

BUILDING OPPORTUNITIES FOR
RESILIENCE IN THE HORN OF AFRICA

BASELINE SURVEY

BUILDING OPPORTUNITIES FOR RESILIENCE IN THE HORN OF AFRICA IS A MULTI-COUNTRY PROGRAM IN KENYA, ETHIOPIA AND SOMALIA



**BASELINE SURVEY-BUILDING OPPORTUNITIES FOR RESILIENCE IN THE
HORN OF AFRICA (BORESHA) PROGRAM**

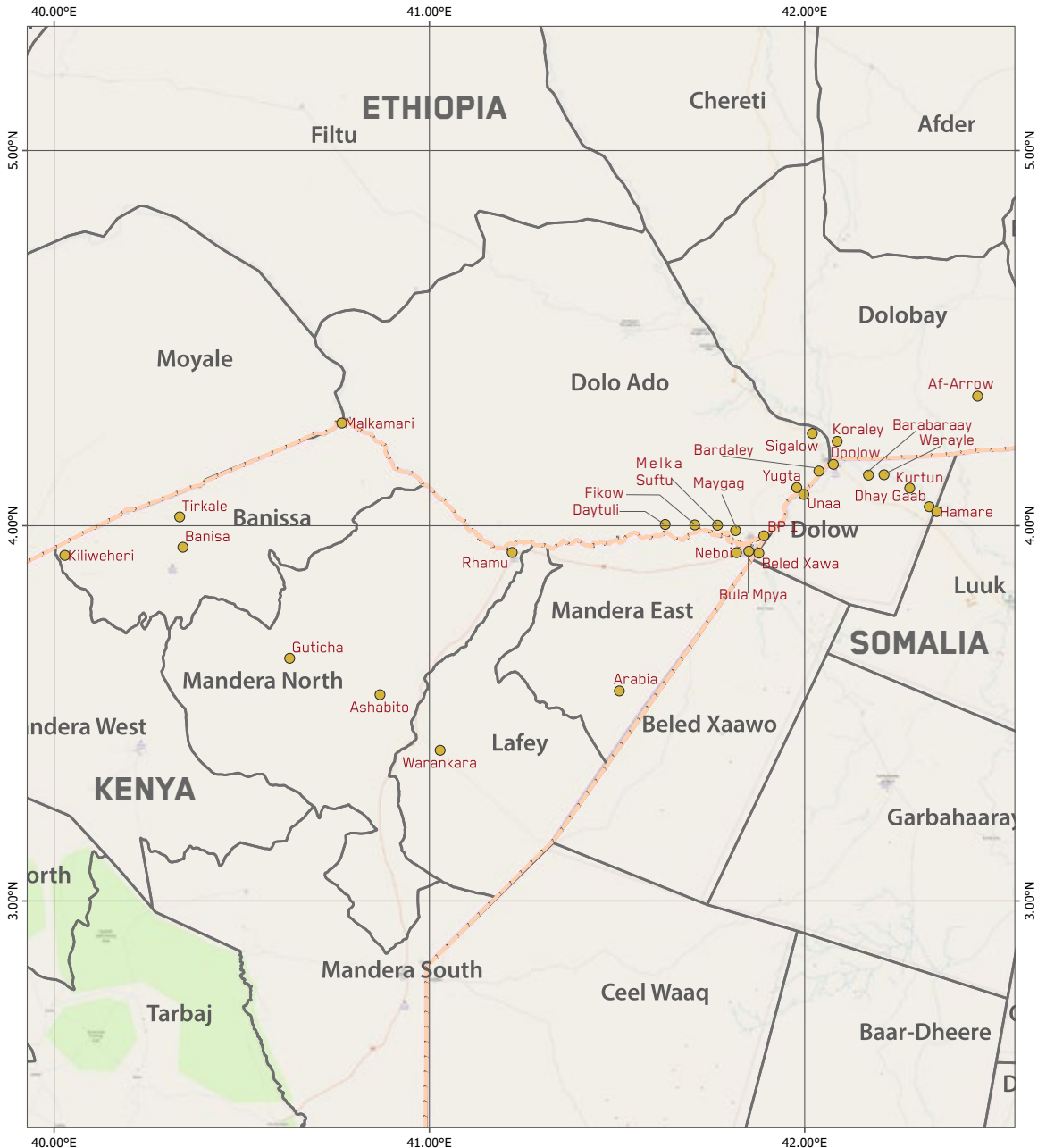
**FINAL REPORT
JULY 2018**



BORESHA TARGET VILLAGES

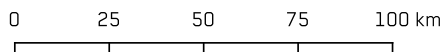
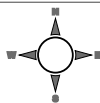


Funded by European Union



Legend

- Boresha target villages
- Administrative boundary
- International boundary



Contact:
BORESHA Consortium
 Danish Refugee Council Regional Office,
 East Africa and Great Lakes
 Lower Kabete Road (Ngecha Junction)
 P.O Box 14762 - 00800
 Nairobi, Kenya
 Office: +254 709 867 000
 Email: Boresha@drckkenya.org
 Twitter: [BORESHA_HoA](https://twitter.com/BORESHA_HoA)

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1.1 List of Abbreviations

ASAL's	Arid and Semi-Arid Lands
BORESHA	Building Opportunities for Resilience in the Horn of Africa
DRC	Danish Refugee Council
CSI	Coping Strategy Index
CIDP	County Integrated Development Plan
DRR	Disaster Risk Reduction
DRRM	Disaster Risk Reduction and Mitigation
ECSA	Ethiopia Central Statistical Agency
EU	European Union
FAO	Food and Agriculture Organization
HHs	Households
HSNP	Hunger Safety Net Programme
IBLI	Index Base Livestock Insurance
IGAD	Inter- Governmental Agency for Development
ILRI	International Livestock Research Institute
KES	Kenya Shillings
KLIP	Kenya Livestock Insurance Programme
KNBS	Kenya National Bureau of Statistics
NDMA	National Drought Management Authority
SALM	Sustainable Agricultural Land Management
TLU	Tropical Livestock Unit
UNFPA	United Nations Population Fund
USD	United State Dollar
VSLA	Voluntary Savings and Loan Associations

1 Executive summary

Building Opportunities for Resilience in the Horn of Africa is a multi-country program in Kenya, Ethiopia and Somalia that is to be implemented for a period of three years with funding from European Union Trust Fund for Africa. The program is being implemented by a consortium of partners namely: Danish Refugee Council (DRC) which is the lead partner, CARE Deutschland-Luxemburg (CARE), World Vision UK (WVUK) and WYG International Limited (WYG). The consortium is united by the overall vision of building resilient communities in the Horn of Africa through cross-border programming.

The main aim of the program is to create greater economic and employment opportunities and thereby strengthen resilience of communities. The program seeks to achieve these objectives through the following broad intervention areas: Strengthening cross-border communities' capacities to identify their own priorities, plan and advocate for measures to help them withstand shocks; Promoting the development of inclusive cross-border environment for livestock and non-livestock trade and business, and fostering private sector opportunities for women and young people; Supporting the equitable and conflict sensitive management of natural resources in the cross-border area.

The study utilized mixed method of data gathering to benchmark the log frame indicators. The methods utilized for data gathering included literature review, household survey, focus group discussions, observation and key informant interviews.

Livestock marketing, understood as the process through which live animals change ownership, is increasingly perceived as critical for improving pastoral household income. Financial needs, rather than profit-making opportunities, are the major trigger for livestock sales in pastoralist households. In non-drought times livestock marketing decisions are largely driven by the type and magnitude of expenses that pastoralists need to cover with the cash obtained from livestock sales.

Vulnerable groups, and particularly women, account for almost two-thirds of low-income livestock keepers in Africa. However, these groups are often either placed at unfair disadvantage or completely excluded from livestock value-chain development. The participation of women and other marginal groups in livestock value-chain activities is constrained by a number of factors including unequal sharing of unpaid work, limited opportunity to develop capabilities (e.g. literacy skills, education), mobility constrained by cultural practices and social norms, poor access to and control over productive resources, and limited access to markets¹.

Over half (55.8%) of the households in Kenya compared to 21.3% in Ethiopia and 17.8% in Somalia had started SMEs or were practicing new livestock production techniques. Savings in a household reduces the severity of the impact of disasters on its members. To mobilize adequate financial resources to ensure availability of credit for business development, households need to form common interest groups. The study sought to establish the existence of common interest group in the targeted areas and found the following: In Ethiopia, only 18.5% of the households sampled had joined a savings and loans group compared to 77.0% in Kenya and 22.0% in Somalia. The savings and loan groups were primarily informal, with none of the groups being formally registered with the authorities.

¹ Sara Pavanello, HPG Working Paper, July 2010, p7



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1 Introduction

Drivers of Migration in cross- border zones

Instability is common to all the study countries to varying degrees, and manifests itself in a number of ways. It can take the form of clan conflict, as rival groups compete and fight over scarce resources (especially land and water), but also trade and political power. Instability in the cross-border area of Kenya-Somalia-Ethiopia is frequently generated by violent attacks associated with Al-Shabaab. Given that a number of different groups and actors are involved in conflict, instability is taking place at local, regional, national and international levels (*EU Emergency Trust Fund for Africa. Cross-border Analysis & Mapping. September 2016, p 4*).

Migration occurs across the countries, but in different ways, involving different people and to differing extents. Generally speaking, migration is more prevalent in the Somalia cluster. Migration studies in the cross-border areas have identified a wide range of migratory practices, including transhumance (seasonal movement of people with their livestock between dry and wet season for pastures), labour migration, irregular migration, forced migration, displacement, migration for education and health purposes, family reunification, politically motivated migration, migration for flood retreat agriculture and community resettlement. ***In this context, the drivers of migration are multiple and often overlapping. They include: resource scarcity, development projects, conflict, natural disaster, coercion, unemployment, a lack of basic services, culture of migration and political participation***, among others. While the demographic profile of migrants (particularly in terms of their age, gender and access to resources) varies across the study areas, the research found that labourers, young people and pastoralists typically made up the majority of those moving.

A number of interventions are being carried out by NGOs, UN and governments in the border areas. Initiatives that have achieved the best results have tended to be those that: adopt a cross-border and conflict-sensitive approach; involve / build on traditional institutions and practices; balance commercial interests and community needs; integrate peace building; take a market approach; and support already-existing mechanisms

Economic activities

Four main livelihood systems dominate: pastoralism, agro-pastoralism, formal and informal employment, and trading. Livestock rearing (pastoralism) is the main economic activity, and households rely heavily on camels, goats, sheep and, to a lesser extent, cattle to meet their daily needs. Livestock marketing, mainly across the border with Somalia and into the Gulf states, generates enormous revenues for livestock owners, traders and marketing agents in Kenya-Somalia-Ethiopia. Cross-border trade (including lucrative smuggling) of consumer goods, foodstuffs, cattle, camels, khat, cars and construction materials is also common, and is facilitated by the porous nature of parts of the border. Gun smuggling and human trafficking and smuggling are two of the most serious forms of illegal trade across the region's borders. Major human trafficking routes include Ethiopian trafficking into Somalia and Djibouti onwards to Yemen and the Gulf, and Somali human trafficking into Kenya and onwards to South Africa, Europe, or North America. Efforts to crack down on this business have been limited due to weak government capacity and powerful interests profiting from it.

Economic activities across the Kenya-Somalia-Ethiopia border area have been facilitated by a rise of small border towns and settlements on both sides of the border, most visible along the Somali-Kenyan border. In this light, the study area constitutes an

integrated cross-border economy, with a critical set of corridors for commerce and livestock sales for the entire region. Cross-border business partnerships exist and, while these can be a source of competition, have, for the most part helped to build resilience to conflict as both sides have a vested interest in maintaining peaceful and secure trade arteries (EU Emergency Trust Fund for Africa. Cross-border Analysis & Mapping. September 2016, p 17)

Livestock marketing

Livestock marketing, understood as the process through which live animals change ownership, is increasingly perceived as critical for improving pastoral household income. Financial needs, rather than profit-making opportunities, are the major triggers for livestock sales in pastoralist households. In non-drought times livestock marketing decisions are largely driven by the type and magnitude of expenses that pastoralists need to cover with the cash obtained from livestock sales. Decisions are also strongly influenced by climatic and environmental conditions, all of which in turn affect livestock production, body weight and market value. Growing financial pressures and food insecurity during drought push pastoralists to sell their livestock regardless of productivity, age or sex, in order to purchase basic food items (Sara Pavanello, HPG Working Paper, July 2010, p7).

1.4 Purpose and Objectives

The overall objective of the study was to benchmark the project indicators and have a better understanding of the operational environment and existing priorities in the targeted areas of intervention. Data and information emanating therefrom was expected to inform the planning and implementation process including potential redesign of activities as well as the design of the monitoring, evaluation and learning (MEL) systems.

Specifically, the study aimed to:

- Provide a broad analysis of border dynamics around the Ethiopia, Kenya and Somalia boarder and contribute to understanding the driving factors around movement of people, livestock, goods, services and trade across the borders. Specifically, the analysis looked at movements through the formal and informal channels / routes, the determinant factors in selecting movement routes, challenges associated with these different routes and general / brief on issues around how cross border traders are dealing with different currencies from the three countries.
- examine socio cultural beliefs and practices that have a high influence in gendered livelihoods activities and resilience opportunities.
- Provide a general top-line understanding of the existing and potential livelihood and income opportunities available and / or utilized by the different population groups (i.e. male, female or poor, middle, and better-off) or any other group/s that may exist and relevant for disaggregation.
- Give a brief / general understanding of the enabling and hindrance factors for livestock insurance in relation to key players, community perceptions, and levels of access to insurance.
- Provide top -line / broad understanding on how existing regulation and cross-border agreements (formal and informal) around movement of people, goods, and services have / or are impacting trade and sharing of strategic natural resources (pasture and water) across the three countries, especially for communities living around the boarders.
- Provide a reference point / baseline the specific indicators for the program and where appropriate, recommend adjustments for project targets where necessary based on the baseline findings and top-line strategic recommendations on targeting, possible revision of indicators, project / program MEL and Accountability.

- Identify potential learning areas (and top-line learning approaches) where consortium partners can systematically collect and review data on a regular basis for continuous learning and improvement both for the project and in future programming of a similar nature.
- Provide quantitative statistics which will be used as starting points for subsequent qualitative and participatory studies scheduled within the project: The priority studies to be carried out during the first year include: Mapping of shared Natural Resources, Livestock Value Chain Analysis, Vulnerability Analysis, and Labour Market Assessment.

1.5 Scope of the assignment

The study was done at three levels namely: regional which entailed collection of data from cross boarder points in Kenya, Somalia and Ethiopia; district levels, community and household level.

The preliminary/macro level study looked at boarder dynamics and movement of people, goods and services, specifically around the border region and; existing regulatory frameworks that are likely to impact on the intended outcomes and outputs for cross-border programming and movement of people, goods and services across the borders. It mapped historical and recent statistics around movement of people and goods at the boarder to facilitate trend analysis.

Besides generating a general understanding of the livelihood and income opportunities, the macro-level study broadly looked at availability, accessibility and capacities of existing institutions (government, non-governmental, communal or private) to provide the communities with services ranging from: extension, supply of inputs, veterinary, loans, livestock insurance, skill development, access to markets, conservation and sustainable use of natural resources. At the household level analysis, the study focused mainly on quantitative information using probability-based sampling methodologies. The household survey quantified information required to benchmark the indicators in the logical framework.

1.6 Methodology and Approach

The study largely employed the methods of data gathering anticipated in the TOR as explained below:

1.6.1 Literature Review

Among the literature reviewed were:

- Documents from consortium partners
- Literature from IGAD
- Documents from ministry of Agriculture, fisheries and natural resources
- Document from former Ministry of Arid and Semi-Arid lands
- NDMA monthly bulleting
- County integrated Plans
- FAO documentation of lvestock and non-livestock value chains in ASAL counties
- GIZ value chain analysis report for Northern Kenya

1.6.2 Key Informant Interview

- The study carried out interviews with persons strategically placed to possess vital perspectives on content and implementation of the project. Key informants targeted included:
 - Personnel from IGAD/ILRI
 - Staff of BORESHA and RASMI
 - Cross border traders

- Department heads from relevant government ministry (Ministry of agriculture, water, natural resources, livestock)
- Representatives from communal, government, private institutions
- Livelihoods Manager -World Food Program (Ethiopia)

1.6.3 FGDs and Small group meetings

FGDs and Small group meetings were useful in gauging the views of the households on various aspects including gendered dynamics of livelihoods, livestock insurance, Knowledge of hazards, actions the communities take against hazards, how the communities are adapting to climate change and natural resource management. Discussion groups were composed of the cross-border traders and local administration.

1.6.4 Adaptive Ethnographic Study

This approach has been used extensively in the field of psycho-social research and the study employed an adaptive variation of this approach to help establish perceptions, attitudes, knowledge and receptivity of interventions by the local people from their own cultural orientation as opposed to external perspectives. Through in-depth interviews with local (Somali) livelihood and emergency “experts” the study was able to determine appropriate renditions for livelihoods and livelihood choices, disaster risk reduction, natural resource management, among others.

1.6.5 Rapid Community Sample Survey

The survey constituted the primary means of collecting quantitative information on the key indicators cutting across all the thematic areas. The sampling methodology employed for the baseline ensured that adequate sample was obtained in order to estimate indicators with sufficient precision. To determine the sample size, the following formula was used:

- $n = t^2 \times p (1-p) / m^2$

Where: n = required sample size; t = confidence level at 95% at standard value of 1.96; p= proportion of population targeted by DRC out of the total population (assumed / set to be 0.5 for maximum variance of 0.25) in each cluster targeted (Sub-regional population in areas targeted in Ethiopia, Somalia, Kenya) ; and m=margin of error at 5% at standard value of 0.05

1.6.5.1 Characteristics of respondents

A total of 1164 respondents (390, 387, and 387 in Ethiopia, Kenya and Somalia respectively) participated in the baseline survey in areas where the program is being implemented. Overall, 55.2% of the respondents were females with majority of them (73.2%) aged between 31 to 50 years. The complete disaggregation of age categories is given in table 1 below.

Table 21 Age of respondents

Age of the respondent:	Ethiopia	Kenya	Somalia	Grand Total
15-30 years	16.2%	10.1%	18.3%	14.9%
31-40 years	47.9%	52.2%	39.8%	46.6%
41-50 years	23.3%	27.1%	29.5%	26.6%
51-60 years	6.9%	8.5%	12.1%	9.2%
Above 60 years	5.6%	2.1%	0.3%	2.7%
Grand Total	100.0%	100.0%	100.0%	100.0%

Of importance to note is also the fact that 85% of the respondents / respondent households were also residents of the areas where they were interviewed describing both the settlement nature of the population and confirming their knowledge of the area and thus contributing to improved accuracy of the information being collected and presented. The detailed break-down of the observed statistics is given in table 2 below:

Table 22 Migration status of the respondents' households

Migration Status	Ethiopia	Kenya	Somalia	Grand Total
Have never migrated	80.4%	87.4%	87.6%	85.0%
IDP	18.9%	12.1%	2.6%	11.5%
Returnee	0.8%	0.5%	9.8%	3.5%
Grand Total	100.0%	100.0%	100.0%	100.0%

1.6.6 Data management and analysis

The data collected was both quantitative and qualitative data. The latter was collated and verified in order for inferences, judgments and conclusions made to be as accurate as possible. Quantitative data was collected using ODK/KOBO and analysed in excel. To ensure a high validity, the study applied triangulation for data validation.



**BUILDING OPPORTUNITIES FOR
RESILIENCE IN THE HORN OF AFRICA**

ATOM

2

1 Project context

1.1 Demographic profile:

The study was conducted in Kenya (Mandera County), Somalia (Gedo region) and Somali region of Ethiopia. Dollow district (Gedo Region); Dolo Ado & Dolo Bay districts (Somali region of Ethiopia), and Mandera North, Mandera East and Mandera Central sub counties (Mandera County) are generally sparsely populated regions, with the latter being by far the most densely populated. A number of different clans inhabit the clusters, including: Marehan, Rahanweyn, Ogaden, Harti and Bantu in Gedo; Degodia and Garre in Dollow; and Garre, Murulle, and Degodia in Mandera.

The findings indicate that Ethiopia had the highest number of persons per household at 7.0; Kenya 6.4, and Somalia 6.2. The average household sizes obtained from the survey compare favourably with the official figures in the respective countries and other established statistics. The findings also compare favourably with UNFPA statistics which states that the national household size for urban areas in Somalia is 6.5 while the overall size of a household in Somalia is about 5.9 persons per household. In Ethiopia, the average household size obtained in the survey is at par with the average household size in rural areas. The household size in Kenya, as established by the study was about one point higher than the 5.5 rural household size as per KDHS. The cause of the variation could be explained by the fact that census reports of the three countries targeted were done nearly ten years ago. The project thus has the potential of reaching large number of people in the communities targeted with limited amount of resources. It is also to be noted that majority of the respondents were married and this is largely due to the value attached to the family unit and marriage among the Somali community. Table 3-1 below gives summarized observations around marital status.

Table 31: Marital status of the respondents

Marital status	Ethiopia	Kenya	Somalia	Grand Total
Co-habiting	0.3%	0.0%	0.0%	0.1%
Married	85.1%	87.9%	85.3%	86.1%
Separated/Divorced	1.0%	5.2%	4.1%	3.4%
Single	10.5%	0.8%	1.3%	4.2%
Widowed	3.1%	6.2%	9.3%	6.2%
Grand Total	100.0%	100.0%	100.0%	100.0%

Previous research studies conducted indicated that marriage is one of the few social institutions that are hard to die and constantly develop despite the chaotic situation of the Somali society. The roles of the different members of society are clear. The elders are responsible for ensuring the welfare of the youth. They make sure the family of the chosen bride or groom is one that is worthy of marriage to their son or daughter². This could by far and large be a contributing factor to the high proportion of respondents reporting to be married while at the same time, the small proportion reporting to be separated or divorced. The program thus needs to be cognisant of this fact, especially around gender roles, including decision making and control over productive assets at household and community levels.

2 <https://www.justice.gov/sites/default/files/eoir/legacy/2013/06/11/arranged%20marriage.pdf>

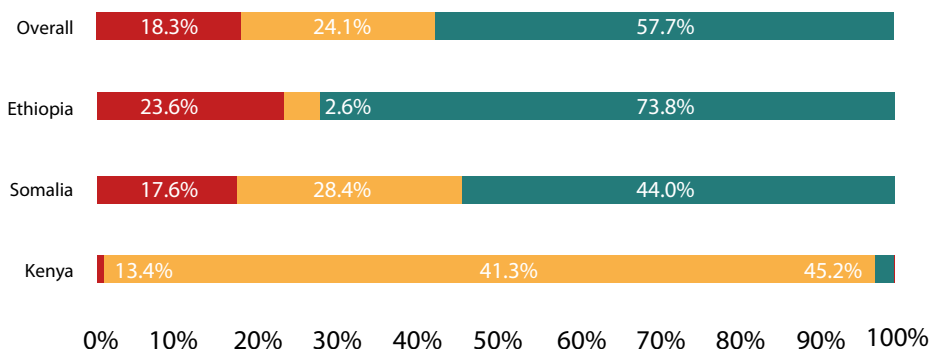
Majority of the respondents (74%) had not undergone through a formal education system with the most significant form of alternative education being madrasa with respondents on the Somali side reporting higher attendances (81.1%) in comparison to those on the Kenyan and Ethiopian sides of the border at 77.8% and 64.4% respectively. Understanding of the alternative education system is crucial for the success of this project due to the nature of the activities which focus on capacity building, strengthening of local support structures and skill development. Table 3-2 summarizes the education levels for household heads.

Table 32: Education level of household heads

Level of Education of household head	Ethiopia	Kenya	Somalia	Grand Total
No School	64.4%	77.8%	81.1%	74.4%
Primary School	30.0%	14.0%	17.8%	20.6%
Secondary School	5.1%	3.4%	0.5%	3.0%
Tertiary/University/college	0.0%	0.8%	0.0%	0.3%
Vocational School	0.3%	2.6%	0.0%	0.9%
Other	0.3%	1.6%	0.5%	0.8%
Grand Total	100.0%	100.0%	100.0%	100.0%

It is also to be noted that majority of the respondents (57.7%) lived in temporary shelters reflecting the pastoral nature of households in these localities. Temporary shelters were more prominent in Ethiopia and Somalia, with dwellings / shelter on the Kenyan side mainly being semi-permanent shelter. Figure 3-1 below gives a detailed picture of the reported dwellings across the three clusters.

Figure 31: Types of dwellings



1.2 Economic activities

Four main livelihood systems dominate: pastoralism, agro-pastoralism, formal and informal employment, and trading. Livestock rearing (pastoralism) is the main economic activity, and households rely heavily on camels, goats, sheep and, to a lesser extent, cattle to meet their daily needs. There is a trend in livelihoods diversification from pure dependency on livestock to trade and SMEs. Pastoralism dropout and opportunities arising from rising demand for food and non-food items by ever growing urban conurbations are the major drivers of livelihoods diversification. Livestock marketing, mainly across the border with Somalia and into the Gulf states, generates enormous revenues for livestock owners, traders and marketing agents in Kenya-Somalia-Ethiopia. Cross-border trade (including lucrative smuggling) of consumer goods, foodstuffs,

cattle, camels, khat, cars and construction materials is also common, and is facilitated by the porous nature of parts of the border. Gun smuggling and human trafficking and smuggling are two of the most serious forms of illegal trade across the region's borders. Major human trafficking routes include Ethiopian trafficking into Somalia and Djibouti and onwards to Yemen and the Gulf, and Somali human trafficking into Kenya and onwards to South Africa, Europe, or North America. Efforts to crack down on this business have been limited due to weak government capacity and powerful interests profiting from it.

Economic activities across the Kenya-Somalia-Ethiopia border area have been facilitated by a rise of small border towns and settlements on both sides of the border, most visible along the Somali-Kenyan border. In this light, the study area constitutes an integrated cross-border economy, with a critical set of corridors for commerce and livestock sales for the entire region. Cross-border business partnerships exist and, while these can be a source of competition, have, for the most part helped to build resilience to conflict as both sides have a vested interest in maintaining peaceful and secure trade arteries (EU Emergency Trust Fund for Africa. Cross-border Analysis & Mapping. September 2016, p 17)

A key economic activity across the three clusters is cross-border trade with key players mainly including state / government institutions (in charge of security and migration), private merchants and pastoralists / farmers. However, there are instances where the interests of these key players' conflict and in such situations, workable consensus is built based on local arrangements at times creating a compromise on existing procedures for cross-border movements. Because of the extensive border zones in the Horn with few custom posts and banking facilities, the state often has no recourse but to turn a "blind eye" to cross-border trade. Vastly different border policies and international relationships among neighboring countries (i.e. Ethiopia, Kenya, and Somalia) in the region challenge generalizations about informality and cross-border trade. Recent attempts by government authorities to coerce the trade into formal channels have had minimal success (reference made from P. Little, *Journal of Borderland Studies*, 2015). Cross-border trade is very important for the immediate inhabitants of the border regions as well as for consumers and producers located in the interior sides of the borders, across the three clusters. Policies that encourage regional trade across borders, rather than discourage it, should be advocated to capitalize on comparative advantage for different local and national economies; strengthen local food security; increase collection of state revenues and investments in key market and transport infrastructure; and reduce price volatility and market imperfections. Significant damages happen to local incomes, food security, pastoral welfare, and local and regional markets when cross border commerce is disrupted (P. Little, 2002).

Low population density and limited infrastructure capacity are both typical of peripheral border areas. Water, livestock and land for farming and grazing are the main natural resources identified in the cross border clusters. Resource scarcity is widespread and caused by a combination of man-made (state-sponsored development projects) and natural (climate change and droughts) pressures. Most of the vulnerabilities identified are also associated with resource scarcity. Livelihoods across the study area tend to be undiversified and reliant on scarce natural resources, and are therefore vulnerable to shocks and pressures. These vulnerabilities could be alleviated through better sharing of resources across and within borders, and between local communities and commercial entities, as well as by initiating targeted interventions to build resilience, strengthen local infrastructure and improve access to basic services (EU Emergency Trust Fund for Africa. Cross-border Analysis & Mapping. September 2016)

Currency markets are functional and convertibility is available based on market rates that are updated regularly on a daily basis. Estimates at the time of the study were 1 Ethiopian Birr (E Birr) trades at 4 Kenyan shillings (KES) and 1 Kenyan Shilling trades at 100 Somali Shillings (So Sh).

1.3 Livestock marketing

Livestock marketing, understood as the process through which live animals change ownership, is increasingly perceived as critical for improving pastoral household income. Financial needs, rather than profit-making opportunities, are the major triggers for livestock sales in pastoralist households. In non-drought times livestock marketing decisions are largely driven by the type and magnitude of expenses that pastoralists need to cover with the cash obtained from livestock sales. Decisions are also strongly influenced by climatic and environmental conditions, all of which in turn affect livestock production, body weight and market value. Growing financial pressures and food insecurity during drought push pastoralists to sell their livestock regardless of productivity, age or sex, in order to purchase basic food items (Sara Pavanello, HPG Working Paper, July 2010, p7).

1.4 The Index-Based Livestock Insurance (IBLI)

The IBLI product leverages the strong correlation between **a remotely sensed vegetation index** and **livestock losses associated with forage shortages** to offer insurance coverage to pastoralists in regions without access to conventional insurance products (“The favourable impacts of Index-Based Livestock Insurance: Evaluation results from Ethiopia and Kenya”; Nathan Jensen, Christopher Barrett and Andrew Mude. ILRI Research Brief, May 2015)

During times of extreme drought, substantial financial resources are used on food relief, livestock destocking, trucking of water and livestock restocking programs which are done after the drought has significantly eroded livelihoods of communities and compromised their capacities to recover. It has been found that these *ex-post* interventions are not sustainable and hence the need to shift to *ex-ante* approaches to disaster risk management. Insurance can provide much-needed protection to keep pastoralists out of extreme poverty by smoothing income during shocks (Kenya Livestock Insurance Program –KLIP-Brief to Counties) Kenya Livestock Insurance Program (KLIP), which supports 2,000 H/Hs in Mandera County, uses satellite data provided by ILRI (using rainfall data from the meteorological department), on forage availability to develop insurance tools and products that are suitable for livestock keepers in the ASAL’s of the country.

Coverage per H/H is 5 TLU (Tropical Livestock Unit). The government pays KES 15,000 per TLU to APA for purposes of insurance (Assumption of 1 cow=1 TLU –average weight 250kg, and equated to 10 shoats, with camel calculated at 1.5 the rate of cattle). Insurance payouts are bi-annual, based on short and long-rain assessments (July to September and January to March to correspond to the short rain period of October to December and the Long rains of April to June). Average payment is KES 25,000 per season per H/H. The average price of hay in the dry season is KES 500/ bale of 15kg, whereas a cow needs to consume 3kg of dry matter. 1 bale is thus assumed enough to feed 5 cows for 1 day or 1 cow for 5 days

Takaful Livestock Insurance

There is also privately provided Sharia-compliant livestock insurance that is solely provided in the horn of Africa by Taqaful Insurance of Africa. Takaful (from Arabic kafalah “helping one another” or “mutual guarantee”) refers technically to shared responsibility, shared guarantee, collective assurance and mutual undertakings by a group.³ It is a system of insurance achieved through cooperation and risk-sharing as opposed to risk transfer in traditional insurance, and premiums are paid for by the farmer. The insured under the Tafakul scheme are also compensated for the loss, or reduction in value, of their livestock based on an index formulated by the International Livestock Research Institute (ILRI), using information gathered by satellites to measure vegetation coverage and thus the severity of drought.

A pilot Takaful Insurance project (covering 101 livestock farmers in Wajir County in

3 Explanation on the Takaful Insurance of Africa website

Kenya) was implemented by ILRI in 2013, in partnership with the UK Department for International Development (DFID). Insurance pay-outs in 2014 were made according to premium contributions and guided by religious principles to jointly manage and share risks. Beneficiaries received a total \$5,800. The highest premium holder, Bashir Ibrahim, who had paid the equivalent of US\$951, received a pay-out of \$719. He received a lower indemnity than his premium based on the market performance of the common risk fund. Uptake is picking up, driven by the growing number of livestock keepers keen to operate under religion's precepts, the amount of payouts notwithstanding.

The pay-out was ... "critical for building confidence in the concept of insurance for the pastoral, drought-prone regions where life revolves around livestock and drought can bring disasters."⁴ The success of the scheme is clearly significant in a region where many thought protecting livestock assets with a simple insurance policy was impossible due to limited economic activity, and the remoteness of the areas inhabited by pastoralists. According to ILRI, insurance can make livestock-keeping more effective, cushioning household assets and income in times of distress. Indeed, according to ILRI experts, droughts were less likely to damage household diets in regions with access to IBLI. The households also recorded a 50 percent drop in distress livestock sales as well as a 33 percent drop in reliance on relief food.⁵

Challenges remain though as many herders receive low pay-outs from the Takaful scheme due to taboos linked to quantifying household assets. This was noted in FGDs, where participants suggested that "Somali people consider it a taboo to give the correct number of animals they own. They believe sharing such information will attract a bad omen, [and] lead to loss of their livestock. The people deserve to be told to change and ignore such beliefs," some participants said in the discussions. In addition, some livestock farmers complain that the remote climatic assessments based on vegetative cover can sometimes be misleading since the cover is often made of invasive and non-palatable vegetation.

1.5 Livestock Value chains in ASALS

A value chain links the steps a product takes from producer to final consumer. The livestock value chain can be defined as the full range of activities required to bring a product (e.g. live animals, meat, milk, eggs, leather, etc.) to final consumers passing through the different phases of production, processing and delivery (IDRC, 2000). The core processes of a value chain include production, processing, distribution, wholesaling/retailing and final consumption. Besides the core processes, the value chain is supported by a network of support service providers and is influenced by a myriad of external factors.

The support functions of a value chain include input supply, financial services, transport, packaging, market research and advertising. These support functions are provided by various actors in the value chain including input suppliers, producers, processors, packagers, distributors, wholesalers and retailers. The distinguishing feature of a value chain is that all the links are coordinated, with value added at each stage, and are all geared towards meeting the needs of the final market (CTA, 2012). Value addition along the value chain may arise from improving the quality of the product and through increased efficiency of its delivery to the final consumer. At the production stage, value addition may arise through the use of better production technologies (breeds, forage, etc.), while at processing & packaging, value addition may arise from improving presentation & preparation, and introduction of grading system. Availing the final product to the consumer at the right place and time is a key value addition activity of the value chain (CTA Discussion Paper. Mapping Livestock Value Chains in the IGAD Region 2017)

⁴ Andrew Mude, ILRI's IBLI project leader, quoted in press release, 2014

⁵ Ibid

1.6 Informality and low profitability of economic activity in cross-border zones

Economic activities in the three clusters tend to provide low levels of income; they are largely informal and dependent on natural resources. Pastoralism and agro-pastoralism are common to all the clusters (in varying proportions), and other informal employment opportunities were also identified in some areas. Trade in goods and animals, and relatively lucrative smuggling and trafficking networks are also a feature of economic activity in the cross border areas. In nearly all areas, a lack of adequate investment and targeted interventions undermines the productivity and profitability of these economic activities. (EU Emergency Trust Fund for Africa. Cross-border Analysis & Mapping. September 2016).

1.7 Resources

Water scarcity is common in many parts of the Kenya-Somalia-Ethiopia Border area. Water from the rivers Dawa and Ganale is a shared resource, and is widely used for irrigation by residents of the triangle, though particularly in Mandera county. According to local authorities, **the potential for irrigation is believed to be between 10,500 to 15,000 hectares**. Sources indicate that the Government of Kenya is developing a masterplan for the river Dawa, which will involve various developmental projects including increased irrigation, generation of hydro-electric power and revamping of the Malkamari National Park. A recent tripartite consultative process under the auspices of IGAD that sought to bring together government representatives from Ethiopia, Kenya and Somalia seems to have stalled. It is also important to note that Ethiopia has plans to dam the Shabelle River for irrigated agriculture in Somali Regional State. If not properly managed, this could produce communal tensions over the new farmland, pastoral clashes with farmers over access to the river, and possible cross-border tensions due to reduced water flow into Somalia.

Livestock is another key resource for households inhabiting the Kenya-Somalia -Ethiopia border area. These include camels, goats, sheep and cattle. Cattle are no longer kept in large numbers because of the harsh climatic conditions and lack of sufficient water resources required to maintain Large herds. Animals are used for food, as pack animals, or for ploughing. Livestock and their products (milk, meat, and skins) are also sold to generate household income. There have been reports of declining numbers of livestock in recent years, due to a combination of recurrent droughts, livestock disease and the obligations to pay religious or social contributions using animals as zakat or dowry payment.

A Livestock census conducted in 2014 established that there were a total of Six Million, Six Hundred and Sixty Eight Thousand, Two Hundred and Sixty Three (**6,668,263**) livestock reared in Mandera County. This translates to an equivalent total of 2,849,166 Tropical Livestock Units (TLU). Out of this total there were 3.42 Million goats, 1.16 Million Sheep, 863,265 Cattle, 1.02 Million camels and 208,126 donkeys. This means there were about as many goats as all other livestock combined.⁶

1.8 Infrastructure

Infrastructure in the cross-border area is also limited. On all three sides of the border, most road networks and airstrips are yet to be tarmacked. Access to electricity is low, although the cluster is endowed with vast, untapped solar and wind energy potential. Conflict in Gedo has been the main challenge to improving key infrastructure, such as airways and a dam project. Educational infrastructure has also been impacted and only four secondary schools are functional on the Somali side of the border. Mandera's infrastructure is relatively more developed with a greater number of educational, health, banking, communications and transport Facilities. These attract people to move to Mandera County from across the border in Ethiopia and Somalia, in order to access such services. Given the heightened security considerations across

⁶ ROK (2014), Mandera County Government: Department of Livestock development & Fisheries; Mandera Livestock Census

the Kenya-Somalia-Ethiopia cross-border areas, there have been efforts to streamline security infrastructure and arrangements across borders.

1.9 Vulnerabilities

Across the study areas, vulnerabilities are generally associated with reliance on un-diversified livelihoods and, linked to this, a lack of household resilience. As a consequence, when natural and man-made shocks occur, and resources (such as water, land and livestock) become scarce, households become increasingly vulnerable.

Climate change is key to understanding these vulnerabilities. In recent years, the frequency, duration and intensity of droughts have increased. Consistent droughts and famine over the years have depleted the livestock herds of poorer pastoralists, and left them with no alternative but to migrate to peri-urban or urban areas in search of casual job opportunities and/or humanitarian assistance. Conflict is another factor behind local vulnerabilities. For example, inter-clan fighting in the Kenya-Somalia-Ethiopia cluster has led to the displacement of tens of thousands of people, undermining their livelihoods and resilience. Conversely, vulnerabilities also sometimes lead to conflict and instability, as resource scarcity and livelihood pressures increase competition and tensions between groups and individuals.

Livestock dependence has created vulnerabilities given the susceptibility of livestock to drought and disease. Livestock are typically unprotected against disease because of the absence of veterinary services and vaccination campaigns and the widespread use of counterfeit and ineffective drugs. The absence of formal insurance mechanisms and disease surveillance has also left livestock owners vulnerable to livestock losses. As a consequence, the governments of Ethiopia, Somalia and Kenya have been accused of neglecting pastoralism as an economic developmental priority over the years.

Communities reliant on farming are also subject to a number of vulnerabilities, and sharecroppers and landless households are especially vulnerable. Farming is confined to river banks and canals, and yields therefore tend to be low. Farmers have little or no access to fertiliser, irrigation equipment, input credit or agricultural extension services, and there is a high risk of crop failure during drought years. While some farmers are successfully exporting their produce and cash crops to Somalia, marketing opportunities are generally limited. Food price seasonality is a particular risk for all farming households, and poorer farmers with undiversified incomes are often forced to sell produce immediately after harvest (when prices are at their lowest) to raise cash, and then buy food later in the year at much higher prices.

1.10 Gender Dimensions

Vulnerable groups, and particularly women, account for almost two-thirds of low-income livestock keepers in Africa. However, these groups are often either placed at unfair disadvantage or completely excluded from livestock value-chain development. The participation of women and other marginal groups in livestock value-chain activities is constrained by a number of factors including unequal sharing of unpaid work, limited opportunity to develop capabilities (e.g. literacy skills, education), mobility constrained by cultural practices and social norms, differential poor access to and control over productive resources, and limited access to markets. Interventions based on value-chain approach provide some evidence of gender-based analysis (objectives with a strong focus on gender equality and empowerment, availability of sex-disaggregated data and gender mainstreaming in project cycles). But, overall, very few initiatives have considered gendered issues as an essential component in forging linkages between actors involved in the livestock value chains (Sara Pavanello, HPG Working Paper, July 2010, p7). Women own shoats; Women are increasingly engaged in poultry keeping, trade (cross-border) and SMEs in towns / centres- handling livestock products.

1.11 Drivers of Migration in cross- border zones

As indicated in table 2 above, 85.0% of the respondents came from households that have never migrated. However, migration occurs across the countries, but in different ways, involving different people and to differing extents. Generally speaking, migration is more prevalent in the Somalia cluster. Migration studies in the cross-border areas have identified a wide range of migratory practices, including transhumance (seasonal movement of people with their livestock between dry and wet season pastures), labour migration, irregular migration, forced migration, displacement, migration for education and health purposes, family reunification, politically motivated migration, migration for flood retreat agriculture and community resettlement. ***In this context, the drivers of migration are multiple and often overlapping. They include: resource scarcity, development projects, conflict, natural disaster, coercion, unemployment, a lack of basic services, culture of migration, political participation***, and so on. While the demographic profile of migrants (particularly in terms of their age, gender and access to resources) varies across the study areas, the research found that labourers, young people and pastoralists typically made up the majority of those moving.

Instability is common to all the study countries to varying degrees, and manifests itself in a number of ways. It can take the form of clan conflict, as rival groups compete and fight over scarce resources (especially land and water), but also trade and political power. Instability in the cross-border area of Kenya-Somalia-Ethiopia is frequently generated by violent attacks associated with Al-Shabaab. Given that a number of different groups and actors are involved in conflict, instability is taking place at local, regional, national and international levels (*EU-T: Cross-border Analysis & Mapping. September 2016, p 4*).

1.12 Donor funded Projects in Mandera county

A number of interventions are being carried out by NGOs, UN and governments in the border areas. Initiatives that have achieved the best results have tended to be those that: adopt a cross-border and conflict-sensitive approach; involve/build on traditional institutions and practices; balance commercial interests and community needs; integrate peace building; take a market approach; and support already-existing mechanisms. The key areas of focus for the BORESHA program in Kenya-Ethiopia, Somalia cross-border area (EU-TF Proposals) are: complimenting Peace building activities with the peace dividend; business & skills development; Cross border livestock disease control programme / Surveillance of livestock diseases; Disaster Risk Reduction & Resilience building activities to minimize the impact of drought on livestock and pastoralist livelihoods; Integrated water management interventions at both a localized and regional level; and sustainable natural resources management. A number of donor funded projects that have relevance for BORESHA in terms of scope and focus exist:

Regional Pastoral Livelihoods Resilience Project (RPLRP)

This project is funded by the World Bank and is implemented in Kenya, Uganda and Ethiopia. Its objectives are to enhance livelihood resilience of pastoral and agro-pastoral communities in cross-border drought-prone areas of selected countries and improve the capacity of the selected countries' governments to respond promptly and effectively to an eligible crisis or emergency. The project has the following components: i) natural resources management that focuses on enhancing the sustainable management and secure access of pastoral and agro-pastoral communities to natural resources (water and pasture) with trans-boundary significance; ii) market access and trade, which aims at improving the market access of the agro-pastoralists and pastoralists to the intraregional and international markets of livestock and livestock products; iii) livelihood support which aims at enhancing the livelihoods of pastoralist and agro-pastoralist communities; iv) *pastoral risk management, which aims at enhancing drought-related hazard preparedness, prevention and response at the national and regional levels* and v) project management and institutional support.

Agricultural Sector Development Support Programme (ASDSP)

The programme is county-wide in Mandera and primarily gives software support, including skills development, exchange programs and capacity building. Interventions cover areas such as value addition in a number of important areas (goat meat, camel milk and tomato value chains). Some groups formed along these value chains and some have even “graduated” to form cooperatives.

Kenya Climate Smart Agriculture project (KCSAP)

This is a World Bank funded project that covers 24 counties in Kenya, including Mandera. Six wards in three sub-counties are the project areas. These are Neboi and Libeisha in Mandera East constituency, Rhamu and Rhamudimtu in Mandera North constituency, and Banisa and Derkale in Banisa constituency. Workplans and manuals have been developed in readiness for implementation in 2018.

Hunger Safety Net Programme (Phase one and two)

This programme is funded by USAID, UK-AID in conjunction with the government of Kenya. The programme ends in March 2019. 22,231 beneficiary households across all sub-counties, and each receiving KES 5,400 on a bi-monthly basis were targeted for support in Mandera under group one. Other counties targeted include Turkana, Wajir and Marsabit. When the NDMA bulletin is at alarm stage the safety net for group two beneficiaries is activated. Group two beneficiaries receive KES 2,700 per month.



3

1 Key Findings on high level Program indicators

One key objective of the study was to benchmark program indicators to be used as a point of reference in subsequent reviews / impact assessments. The study thus investigated different aspects of these indicator and came up with the following findings at the different levels of hierarchy.

1.14 Overall objective:

The project supports on-going regional efforts to build sustainable livelihoods, improve natural resources management and strengthen resilience with activities and outputs contributing to 4 (out of 7) key priority interventions areas highlighted in the IGAD 15-year regional strategy (2012 – 2027) for reducing vulnerability and strengthening drought resilience in ASAL regions. The four priority areas are: i) environment and natural resource management; ii) market access, trade and financial services; iii) livelihoods support and basic social services, and iv) disaster risk management, preparedness and effective response. The overall implementation strategy is based on the following theory of change:

- If we strengthen cross-border communities' capacities to identify their own priorities, plan and advocate for measures to help them withstand shocks;
- If we promote the development of inclusive cross-border environment for live-stock and non-livestock trade and business, and foster private sector opportunities for women and young people;
- If we support the equitable and conflict sensitive management of natural resources in the cross-border area;

Then communities will become more resilient and self-reliant; individuals, including women and young men, will have the skills and opportunity take up a more diverse range of employment and livelihoods options; natural resources will be used more rationally, and with less conflict; local governments will be more accountable to their constituencies (outcomes); and fewer people will be displaced within, or migrate out from, the cross-border region (impact).

1.14.1 Mean monthly income of HHs in targeted communities

As given in table 4-1 below, the measurement revealed that farming (crop agriculture) is the dominant livelihood activity in surveyed clusters of Ethiopia and Somalia at 75.1% and 56.1% respectively with livestock / poultry keeping dominating in the surveyed cluster of Kenya (Mandera county). Generally, the two livelihood options dominated across the three clusters with farming taking 48.4% and livestock / poultry keeping taking 33.8%. As observed during FGDs and KII in Ethiopia, crop agriculture was the main source of livelihood accounting for an estimated 95% of the populations along river Daua producing mainly fruits and vegetables and targeting the Mandera market due to proximity and accessibility. It also emerged that there is a reasonable support system for these farmers in forms of agricultural inputs (farm tools, seeds, equipment, pesticides, among others) coming from the government and NGOs supporting farmers along the river Dauwa. The Index Based Livestock Insurance program being led by the central government in Kenya through the Kenya Livestock Insurance Program (KLIP) and targeting 8 ASAL counties in Kenya (including Mandera) seeks to address the challenges faced by livestock farmers due to recurrent drought.

Table 41: Sources of livelihoods

Main source of livelihood / income for respondent	Ethiopia	Kenya	Somalia	Overall
Cash transfer	0.0%	7.2%	0.0%	2.4%
Daily/casual/common labourer	3.1%	3.9%	6.2%	4.4%
Farming	75.1%	13.7%	56.1%	48.4%
Fishing	0.0%	0.8%	1.0%	0.6%
Forestry, and hunting/foraging (such as firewood gathering, small-scale logging, charcoal making, gathering forestry products/used paper)	1.0%	5.4%	1.6%	2.7%
Handicraft and artisan work (such as mat weaving, making wood carvings tailoring, dress-making, welding, hairdressing, woodwork)	0.0%	2.6%	1.8%	1.5%
Livestock/poultry keeping (E.g. Cattle, chicken, production of fresh milk, eggs, etc.)	19.5%	52.5%	29.7%	33.8%
Remittance	0.3%	7.0%	0.0%	2.4%
Retail/petty trade (including market vending, side walk, vending and peddling, small shop)	0.5%	4.1%	3.1%	2.6%
Salaried employment (such as medical, teaching ,)	0.0%	1.3%	0.0%	0.4%
Skilled Labourer	0.5%	1.6%	0.0%	0.7%
Other	0.0%	0.0%	0.5%	0.2%

As such, it was noted that the overall median and mean monthly income of the households surveyed was USD 32.03 and USD 35.15 respectively. The mean monthly income of households in the areas targeted in Kenya was KSH 4241.94 (USD41.80) while in Ethiopia and Somalia was Birr 1030.22 (USD37.39) and SSH 15,024.17 (USD26.27). Besides crop agriculture and livestock related livelihoods which accounted for a reasonable population among the potential target beneficiaries, other potential sources related to the program strategies accounted for very small proportions among the same population. These included: retail / petty trade (2.6%); handicraft & artisan work (1.5%); forestry & hunting / foraging (2.7%); and salaried employment / skilled labour (1.1%). The median monthly income in Ethiopia was Bir 1053.15 (USD 38.32) while in Kenya and Somalia was KSH 3,680.69 (USD 36.41) and SSH 12,321.79 (USD 21.36) respectively. Table 4-2 below gives summarized details of the potential livelihood sources with their current contribution to the overall household income.

Table 42: Average household income per source

Sources of income	Ethiopia (EBir)	Kenya (KSh)	Somalia (SoSh)
Farming	1104.01	3968.13	34247.46
Livestock production	1002.29	3827.75	17795.53
Forestry, foraging	425.00	1286.24	5063.33
Petty trade	1300.00	4588.00	6847.97
Welding	0.00	1731.80	1143.40
Salaried employment	0.00	12000.00	0.00
Skilled labour	800.00	3000.00	0.00
Casual labour	1550.00	3533.60	25047.29

With the findings reporting over-reliance on crop agriculture and livestock related livelihoods, it is important for the program to pay much attention on strengthening these livelihood activities and particularly looking at extension services, value chain improvement and access markets for both inputs and products. Reference should be made to the value chain analysis which is part of the initial activities to be implemented under this project. Livelihood diversification strategies, especially around the livestock / crop agriculture value chains; skills development (vocational skills and business / trade), and utilization of invasive species can also be explored (as given in the project documents) to generate alternative sources of household income and cushion households during the lean periods. Findings from the studies commissioned as part of program activities: Value Chain Analysis, Labour Market Assessment and Natural Resource Mapping should be utilized to create a focus on the viable livelihood diversification options across the three clusters.

1.14.2 % decrease in number of HH applying negative coping strategies to deal with stressors in the target communities

With this being a livelihood / resilience program, analysis on coping mechanisms looked casual factors contributing to food security outcomes such as livelihood strategies (& sources of food), livelihood assets, and the supportive environment for livelihoods to thrive. In particular, the analysis looked at food production, availability, access and utilization.

Food production and access:

Food production is largely dependent on access to the necessary production assets, necessary inputs and a supportive environment for production to thrive and be sustained. Majority of the respondents reported access to between 1 to 5 acres of land as indicated table 4-3 below.

Table 43: Household ownership of / access to land

Land ownership	Ethiopia	Kenya	Somalia	Grand Total
1 acre or less	43.6%	34.9%	43.9%	40.8%
Between 2 -5 acres	32.1%	37.5%	26.1%	31.9%
Between 6-10 acres	10.8%	10.9%	16.3%	12.6%
Land is communally owned	9.0%	15.0%	10.6%	11.5%

More than 10 acres	4.6%	1.8%	3.1%	3.2%
Grand Total	100.0%	100.0%	100.0%	100.0%

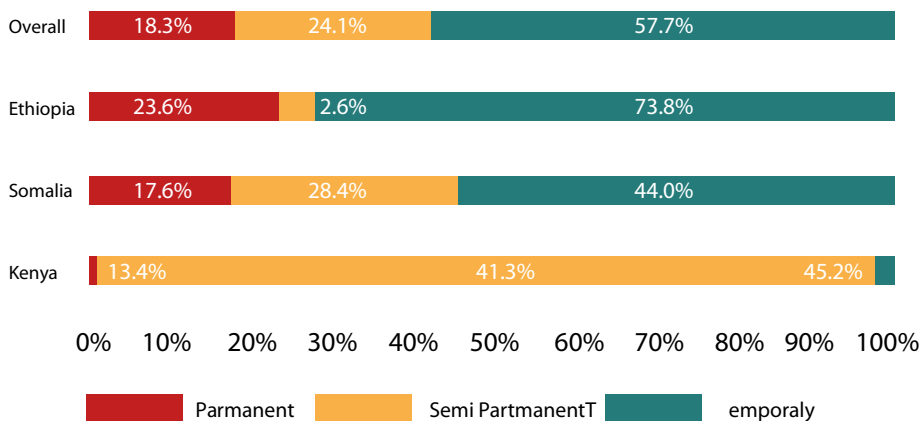
At the same time, 65.5% of the respondents reported to have utilized the land they have access to but in varying acreage up to 5 acres in comparison to 72.7% of those who reported to have access to similar acreage. The difference noted was statistically significant at 95% level of significance inferring that the households actually cultivate less than what they have access to. The break-down of the observed statistics regarding land utilization is given table 4-4 below.

Table 44: Household land utilization

Land utilization	Ethiopia	Kenya	Somalia	Grand Total
1 acre or less	48.7%	40.1%	38.0%	42.3%
Between 2 -5 acres	17.4%	25.3%	26.9%	23.2%
6 acres or more	4.6%	2.3%	1.3%	2.7%
None	29.2%	32.3%	33.9%	31.8%
Grand Total	100.0%	100.0%	100.0%	100.0%

The analysis further revealed that only 39.3% of the respondents manage to store their farm produce with the break-down across the three clusters being 33.6%, 58.7% and 25.8% for Ethiopia, Kenya and Somalia respectively. Most households store their produce inside the house, which is also the largely storage facility utilized in Ethiopia whereas granary storage was largely utilized in Somalia and Kenya. Figure 4-1 below gives a detailed distribution of how the households were utilizing different storage facilities.

Figure 41: Household storage facilities for agricultural produce



More than half of the respondent households that reported to have been storing their produce reported that it lasts for a maximum period of 3 months (as given in table 4-5 below), signifying a lean period before the next harvesting season (if the conditions are favourable for cultivation). This bring out the need for alternative sources of livelihood to ensure continuous access to food during the lean period or perhaps relief or any other form of support.

Table 45: duration in which stored produce lasts

Duration in which stored produce lasts	Ethiopia	Kenya	Somalia	Grand Total
1 week or less	24.3%	9.6%	37.8%	22.5%
1-3 Months	30.3%	43.6%	22.9%	33.4%
between 1-4 weeks	24.3%	4.8%	35.6%	19.9%
3-6 Months	6.5%	25.6%	3.2%	13.2%
More than 6 months	14.6%	16.4%	0.5%	11.1%
Grand Total	100.0%	100.0%	100.0%	100.0%

Besides agricultural production, an alternative livelihood dominating in this region is livestock keeping, which is more dominant on the Kenyan cluster where sheep and goats are the main herds being kept as given in table 4-6 below.

Table 46: Household livestock ownership

Average livestock herds per household	Ethiopia	Kenya	Somalia	Grand Total
Camels	1	19	4	8
Cattle	7	36	9	26
Donkeys	2	2	2	2
Goats	18	30	39	28
Sheep	8	10	5	8
Poultry	2	3	1	2

Livestock production has its own challenges across the three clusters with the main one being livestock diseases, inadequate water, inadequate pasture and threat from wildlife. As such the project can directly contribute towards reducing livestock diseases, inadequate pasture and inadequate water. The threat of livestock attack by wildlife can be mitigated by working with the relevant government departments or other agencies that work directly on conservation programs.

Table 47: Challenges faced by livestock farmers.

Reported challenges for livestock livelihoods	Ethiopia	Kenya	Somalia	Grand total
Disease and pests	60.3%	72.4%	53.5%	62.0%
In adequate pasture	48.5%	71.8%	48.3%	56.2%
Cattle rustling / theft	27.4%	41.3%	21.7%	30.2%
In adequate water	38.2%	67.4%	40.6%	48.7%
Livestock killed by wild animals	44.4%	82.7%	53.7%	60.2%

As reported in section 4.1.1, the dominating livelihoods across the three clusters are crop agriculture and livestock related with different potential for diversification. However, the household income levels are still low with an estimated daily household income revolving around 1 USD per household (of about 6 people) per day which can

be classified in the extreme poverty levels. It was also noted that food was mainly accessed through own production and market purchase, with the Kenyan cluster heavily relying on market purchase (86.3%). Similarly, significant proportions from the Kenyan cluster also recorded borrowing / battered or exchange (42.9%) and food aid (35.7%) as their main sources of food.

Table 48: Household sources of food

Food Source	Ethiopia	Kenya	Somalia	Grand Total
Own Production	78.7%	43.4%	64.3%	62.2%
Market Purchase	25.4%	86.3%	59.7%	57.0%
Borrowing / battered	3.6%	42.9%	20.2%	22.2%
Food aid	12.3%	35.7%	1.6%	16.5%
Other sources	0.5%	0.0%	0.0%	0.2%

Both dominating sources of food (own production and market purchase) are greatly vulnerable to potential shocks of inflation and extreme weather with low household incomes making the households even more vulnerable to these shocks. The prevailing shocks experienced in the past 2 years across the three clusters were drought, floods, livestock disease and rising food prices as reported by the respondent households (table 10 gives the summarized observations). From qualitative discussions, it was observed that despite most respondents citing it as a shock to their livelihoods, drought and floods still remain the biggest threats to the livelihoods along the cross-border communities.

Table 49: Hazards / shocks experienced in the past 2 years

Hazard/shock experienced in the past 2 years	Ethiopia	Somalia	Kenya	Grand Total
Drought	67.9%	74.4%	67.2%	78.4%
Floods	74.6%	78.8%	94.1%	82.5%
Livestock disease	79.5%	77.0%	93.0%	83.2%
Rising food prices	69.0%	77.8%	94.3%	80.3%
Conflict	3.3%	16.5%	51.7%	23.8%

Coping strategies and food consumption

The main reported reason for households selling their different assets was to purchase / buy food which accounted for 38.3% of the respondent households with further statistical analysis revealed that the reported responses were significantly higher in the Ethiopian cluster compared to Kenya and Somali clusters. Table 4-10 below gives the different main reasons why households sold their assets. It is to be noted that these households were sold within 3 months prior to the survey (*i.e. between February to May 2018*).

Table 410: Main reasons for households selling their assets

Main reason for selling assets	Ethiopia	Kenya	Somalia	Grand Total
Buy food for household	46.2%	31.8%	36.8%	38.3%
No longer needed	10.5%	9.3%	16.3%	12.0%
Not applicable	21.0%	23.3%	21.8%	22.0%
Pay daily expenses	15.9%	7.8%	7.0%	10.2%
Pay debt	1.5%	4.4%	0.3%	2.1%
Pay for medical expenses	2.6%	1.6%	1.3%	1.8%
Pay for social event	0.3%	1.0%	0.0%	0.4%
Pay school fees	0.5%	11.1%	0.3%	4.0%
Upgrade – to purchase a new asset	1.5%	9.8%	16.3%	9.2%
Grand Total	100.0%	100.0%	100.0%	100.0%

Looking at the type / nature of assets that were sold, it was revealed that most of the households either sold livestock or their productive assets with an overall aggregate of 78.3% (as shown in table 12 below). with the reported livelihoods being livestock or crop agriculture, the implications of selling livestock or agricultural productive assets to mainly to purchase food has a high potential to negatively affect the livelihood system in these areas.

Table 411: Categories of different types of assets sold by households.

Assets sold by households	Ethiopia	Kenya	Somalia	Grand Total
Livestock	63.6%	34.4%	57.1%	58.5%
Productive assets (for agricultural production)	6.2%	56.1%	30.7%	19.8%
Transport assets	2.8%	23.5%	28.8%	11.2%
Household assets	2.3%	2.6%	38.6%	14.2%

To further understand vulnerability of households in the areas of interest, a study of critical assets for livelihood diversification and improvement of the existing traditional (agro) pastoralist livelihoods was made and the general observation was that fewer households had access to these assets / facilities as given in table 4-12 below.

Table 412: Livelihood diversification / improvement assets

Resilience assets	Ethiopia	Kenya	Somalia	Grand Total
Water storage tank	6.2%	52.7%	28.9%	29.2%
Bee hive	1.5%	31.8%	10.6%	14.6%
Irrigation equipment	20.3%	32.6%	7.0%	19.9%
Iron sheet roof to harvest rain water	2.3%	47.5%	2.8%	17.5%

A key indicator to assess the severity of the different coping mechanisms employed by households is the Coping Strategies Index (CSI) which is one of the key universal indicators used to assess the overall food security and resilience among community members. However, the CSI was computed based on a 7 days' recall period (to minimize recall bias) using the universal guidelines and weights used in computing the reduced CSI scores (rCSI). From the presented information in table 4-13 below, the mostly applied coping strategies (with average weekly frequency of at-least 10%) are mainly dietary change and increase short-term household food availability which are mainly adoptive coping strategies. **The same analysis further revealed that the overall average CSI score was 21.9, with the observed scores for the clusters in Kenya, Ethiopia and Somalia being 21.8, 21.9 and 21.9 respectively.**

Table 413: Average Frequency of coping strategies as a % of 7 days recall period

Coping strategy	Severity Weight	Kenya	Ethiopia	Somalia	Grand Total
Rely on less preferred / less expensive food	1	15.7%	5.7%	8.6%	10.0%
Borrowed food / helped by relatives	2	14.3%	11.4%	24.3%	17.1%
Limit meal size for the food to last long	1	22.9%	14.3%	22.9%	20.0%
Reduce daily meals frequency for food to last long	1	22.9%	14.3%	28.6%	21.4%
Reduce consumption by adults for children to eat more	3	10.0%	15.7%	10.0%	11.4%
Purchase food on credit	2	18.6%	5.7%	28.6%	17.1%
Consumed seed stock held for next season	3	8.6%	1.4%	4.3%	4.3%
Feed working members at the expense of non-working members	2	8.6%	2.9%	2.9%	4.3%
Gather wild fruits / consume premature crops	4	5.7%	2.9%	1.4%	2.9%
H/H members sent to eat elsewhere	2	5.7%	2.9%	7.1%	5.7%
H/H members sent to beg	4	5.7%	2.9%	1.4%	2.9%
Children drop out of school to support family		7.1%	2.9%	5.7%	5.7%

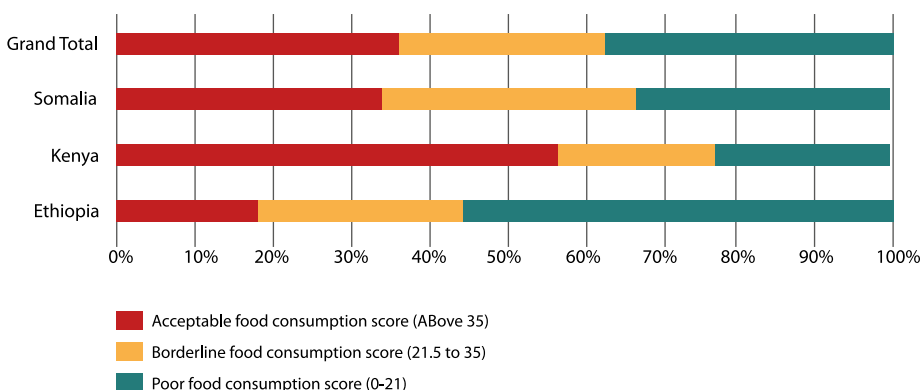
Generally, the coping strategies employed by households have an impact in the overall food consumption patterns and thus have an effect on the Food Consumption Scores (FCS). The analysis also looked at food consumption patterns in a 7 days' recall period using the WFP VAM guidelines (21/35 threshold) to examine the food consumption patterns and the resultant Food Consumption Scores. The 7 days' food consumption patterns (as indicated in table 4-14 below) indicated that maize, rice and wheat were the commonly consumed cereals where-as beans, milk / dairy products were the commonly consumed sources of protein (all these recording a weekly average consumption of at-least 20%).

Table 414: Weekly Food consumption patterns (7 days' recall)

Food group	Ethiopia	Kenya	Somalia	Grand Total
Maize	40.0%	32.9%	30.0%	34.3%
Sorghum	20.0%	2.9%	22.9%	15.7%
Millet	5.7%	5.7%	7.1%	5.7%
Rice	40.0%	55.7%	45.7%	47.1%
Wheat	18.6%	32.9%	38.6%	30.0%
Potatoes	5.7%	20.0%	14.3%	12.9%
Beans	24.3%	40.0%	38.6%	34.3%
Cow-peas	1.4%	2.9%	4.3%	2.9%
Animal protein (mean, poultry, fish)	14.3%	24.3%	11.4%	17.1%
Oil seeds (ground nuts, sesame)	8.6%	10.0%	21.4%	12.9%
Milk / dairy products	21.4%	41.4%	22.9%	25.7%
Vegetables	12.9%	12.9%	14.3%	14.3%
Fruits	1.4%	12.9%	4.3%	5.7%

During the analysis, it was revealed that the overall proportion of households with poor Food Consumption Scores was 37.0%, with the Ethiopian cluster having more households falling in this category. Of importance to note was also that the observed differences in proportions of households falling in this categories across the three clusters were statistically significant at 95% level of confidence. Figure 4-2 below gives the statistics based on the FCS classification.

Figure 42: Food Consumption Scores



From the different data and analysis presented under this indicator, it is clear that the community largely depends on 2 sources of food, namely: own production, and market purchase. It was also observed that the average income of an estimated 1 USD per household (with an average of 6 members) per day is far below the poverty line (which is around USD 1.9 per person per day) and thus limiting the purchasing power for most of the households. In addition, the farm produce mostly lasts for a period of up-to 3 months, signifying that the produce may not be enough to take them through the entire season. **As a coping mechanism, households have reported to have sold livestock (58.5% of the respondent households) with the main reason being**

to buy food, besides other adoptive coping mechanisms (dietary change and strategies to increase short-term food availability) as given during computation of the rCSI. With the small livestock herds, selling of the herds (mainly to buy food) and the recurrent droughts (which was reported as a major threat to livestock), the communities are thus left very vulnerable to potential shocks and hazards that directly affect the livestock sector. This thus calls for coordinated efforts in: 1) improving the livestock management practices (including the relevant livestock value chains); 2) improving and promoting crop production (including the relevant value chains); and 3) looking at other potential sources of livelihoods where vulnerable households can engage in and increase their household income. Looking at the BORESHA project strategies, all the three outcome areas are contributing towards addressing most of the key challenges reported by livestock farmers (as given in table 4-15 below) through the different outputs. Key to work on around advocacy / lobbying with the relevant government institutions is addressing the fear of livestock theft / cattle rustling and attack of livestock by wild animals.

Table 415: Reported challenges facing livestock farmers

Reported challenges for livestock livelihoods	Ethiopia	Kenya	Somalia	Grand total
Disease and pests	60.3%	72.4%	53.5%	62.0%
In adequate pasture	48.5%	71.8%	48.3%	56.2%
Cattle rustling / theft	27.4%	41.3%	21.7%	30.2%
In adequate water	38.2%	67.4%	40.6%	48.7%
Livestock killed by wild animals	44.4%	82.7%	53.7%	60.2%

With shocks being eminent and the overall assessment of the coping capacity being low, social safety nets can largely contribute to building the resilience of these communities (especially the most vulnerable households among these communities) and preserve their dignity during a time of crisis. However, the level of awareness on the different social safety-net schemes was also low as indicated in table 4-16 below.

Table 416: Awareness on different forms of social safety-nets

Social safety net	Ethiopia	Kenya	Somalia	Grand Total
Livestock insurance	29.5%	46.3%	34.1%	36.6%
Crop insurance	15.9%	27.1%	31.3%	24.7%
Hunger Safety Net Program	37.2%	88.8%	83.7%	43.2%
Public medical Insurance Scheme/Fund	2.3%	56.1%	20.4%	26.2%
Social Security Fund	1.0%	29.7%	22.2%	17.6%

Awareness level of these safety-nets was much higher on the Kenyan side in comparison to the other 2 clusters. This is largely due to government efforts and other previously implemented social safety-nets programs, especially in ASAL areas.

1.15 Disaster Risk Reduction (DRR) outcome

The DRR outcome looks at improved community – lead disaster risk reduction through community engagements in developing disaster preparedness plans; increased community awareness on community based early warning & early response; engaging dif-

ferent stakeholders and duty bearers to support community DRR plans; and protecting the most dominant source of livelihood (livestock) through promotion of livestock insurance products. A set of outcome and output indicators will be used to assess progress made towards realising the DRR outcomes.

1.15.1 # of community associations (especially farming and pastoral) know the early warning signs and know what to do in case of an emergency or disaster

All the disaster committees (9) and the informal cross border trader groups (6 groups) who participated in the focus group discussions know early warning signs and actions the community takes to mitigate the damaging effects of disaster. From the discussions it was apparent that households and traders put various measures against the earlier reported prominent hazards: drought, floods, inflation, conflict and livestock disease. The households managed the damaging effects of droughts through migration and preservation of food such as drying meat. Against Livestock disease, households indicated they usually liaise with experts in livestock management including the government and application of quarantine. Inflation is adequately managed through selling of local currency (Birr, Shilling) and saving money in USD in Dahabshil Bank. In addition, the traders also kept money in stocks of highly demanded goods. Conflicts in the community or between communities were resolved through government interventions and reconciliation organized by council of elders. In addition, the community members still observe traditional warning signs for disaster risks like drought, conflict and floods. The community observes and heed the traditional warning signs of disasters to avert losses to damaging effects of the hazards. The warning signs for drought include cold / hot temperatures, drying rivers, very strong winds, withering trees, out-migration of birds, influx of vultures, failure of seasonal crops, outbreak of livestock diseases, and failure / prolonged rains. From the household survey, it emerged that different source of information about risks and hazards exist within the communities with mass media (radio / SMS), learning institutions and family members being the commonly known / preferred avenues to share such information. Table 4-17 below details the different sources of information in the 3 different countries.

Table 417: Information source about risks and hazards

Information source	Ethiopia	Kenya	Somalia	Grand Total
Schools	41.5%	28.4%	34.6%	34.9%
Media / Radio / SMS	36.7%	80.4%	37.0%	51.3%
Family members	19.2%	50.9%	46.8%	38.9%
Mosques	30.8%	49.9%	18.6%	33.1%
Gathering	11.0%	58.9%	34.9%	34.9%

From the information above, it is clear that the information dissemination strategies should capitalize / build on the existing avenues with larger outreach potential in the different countries. It is also clear that the Kenyan cluster has a higher number of options to disseminate information compared to the Ethiopian and Somali clusters. Of importance to note is that there is still a high awareness on the prominent hazards among community members. Awareness on the risks of floods, livestock diseases, inflation, drought and conflict were 82.6%, 83.2%, 80.4%, 78.5% and 23.4% respectively.

1.15.2 # of DRRM plans funded or integrated in local development plans (LED; CIDP) by targeting, costing/budgeting, and implementation

Overall, 26.5% of the households surveyed indicated that their community had disaster risk reduction plans. When categorized according to the different clusters, it was observed that 47.5% of the respondents in Kenya reported presence of DRR plans in their communities while in Ethiopia and Somalia, the responses were 12.3% and 21.7% respectively. 89.6% of these respondents reported that the DRR plans had been reviewed (75.0% in Ethiopian cluster, 95.5% in Kenyan cluster and 85.7% in Somalia cluster). Community participation in cDRR activities was also high on the Kenyan side compared to the Ethiopia and Somali clusters with table 4-18 below giving detailed breakdown of the different activities in which the respondents reported to have participated in.

Table 418: Community participation in cDRR activities

Community participation in cDRR activities	Ethiopia	Kenya	Somalia	Grand Total
Developing / rehabilitating strategically located rain water harvesting systems for pastoral livelihoods (e.g. water pans)	32.3%	60.7%	29.5%	40.8%
Rain water harvesting for schools, home or community	22.3%	61.8%	29.2%	37.7%
Opening trenches to divert run off water from dwellings (home, school or community)	17.9%	59.4%	28.7%	35.3%
Planting trees for home-stand, school or community	22.3%	58.7%	26.6%	35.8%
Saving money	16.2%	55.8%	27.6%	33.2%
Spreading DRR / SMS alert	14.9%	65.1%	28.7%	36.2%

Through focus group discussions the study established that major activities in the plans had not been funded, but, the three governments in collaboration with civil society have promoted agro-pastoralism in riverine communities, destocking / restocking, water trucking, tree planting, rain water harvesting and provision of relief food at a minimal scale.

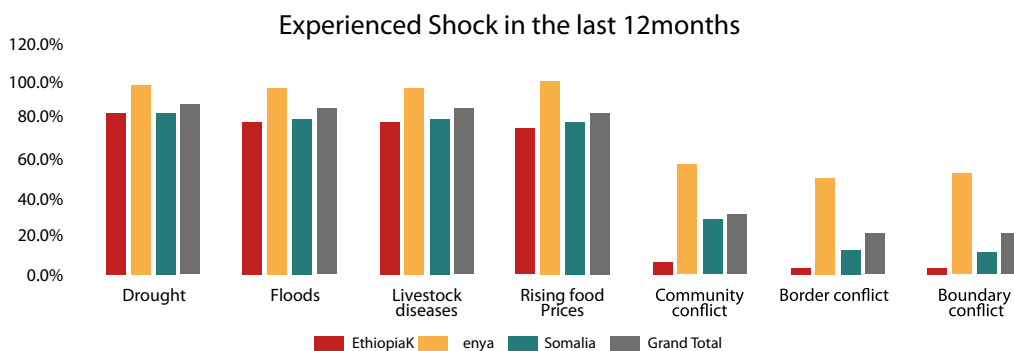
However, the actual number of to be reported through this indicator will be based on the cDRR plans (cDPPs) that will be developed through this project. The specific information to be collected will be looking at cDRR with activities that have been factored in local development plans and budgeted for. Information will be updated through regular monitoring.

1.15.3 Proportion of shocks “well managed” by the target communities during the project

As reported against indicator 4.1.2 above, the main highlighted shocks in descending order are livestock disease, floods, rising food prices (inflation), drought and conflict which households reported that these shocks have been experienced in the past 2 years. This was further confirmed through the Focus Group where drought was managed through preservation of food (such as drying meat). For livestock diseases, households normally liaise with experts in livestock management (including government departments) and application of quarantine. Inflation is adequately managed through sell of local currency (Birr, Shilling) and saving money (proceeds of trade) in USD in Dahabshil Bank. In addition, the traders also kept money in stocks of highly demanded goods. Conflicts in the community or between communities were resolved through government interventions and reconciliation organized by council of elders. Of importance to note is that these shocks mainly have an effect on the livelihood system and majorly affecting (agro) pastoralist livelihoods and trade which will eventually have an impact on access to food. To cope with the food shortage, households have mainly been selling their livestock as given in the section covering indicator 4.2.1 besides the normal adoptive coping mechanisms (dietary change, reducing food quantity and purchasing food on credit).

In recall of 12 months’ period prior to the survey, the same shocks highlighted were experienced at different magnitudes across the three clusters. Of importance to note was the fact that the Kenyan cluster has experienced significantly higher proportions of conflicts (community, border and boundary) related conflicts. Figure 4-3 below gives a pictorial break-down of the different shocks experienced 12 months prior to May 2018.

Figure 43: Shocks experienced within 12 months prior May 2018).



All in all, 57.0% of the respondent households applied coping mechanisms that would deplete their main livelihood systems, i.e. sell of household productive assets and / or sell of small livestock. Looking at the distribution across the three clusters, Kenya recorded the highest proportion of 74.9%, followed by Ethiopia (50.8%) and Somalia (45.5%). This computation was based on the union characteristic of the 2 sets (coping mechanisms). The other coping mechanisms used and their corresponding responses are given in table 4-19 below.

Table 419: Household coping mechanisms to recently experienced disaster (within 12 months prior to study)

Coping mechanisms	Ethiopia	Kenya	Somalia	Grand Total
Loan from neighbors / relatives	53.3%	72.9%	41.6%	55.9%
Loan from money lender	21.8%	51.2%	18.6%	30.5%
Grain loan from kin	15.9%	53.0%	9.3%	26.0%
Adjustment to meals	27.4%	85.3%	22.0%	44.8%
Sold household productive assets	25.1%	59.7%	19.6%	34.8%
Sold small animals	44.4%	68.5%	41.1%	51.3%
Sold jewelry / utensils / furniture	7.9%	52.2%	13.2%	24.4%
Permanently migrated	4.6%	42.1%	16.3%	21.0%
Sold trees	36.7%	54.0%	22.7%	37.8%
Sold labor	38.5%	56.1%	10.6%	35.1%
Changed occupation	13.3%	51.4%	23.3%	29.3%

It is clear that the coping mechanisms were mainly applied on the Kenyan cluster, which also corresponds to the higher proportion of respondents who reported to have experienced shocks within the same period. According to the project design documents management of the mentioned risks affecting (agro) pastoral livelihoods was mainly to be mitigated through: promotion of livestock insurance (IBLI); fodder production and conservation; livestock vaccination; and livestock disease surveillance and appropriate treatment. In addition, several activities in the cDRR plans and the NRM plans will contribute largely through protection of these livelihoods both at household capacities and developing the local institutional capacities to support communities and households. Other initiatives around livelihoods diversification will also cushion (agro) pastoralist communities against the mentioned shocks. However, proper management of the above shocks will also require well-coordinated efforts to develop appropriate early warning systems and building sustainable & resilient livelihoods and support structures at household, community, and district levels which the project seeks to address through the different outputs and outcomes. In relation to early warning systems, it was revealed that the outreach from the different information sharing avenues assessed was highest among targeted communities in the Kenyan cluster in comparison to their counterparts in Somalia and Ethiopia as given in table 4-20 below.

Table 420: Sources of early warning information

Information sources about impending disasters	Ethiopia	Kenya	Somalia	Grand Total
Observing traditional early warning systems	40.8%	89.4%	30.6%	53.5%
Religious institutions (mosques)	36.4%	78.8%	32.1%	49.1%
Radio	43.3%	92.8%	44.3%	60.1%
SMS system by relevant authorities and NGOs (such as NDMA, Kenya red cross, e.t.c.)	13.3%	85.0%	18.9%	39.0%

There are a number of DRR initiatives lead by the government (through the NDMA) in Kenya which works with other stakeholders within the Country Steering Group (CSG), opinion leaders and respected institutions (including mosques) in mobilizing communities and coordinating humanitarian and development efforts within Mandera county. This could be a contributing factor of the high level of awareness about impending disasters within Mandera county (the Kenyan cluster).

1.15.4 Number of livestock-dependent households protected by insurance

The Index Based Livestock Insurance (IBLI) product leverages the strong correlation between a remotely sensed vegetation index and livestock losses associated with forage shortages to offer insurance coverage to pastoralists in regions without access to conventional insurance products. In Kenya, the Kenya Livestock Insurance Program (KLIP) supports 2,000 H/Hs in Mandera County and uses satellite data provided by ILRI (using rainfall data from the meteorological department) on forage availability to develop insurance tools and products that are suitable for livestock keepers in the ASAL's of the country. The government pays KES 15,000 per TLU to APA Insurance for purposes of insurance (Assumption of 1 cow = 1 TLU - average weight 250kg, and equated to 10 shoats, with camel calculated at 1.5 the rate of cattle). Insurance payouts are bi-annual, based on short and long-rain assessments (July to September and January to March to correspond to the short rain period of October to December and the Long rains of April to June). Average payment is KES 25,000 per season per H/H. The average price of hay in the dry season is KES 500/bale of 15kg, whereas a cow needs to consume 3kg of dry matter. 1 bale is thus assumed to be enough to feed 5 cows for 1 day or 1 cow for 5 days. Given that the payment is made to households when there are triggers, the payment adequately covers fodder needs of the livestock in the lean season.

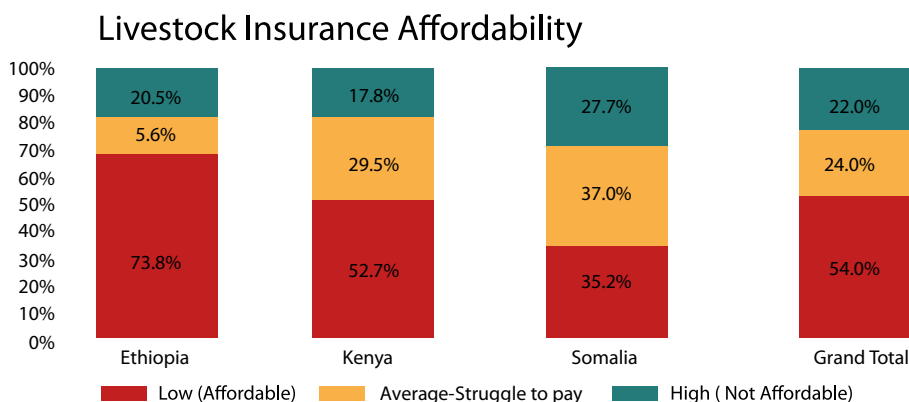
The general awareness on livestock insurance among respondent households across the three clusters was 30.7%, with the awareness being 51.9% in the Kenyan cluster while in the other clusters, it was 18.5% and 20.9% in the Ethiopian and Somali clusters respectively. The use of local media (radio and SMS) has been a significant contributing factor to the reasonable level of livestock insurance in Kenya compared to the Somali and Ethiopian clusters. Similarly, the other methods of awareness raising are also contributing to the general awareness of the same. Of importance to note is the fact that awareness through NGOs is extremely low, giving the possibilities that NGOs have not been working in the area of livestock insurance but at the same time presenting an opportunity for NGOs working in these areas to work on interventions aiming at raising awareness and promoting the livestock insurance uptake.

Table 421: Source of information on livestock insurance

Information Source on IBLI	Ethiopia	Kenya	Somalia	Grand Total
Media / radio / SMS	7.9%	41.1%	12.7%	20.5%
Family members	9.2%	35.7%	11.6%	18.8%
Friends / neighbors	4.6%	38.2%	8.5%	17.1%
NGOs	0.8%	26.6%	0.0%	9.1%
Public barazas / public gatherings	0.5%	23.8%	1.0%	8.4%

There is a general perception that the cost of premiums for livestock insurance are low / affordable (54.0%) where the perception was highest on the Ethiopian cluster as given in figure 4-4 below. In comparison to the overall uptake of the product, there was no evidence that the perception on affordability of the product had an influence on the overall uptake of the product.

Figure 44: Livestock insurance premiums



Similarly, the study established that households in Ethiopia and Somalia were aware of the livestock covered by the insurance but none of the households sampled had actually subscribed or insured their animals. Similarly, in Somalia none of the households sampled had subscribed to or insured any of the livestock they owned. The survey established that 26.1% of the respondent households had taken livestock insurance for their livestock. When disaggregated according to the clusters in Kenya, Somalia and Ethiopia, the survey revealed 43.2%, 18.7% and 16.7% respectively. This could also be attributed to the high level of awareness and the general perception about the importance of the livestock insurance products.

Importance of livestock insurance	Ethiopia	Kenya	Somalia	Grand Total
Don't know	51.5%	33.9%	44.7%	43.4%
Not important at all	2.1%	4.4%	6.2%	4.2%
Somewhat important	31.5%	23.0%	34.6%	29.7%
Very important	14.9%	38.8%	14.2%	22.6%

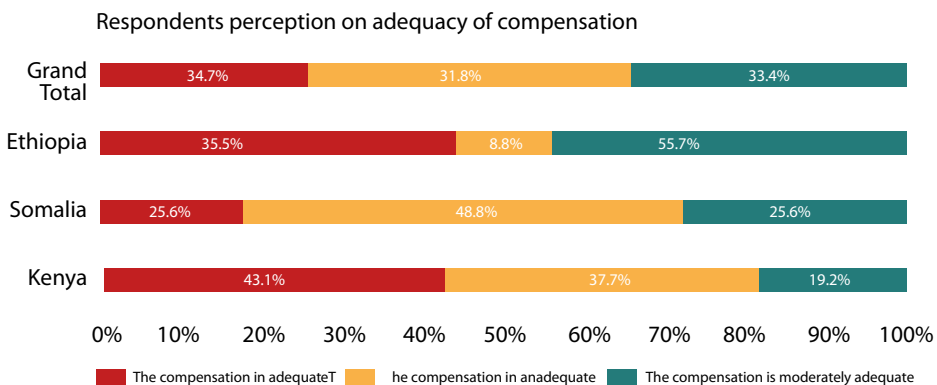
Of importance to note is that livestock preferred for the insurance products are the core breeding herds of camels, cattle, shoats and donkey which are valued among pastoral communities, especially in the area of interest due to their different associated benefits. The table below (4-22) is a summary of the livestock types that households would obtain insurance for. It is important to note that the households sampled reported that all livestock (big or small) needs to be insured. However, cattle used to be among the core breeding herds but are rapidly reducing because of the recently experienced harsh weather conditions, making it difficult for cattle to survive. Goats and sheep are the commonly bred herds since they are easier to breed and accessible to poor households.

Table 422: Livestock preferred for insurance

Livestock preferred for insurance	Ethiopia	Kenya	Somalia	Grand Total
Camels	16.7%	95.3%	55.1%	64.1%
Cattle	66.7%	99.3%	38.5%	75.3%
Goats	92.9%	98.7%	59.0%	87.2%
Donkey	54.8%	67.3%	26.9%	53.8%

Knowledge on compensation among the respondent households stood at 34.2%. according to the different clusters, this knowledge stood at 49.6% on the Kenyan side, 23.6% on the Ethiopian side and 29.5% on the Somali side. Likewise, the general perception on adequacy of the compensation package was reported to be 34.7%, with the majority of the Kenyan respondents (where uptake was higher) indicating that compensation was inadequate as given in figure 4-5 below.

Figure 45: Respondents' perception on IBLI compensation



From the analysis on livelihood strategies and the nature of prevalent shocks in the areas of study, it is clear that livestock insurance is a key contributor to resilient livelihoods across the three clusters. Based on the observations from the data, it is also clear that the hindrance factor to IBLI uptake is awareness, especially around the importance of the IBLI scheme and the associated benefits of IBLI. A key observation made was also that the affordability of the premiums was not seen as an issue, implying that as long as the community members are made aware of the products, how to access them and the potential benefits, community uptake of the same could greatly increase. The information dissemination strategies for the IBLI products seem to work differently in across the three clusters, but in general, they have worked pretty well on the Kenyan side.

1.16 Livelihoods and diversification

Interventions under this outcome focus mainly on improving the key livelihood strategies and providing diversified opportunities for potential livelihood strategies within the communities. The outputs under this outcome are closely linked with the other 2 outputs for maximum impact. Specifically, this outcome focuses on improved cross-border engagements (in pursuant of sustainable and diversified livelihood systems), business development, improved savings & access to business capital, skills development, improved livestock management practices and improved value chains for locally produced agricultural and livestock products.

1.16.1 Increase in number of livelihood resources being used by households

As reported against indicators 4.1.1 and 4.1.2 above, the community mainly relies on (agro) pastoral livelihoods and petty trade for sustenance and income generation. Key resources for these livelihoods are rangelands, water supply and access to land for cultivation. However, land utilization for agriculture among the respondent households was mainly 1 acre or less (42.3%) and between 2 to 5 acres (23.2%). Livestock ownership is also at an average of 20 shoats per household which is faced with a number of challenges including inadequate water and inadequate pasture. It was further reported that water scarcity (especially during dry spells) was experienced across the three clusters along the border region of Kenya, Somalia and Ethiopia. Water from the rivers Dawa and Ganale is a shared resource, and is widely used for irrigation of fast maturing crops (fruits and vegetables) by communities residing along the riverine areas. According to local authorities, **the potential for irrigation is believed to be between 10,500 to 15,000 hectares.**

From the household survey, it was revealed that 67.5% of the respondent households reported to have utilized at-least one of the resources that the study focused on: wild food, forest products, aquatic resources, pasture / fodder, and rivers / swamp. Utilization of these resources was significantly higher among respondents in the Kenyan cluster in comparison to their counterparts in Somalia and Ethiopia. The study focused access and utilization in a period of 12 months prior to the study. Further observed was that the resources mainly utilized were pasture / folder and rivers / swamp, which are largely required resources for (agro) pastoral livelihoods.

Table 423: Natural resources accessed / utilized 12 months prior to study

Natural Resource accessed / utilized in the past 12 months	Ethiopia	Kenya	Somalia	Grand Total
Wild food	15.9%	45.2%	19.1%	26.7%
Forest products	30.3%	70.8%	30.0%	43.6%
Aquatic resources	22.1%	16.8%	10.9%	16.6%
Pasture / fodder	40.5%	72.1%	27.1%	46.6%
Rivers / swamp	42.6%	28.2%	19.9%	30.2%
At-least 1 resource used	66.7%	87.9%	48.1%	67.5%

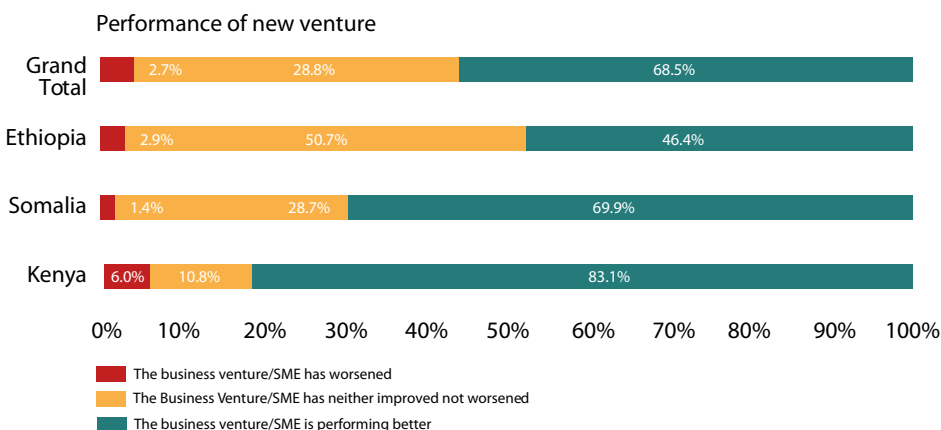
Livestock is another key resource for households inhabiting the Kenya-Somalia -Ethiopia border area. These include camels, goats, sheep and cattle. Cattle are no longer kept in large numbers because of the harsh climatic conditions and lack of sufficient water resources required to maintain Large herds. Animals are used for food, as pack animals, or for ploughing. Livestock and their products (milk, meat, and skins) are also sold to generate household income. There have been reports of declining numbers

of livestock in recent years, due to a combination of recurrent droughts, livestock disease and the obligations to pay religious or social contributions using animals as zakat or dowry payment. Whereas households rely heavily on camels, goats, sheep and, to a lesser extent, cattle to meet their daily needs, there is a trend in livelihoods diversification from pure dependency on livestock to trade and SMEs. Pastoralism dropout and opportunities arising from rising demand for food and non-food items by ever growing urban conurbations are the major drivers of livelihoods diversification.

1.16.2 % increase in revenues of the target HHs

As reported in section 4.2.1, the median and mean monthly income for a household was USD 32.0 and 35.2 respectively. The income was largely from (agro) pastoral livelihoods where most of the households engage in and accounted for the largest proportion of the revenue generated, especially in Ethiopia and Somalia, where salaried employment accounted for the largest proportion in Kenya. Petty trade, though not practiced by many, (accounting for only 2.6% of the respondent households) has potential of generating significant household revenue. As such, it was reported that 31.6% of the respondent households have taken up any new livestock; none-agricultural production; business development practices & technologies; and small and medium enterprises. Break-down per cluster was 21.3% in Ethiopian cluster, 55.8% in the Kenyan cluster and 17.8% in the Somali cluster. At the same time, 68.5% of those who had enrolled in new ventures reported that the business venture / SME is performing better. Figure 4-6 below gives detailed analysis of the observations.

Figure 46: Respondents' perception on performance of new venture



Since the new venture has contributed to the overall household income, change in revenue will be measured with respect to the average / median household revenue as a % of the baseline averages. This change will be measured / assessed during subsequent studies and reported.

1.16.3 % of individuals describing better health and lower rates of attrition amongst their herds compared to baseline

As reported in earlier sections, (agro) pastoral livelihoods dominate the three clusters with the core breeding herds being camels, shoats, donkey and cattle (even though there is a significant reduction in cattle being kept). As such this sustaining this sector by improving livestock management practices to maintain good body conditions and reduce the mortality rates for these breeds is critical for their livelihoods. The overall perception was that 68.1% of the households reported that their animals were in good condition, with the overall break-down per the individual clusters given in figure 4-2 below. Through the FGDs conducted in the villages, it was also reported that the rains that were experienced from March 2018 had a positive effect on the livestock sector

and thus households had begun reconsolidating their stocks. However, there is a risk of livestock diseases, with the threat of Rift Valley fever being a concern to both government livestock departments as well as community members.

Besides other essential inputs such as pasture and water (which will be discussed in the NRM section), another key success factor on the livestock sector is the availability of livestock extension services. As such, it was observed that the overall perception on the availability and quality of livestock extension services was below average (on a scale of 0-5, with 0 being poor or not available / accessible at all) which was reported by 87.6% of the respondents. Table 4-24 below gives a detailed break-down on the community perception in terms of ranking the accessibility and quality of livestock extension services. Transmitting information on livestock production has rarely been a priority for centralised extension services in developing countries. National agricultural extension services are usually designed around the need to transmit information on annual crops, while livestock ministries and departments are dominated by vets and animal health concerns. Yet the potential for increasing livestock production through the provision of information is growing in many developing countries. Despite its growing importance, livestock production extension is a field neglected both by policy-makers and by researchers. The importance of livestock to household welfare, fertility maintenance and production is still under-recognised in many developing countries. But livestock production extension faces the additional institutional problem of being marginal to both agricultural extension and animal health services. Livestock services and the ministries or departments that are responsible for them, are mainly run by vets, and focus on animal health issues: curative treatment of individual animals, preventive health, and health screening of animal products⁷.

Table 424: Respondents' ranking of livestock extension service

Rankings Livestock extension services	Ethiopia	Kenya	Somalia	Grand Total
Rank 0 (least favourable)	35.1%	56.1%	28.4%	39.9%
Rank 1	20.3%	20.4%	51.7%	30.8%
Rank 2	22.8%	10.9%	17.1%	16.9%
Rank 3	15.4%	5.9%	2.1%	7.8%
Rank 4	3.3%	6.7%	0.8%	3.6%
Rank 5 (most favourable)	3.1%	0.0%	0.0%	1.0%
Grand Total	100.0%	100.0%	100.0%	100.0%

Through this project's key outputs focusing on sustainable livestock management practices through group based learning approach and strengthening of cross-border animal health initiatives, there is a very big opportunity for making a significant and sustainable contribution to this sector by establishing community-based structures for improved livestock management practices and linking them to the relevant authorities. Other contributing factors of success in this sector that could come with this project are commercializing the livestock sector by improving the livestock value chains (for live animals and various animal products), and development of business skills among the local communities.

⁷ <https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/2967.pdf>

1.16.4 % of HHs in targeted communities getting better results from their SMEs

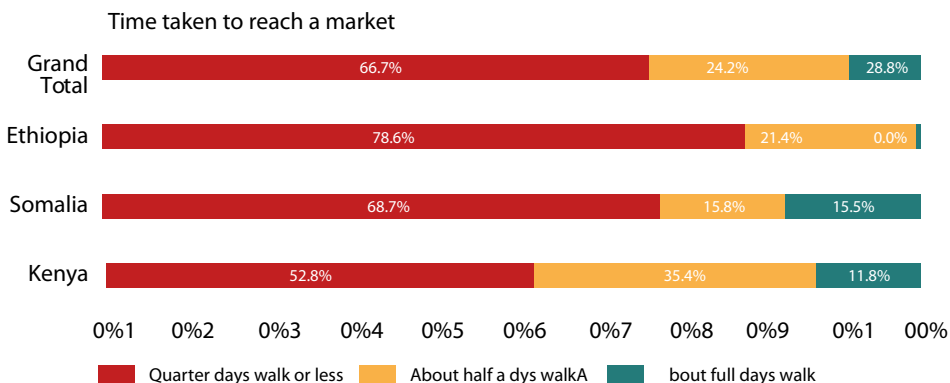
The performance of SMEs in the three countries under review is heavily influenced by the profile of the market, distances to the market, prices and availability of goods and services in the market. Trade in the markets in Somalia, Ethiopia and Kenya borders is subject to few regulations. Trade in these markets focuses on livestock, cereals, electronics, clothes and consumer items. Traded goods in these markets are dominated by the flow of livestock from Ethiopia and Somalia through border areas and eventually to large urban markets in Kenya or external markets in middle east through the port of Somalia. The area of concern is distant from agricultural zones and consequently there is only minimal movement of agricultural products across the border. In some cases, maize and wheat flour will be moved from Kenya to Ethiopia and Somalia when shortages exist and food aid is unavailable. Goods such as tea, sugar and clothes are moved from Kenya to Somalia and Ethiopia in small quantities on livestock merchants' return trip to the two neighbouring countries. Khat is also moved from Mandera Kenya to Ethiopia and Somalia. The profiles for markets accessed by households across the three clusters is given in the table below (table 4-25).

Table 425: Market profiles

Market profile	Ethiopia	Kenya	Somalia	Grand Total
Large market serving district/ Woredas with many goods/livestock/traders, including from across national borders	21.0%	2.3%	1.6%	8.3%
Mid-sized market with a fair amount of goods/livestock/traders and serving more than 5 settlements	37.2%	10.6%	10.9%	19.6%
Small market with limited goods/ livestock, and serving only one or few settlements	41.8%	87.1%	87.6%	72.1%
Grand Total	100.0%	100.0%	100.0%	100.0%

A key determinant of market accessibility was the overall time taken to reach the market from the homestead / business premises, availability of goods and prices of the available goods. As such, it was observed that 66.7% of the respondents would access the markets within a quarter of a day (3 hrs) or less. The markets were closer on the Somali cluster and followed closely by the Ethiopian markets as given in table 4-8 below.

Figure 48: Time taken to reach a market



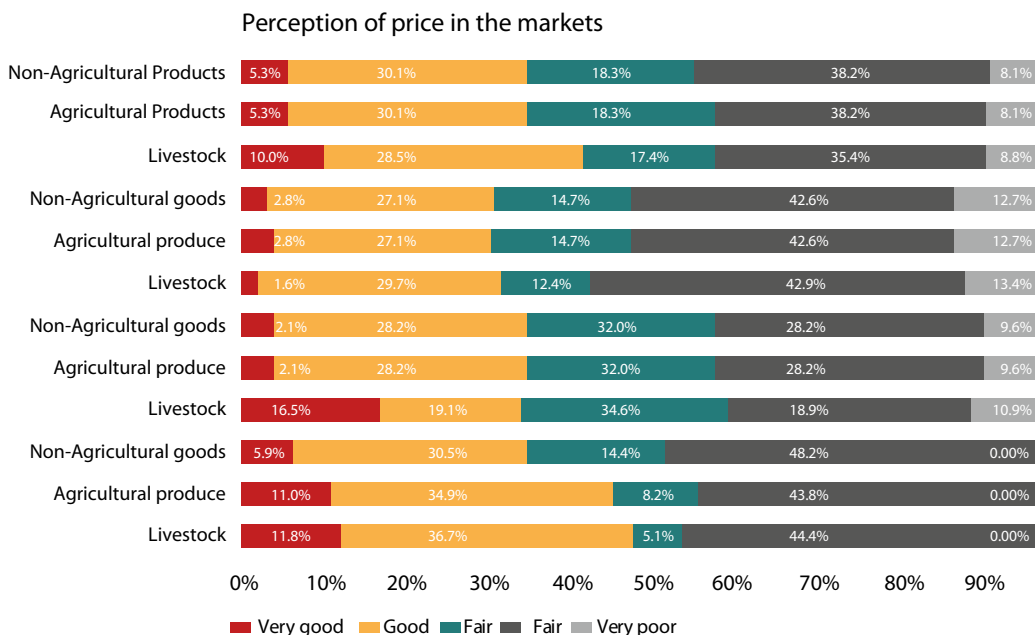
It was also observed that 64.9% of the respondents reported that the goods they need are usually not available in the markets most of the time, with Kenya and Somalia recording over 70% of respondents reporting that required goods are usually not available in the markets as given in table 4-26 below.

Table 426: Availability of goods in the market

Availability of goods	Ethiopia	Kenya	Somalia	Grand Total
The goods we need are usually available	43.3%	3.1%	0.8%	15.8%
The goods we need are sometimes available	11.0%	24.3%	22.5%	19.2%
The goods we need cannot be found most of the time	45.6%	72.6%	76.7%	64.9%

In relation to the prices, the markets performed better in the Ethiopian cluster compared to the Kenya and Somali clusters but generally, there is still quite some work that needs to be done to open up the markets and make them favourable to the local communities. Figure 4-9 gives a general overview of how the pricing was perceived in the markets across the three clusters.

Figure 49: Market performance with respect to prices



From the data given above, Ethiopian markets were better performing in terms of availability of goods and prices. However, in relation to distance from homesteads, it was the cluster with fewer respondents who reported that it takes a quarter of a day or less to reach the market. As such, SMEs in Ethiopia are more likely to perform better in comparison to their counterparts in Kenya and Somalia. Besides access to markets, other factors that have an influence on the performance of SMEs which the project can look at directly or through advocacy work include: business / entrepreneurship skills (including financial literacy and management), macro-economic environment, access to credit for business financing, and infrastructure.

1.16.5 % of VSLAs self-reporting an increase in household income

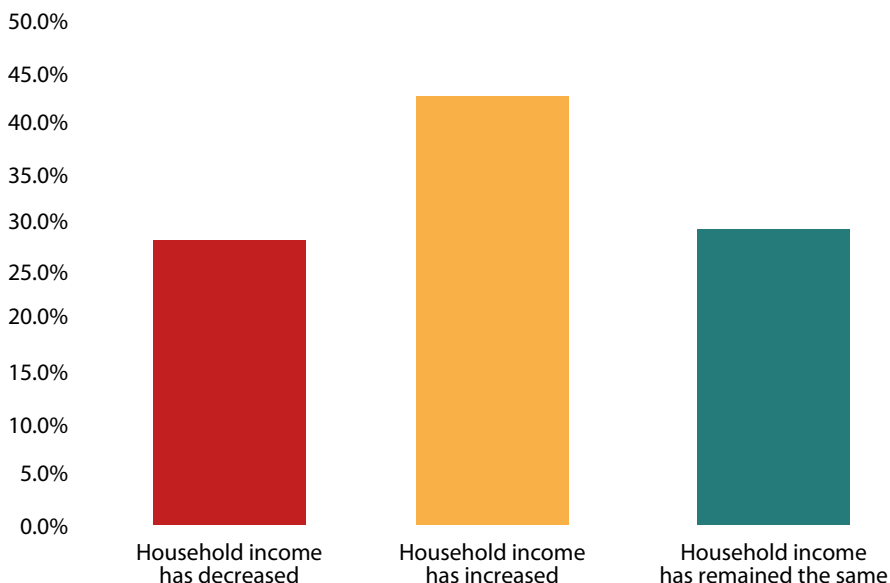
Groups savings and loans approached have developed over the past 20 years into a fairly standardized methodology. It was introduced into the arid and semi-arid lands (ASALs) of the Horn and East Africa as around 10 years ago (around 2001) and is currently being implemented by a number of international and national NGOs including several ECHO DCM partners. In Kenya it has been referred to as Village Community banking (VICOBA), while in Uganda it is called Village Savings and Loans Associations (VSLA) a methodology developed by CARE and implemented in various countries. although the methodologies are very similar. In the drylands of the Horn and East Africa, VICOBA/VSLA has been shown to increase diversification of income leading to increased resilience to drought and The ability to earn and save money through VICOBA / VSLA has been shown to attract youth (particularly in Karamoja) out of raiding. The VICOBA approach has been shown to provide a useful basis for the establishment of private animal health services. In Ethiopia savings and loans combined with functional literacy and business development skills was shown to increase women’s confidence to engage in individual business ventures as well as confidence to engage in meetings and other community events (CARE Ethiopia, 2009)⁸.

⁸ http://www.fao.org/fileadmin/user_upload/drought/docs/1_Good%20practice%20principles%20on%20groups%20savings%20and%20loans_DRAFT_%20June%202011.pdf



In focus group discussions, it emerged that households recognized that availability of savings in a household reduces the severity of the deleterious effects of disasters on its members. It was also noted in FGDs that formation of common interest groups would enable members to mobilize adequate financial resources which would be loaned-out to members for business development. Through the household survey, it was noted that 39.1% of the respondent households had at-least one member in a VSLA with Kenya recording the highest proportion of 77.0%, followed by Somalia and Ethiopia at 22.0% and 18.5% respectively. Households which had joined local village savings groups or any common interest groups reported that they obtain benefits of loans from their group. This was confirmed by 38.9% of the households who had enrolled in common interest groups in Ethiopia; 85.2% in Kenya and 75.3% in Somalia. However, it is important to note that the groups which existed in Ethiopia and Somalia had not been formally registered with the relevant ministries and were not legal entities which could benefit from formal banking loans. Of the households that had indicated they had at least one member belonging to a VSLA, slightly above four in ten (43.1%) indicated that their income increased since they enrolled in village savings and loan groups in their community, as given in figure 4-10 below.

Figure 410 Household reporting increase in household income after joining VSLA

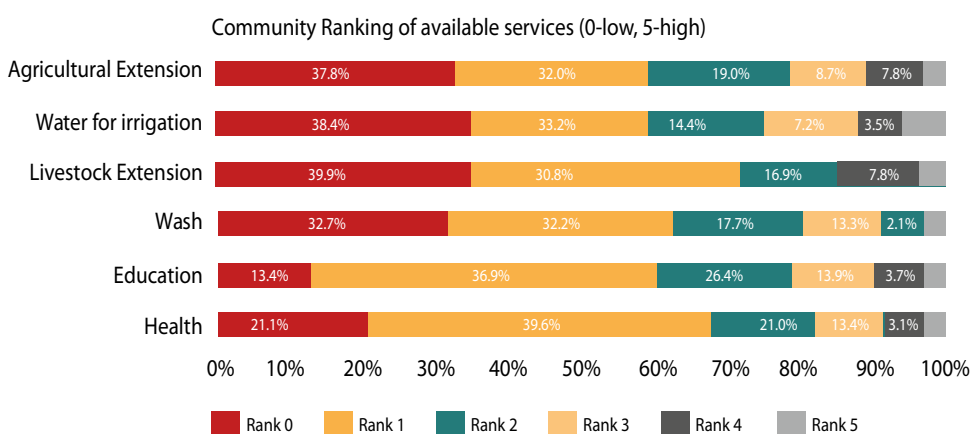


1.16.6 Number of interviewees reporting changes from the community infrastructure established / rehabilitated, supporting cross border employment / diversified enterprise and livelihoods

Infrastructure plays a critical role in overall development of communities. Infrastructure boosts production by serving as an input to production, as well as providing services that are part of the consumption bundles for individuals or an entire economy. The general observation was that infrastructure in the cross-border area is limited. On all three sides of the border, the commonly used means of transporting goods and services are only usable during the dry season as most roads and air-strips have not been tarmacked. Access to electricity is also low, although the region is endowed with vast, untapped solar and wind energy potential. Conflict in Gedo has been the main challenge to improving key infrastructure, such as air-strips and water harvesting & conservation projects. Educational infrastructure has also been impacted and only four secondary schools are functional on the Somali side of the border. Mandera's infrastructure is relatively more developed with a greater number of educational, health, banking, communications and transport Facilities. These attract people from

the bordering villages in Ethiopia and Somalia to move to Mandera County in order to access such services. Given the heightened security considerations across the Kenya-Somalia-Ethiopia cross-border areas, there have been efforts to streamline security infrastructure and arrangements across the borders. With the resilience nature of the BORESHA program, the study focused on communities’ perception in relation to their level of access and the overall quality of the following services: Education services; Public health and medical services; Livestock extension services; Water, Sanitation and hygiene promotion (WASH) services; Water for irrigation and livestock. The overall perception is that access to or the overall quality of these services was below satisfactory (reported by 64.7% of the respondents) where only 15.6% reported satisfaction with these services. Water for irrigation, livestock extension, agricultural extension, and WASH services were among the lowest ranking sectors, with more than 30% of the respondents ranking it as 0 (the lowest rank, on a scale of 0 to 5). The overall picture of how the ranking was perceived is given in figure 4-12 below.

Figure 412: Communities’ ranking of available services



As a coping mechanism, households from the bordering villages normally cross the borders to get different services and amenities that they feel are inaccessible or not of the expected quality in their countries. The table below gives the perceived frequency of cross-border movements

Table 427: Migration frequency

Frequency of crossing the border	Ethiopia	Kenya	Somalia	Grand Total
Infrequent (Only once or twice a year)	17.9%	14.5%	2.1%	10.8%
Moderately frequent (at least once every three months)	43.9%	37.1%	62.5%	47.8%
Very frequent (at least once a month)	38.2%	48.4%	35.4%	41.4%
Grand Total	100.0%	100.0%	100.0%	100.0%

The key drivers of migration across the borders to the neighbouring countries in this context differ from country to country. However, the major drivers are livelihoods related such as: search for pasture, and water for livestock as given in table 4-27 below.

Table 428: Services sought across the borders

Services sought across the border	Ethiopia	Kenya	Somalia
Health	51.8%	31.3%	49.6%
Education	45.6%	14.5%	44.4%
Livestock extension	27.2%	25.8%	33.3%
Water for livestock	25.4%	48.1%	35.1%
Pasture for livestock	42.6%	63.6%	37.0%
Agricultural extension	25.6%	21.7%	29.7%
Markets	31.5%	57.1%	49.6%

From the drivers of migration, it is clear that these are influenced by the perceived accessibility / level of these services in the different localities across the three borders. Tale 4-29 below gives a summarized picture of the state / quality of the different services as per the communities' / respondents' perception.

Table 429: Quality of the different services across the three borders

	Agricultural extension services			Water for irrigation			Livestock extension services			WASH services			Education services			Health services			Rankings
	Somalia	Kenya	Ethiopia	Somalia	Kenya	Ethiopia	Somalia	Kenya	Ethiopia	Somalia	Kenya	Ethiopia	Somalia	Kenya	Ethiopia	Somalia	Kenya	Ethiopia	
	23.0%	52.5%	21.2%	3.4%	0.0%	0.0%	28.9%	51.9%	16.5%	2.3%	0.3%	0.0%	15.0%	64.3%	19.9%	0.8%	0.0%	0.0%	0
	59.4%	20.2%	11.6%	6.5%	1.8%	0.5%	54.0%	24.3%	14.2%	5.9%	1.0%	0.5%	18.9%	26.1%	33.9%	15.5%	4.9%	0.8%	1
	31.0%	23.6%	24.1%	16.2%	3.3%	1.8%	32.3%	23.6%	21.3%	13.3%	2.6%	6.9%	6.4%	20.5%	25.4%	25.4%	6.2%	16.2%	2
	27.6%	56.1%	15.0%	1.3%	0.0%	0.0%	27.6%	56.1%	15.0%	1.3%	0.0%	0.0%	27.6%	56.1%	15.0%	1.3%	0.0%	0.0%	3
	19.6%	32.0%	26.6%	12.9%	7.0%	1.8%	19.6%	32.0%	26.6%	12.9%	7.0%	1.8%	19.6%	32.0%	26.6%	12.9%	7.0%	1.8%	4
	16.2%	30.8%	21.3%	25.9%	2.3%	3.6%	16.2%	30.8%	21.3%	25.9%	2.3%	3.6%	16.2%	30.8%	21.3%	25.9%	2.3%	3.6%	5

1.16.7 Increase in cross-border employment opportunities (as reported by individuals against baseline)

From group discussion it was apparent the institutions which provide employment to members of the community across the triangle are international development Agencies; the government and Small and medium size enterprises in the urban and semi-urban areas. The government jobs available in the area are mainly administrative while the non-governmental organizations provide both program related and wage jobs to people in the community. The small and medium size enterprises offer artisanal jobs which require persons to obtain technical skills. Example of artisanal jobs include, hairdressing, welding, carpentry and masonry. Other jobs in the SMEs include clerical jobs in money transfer (M-Pesa, Dahabshii), shops and hotels. Food kiosks and restaurants also provide employment opportunities to persons with skills in catering and unskilled labour in cleaning and supplies services.

As reported in section 4.1.1 (table 4-1), the proportion of households depending on income from salaried employment and skilled labour was only 1.1%. however, there is great potential for the agricultural and livestock sectors to provide employment opportunities if management practices in these sectors can be improved.

1.17 Outcome 3: sustainable utilization of cross-border rangelands and other shared natural resources.

Under this outcome, the program seeks to promote the utilization of cross-border rangelands and other shared natural resources in a more sustainable and equitably manner. This will ensure that these resources (which have been a source of conflict among pastoral communities) last through the lean period as well as accessible to community members (including vulnerable and minority groups). The key outputs under this outcome focus on:

- Supporting in Improving / strengthening the planning and management processes of shared natural resources.
- Supporting in protection and reclamation of rangelands.
- Supporting in the improvement of management of rangeland, grazing and dry-season grazing reserves.
- Support in strengthening of Integrated water resource management.

1.17.1 % change in land area rehabilitated and managed for communal use

The community land was still under the invasive species at the time of this baseline study. There are no records of the proportion of land covered by invasive species, though through observation during the field visits, young *Prosopis* covered community land in the rural areas. In the communities targeted, the species is a menace on grazing land and animal health especially when the animals browse on the leaves.

From the household survey, the overall awareness of invasive species amongst respondents was 44.7% with awareness being high on the Kenyan cluster (76.2%) followed by the Somali cluster (43.7%) and Ethiopia at 14.4%.



1.18 Number of natural resource management committees reporting increased productivity due to land management practices

The study established that the communities had not formed natural resource management committees. To enhance environmental resilience and climate change adaptation, Sustainable Agricultural Land Management (SALM) practices, promotion of crop diversification to provide different sources of income and for food needs to be DRC's main focus. Specific SALM practices which BORESHA project needs to promote include: Livestock management, efficient energy systems, agronomic practices, nutrient management and water management. Observed from the field is limited promotion of tillage and residue management which is part of the SALM practices. BORESHA should focus on rain water harvesting, small scale irrigation, river bank protection and terracing. Other climate change measures besides agro-forestry which households needs to adopt include: Energy saving stoves; Mixed farming; Intercropping; the excavation of water pan to catch runoffs during heavy rains; Bulk purchase of drought resistant seeds and timely planting.

1.18.1 # of households generating income through alternative uses of invasive species

As reported in section 4.4.1, there was high level of awareness on the invasive species (*Prosopis*) in Kenya (76.2%) followed by Somalia (43.7%) and Ethiopia (14.4%). Among those aware of invasive species, it was reported that 79.4% (67.9% in Ethiopia, 79.3% in Kenya, and 83.4% in Somalia) of them are already taking advantage of these invasive species to generate household income. With respect to the overall sample, only 35.5% (9.7% in Ethiopia, 60.5% in Kenya, and 36.4% in Somalia) of all the respondents reported utilization of the invasive species to generate household income. Among the ways in which the invasive species are being utilized, firewood was more prominent followed by producing charcoal as given in the table below.

Table 430: Utilization of invasive species

Utilization of invasive species	Ethiopia	Kenya	Somalia	Grand Total
Firewood	5.9%	66.4%	35.1%	35.7%
Making urea blocks	0.3%	27.6%	10.3%	12.7%
Producing charcoal	5.1%	56.8%	9.6%	19.5%

From the tabulated data, *Prosopis* is mainly utilized for fuel among households in the areas of interest. However, there are other potential uses of *Prosopis* that are appropriate to the context that can be explored through this project. Such can be utilization for fodder production, timber / seasoned wood, environmental conservation (such as control of wind erosion, soil conservation) and where possible, can be utilized for extracting tannin or dye stuff.

1.18.2 Number households accessing water for domestic and livelihood activities from rehabilitated / developed water sources

During the last 12 months prior to the survey (from May 2017 to April 2018), respondents reported that their households had access to different natural resources for domestic and production processes. It also emerged that the commonly accessed natural resources was water and forest products with more than 40% of the respondents reporting access to these 2 resources. Table 4-29 below gives a detailed overview of the situation.

Table 431: Last 12 month access to natural resources

Accesses natural resources in the last 12 months	Ethiopia	Kenya	Somalia	Grand Total
Wild food	15.9%	45.2%	19.1%	26.7%
Forest products	30.3%	70.8%	30.0%	43.6%
Aquatic resources	22.1%	16.8%	10.9%	16.6%
Pasture / fodder	40.5%	72.1%	27.1%	46.6%
River / swamp	42.6%	28.2%	19.9%	30.2%

In relation to (rain) water harvesting, it was also observed that 37.1% (14.6% in Ethiopia, 73.9% in Kenya, and 23.0% in Somalia) of the respondents were aware of rain water harvesting techniques. The harvested water is mainly used for domestic and watering livestock at 37.1% (11.8% in Ethiopia, 75.2% in Kenya and 24.5% in Somalia) and 33.0% (27.7% in Ethiopia, 55.6% in Kenya and 15.8% in Somalia) respectively. Utilization for agricultural production stood at 25.3% (22.3% in Ethiopia, 44.7% in Kenya and 9.0% in Somalia). Further information about rain water harvesting and conservation / retention of soil water (for agriculture) is given in table 4-31 below.

Table 432: Rain water harvesting & soil water retention

Rain water harvesting & water retention techniques	Ethiopia	Kenya	Somalia	Grand Total
Water pan (harvesting)	4.6%	60.2%	20.2%	28.3%
Tanks around houses (harvesting)	4.1%	68.5%	22.7%	31.7%
Reservoir (harvesting)	3.3%	39.3%	2.6%	15.0%
Minimum tillage (retention)	13.6%	40.3%	2.3%	18.7%
Mulching (retention)	8.2%	62.0%	9.6%	26.6%
Furrowing (retention)	42.6%	42.6%	28.9%	38.0%

Of importance to note is that this indicator will be measured during subsequent studies as no water source / water harvesting scheme has been developed or rehabilitated through the project.



4

1 Conclusions and Recommendations

1.20 Conclusions:

Overall objective and context:

It was a general observation that migration / movement of people, goods and services occurs across all clusters for different reasons. However, instability remains a key migration driver, especially on the Somali cluster. Besides migration due to conflict, other factors contributing to seasonal movement of people are livelihood related such as in search for pasture & water for livestock; labour migration, trade, in search for social services; family re-unification and politically motivated migration. However, the survey reported that over 85% of the respondents had not migrated. However, it was also observed that frequent movements across the borders is common among residents of the three clusters seeking different services and resources as earlier reported in table 4-28 in section 4.3.6.

The general observation was that the area is dominated by (agro) pastoral livelihoods and other sources of income which are practiced at different magnitudes across the three clusters. As such, it was also noted that the overall median and mean monthly income of the households surveyed was USD 32.03 and USD 35.15 respectively. However, there is a huge potential to improve these livelihoods (and their related value chains) as well as diversifying through other sectors. Mostly, households practice small scale farming at most 1 acre with only 93.3% of those engaging in agriculture managing to store their farm produce, where the stored produced mostly lasts for a maximum period of three months. Besides agricultural production, an alternative livelihood dominating in this region is livestock keeping, which is more dominant on the Kenyan cluster where sheep and goats are the main herds being kept as given in table 4-6 in section 4.1.2. The major challenges reported in the livestock sector include: diseases & pests; inadequate pasture; and inadequate water which are related to the changing weather patterns (recurrent drought and flash floods). Ownership of critical assets for improvement of the traditional and alternative livelihoods was also low as reported in table 4-12 of section

A key driver of economic growth across the three clusters is trade and access to markets. Trade in these markets focuses on livestock, cereals, electronics, clothes and consumer items. Traded goods in these markets are dominated by the flow of livestock from Ethiopia and Somalia through border areas and eventually to large urban markets in Kenya or external markets in middle east through the port of Somalia. Most of the community members have access to small markets with limited livestock and only serving a few settlements. At the same time, it was reported that the goods needed cannot be found most of the time. In relation to the prices, the markets performed better in the Ethiopian cluster compared to the Kenya and Somali clusters but generally, there is still quite some work that needs to be done to open up the markets and make them favourable to the local communities.

Both dominating sources of livelihoods in the areas of interest are vulnerable to the potential shocks identified by community members (drought, floods, livestock disease, rising food prices / inflation, and conflict). Among other remedies, the main coping strategy was sale of household / productive assets (including livestock) and adoptive coping strategies (dietary change or reducing the overall meal consumption). As such, the overall CSI score was 21.9 on aggregate average. All in all, 57.0% of the respond-

ent households applied coping mechanisms that would deplete their main livelihood systems, i.e. sell of household productive assets and / or sell of small livestock.

The general awareness on livestock insurance among respondent households across the three clusters was 30.7%, with the awareness being 51.9% in the Kenyan cluster while in the other clusters, it was 18.5% and 20.9% in the Ethiopian and Somali clusters respectively. The use of local media (radio and SMS) has been a significant contributing factor to the reasonable level of livestock insurance awareness in Kenya compared to the Somali and Ethiopian clusters. Similarly, the other methods of awareness raising are also contributing to the general awareness of the same. Of importance to note is the fact that awareness through NGOs is extremely low, giving the possibilities that NGOs have not been working in the area of livestock insurance but at the same time presenting an opportunity for NGOs working in these areas to work on interventions aiming at raising awareness and promoting the livestock insurance uptake.

1.20.1 Disaster risk reduction (DRR) outcome

All the disaster committees (9) and the informal cross border trader groups (6 groups) who participated in the focus group discussions know early warning signs and actions the community takes to mitigate the damaging effects of disaster. From the discussions it was apparent that households and traders put various measures against the earlier reported prominent hazards: drought, floods, inflation, conflict and livestock disease. The households managed the damaging effects of droughts through migration and preservation of food such as drying meat. Against Livestock disease, households indicated they usually liaise with experts in livestock management including the government and application of quarantine. Inflation is adequately managed through selling of local currency (Birr, Shilling) and saving money in USD in Dahabshil Bank. In addition, the traders also kept money in stocks of highly demanded goods. Conflicts in the community or between communities were resolved through government interventions and reconciliation organized by council of elders. In addition, the community members still observe traditional warning signs for disaster risks like drought, conflict and floods. To respond to some of these shocks, community Disaster Risk Reduction (cDRR) plans exist within the communities, though the overall awareness about these plans stood at 26.5% with high level of awareness being observed on the Kenyan side (47.5%). Among those aware of the cDRR plans, there is a high perception that the plans are regularly being reviewed. Likewise, participation in cDRR activities was also high on the Kenyan side, in comparison to the other 2 clusters.

The community observes and heed the traditional warning signs of disasters to avert losses to damaging effects of the hazards. The warning signs for drought include cold / hot temperatures, drying rivers, very strong winds, withering trees, outmigration of birds, influx of vultures, failure of seasonal crops, outbreak of livestock diseases, and failure / prolonged rains. From the household survey, it emerged that different source of information about risks and hazards exist within the communities with mass media (radio / SMS), learning institutions and family members being the commonly known / preferred avenues to share such information. From the household survey, there are different sources of early warning information on impending disasters, and these seem to be more effective on the Kenyan side, in comparison to the Somalia and Ethiopian clusters as given in table 4-20 in section 4.2.3. There are a number of DRR initiatives lead by the government (through the NDMA) in Kenya which works with other stakeholders within the Country Steering Group (CSG), opinion leaders and respected institutions (including mosques) in mobilizing communities and coordinating humanitarian and development efforts within Mandera county. This could be a contributing factor of the high level of awareness about impending disasters within Mandera county (the Kenyan cluster).

The general awareness on livestock insurance among respondent households across the three clusters was 30.7%, with the awareness being 51.9% in the Kenyan cluster.

ter while in the other clusters, it was 18.5% and 20.9% in the Ethiopian and Somali clusters respectively. The use of local media (radio and SMS) has been a significant contributing factor to the reasonable level of livestock insurance in Kenya compared to the Somali and Ethiopian clusters. Similarly, the other methods of awareness raising are also contributing to the general awareness of the same. Of importance to note is the fact that awareness through NGOs is extremely low, giving the possibilities that NGOs have not been working in the area of livestock insurance but at the same time presenting an opportunity for NGOs working in these areas to work on interventions aiming at raising awareness and promoting the livestock insurance uptake.

1.20.2 Livelihood diversification:

The community mainly relies on (agro) pastoral livelihoods and petty trade for sustenance and income generation. Key resources for these livelihoods are rangelands, water supply and access to land for cultivation. However, land utilization for agriculture among the respondent households was mainly 1 acre or less (42.3%) and between 2 to 5 acres (23.2%). Livestock ownership is also at an average of 20 shoats per household which is faced with a number of challenges including inadequate water and inadequate pasture. From the household survey, it was revealed that 67.5% of the respondent households reported to have utilized at-least one natural resources: wild food, forest products, aquatic resources, pasture / fodder, and rivers / swamp.

From the household survey, it was revealed that 67.5% of the respondent households reported to have utilized at-least one of the resources that the study focused on: wild food, forest products, aquatic resources, pasture / fodder, and rivers / swamp. Utilization of these resources was significantly higher among respondents in the Kenyan cluster in comparison to their counterparts in Somalia and Ethiopia. The study focused access and utilization in a period of 12 months prior to the study. Further observed was that the resources mainly utilized were pasture / fodder and rivers / swamp, which are largely required resources for (agro) pastoral livelihoods in the last 12 months (April 2017 to May 2018).

Household income was largely from (agro) pastoral livelihoods where most of the households engage in and accounted for the largest proportion of the revenue generated, especially in Ethiopia and Somalia, where salaried employment accounted for the largest proportion in Kenya. Petty trade, though not practiced by many, (accounting for only 2.6% of the respondent households) has potential of generating significant household revenue. As such, it was reported that 31.6% of the respondent households have taken up any new livestock; none-agricultural production; business development practices & technologies; and small and medium enterprises. Break-down per cluster was 21.3% in Ethiopian cluster, 55.8% in the Kenyan cluster and 17.8% in the Somali cluster. At the same time, 68.5% of those who had enrolled in new ventures reported that the business venture / SME is performing better. Figure 4-6 below gives detailed analysis of the observations. The overall perception was that 68.1% of the households reported that their animals were in good condition. Through the FGDs conducted in the villages, it was also reported that the rains that were experienced from March 2018 had a positive effect on the livestock sector and thus households had begun consolidating their stocks. However, there is a risk of livestock diseases, with the threat of Rift Valley fever being a concern to both government livestock departments as well as community members.

General enrolment to Village Community banking (VICOBA) or Village Savings and Loans Associations (VSLA) was still low (overall at 39.1%) with the highest enrolment rates being observed in Kenya (77.0%). There are reports that enrolment to these groups has contributed to increase in household income which coincides with similar work on VSLAs that has been done in different areas / contexts, especially in ASAL areas.

1.20.3 Natural resources management outcome:

The community land was still under the invasive species at the time of this baseline study. There are no records of the proportion of land covered by invasive species, though through observation during the field visits, young *Prosopis* covered community land in the rural areas. In the communities targeted, the species is a menace on grazing land and animal health especially when the animals browse on the leaves. From the household survey, the overall awareness of invasive species amongst respondents was 44.7% with awareness being high on the Kenyan cluster (76.2%) followed by the Somali cluster (43.7%) and Ethiopia at 14.4%. Among those aware of invasive species, it was reported that 79.4% (67.9% in Ethiopia, 79.3% in Kenya, and 83.4% in Somalia) of them are already taking advantage of these invasive species to generate household income. With respect to the overall sample, only 35.5% (9.7% in Ethiopia, 60.5% in Kenya, and 36.4% in Somalia) of all the respondents reported utilization of the invasive species to generate household income. Potentially, the invasive species can be utilized for fossil fuels (charcoal production and firewood), production of seasoned timber, fodder production among other uses.

The study established that the communities had not formed natural resource management committees. To enhance environmental resilience and climate change adaptation, Sustainable Agricultural Land Management (SALM) practices, promotion of crop diversification to provide different sources of income and for food needs to be DRC's main focus. Specific SALM practices which BORESHA project needs to promote include: Livestock management, efficient energy systems, agronomic practices, nutrient management and water management. Observed from the field is limited promotion of tillage and residue management which is part of the SALM practices. BORESHA should focus on rain water harvesting, small scale irrigation, river bank protection and terracing. Other climate change measures besides agro-forestry which households needs to adopt include: Energy saving stoves; Mixed farming; Intercropping; the excavation of water pan to catch runoffs during heavy rains; Bulk purchase of drought resistant seeds and timely planting.

1.21 Key recommendations:

- Since migration and cross-border movement will always be part of the communities' way of life (due to different reasons, including livelihood related activities), adoption of cross-border and conflict-sensitive approaches or practices need to be enhanced / strengthened, building on the existing traditional systems and harmonizing them with the existing regulations across the three countries. The project should intentionally work with stake holders from local governments and immigration to enhance this way of life for livelihood activities, without overlooking at the different national interests of the authorities in place. Policy influencing and awareness creation on key agreements among regarding cross-border movement between the three countries of interest is key to ensure that cross-border movement and trade among these communities are sustained, even after the project has come to a close.
- Enhance / promote sustainable management of the livestock sector through improved livestock management practices, and promoting the Index Based Livestock Insurance (IBLI) products among community members to cushion them from the recurrent droughts. There are information gaps on the products and investments in awareness creation plus little support to the most vulnerable households can greatly contribute towards stabilization of the sector. Opening up of the livestock value chain (for livestock products and live animals) will largely contribute towards diversification of livelihoods among the communities.
- There is a high potential for livelihood diversification to promote / enhance crop agriculture, cross-border trade, and skills development. In this regard, different initiatives through the project can be implemented in a coordinated manner to promote these livelihoods. For such livelihoods to thrive, there is need to sustain-

ably manage the existing natural resources (including strategic water sources), opening up markets (for inputs & produced items), develop the required technical skills to manage the different sectors and development of the necessary business management skills to commercialize these activities and improve the value chains.

- For sustainability, strengthening of the local structures will be key to widen the scope of reach (trickle-down effect) and sustaining the gains made through this action and other related actions. Working with community committees and government departments in the key sectors of agriculture, livestock, trade, local administration, and all the key departments mapped will be essential to achieve this. Investments in regular capacity building initiatives (training, logistical and material support) will be key to achieve this.
- To promote utilization of invasive species, capacity building and exchange visits will go a long way in facilitating learning among community members on how to tap in the economic potential of the invasive species (*Prosopis*) to increase household income or provide an alternative source of energy.





BORESHA Consortium

Danish Refugee Council - East Africa and Great Lakes
Lower Kabete Road (Ngecha Junction)
P.O Box 14762 – 00800 Nairobi, Kenya
Office: +254 709867000
Email: KEN-Boresha@drc.ngo
Twitter: BORESHA_HoA
Website: www.boreshahoa.org



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