	Oldonyiro
9	Ndugu Zangu Primary	Oldonyiro
10	Leparua Mixed Secondary	Oldonyiro
11	Leparua Primary	Oldonyiro
12	Garbatulla High School	Garbatulla
13	Kulamawe Secondary	Kinna
14	Nil	Sericho
15	Bulesa Secondary	Chari
16	Macci Boys Secondary	Cherab
17	Macci Girls Secondary	Cherab

SAMUEL N. KIRAGU

FOR: COUNTY DIRECTOR OF EDUCATION, ISIOLO.

ANNEX 9: ENTREPREUNERSHIP GROUPS (Source: Isiolo County Government)

NYAMBURE								
S/No	Name	Group	Serial No	Mobile No.	Type of Business	F	M	Total
1	Catherine Nkatha	Isiolo Friends Of The Blind	3660	0726738582	Mery Go	7	3	10
2	Galgalo Haro Jattan	Isiolo Different Abilities Youth	3659	0713879227	Selling Goat	14	3	17
3	Martin Ekilu	Isiolo Persons With Visual Impairment	3661	0710565926	Business	10	5	15
4	Mohamud Ibrahim	Isiolo Sub-County Crescent Of Hope	2369	07215485560	Mery Go	4	8	12
5	Abdi Wako	Bulapesa Gamachu Disabled Self Help Group	2368	0726883480	Business	5	5	10
6	Abdi Ibrahim	Isiolo Disabled Youth Group	2472	0708469118	Poultry	4	4	8
KINNA								
S/No	Name	Group	Serial No.	Mobile No.	Type of Business	F	M	Total
1	Nuria Hussein Huqa	Kinna Dhamaqa Women Group	1357	0701295723	Table Banking	7	0	7
2	Halima Ahmed Bonaya	Mfereji Women Group	1362	0710534830	Nil	10	0	10
3	Abdirizack Abdi Wako	Kinna Ibsitu Youth Group	1413	0792199294	Egg Sells	9	6	15
4	Amina Jillo Hanti	Dullachas Self Help Group	1414	07147333378	Small Trade	8	2	10
5	Maka I.	Malka Bisan Adi Cultural Village	1415	0722851953	Cultral	30	0	30
6	Kula Mohamud	Gamachisa Olla Self Help Group	1412	0724726851	Merry Go	10	0	10
7	Fatuma Ntalo Namu	Kinna Gamachu Women Empowerment Forum	1439	0726875615	Merry Go	8	2	10
8	Godana Abduba	Kinna Badasa Self Help Group	2739	0710818513	Merry Go	2	9	11
9	Fatuma Huka Galgalo	Kinna Fahasha Self Help Group	1389	0725180733	Merry Go	6	4	10
10	Jamila Hassan Ali	Kinna Biliqe Self Help Group	1391	0757187913	Merry Go	7	3	10
11	Mohamed Somo	Al-Abrar Self Help Group	1440	0745024903	Merry Go	9	2	11
12	Ibrahim Abdi Kosi	Kinna Driver Welf Help Group	1597	0718954568	Nil	10	5	15
13	Mumina Chachu	Kinna Buba Self Help Group	1503	0708172887	Business	9	1	10
14	Rukia Guyo	Kinna Biqiltu Self Help Group	1495	0794784037	Merry Go	9	1	10

S/No	Name	Group	Serial No.	Mobile No.	Type of Business	F	M	Total
15	Muslima Alisime	Isra Women Empowerment Self Help Group	1499	0712522059	Merry Go	13	0	13
16	Timira Bagaja Haro	Jiren Dansa Self Help Group	1617	0715245039	Merry Go	NIL	NIL	NIL
17	Hadija Golicha	Faayo Self Help Group	1608	0742921441	Merry Go	10	1	11
18	Hadija Roba Huka	Wante Women Self Help Group	1609	0717564860	Merry Go	9	1	10
19	Amina Katelo Guyo	Kinna Thrayana Self Help Group	1612	0717076757	Merry Go	7	3	10
20	Mumina Diba Shaban	Kabanessa Kulamawe Women Group	1779	0708735626	Merry Go	19	1	20
21	Zeinab John	Waliilaala Self Help Group	1348	0724937578	Merry Go	9	2	11
22	Fatuma Abdullahi	Waliqar-Qara	1778	07422924753	Merry Go	NIL	NIL	NIL
23	Halima Godana	Kulamawe Milk Traders Self Help Group	1777	0710934716	Merry Go	14	0	NIL
24	Hawo Abdi Dida	Uflaala Kinna Self Help Group	1370		Merry Go	10	1	11
25	Sadia Diba Dabaso	Kinsta Women Group Kinna	1613	0791161589	Farming	9	0	9
26	Amina Gollo Jattani	Liban Mother To Mother Support Group	1818	0725607239	Table Banking	10	0	10
27	Kaltuma Wario	Bulle Kokota Self Help Group	1457	0720305420	Livestock	14	0	14
28	Habiba Halkano	Kulamawe Halcha Self Help Group	1418	0741179775	Nil	19	12	31
29	Diko Mohamed	Garisa Women Group	1416	0701957146	Livestock	16	1	17
30	Hasna Jarso	Madoyaka Self Help Group	1417	0729606918	Butchery	3	11	14
31	Liban Ali Wako	Badada Thamesia	1509	0717107796	Merry Go	9	3	12
32	Kaltuma Hassan	Il-Banada Self Help Group	1364	0717298407	Livestock	7	3	10
33	Amina Boru Ali	Maamula Women Self Help Group	1347	0713758977	Tailoring	10	0	10
34	Mumina Diba	Mudida Self Help Group	1363	0742673748	Merry Go	10	0	10
35	Nuria Salesa Ido	Al-Rahma Self Help Group	1371	0743837371	Merry Go	8	2	10
36	Asha K Dida	Mutaqabal Shg	1470	0741147533	Merry Go	8	2	10
37	Hawo Galgalo	Maljirena Shg	1548	0717000348	Nil	11	2	13
38	Hawo Ali Boru	Gubadida Farmers Women Group	1510	0727152299	Agr Busines	10	0	10
39	Abdullahi Batabada	Sofomari Biftu Shg	1596	0728544781	Farming	10	1	11

S/No	Name	Group	Serial No.	Mobile No.	Type of Business	F	M	Total
40	Orge Iya	Kinna Women Livestock Traders Shg	1355	0727879166	Livestock	10	0	10
41	Abdia Sharama	Charabdicha Walqabana Women Group	1377	0712644531	Livestock	7	0	7
42	Gedi Abdullo	Dige Young Group	1372	0792587706	Livestock	10	0	10
43	Halima Bonaya Sama	Kinna Muslim	1358	0727293442	Merry Go	18	0	18
44	Halima Ali	Bismillahi li Women Group	1369	0702279942	Farming	15	0	15
45	Abdia Duba	Maanjenan Self Help Group	1367	0702237524	Bee Keeping	8	2	10
46	Muslima Ali	Machesa Women Empowerment Forum	1373	0712522059	Table Banking	10	1	11
47	Amina Sarite Bukicha	Nagaanola Charabdicha	1376	0726818919	Poultry	10	0	10
48	Mumina Kanchoro	Fatia Women Group	1349	0715934675	Merry Go	10	0	10
49	Asna Kosi	Kamar Women Group	1352	0727253840	Merry Go	11	0	11
50	Fatuma Somo	Kinna Gamachiftu Women Empowerment Forum	1388	0727567741	Merry Go	10	0	10
51	Asha Chachicha	Kinna Naeem Women Empowerment	1386	0728594183	Merry Go	11	0	11
52	Amina Mohamed	Kinna Qongo Women Forum For Dvt	1385	0728647793	Merry Go	11	0	11
53	Abshiro Eno Mohamed	Guyasa Cbo	1492	0790657344	Livestock	12	4	16
54	Fatuma Ali Buko	Roqa Women Group	1600	0714579643	Farming	15	0	15
55	Mohamed Titima	Hirba Self Help Group	1395	0703628921	Farming	5	3	8
56	Fatuma Guyo Sora	Galan Wabu Self Help Group	1473	0726037053	Table Banking	10	0	10
57	Kadija Golicha	Kinna Laat Women Group	1383	0796645443	Merry Go	10	0	10
58	Hawo Mohamed	Dharer Bor Self Help Group	1484	0718317701	Table Banking	8	2	10
59	Maimuna Abdullahi	Kinna Mala Mari Self Help Group	1365	0726670172	Farming	12	0	12
60	Rahma Mohamed Abdi	Biftu Ganama W0men Forum For Dev	1610	0720720241	Table Banking	10	0	10
61	Asha Hassan Ware	Town Jirani Women Group	1375	0710919077	Merry Go	10	0	10
62	Sadia Wako	Chuluks Self Help Group	1482	0720472687	Merry Go	10	0	10
63	Nadhifo Galgalo	Siiqe Sibilla Self Help Group	1483	0710190781	Merry Go	10	0	10
64	Fardosa lbahim Ali	Garse Women Group	1031	0795421935	Merry Go	8	2	10

S/No	Name	Group	Serial No.	Mobile No.	Type of Business	F	M	Total
65	Habiba Mohamed Roba	Buusan Self Help Group	809	0705526250	Merry Go	10	0	10
66	Muslima Huka	Koticha A Women Group	1616	0796188743	Farming	9	0	10
67	Fatuma Abdikadr	Darartu Kinna Self Help Group	1594	0715135326	Merry Go	6	4	10
68	Ambia Diba	Nagele Ken Self Help Group	1356	0719481504	Merry Go	8	3	11
71	Fatuma Halake	Arkan Women Group	1505	0702700675	Merry Go	8	2	10
72	Halima Hillow Aliow	Qone Mrefu Self Help Group	1353	0769748208	Merry Go	6	4	10
UPDATED BURAT								
1	Said Juma	Salam Isiolo Self Help Group	80	724015417	Not Indicated	2	10	12
2	Safia Diba Guyo	Batow 2 Women Group	1157	713615820	Tent & Chair Hire	9	1	10
3	Abdinasir Adan	Yana Youth Group	666	720475678	Poultry Rearing	1	7	8
4	Mumina Gollo	Latto Libe Self Help Group	676	719612253	Table Banking	14	1	15
5	Charles Muriti	Discovery Cycle Stage Shg	730	704183089	Bodaboda Operator	13	10	23
6	Noor Mohamed	Baraza Park Open Air Mrkt	685	707816464	Merrygo Round	15	5	20
7	Abdi Isack Mohamed	Forr Self Help Group	1155	716634807	Livestock Traders	6	4	10
8	Mohamed Abdullahi	Juhudi Youth Group	694	723168943	Silc/Table Banking	5	5	10
9	Joseph Mwenda	Pentagon Self Help Group	679	705561132	Montly Contribution	3	7	10
10	Margaret Nasike	Mwangaza Shiner Self Help	652	700767460	Poultry Keeping	10	0	10
11	Attho Burri	Dharartu Selg Help Group	677	798114766	Merrygo Round	10	10	20
12	Abdinoor Kanchora	Baraka Boda Boda Stage Youth	674	706606643	Bodaboda Operator	5	6	11
13	Sharif D Kontoma	Teso Self Help Group	655	704715298	Livestock Selling	5	4	10
14	Talaso Duba	Kachu Self Help Group	681	700033776	Grocery & Poultry	5	5	10
15	Evans Nyakwama	Mainstage Bodaboda Youth Group	94	702826251	Bodaboda Operator	0	20	20
16	Salat Hassan	Northern Frontier Self Help Group	653	704643400	Gas Refilling Business	9	6	15
17	Abdi Aliow Isack	Alyaqin Dhuku Self Help	1747	728366236	Dhuku{Madarassa}	17	0	17
18	Silas Mutwiri	Kenya Power Boda Boda Self Help	693	726865589	Bodaboda Operator	19	0	19
19	Nura Abdi	Edge Light Youth	663	713068951	Butcheries	5	7	13

S/No	Name	Group	Serial No.	Mobile No.	Type Of Business	F	M	Total
20	Boran Idris	Gabare Youth Group	1028	700649116	Selling Of Peanuts	4	6	10
21	Eunice Kathorwa	Checheles Morning Star Youth	688	716675936	Broiler Business	12	8	20
22	Ali Hassan	Isiolo For Peace And Devt	649	710449874	Bodaboda Operator	5	7	12
23	Abdullahi B Jirma	Fathurahman Youth	661	728722099	Merrygo Round	6	6	12
24	Ahmed Abdirahman	Nasibu Youth Enterprise	1	743431557	Supply Milk	4	8	12
25	Omar Adano Racha	Sahal Youth Self Help Group	801	721867368	Monthly Contribution	4	7	11
26	Ramadhan Yussuf	Baliti Gumi Cbo	1024	728634596	Livestock Trading	3	7	12
27	Boru Golicha Okotu	United Brothers Self Help Group	647	720986785	Merrygo Round	2	10	12
28	Isaack Mohamed	Rud-Tec Self Help Group	1017	758888170	Cyber	6	4	10
29	Antonia Narengi	African Pearl Solace Cbo	696	716740984	Not Indicated	5	0	5
30	Abdinoor Osman Liban	Bafana Bafana Afc Shg	648	716635142	Snacks,Fruit Parlour	1	39	40
31	Abdinasir A Adhi	Chuche Youth Group	667	720475678	Chickenrearing,Poultry	2	8	10
32	Galgalo Galma	Tuluroba Mainstage Boda Youth	64	791376090	Bodaboda Operator	0	15	15
33	Wilfred Raruti	Acacia County Boda Youth Group	75	726486775	Bodaboda Operator	0	12	12
34	Dabo Yussuf	Bule Wayammo Self Help Group	67	718489114	Not Indicated	10	10	10
35	Paul Mugambi	The Twelve Great Riders Self Help	73	716495717	Bodaboda Operator	4	6	10
36	George Muriuki	Isiolo North Supporter Shg	95	727996620	Motor Cycle Spare Shops	1	9	10
37	Isaac Karwa Mbirithi.	Isiolo Town Safari Boda Boda Youth Group	690	711644382	Bodaboda Operator	0	15	15
38	Nura Abdi Jaldesa	Kenn Horri Self Help Group	697	713068951	Livestock Traders	0	8	8
39	Josphat Muthuri	Kcb Bodaboda Self Help Group	672	706296761	Not Indicated	12	10	22
40	Galm Buke	Shalom Empowerment Forum Self Help Group	80	727019972	Monthly Contribution	8	8	16
41	Isamail Hassan	Dubai Traders Self Help Group	8	721463151	Clothes Selling& Taxi Services	5	6	11
42	Ali Mohamed	Nothern Nomads Youth Group	658	725935437	Tomato Farming	2	5	7
43	Frankline Mwirigi	Isiolo Finest Entertainers Youth	2401	710573892	Not Indicated	5	5	10

S/No	Name	Group	Serial No	Mobile No.	Type of Business	F	M	Total
44	Fatuma Abdikadir	Peak Performance	806	793748718	Poultry Sales, Cooking Gas	2	9	11
45	Mohamed Ali Roba	Isiolo Young Enterprenuer Group	805	742529771	Small Kiosk	5	5	10
46	Kaltuma Adan	Husda Youth Self Help Group	810	746869373	Livestock Rearing	8	2	10
47	Adan Heri Perera	Maslah Self Help Group	97	795833190				
48	Isack Adan Elema	Grand Advocacy & Development Youth Group	96	791049375	Merrygo Round	6	4	10
BURAT								
1	Barwako Adan	Bilitu Maisha Bora Women Group	1653	0729924262		9		
2	Naiyari Nagwenya	Nareto Self Help Group	1226	0742923074		30	1	
3	Sadia Ibrahim	Bidii Farmers Field School	1631	0727420983		14	4	
4	Kuresha Bille	Akenyi Farmers Field School	1219	0726342337		16	0	
5	Selina Aspital	Emejen Women Group	1658	0725286807		14	7	
6	Khadija Wako Dida	Hordofa Kambi Oda Women Group	1274	0721337168		14	0	
7	Mikelina Nao	Apudunet Tuinuane Cbo	1632	0724865340		20	5	
8	Namery Serempen Toki	Nasuju Women Group	1227	0728346830	Farming & Selling & Buying Goats.	25	0	
9	Sadiya Hassan	Barwaqo Women Group	1238	0727527738	Livestock	15		
10	Nanguro Lepeyo	Nalusu Women Group	1652	0742923073	Merry Go Around	10	17	
11	Racha Buke	Apedor Women Self Help Group	1634	0720650099	Posho Mills Machines	8	2	
12	Halima Ibrahim	Mashujaa Kambi Odha Self Help Group	1664	0705309243	Merry Go Around	8	2	
13	Mumina Elema	Sky Women Group	1224	0724389858	Farming & Rearing Poultry			
14	Regina Kinyaga	Nailepua Women Group	1228	0721239698	Monthly Contribution			
15	Halima Samson	Women For Poverty Eradication & Education	1215	0720976397	Table Banking	31		
16	Esther Mwari	Maisha Bora Wanaruona Self Help Group	1622	0720788207	Table Banking	13		
17	Christina Rimpas	Naitashe Women Group	1225	0701958755				

S/No	Name	Group	Serial No.	Mobile No.	Type Of Business	F	M	Total
18	Dominica Ekeno	Eitos Women Group	1211	0726912629	Beads Making And Small Scale Trade	19	3	
19	Diko Golole	Badha Cultural Group	1204	0721419726	Monthly Contribution	12		
20	Aisha Wako	Waligalan Alagalan Women Group	1210	0721973412	Monthly Contribution			
21	Amina Abdi	Ordofa Mixed Self Help Group	1648	0724720884	Poultry Farming			
22	Agnes Logolan	Ekisil Women Group	1626	0713722071	Motor Bike Business	8	2	
23	Nuria Mohamed	Kayo Odha Women Group	1667	0721773300	Poultrykeeping	10		
24	Rose Paula Aluk	Echamiyok Women Group	1633	0701319962	Mobile Markets And Merry Go Round	12		
25	Julia Riman	Nanapisho Self Help Group	1763	0720168870	Members Shares Contribution	12	3	
26	Bade Mohamed	Maisha Bora Damaka Self Help Group	1665	0718228543	Goat & Sheep Selling	8	2	
27	Mohamed Abdirahman	Maisha Bora Tawakal Farmers Self Help Group	1623	0741273449	Green Grocery			
28	Mary Nakuja B.	Shambani Young Mothers Women Group	1200	0720955132	Merry Go Around	18		
29	Diana Camilla	The Shiners Self Help Group	1640	0759192802	Merry Go Around			
30	Christine Apan	Ngaka Self Help Group	1651	0725747591	Farming And Keeping Livestock			
31	Amina Halake	Bulesa Dima Wara Women Group	1223	0717649789				
32	Talaso Benson	Dagarahoko Livestock Marketing Self Help Group	1666	0705499718	Table Banking			
33	Roseline Kemuntu	Faith Market Self Help Group	1222	0712086846	Improve Their Credit Funding	7	3	
34	Jillo Jattan	Miraa Ibse Women Group	1195	0726093306	Improve Miraa Business			
35	Rahma Ekwam	Tumaini Self Help Group	1656	0758035791	Poultry			
36	Barwako Abdi	Barthaley Self Help Group	1232	0703131893	Selling Of Goats	24		
37	Mariam Godana	Kambi Odha Women Group	1661	0725243839	Farming & Livestock			
38	Amina Gollo Ali	Agaff Women Group	1660	0720365959	Table Banking	12		
39	Fatuma Dida	Jiru Jirena Women Group	1449	0729216155	Table Banking			

S/No	Name	Group	Serial No.	Mobile No.	Type Of Business	F	M	Total
40	Habiba Adan	Halch Women Group	1214	0720411977	Selling Of Onions And Livestock	18		
41	Abdi Ali Jillo	Gurmu Self Help Group	1645	0713005050	For Development			
42	Adan Maalim Hassan	Dubai Shopping Center Self Help Group	1644	0720122358	Cloth Making Business	9	9	
43	Amina Mohamed	Soko Mbuzi Marhaba Women Group	030	0724951582	Livestock			
44	Pamela Mumbi Ekuwam	Halakara Self Help Group	1641	0706703919	Livestock			
45	Halima Abdi	Jipe Moyo Women Group	1678	0707099992	Selling Clothes And Dairy Milk			
46	David Nameyan	Kitamnos Self Help Group	1630	0726623618	Group Contribution	24	8	
47	Sabina Bahati Lokai	Kinywou Lmd Women Group	1230	0700748215	Poultry	17		
48	Sacilia Nteke Nkoroi	Sotua Women Group	1239	0717471684	Selling Of Livestock			
49	Garo Molu	Odha Mulata Women Group	1428	0711597284	Flowers, Poultry & Farming			
50	Zeinabu Adano Racha	Umulsalama Women Group	1306	0707203291	Monthly Contribution			
51	Deka Wako	Jirena Mothers Women Group	1432	0721238342	Poultry			
52	Habiba Boru	Makiyo Odha Women Group	1243	0713338190	Chicken Rearing			
53	Halima Nyencho Dullow	Warsure Dose Women Group	1657	0701554634	Merry Go Round	24		
54	Joyce Naresia	Elsa Women Group	1465	0720239860	Table Banking			
55	Habiba Adan	Halcha Women Group	1307	0720411977	Table Banking			
56	Mohamed Godana	Chafa Boni Self Help Group	1754	0723128574	Selling Eggs And Chicken			
57	Fatuma Mohamed	Kambi Garba Livestock Women Group	1453	0768241584	Livestock Marketing			
58	Safia Abdi Adan	Marere Women Group	1821	0724166637	Livestock Trade/Tailoring			
59	Abdia Gedi	Ismaqal Women Group	1233	0713592522	Tent Hire			
60	Kula Sororo	Ababuro Self Help Group	1213	0745090800				
61	Madina Wario	Mawazo Bora Self Help Group	1775	0712910371	Poultry			
62	Fatuma Omar	Iman Community Based Organization	1748	0719480127	Tem			
63	Mary Lomuria	Kitos Ngitunga Women Group	1220	0717435427	Table Banking			

S/No	Name	Group	Serial No.	Mobile No.	Type Of Business	F	M	Total
64	Mumina Mohammed	Mothers Of Hope Kambi Garba	1242	0704641887	Table Banking			
65	Safia Wario	Simantu Women Group	1399	0710147182	Selling Of Livestock			
66	Halkano Osman	Silchacho Mixed Self Help Group	1813	0723246563	Selling Miraa And Tea			
67	Lillian Amina	Nabenyo Ffs Self Help Group	1407	0704227693	Tomatoes Selling			
68	Regina Asimit	Ngisoro Mother Support Women Group	1638	0727979841	Farming VsIa			
69	Ali Hassan	Hasbilah Self Help Group	1731	0722813160	Monthly Contribution			
70	Fatuma Abdullahi	Al-Muhsin Women Group	1209	0724989158	Merry Go Round			
71	Zeinab Guyo	Kambi Garba Bismilahi Women Group	035	0711404433	Livestock Selling			
72	Michelina Ochoto	Amoruhawo Enviroment Self Help Group	627	0707987608	Merry Go Round			
73	Monica Gacheri	Isiolo Saloon Community Project	1829	0721830291	Saloon Project			
74	Francisca Akeno	Apiaro Village Saving Loan Association Group	1636	0746044981	Farming			
75	Rael Mukiri	Burat Upendo Women Group	1663	0793320228	Farming			
76	Ali Racho	Al-Abrar Youth Group	1831	0726743815	Merry Go Round			
77	Abdi Barre	Duasane 2 Women Group	1206	724299741	Merry Go Round			
78	Mohamed Roba	Galesa Self Help Group	1237	720803152	Farming			
79	Veronica Ekiru Epur	Mugur Nanyori Women Group	2395	711358455	Goat And Sheep Selling			
80	Nadhifo Ali	Arise & Help Community Self Help Group	147	722493870	Selling And Buying Goats			
81	Zeinabu Roba Guyo	Culture And Conservative Cbo	1659	719101445	Selling Makuti & Goats			
82	Namaita Lelendoyoa	Nalowon Women Group	1839	703932535	Sheep And Goat Selling			
83	Halima Chibra	Safwa Marwa Self Help Group	1669	720444164	Merry Go Around			
84	Nalotuesha Lowuakutuk	Nasula Women Group	1838	721224164	Goat Selling			

ANNEX 10: LIST OF PEOPLE INTERVIEWED

a. Consortium Members

NO.	NAME	SEX (F/M)	ORGANIZATION	DESIGNATION	PHONE NO.	EMAIL ADDRESS
1	Eric Rosana	M	VSF – Suisse	Project Officer	0724069899	ericmosoto@yahoo.com
2	Fredrick Agutu	M	VSF – Suisse	Project Officer	0728401312	agutufredricks@gmail.com
3	Bishar Maash Juma	M	We World MVR	Project Coordinator	0723620150	bishar.saman@weworld.it
4	Felix Lekurchalan	M	SOMIRENEC	Project Coordinator	0718858822	Felixchalan63@gmail.com
6	Joseph Sang	M	SOMIRENEC	Project Officer	0711588805	koituikirwa@gmail.com
7	Hellen Larabi	F	CCM	Project Coordinator	0722520364	hnlarabi@gmail.com
8	Caleb Masoti	M	We world GVC	WASH Officer	0719659309	mosoticalaleb@gmail.com
9	Maximillar Lerate	M	We world GVC	P.O Food security	0710373712	maxleinte@gmail.com
10	Buke Wako	F	VSF – Suisse	Project Officer	0712780381	yussufbuke@gmail.com
11	Muktar Ibrahim	M	VSF – Suisse	Base Coordinator	0720597231	muktars@yahoo.com
12	Amina Halkano	F	VSF – Suisse	Field Officer	0712442060	Aminah.gollo@gmail.com
13	Genevieve Owuor	F	VSF – Suisse	Consortium Manager	0722814751	Geneviene.owuor@vsf-suisse

b. County Officials Interviewed as Key Informants

NO.	NAME	SEX (F/M)	ORGANIZATION	Department	DESIGNATION	PHONE NO.	EMAIL ADDRESS
1.	Victor K. Kisachi	M	Office of the President	Garbatulla Subcounty	District Commissioner	0721987100	dcgarbatulla@gmail.com
2.	Saida Abdirahman	F	Isiolo County	Nutrition	County Nut. Coordinator	0711868283	Saidaabdirahman@yahoo.com
3.	Florence Gitonga	F	Isiolo County	Nutrition	SCNC	0724024689	
4.	Anabelle	F	National Govt.	Office of the President	PA Commisioner of Isiolo County		
5.	Charles Njiru	M	National Govt.	Office of the President,	Ass. Commissioner of Isiolo County		
6.	Dr. Abubacar Hussein	M	Isiolo County	Ministry of Health	County Dir. Health	0725313153	Abuabdalah2nd@gmail.com
7.	Galgalo Ali G.	M	Isiolo County	MoE	Dir. Education (ECDE)	0789457476/ 0720266881	
8.	Michael Mugo	M	Isiolo County	Water, Sanitation and Hygiene	County Coordinator of WASH		
9.	Dr. Muriira	M	Isiolo County	MoALF	County Director Vet	0713024279	muriiradrjoseph@gmail.com
10.	Dickson Chaulo	M	Isiolo County	MoALF	Deputy Dir. of Livestock Production	0714655522	
11.	Adan Golo Hussein	M	National Govt.	Office of the President	County Director peace & cohesion	0789457476	gadan812@gmail.com
12.	Dr. Stephen Kiluva	M	Isiolo County	MoH, Isiolo Referral Hospital	Medical Officer	0721382163	
13.	Florence Mwangangi	F	Isiolo County	MoALF	Dir. Agriculture	0712942506	fkabobori@yahoo.com
14.	Osman Bagaja	M	Isiolo County		Dir. of Environment Climate Change	0721819981	bagayaosman@yahoo.com
15.	Said Roba Tullu	M	Isiolo County	Trade & Tourism	Cooperative Officer	0704913479	Saidroba40@gmail.com
16.	Guyo Abdi	M	Isiolo County	CHMF Office	Dept Dir. M&E	0721708980	guyoabdi036@gmail.com
17.	Ali Bada	M	Isiolo County	MoH	Disease Coordinating Unit	0726344342	

18.	Lordman Lekalkuli	M	Isiolo County	NDMA	County Drought Cordinator	0721426453	
19.	Dr. Lawrence Mongela	M	Isiolo County	CEC	Livestock	0712557432	
20.	Victor K. Kisachi	M	Office of the President	Garbatulla Subcounty	District Commissioner	0721987100	

c. Chiefs Interviewed as key informants

NAME	DESIGNATION	WARD	LOCATION	CONTACTS
Wario Halake Reba	Senior Chief	Kinna	Kuramawe	0710147988
Mohamed Rashid Dabaso	Chief	Sericho	Sericho Town	0719349763
James Nkayai	Chief	Ngaremara	Nakupurat	0726908173
Henry Lesokoyo	Chief	Oldonyiro	Kipsing	0710584934
Fatuma Mander	Assistant chief	Garbatulla	Garbatulla worth	0728722221
Ibrahim Kiti Huha	Chief	Cherab	Mata-Arba	0700571799
Hassan Galgayo	Senior Chief	Kinna	Kina	0720410237
Hersi Bora Huka	Assistant chief	Sericho	Fororsa	0715645463
Hassan Mohamed Adan	Chief	Charri	Goda	0710744306
Kuri Adano	Chief	Cherab	Merti south location	0725384456
Yabdi	Chief	Burat	Kilimani	0725239643
Shana Bidu Shana	Chief	Cherab	Korbesa	0723628354
Abkul Godana	Chief	Cherab	Merti North	0712189675
Nuru Sime Qumbi	Chief	Cherab	Dadacha-Basa	0723218502
Dima Ali Jarso	Assistant chief	Chari	Bisandilizo	070262914

D. Community Participants for Household Interviews

NO.	NAME	SEX (F/M)	WARD	AREA	ID No.
1.	Bosco C. Lodung	M	NGARE MARA	Ngare Mara	24076200
2.	Joseph Eregni	M	NGARE MARA	Ngare Mara	0367405
3.	Andrew Engor	M	NGARE MARA	Ngare Mara	13867644
4.	Nicholas Lowasa	M	NGARE MARA	Ngare Mara	35489176
5.	James Lokorod	M	NGARE MARA	Ngare Mara	27886508
6.	Stephen Lokeyo	M	NGARE MARA	Ngare Mara	0979628
7.	Lowa Lekarata	M	NGARE MARA	Ngare Mara	4441268
8.	Godfrey Kiplagat	M	NGARE MARA	Ngare Mara	11275345
9.	Consolata Ekwam	F	NGARE MARA	Ngare Mara	38230719
10.	Beatrice Lokarato	F	NGARE MARA	Ngare Mara	27387496
11.	Ann Lembore	F	NGARE MARA	Ngare Mara	30422394
12.	Lucia Luji Ekyam	F	NGARE MARA	Ngare Mara	28451969
13.	Mary Masunten	F	NGARE MARA	Ngare Mara	12875156
14.	Lucy Ekitela	F	NGARE MARA	Ngare Mara	1275353
15.	Sandwit Pioke	M	BURAT	Leparua	4473306
16.	Lela Kinyangah	F	BURAT	Leparua	
17.	Philip Kitongah	M	BURAT	Leparua	13442433
18.	Naonian Korosian	F	BURAT	Leparua	
19.	Kimaiyion Senteria	M	BURAT	Leparua	36771345

NO.	NAME	SEX (F/M)	WARD	AREA	ID No.
20.	Andrew Nyausi	M	BURAT	Leparua	24003898
21.	Ririyo Ngonde Olelegei	F	BURAT	Leparua	24010184
22.	Sirwaine Legei	M	BURAT	Leparua	13442431
23.	Riman Kiperus Serempen	M	BURAT	Leparua	13442369
24.	Sakamet Kitonga	M	BURAT	Leparua	11653617
25.	Lilian Bilisho	F	BURAT	Leparua	35152528
26.	Winfred Arisa Senteria	F	BURAT	Leparua	26711148
27.	Roseline Poiyasan	F	BURAT	Leparua	24109519
28.	Caroline Nyokabi	F	BURAT	Leparua	35456888
29.	Nailasai Nyausi	F	BURAT	Leparua	24093301
30.	Eunice Nyausi	F	BURAT	Leparua	33274513
31.	Retia Parikaya	F	BURAT	Leparua	5501211
32.	Mumina Hussein	F	KINNA	Kinna	12876010
33.	Ralia Dida	F	KINNA	Kinna	23366562
34.	Ali Kara	M	KINNA	Kinna	00824470
35.	Sarr Goresa	M	KINNA	Kinna	0632616
36.	Mohamed Deboso	M	KINNA	Kinna	3476392
37.	Hajji Dida	F	KINNA	Kinna	0081182
38.	Wako Wario Guya	M	KINNA	Kinna	36376657
39.	Mohamed Dida	M	KINNA	Kinna	33882089
40.	Abdikarim Dida	M	KINNA	Kinna	38629391
41.	Zeinab Wako	F	KINNA	Kinna	21400331
42.	Edini Boru	M	KINNA	Kinna	0366782
43.	Hassan Halake	M	KINNA	Kinna	0081288
44.	Halake Jillo	M	KINNA	Kinna	12874834
45.	Nora Adam	M	KINNA	Kinna	26257995
46.	Halima Jarso	F	KINNA	Kinna	21613470
47.	Zeituna Huka	F	KINNA	Kinna	32917523
48.	Hassan Ali Jare	M	KINNA	Rapsu	24335477
49.	Adan Wachu	M	KINNA	Rapsu	26308867
50.	Dida Warabesa	M	KINNA	Rapsu	82055640
51.	Hadija Salesa	F	KINNA	Rapsu	0081635
52.	Mohamed Galgalo	M	KINNA	Rapsu	
53.	Salesa Dida	M	KINNA	Rapsu	3636402
54.	Ahmed Adow	M	KINNA	Rapsu	35331339
55.	Madina Mohamed	F	KINNA	Rapsu	24650178
56.	Zeituna Hassan	F	KINNA	Rapsu	35331530
57.	Hassan Galgalo	M	KINNA	Rapsu	0627713

NO.	NAME	SEX (F/M)	WARD	AREA	ID No.
58.	Abdikadir Godana	M	KINNA	Rapsu	11829795
59.	Abdinasir Ali	M	KINNA	Rapsu	23003490
60.	Hassan Galgalo	M	KINNA	Rapsu	6825715
61.	Hassan Bure	M	KINNA	Rapsu	9854115
62.	Hussein Jare	M	KINNA	Rapsu	3925514
63.	Ibrahim Jare	M	KINNA	Rapsu	26300657
64.	Bidu Abduba	M	KINNA	Rapsu	23381066
65.	Diko Abdi	F	KINNA	Rapsu	0083939
66.	Abduba Halake	M	KINNA	Rapsu	12755384
67.	Abdi Adan	M	KINNA	Rapsu	2674874
68.	Mohamed Umuro	M	KINNA	Rapsu	28258557
69.	Amina Dabaso	F	KINNA	Kulamawe	20095682
70.	Amina Godo	F	KINNA	Kulamawe	21000902
71.	Halima Bonaya	M	KINNA	Kulamawe	12876133
72.	Gollo Duba	F	KINNA	Kulamawe	0366610
73.	Halima Dida	M	KINNA	Kulamawe	24463295
74.	Sheikh Hussein Ali	M	KINNA	Kulamawe	0182894
75.	Isack Boru	M	KINNA	Kulamawe	0364798
76.	Guyo Jillo	M	KINNA	Kulamawe	0366500
77.	Osman Dima	M	KINNA	Kulamawe	0366389
78.	Ali Roba	M	KINNA	Kulamawe	9855344
79.	Wario Halake	M	KINNA	Kulamawe	7873870
80.	Fatuma Diba	F	KINNA	Kulamawe	
81.	Abdi Kadir Wako	M	KINNA	Kulamawe	
82.	Hassan Roba	M	KINNA	Kulamawe	11274495
83.	Hallo Huka Salad	M	GARBATULLA	Garbatulla	20268879
84.	Robua Galgalo	M	GARBATULLA	Garbatulla	0078750
85.	Sotho Roba	M	GARBATULLA	Garbatulla	0006770
86.	Mohamend A. Dika	M	GARBATULLA	Garbatulla	12874585
87.	Hassan Diba	M	GARBATULLA	Garbatulla	0079376
88.	Mumina Abdi	F	GARBATULLA	Garbatulla	20009478
89.	Nura Dabaso	M	GARBATULLA	Garbatulla	27199508
90.	Charles O. Jura	M	GARBATULLA	Garbatulla	27587697
91.	Osman A. Tuka	M	GARBATULLA	Garbatulla	11274573
92.	Zamzam Ibrahim	F	CHARI	Bisan Biliqo	38803053
93.	Dima Ali	M	CHARI	Bisan Biliqo	8695896
94.	Adan Mohamud	M	CHARI	Bisan Biliqo	12542449

NO.	NAME	SEX (F/M)	WARD	AREA	ID No.
95.	Abdul Adan	M	CHARI	Bisan Biliqo	27401457
96.	Saldesa Halxan	M	CHARI	Bisan Biliqo	0007455
97.	Bonaya Wario	M	CHARI	Bisan Biliqo	0068372
98.	Yusuf Golicha	M	CHARI	Bisan Biliqo	0009892
99.	Amina Ali	F	CHARI	Bisan Biliqo	25778743
100.	Fatuma Yusuf	F	CHARI	Bisan Biliqo	0364264
101.	Mohamed Iyah	M	CHARI	Bisan Biliqo	25721906
102.	Hussein Bidii	M	CHARI	Bisan Biliqo	24458378
103.	Amina Juma	F	CHARI	Bisan Biliqo	25851009
104.	Asha Diba	F	CHARI	Bisan Biliqo	21378049
105.	Hassan Guyo	M	CHARI	Bulesa	20170523
106.	Roba Diba	M	CHARI	Bulesa	20932999
107.	Jillo Sambola	F	CHARI	Bulesa	20933023
108.	Wario Khibole	M	CHARI	Bulesa	4296573
109.	Halima Charsi	F	CHARI	Bulesa	24569836
110.	Habiba Dima	F	CHARI	Bulesa	0009556
111.	Shauri Halake	F	CHARI	Bulesa	30733670
112.	Asha Maran	F	CHARI	Bulesa	0011174
113.	Abdullahi Komba	M	CHARI	Bulesa	0010647
114.	Abdi Komba	M	CHARI	Bulesa	0182705
115.	Wako Galgalo	M	CHARI	Bulesa	9855109
116.	Kassim Guru	M	CHARI	Bulesa	7872591
117.	Abdi Gollo	M	CHARI	Bulesa	25932027
118.	Jume Dida	F	CHARI	Bulesa	24313353
119.	Mohamed Guyo	M	CHARI	Bulesa	0070234
120.	Abdullahi Mohamed	M	CHARI	Bulesa	7872912
121.	Adan Abduba	M	CHERAB	Korbesa	12542187
122.	Godana Diba	M	CHERAB	Korbesa	0009953
123.	Abdullahi Tadicha	M	CHERAB	Korbesa	12542160
124.	Mohamed Huka	M	CHERAB	Korbesa	32849143
125.	Abdi Golicha	M	CHERAB	Korbesa	21092943
126.	Wato Jarso	M	CHERAB	Korbesa	1090445
127.	Bidu Shana	M	CHERAB	Korbesa	0009179
128.	Amina Abduba	F	CHERAB	Korbesa	25726948
129.	Bonaya Godana	M	CHERAB	Korbesa	1351344
130.	Asli Jahani	F	CHERAB	Korbesa	26049145
131.	Abdi Duba	M	CHERAB	Korbesa	26886124
132.	Godana Halkano	M	CHERAB	Korbesa	00009592
133.	Hadija Huka	F	CHERAB	Korbesa	12542227
134.	Hawo Adan	F	CHERAB	Korbesa	0009770
135.	Mohamud Bilali	M	CHERAB	Korbesa	12542148
136.	Olo Galgalo	M	CHERAB	Korbesa	000953
137.	Guyo Duba	M	CHERAB	Korbesa	2341287

NO.	NAME	SEX (F/M)	WARD	AREA	ID No.
138.	Ibrahim Mala	M	CHERAB	Korbesa	11275189
139.	Mohamed Diba	M	CHERAB	Mataarba	11275302
140.	DiDa Wako	M	CHERAB	Mataarba	0364078
141.	Boru Bidu	M	CHERAB	Mataarba	0010946
142.	Abduba Wako	M	CHERAB	Mataarba	0008979
143.	Halake Gimbe	M	CHERAB	Mataarba	0463240
144.	Ade Godana	M	CHERAB	Mataarba	20109761
145.	Abdi Kotola	M	CHERAB	Mataarba	7767994
146.	Mohamed Abadu	M	CHERAB	Mataarba	0083440
147.	Mohamud Osman	M	CHERAB	Mataarba	25244831
148.	Abdi Roba	M	CHERAB	Mataarba	29282602
149.	Suleman Halkano	M	CHERAB	Mataarba	34211198
150.	Sar Diba	M	CHERAB	Mataarba	2108376
151.	Kiti Huka	M	CHERAB	Mataarba	0008735
152.	Madina Yatan	F	CHERAB	Mataarba	11120442
153.	Mariam Halkano	F	CHERAB	Mataarba	26689503
154.	Hakule Diba	F	CHERAB	Mataarba	9855687
155.	Tume Abdi	F	CHERAB	Mataarba	35300705
156.	Hawo Binesa	F	CHERAB	Mataarba	0010221
157.	Sube Ali	F	CHERAB	Mataarba	30860334
158.	Halima Wako	F	CHERAB	Mataarba	7872750
159.	Fatuma Ali	F	CHERAB	Mataarba	0364421
160.	Shururi	F	CHERAB	Mataarba	23081035
161.	Hadila Adan	F	CHERAB	Mataarba	26693100
162.	Zeinabu Galgalo	F	CHERAB	Mataarba	0009966
163.	Hawo Bon	F	CHERAB	Mataarba	8052648

ANNEX 11: SAMPLE SIZES FOR HOUSEHOLD QUESTIONNAIRES

Number of Samples Collected per Ward			
Ward	Population	Estimated Sample Size	Targeted Sample Size
Oldo Nyiro	17,372	70	70
Ngare Mara	6,232	25	35
Chari	5,398	22	35
Charab	17,567	70	70
Kinna	16,503	67	70
Garbatulla	18,516	75	80
Sericho	13,659	55	60
TOTAL			420

ANNEX 12: NAMES OF ENUMERATORS

	Wards	Locaton/area	Qualification	Name	Contacts
1	Sericho	Sericho/Madogashe/Biliki	Certificate	Salim Mohamed	0797388249
2	Sericho	IresaBoru/Badana/Gafarsa/Kombola	Degree BA Social works	Ramathan A.Dahir	0798460769
3	Kinna	Kinna/Rapsu/Moliti/Duse	Degree Public health	Juma dida	0706586923
4	Kinna	Kulamawe/Barambate/Yakbarsadi	Degree BIM	Abdulrashid ali	0710931025
5	Ngaremara	Ngaremara /Kiwanja/Lotiki/Tractor/Daaba	Student BA in Education	Susan Mwikali	0700301748
6	Ngaremara	Ngaremara-Gotu/Boji Deera/Waldiriri/Quq Banya	Diploma in Engineering	Mohamed Abdullahi	
7	Cherab	Cherab-Bassa/Yamicha/Lafey/Alango	Certificate	Abdikarim	0715794956
8	Cherab	Chari-Merti/Matarba/MunadaNur/Lakole	Certificate	Abdi mohamed	0716831048
9	Cherab	Cherab-Korbesa/Saleti/Malkagala	Diploma Quantity survey	Abduba Galgalo	0727804263
10	Garbatulla	Garbatulla/Tana/Malkadaka	Community Develop. & Social work	Ibrahim Nura	0717285706
11	Chari	Chari-Bulesa/Godha/Awarsitu	Degree in Applied statistics'	Juma golicha	0728729911
12	Chari	Chari-biliqo/Dhimaado/marara	Certificate Executive certificate of insurance	Buluqa Adam Halake	0713615931
13	Oldonyiro	Oldonyiro/Rab/Losira/Rumate/Ndunguzanguni/	Diploma Tour guiding	Laban Lesuuda	0752425323
14	Oldonyiro	Kipsing/Longobito/Noloroi Ngarendare/Kalawash	Degree in Botany/ Zoology	Justin mose	0720430702