Ministry of Humanitarian Affairs and Disaster Management Puntland Somalia

CONSOLIDATED CLIMATE VULNERABILITY AND CAPACITY ANALYSIS (CVCA ON GENDER) CONDUCTED IN BARI, SANAAG AND MUDUG REGIONS

MoHADM Puntland-Somalia

Contents

Acronyms

MoHADM	Ministry of Humanitarian Affairs and Disaster Management
UNDP	United Nation Development Programme
CSOs	Civil society organisations
DRR	Disaster risk reduction
GAPs	Good agricultural practices
CVCA	Climate Vulnerability and Capacity Assessment
GDP	Gross Domestic Product
GEF	Global Environment Facility
ENSO	El Nino Southern Oscillation
EU	European Union
ITCZ	Inter-Tropical Convergence Zone
NAPA	National Adaptation Plan of Action
NCA	Natural Capital Accounting
NDP	National Development Plan
NGO	Non-governmental organization
NRM	Natural resources management
PDRA	Participatory Disaster Risk Assessment
PPP	Purchasing Power Parity
PRA	Participatory Rural Appraisal
SDGs	Sustainable Development Goals
SIGI	Social Institutions and Gender Index
SomReP	Somalia Resilience Program
UNFCCC	United Nations Framework Convention on Climate Change
VSLA	Village Savings and Loans Association

1.0 Introduction

1.1.Overview of Climate change in Somalia

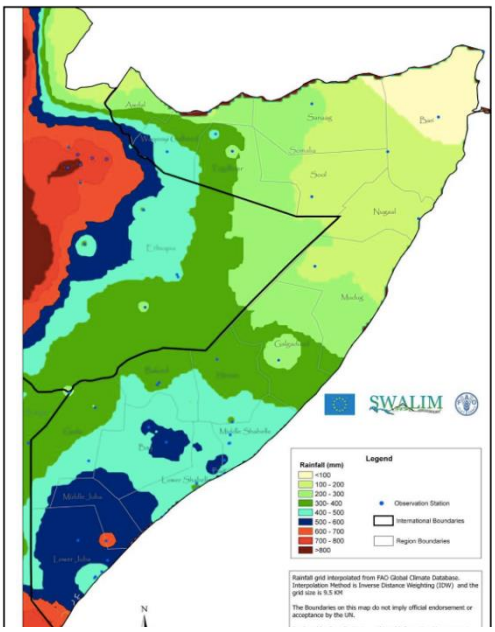


Figure 1: Mean annual rainfall in Somalia (s

Climate change is an unprecedented and increasing global threat to livelihoods and to the supply of life-supporting ecosystem goods and services, particularly in developing countries. It is a global issue, though impacts are felt more extensively in arid and semi-arid regions due to the high degree of climate variability and weak coping capacities. Climate change presents significant threats to the achievement of the SDGs.

Puntland is located in most vulnerable to climate change and climate variability, a situation aggravated by the interaction of multiple stresses, occurring at various levels, and coupled with a low adaptive capacity among the population. The existing major climate hazards in Puntland are droughts and extreme flooding events. Other climate-related phenomena such as dust storms, heat waves and cyclonic winds whose occurrences, though less frequent, still pose serious threats to local livelihoods. Future climate change is expected to see all of these hazards intensify.

Approximately 70% of Somalis are dependent on climate-sensitive agriculture and pastoralism. As floods and droughts become more severe and frequent in Somalia, there is a need to find approaches that can reduce the sensitivity of farmers and pastoralists to increasing rainfall variability. With natural resource degradation also rampant throughout Somalia, most notably for the production of charcoal ad clearing land for different purposes, Somalia is becoming increasingly vulnerable to over scarce resources. Climate change and resource scarcity are exacerbated by the absence of policies on land-use and disaster risk management at the national level. At local levels, communities lack the financial, technical and informational resources needed to build their resilience to climate change as well as the knowledge of how to prepare for extreme weather impacts

Somalia is the world's fifth poorest country with a per capita income of US$435[1] to US$600[2]. In 2016, 51% of the population lived on less than US$1.9 a day at 2011 Purchase

[1] Somalia National Development Plan (SNDP), 2017
[2] World Bank estimates

Power Parity (PPP).[3] Exports constitute only 14% of the GDP, with livestock trading with the Gulf being a mainstay of the Somali economy, constituting 80% of foreign exchange earnings. UNDP estimated that in 2014 over 70% of Somalis were pastoralists or agro-pastoralists.

Pastoralism refers to a livelihood strategy based on moving livestock to seasonal pastures primarily to convert grasses, forbs tree leaves or crop residues into human food.[4] Whereas the search for feed in one of the reasons for mobility, pastoralists may move in order to avoid natural, social hazards or as in the case of Somalia, conflict. Another rationale is to avoid completions with others, or to seek conditions that are more favorable. In Somalia, pastoralism is fully embedded in the tradition, culture and economy.

Climate change is increasingly affecting Somalia, with the country facing growing uncertainty regarding seasonal and annual rainfall levels, rising surface temperatures, sea level rise and the loss of lives and livelihoods dependent on fragile over exploited ecosystems and natural resources. Climate change directly threatens the achievement of the Sustainable Development Goals (SDGs) especially those related to eliminating poverty and hunger. Food security – one of the most critical challenges facing Somalia – is compounded by the effects of climate change on agricultural production and the sustainable management of rangelands and other ecosystems. Climate change also has an impact on health, water availability, terrestrial biodiversity, coastal and marine resources, and the livestock sector.

With the support of partners, the Federal Government of Somalia has developed a National Adaptation Program of Action on Climate Change (NAPA)[5]. The NAPA identifies three urgent areas of action ("agriculture, livestock and natural resources", "telecommunications and media", "financial services") and proposes adaptation measures. The NAPA also specifically lays emphasis on working with affected

[3] The report defines poverty as having a total daily per capita consumption expenditure lower than the international poverty line of US$1.90 at 2011 PPP, which equals 34,341 Somali Shillings per day per person in 2016.
[4] IOM, 2007
[5] For more details on the NAPA, see Federal Government of Somalia (2013). *National Adaptation Program of Action on Climate Change (NAPA).* UNFCC, UNDP and GEF.

communities to understand the vulnerabilities of key sectors as well as collating communities' own perceptions on climate variability.

In addition to ferreting out sectoral vulnerabilities, Somalia's NAPA also calls for identification of vulnerable groups and a deeper understanding of their adaptive capacities and coping mechanisms. Among the eight principles of Somalia's NAPA is gender equality, which is described as "the active participation of women, youth and representatives of communities and marginalized groups." However, the Plan is yet to be cascaded to the regions as it has only been developed and designed by the Federal authorities in Mogadishu.

On its part, Somalia's National Development Plan identifies climate change as a phenomenon that is likely to increase the occurrence of disasters, and calls for "strengthening national capacity to forecast, avoid and cope with the aftermath of disasters is the key towards reducing the deleterious impact on poverty and society at large."[6] In particular, the agriculture sector is deemed as being at risk due to the vagaries of changing climates. For some reason, the infrastructure sector is however deemed to stand at the greatest risk due to climate change, which is why the vision of the infrastructure section talks about "creating infrastructure that enhances the employment, increases food security, **builds up resilience to climate change** and variability, respect Somali cultural heritages and is environmentally and economically sustainable."

The Puntland Disaster Management Policy in July 2014, which aims to strengthen capacities for better disaster preparedness, response, mitigation, prevention and recovery. The policy has been designed to improve responsiveness to early warning, and if implemented in full will address issues of coordination as well as timely and efficient pooling and use of resources to reduce the deleterious impact of disasters caused, by among other things, climate change.

[6] See Republic of Somalia (2016). National Development Plan (2017-2019). Retrieved on January 1, 2019, and accessed at http://extwprlegs1.fao.org/docs/pdf/som169866.pdf

1.1 Recent climate trends

Generally, in East Africa, the availability of station data is highly limited. Gridded observational data sets CHIRPS (daily, 1981-now) and CenTrends (monthly, 1900-2014) provide the best option for observational analyses according to Philip *et al.*, 2017.

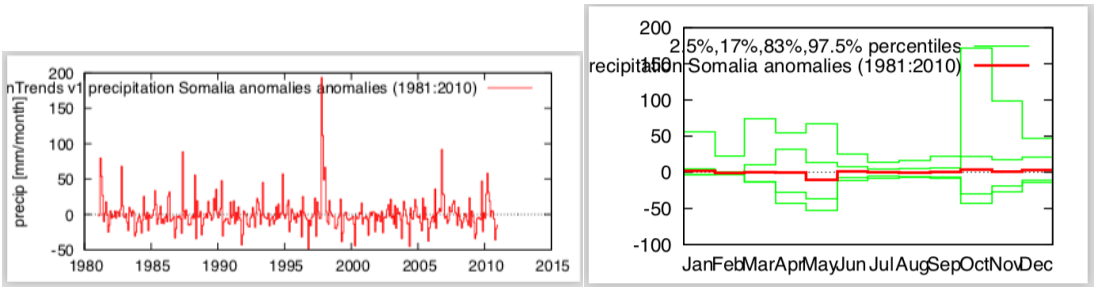


Figure 2: 30-year span of rainfall anomalies in Somalia (1981-2010), constructed on the CenTrends (1900-2014) dataset. (Left) The graph shows monthly anomalies in precipitation as mm/ month. Overall, rainfall anomalies show correlation with drought years, e.g. 1987 and 1998. (Right) Anomaly distribution in percentiles 1981-2010. Anomalies are largest during the OND (October, November, December), correlating to the (short) Deyr rainy season.

Since the 1960s, a warming trend has been observed in Sub-Saharan Africa. Despite trends for this region as a whole being inconsistent, East Africa has been experiencing precipitation increases in the northern part and decreases in rainfall in southern regions.[7] Moreover, climatic extreme events such as floods and droughts have been reoccurring on a once every ten years basis.[8] Especially since the beginning of the 2000s, Somalia has been impacted by a number of disastrous extreme weather events. The IPCC AR4 report already noticed in 2007 that a shift in seasonal patterns could indicates an increased precipitation variability. The report points out that this will very well be causing the increased frequency and impact of drought and flash flood events.In the East African region, rainfall is subject to great spatial and temporal variability with seasonal rainfall dominated by the north and south movement of the ITCZ. The El Niño Southern Oscillation (ENSO)[9] influences Somalia's climate variability in various ways, bringing more rainfall and flooding during El Niño and droughts in La Niña years. During the years 1972, 1977 and 1982, ENSO influences were among the strongest recorded and

[7] Lott, F. C., Christidis, N., and Stott, P. A. 2013. *Can the 2011 East African drought be attributed to human-induced climate change?* AGU100

[8] Balint, T. Lamperti, F., Mandel, A., Napoletano, M., Roventini, A., Sapio A. 2016. *Complexity and the Economics of Climate Change: a Survey and a Look Forward.*

[9] Note: El Niño and La Niña events tend to develop during the AMJ months and tend to disrupt the large-scale air movements in the tropics, triggering a cascade of global side effects. The events typically persist for 9 to 12 months, though occasionally persisting for up to 2 years. They typically recur every 2 to 7 years.

indicated a peak of the October to December rainfall. Drought events occurred during La Niña years 1971, 1974, 1975, 1984 and 1988-2004-2007-2010-2016-2021 and are observable in large peaks and troughs during September to December seasons.

1.2 CVCA Methodologies

The analysis presented here reflects key highlights and insights from the data gathered in Sampled districts including (Badhan, Ufayn, Bosaso, Galkio and Isku-shuban) on 2th and 13th June 2023, during the field practicum exercise. This document presents a summary narrative of four (12) Focused Group Discussions (FGDs) and four (20) Key Informant Interviews (KIIs) conducted in the assessed districts in Bari and Sanaag regions, The FGDs were conducted with Men and Women; while the KIIs separately involved a community elder, person living with disability, youth leader, and women Leader.

Photo 1: Key Informant Interview with a Person living with disability in Bosaso

Framework Analysis was adopted for synthesising and analysing the qualitative data gathered during the CVCA field exercise. This approach of data analysis allows themes to develop both from the research questions and from the narratives of study participants.

This report also presents some quantitatively analysed data, which are represented in proportions and frequencies. These values were computed by averaging approximated values provided by all categories of interviewees on key assessed areas.

The data analysis is organized into six (6) main themes, which were identified in line with the objectives of the CVCA. For each theme, the analysis further dissects them into various sub-themes; in order to enhance better understanding of the various aspects of livelihoods, climate vulnerability and adaptive capacity.

1.3 CVCA Process and scope

The exercise of CVCA in Bari and Sanaag regionswas undertaken by MoHADM staff together with the consultants after CVCA TOT training, The trained CVCA staff were to later take lead in facilitating CVCA in their respective locations. The participants were trained on various concepts which included: Climate change, rationale behind CVCA methodology, CVCA tools, application and analysis. In order for the participants to internalize the concepts, a field practicum was done in Badhan, Bosaso, Galkio, Ufayn and Iskushuban districts of Bari and Sanaag regions.

CVCA tools used in the study included livelihood context tool, Resource mapping, well-being and wealth ranking, Gendered issues and institutional analysis/Venn diagram and finally vulnerability matrix. The participants were segregated based on age and gender i.e young women and your men, old women and old men and each category was interviewed separately. To reinforce community information, key informant interviews were conducted among key government and other stakeholder's representatives in Bari region. The key informants' interviews were also conducted with village leaders, women leaders at community level and also with selected institutional representatives from relevant government departments at local and NGOs.

The primary data information from CVCA study were analysed and was further triangulated with documented secondary data from the literature review focusing on the thematic areas highlighted above ie institutional context, socio-economic context, climate change and vulnerability and adaptive capacity. Some of the secondary documents reviewed include: National Adaptation Program of Action on Climate Change (NAPA), developed in 2013 by the Federal Government of Somalia with support from the United Nations Development Program, the Global Environment Facility (GEF) and the United Nations Framework Convention on Climate Change (UNFCC).

Scope of CVCA

The scope of the study was guided by the five key results areas:

- Review and translate MOHADM CVCA tools and other Participatory Rural Appraisal (PRA) tools that will be used for the CVCA exercise from English to the local language and vice versa
- Support the training of the CVCA teams on the CVCA methodology and tools
- Provide field technical support to the data collection team on a daily basis throughout the study period
- Provide support in literature review – reviewing assessments, baseline surveys and other relevant studies
- Support sharing and validation of study findings at community and district levels
- Analysis of the CVCA data/findings (at all levels – community, district, regional, etc.) and compilation of the village profiles and CVCA report as the CVCA teams share information including aggregation of all the CVCA exercise in Assessed districts district

2.0 livelihood contecxt

2.1 Livelihoods Sustenance and Income Generating Activities (IGAs)

The information on the main livelihood activities in assessed districts. It also highlights the main resources that the community relies on, and their perception of wealth and wellbeing. The team found that fisheries, pastoralism, agriculture (crop production), Big and small businesses (e.g. operating shops and petty trade), and casual labour stood out as the major sources of livelihoods in Bari Mudug and Sanaag regions particularly the assessed districts. A few salaried employments are reported like school teachers, village MCH workers and vehicle drivers all of whom are not many in number.

It was further reported that most households (HHs) spend their household incomes on family consumption activities such as food and water as well as other family requirements like sending kids to school, healthy issues and clothing.

2.1 Socio-economic Status of the Community and Understanding of Wealth/Well being

The team looked at different tiers of social and economic status of the community, as well as the general understanding of what constitutes wealth and poverty in the assessed districts and Villages. Based on the information gathered during the CVCA, it can be deduced that the assessed community is mostly composed of middle class (43%), followed by about a quarter (25%) being considered rich. The poor constitute (20%), while the very poor make up (11%); with very few falling in the category of very rich (1%) as shown in Figure 2.3. Details about the wealth and wellbeing ranking have been summarized in below Table 2.4

Figure 2.3: Wealth distribution and ranking proportion

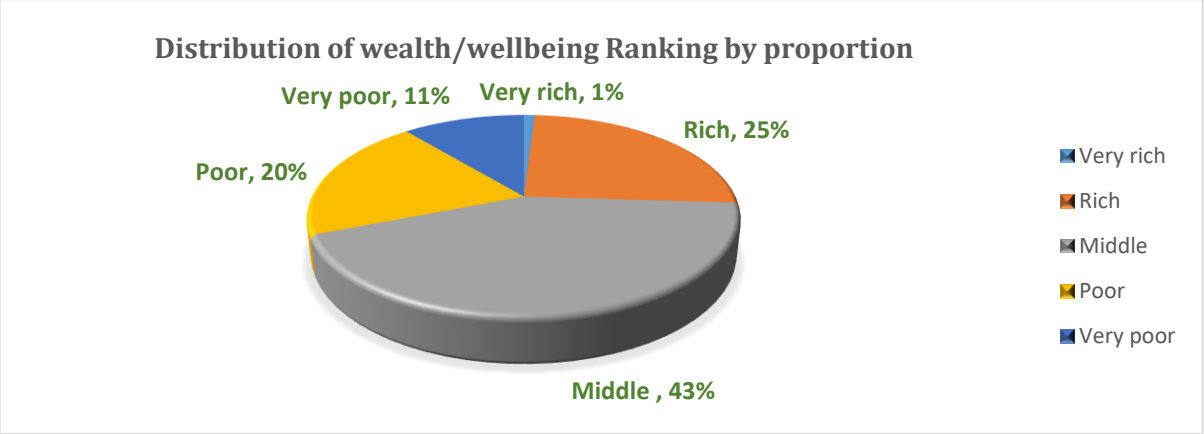


Table 2.4: Perspectives of wealth ranking by characteristics and proportion

Local term for wealth, and poverty	Meaning in English	Characteristics and resources that indicate households are very rich, rich, middle class, poor or very poor	Estimate out of 10 Households (Proportion)

Taajir	Very Rich	• Has 1 or more houses • Owns lots shops • Has 2 wives or more • Transportation vehicles • Luxury cars • One Fishing boat	**1%**
Maalqabeen	Rich	• Owns 1 house with 4 rooms or more • Owns a car • All his/her children can go to any school of their choice • Owns shops • Runs businesses • Owns 2-3 hectares of land • Owns over 100 camels • Owns between 150-200 goats in rural • Has 2 wives • Has 7-10 children	**25%**
Ladane	Middle Class	• Can afford 3 meals a day • Most of his/her children go to school • Runs small businesses • Owns approximately 10 camels • Owns approximately 50-70 goats • Owns a small farm	**43%**
Sabool / Qaadamadhege	Poor	• Lives in a nomadic or iron sheet house • Has 10+ children • His/her children have access to limited education • Owns no land for farming • Owns approximately 10 shoats • Owns 2 back camel and 3 milking camel	**20%**
Faqiir / Caydh / Barlawe	Very Poor	• Can't afford three meals a day • Is homeless or lives in a hut or non-permanent shelter • His/her children don't go to school • He/she only depends on casual labour for survival • He/she mostly relies on getting money from his/her children	**11%**

In view of the decision-making within the wealth ranking composition, it was reported that majority of the decision makers in the assessed community come from wealthy individuals. However, among elders, there are individuals who are classified as poor but are at the centre of key decision-making processes.

According to young men; rich and very rich people are considered more vulnerable to climate hazards because they have so much wealth e.g. large farms, irrigation systems, large herds of livestock and rangelands; which are heavily destroyed when climatic disasters such as floods and droughts occur.

Table 2.5: Perspectives of wealth ranking by gender and age

Gender & Age-group	Wealth status	Reasons for the respective categorizations
Young women	Poor. "There are no wealthy young females in all assessed areas.	• They have no employment opportunities • The perception of young women marrying and sharing inheritance of her husband's clan is perceived negatively. • Cultural barriers

Old women	Majority are wealthy	• They have assets such as gold • Majority have businesses • They have jobs • They receive financial support from their children
Young men	The wealthy and poor young men are proportionate in assessed districts	• The have better chances of getting jobs. • Families provide them with start-up capital for businesses, or to buy a car so they can work
Old men	Majority are wealthy	• They have savings • They earned wealth during earlier years when times were good. • They are leaders & decision makers • They are landowners

2.2 Existing Resources and Institutions in the Community

2.6.1 Existing resources and current status

Below is a summary of the commonly mentioned community resources in the assessed districts.

Resource	**Current status**
Boreholes and spring water sources	Good, they are available, but people can access them during difficult times (droughts)
Hospitals, Maternal and Child Health (MCH) Centre	MCH and health centres, hospitals are available, but there is no general hospital in the Ufayn, Isku-shuban but have ambulance that can drop the sick to major town such as Bosaso, Galkio and badhan.
Markets	It is available but in very poor condition in terms of hygiene, also market roads in two districts are in poor condition (Badhan, Ufayn and Isku-shuban)
Schools	Primary, secondary, Primary, intermediate and Universities are available in all assessed areas. In particular Bosaso only has Universities.
Roads	It is available but in very poor condition in Isku-shuban and Ufayn districts, but Bosaso, badhan and Galkio have good roads

These resources are considered most important for the community because they depend on them for their livelihoods.

2.3 Ownership, Access, Utilization, and Management of Productive Resources

The public resources (e.g. schools, health facilities, etc.) are owned and accessed by all community members. On the other hand, private resources (such as private hospitals/clinics, private schools, etc.) are owned by individuals, but are accessible by any community member who can afford to pay for the services rendered there. With respect to community participation in the existing institutions by gender, age groups and special groups; it was reported that only men take part in the Water Management Committee (WMC), while both women and men participate in Community Education Committee (CEC).

According to young men, both men and women make decisions at household level on the management of livestock, fisheries and agricultural activities (e.g. handling such as decisions on sales). The young men pointed out that good decisions mutually agreed upon at HH level, are key to increasing productivity as well as the well-being of the family.

Table 2.7 provides an overview of the level of ownership, decision-making and resource management processes.

Table 2.7: Ownership, Access, Utilization, and Management of Productive Resources

Resources	Ownership & Access	How they are utilized	When they are utilized	Decision-maker on use and management	Effects of decisions & resource management on resource productivity
Farms/ Land	Farmers & individual owners	HH consumption, Livelihoods and IGAs	Rainy season - All the years Dry & rainy seasons-All the years	Owners	• Increased productivity • Higher/improved fertility
	Men (Father as HH heads)	Income source	Any time, but low production in (*Jilaal* season)	Both men and women (father and mother)	• Good decisions that increase the productivity of land, and enhances the well-being of the family
Borehole	District water management committee Community themselves	Human drinking water and cleaning Animal drinking and irrigation purposes	All months & all years	District Water Management Committee	• Increased water storage • Efficient water use in agriculture. • Reduced wastage of water
Livestock	Individuals or owners	Milk and meat production, selling and income generation	All months & all years	Owners	• Increased Milk production • Improved animal body condition
Fisheries	Individuals or owners	Fish selling and income generation	All the year and some times difficult of availability	Owners	• Improved household incomes

In terms of resources that the communities used to access 20 or more years ago but can no longer access; traditional animal rearing changed, Fishing systems changed and farming practices changed and stood out in both old women's and men's FGDs. On the other hand, the community mentioned some new resources that they were not accessing 20 or more years ago but are accessing these days. These include bee keeping, and poultry, better animal husbandry techniques, farming tools, In addition, these new resources were attributed to some notable positive changes through increasing household incomes.

It was further reported that there are changes in the seasonal availability and quantity of the mapped resources namely; borehole, and meat markets for livestock as a result of climate variations. These climate variations were reported to have contributed to a lower water table, and increased incidences of pests and diseases affecting crops, fisheries and livestock. According to young and old women in assessed districts, no one is intensively addressing these challenges triggered by climate variations.

> *Ali Hassan " Farmer in **Laag Village of Bosaso' 'experienced** pests and diseases. The water table has gone lower as a result of climate variations..."* **FGD**

2.4 EXISTING INSTITUTIONS AND THEIR BENEFITS TO THE COMMUNITY

The institutions were mapped as internal and external. This is based on the community's perceptions of the institutions' roles within the community, and extent of their engagement with assessed areas. The CVCA further looked at the participation of various community members by (gender and age) in the institutions/groups, how they participate, nature of the benefits their participation has yielded to the community, and who exactly benefits from these gains. Table 2.7.3 below highlights this.

With respect to making key decisions in the community, community elders are considered as highly reliable and resourceful persons. It is on this basis that community stakeholders involve them in all aspects of community initiatives to enhance success.

2.7.6 Community institutions engaged in natural resource management, social and political issues

This section summarizes some key community institutions engaged in natural resource management, social and political issues; nature of their engagements; and the results/effects of those engagements with the institutions.

- **VDCs** – They are engaged in community resource mobilization and in providing oversight in community development initiatives. It was reported that their engagements on these issues have brought positive effects on natural resource management.
- **Youth organizations** – They are involved in mobilization of resources (e.g. labour and funds) to implement youth-led initiatives. Their engagements have boosted contributions towards helping the needy in the community, promoted community empowerment through youth, as well as enhanced the saving culture amongst youth.
- **Diaspora organization** – They carryout fundraising for initiatives in Assessed . Their engagement has resulted in community empowerment, in terms of boosting funds used to address pertinent challenges.
- **NGOs** – They are the link to Cash for work (CFW) activities initiated within the community. It was reported that their engagements have positively contributed to improvement of natural resource management and infrastructure.

2.7.2 Mapping institutions supporting the community during crises

The community further identified the types support institutions/groups offer them during times of crises. Notably, the community depends on the Village Development Committee (VDC) and *Qurbo-joog* (diaspora organization) for external support. The types of support received include: mobilization of needed resources, collecting local contributions, sharing vital information, seeking external aid and support, and fundraising. From a social standpoint, both the VDC and diaspora can be viewed as internal institutions, therefore this could imply an enhanced level of community empowerment. This has been summarized in Table 2.7.4 below.

Table 2.7.3: Participation of Community Members in Institutions/Groups and Benefits Gained

Institution/Group	Type of institutions	How community members participate in the institution/group by gender	Types of Benefits	Beneficiaries
VDC	Internal	• **Elders** lead the community, plan and identify the needs of the community. • **Women** identify the most pressing needs of the community. • **Youth** undertake community mobilization	Confliction resolution, prioritizing issues, and requesting for help & support	All community members
Village Savings and Loans Association (VSLA)	Internal	• Women, men, and small business owners • They mobilize funds when disasters occur, and support poor HHs	• Support vulnerable groups • Give revolving loans	• VSLA group members • Vulnerable people
Local authority	Internal	Local council - They are decision makers	• They work on infrastructure projects • Health, especially hygiene and sanitation • Provide land licenses	All community members
Livestock committee	Internal	• **Elders** - decision making • **Women** – Mobilize other pastoralists and support in marketing of livestock production. • **Youth** – Mobilize other youth in the community to engage in livestock activities.	• Coordination • Folder distribution • Conflict resolution	Pastoralists
Farmers' Association / cooperatives	Internal	• Both men and women are involved in agricultural activities and participate in various activities of the associations e.g. organizing and attending workshops, trainings, meetings, mobilization of resources, and contribution to social funds.	• Marketing of agricultural products and mobilization of resources for association members.	• Farmers and HH members benefit directly. • HH members, relatives and friends of those farmers benefit indirectly through sharing of information.
Women groups	Internal	• Mobilize in-kind contributions from the community • Mobilize resources through their social funds • Provide social support to men who are working on community infrastructure initiatives. • Report to men on initiatives from the women's groups and household issues. • Share information and skills during their group meetings	• Nurture the saving and loaning culture through VSLAs • Improved HH income for the families • Community mobilization and awareness creation through dissemination of information.	• Women themselves • All community members

Institution/Group	Type of institutions	How community members participate in the institution/group by gender	Types of Benefits	Beneficiaries
Youth groups	Internal	• Mobilize other youth to engage in various youth-led initiatives within the community. • Engage in activities that promote proper sanitation	• Mobilization of resources for youth-driven initiatives within the community	• Both young men & women • All community members
Religious groups	Internal	• **Elders and religious leaders -**They create awareness on various community initiatives and are involved in overall decision making. • **Male religious leaders (**Sheikhs)- Nurture spiritual lives by providing *Qur'anic* teachings and lecturing the community on what is good and bad in life. They are also involved in community mobilization and conflict resolution. • Men, women, boys and girls all pray in times of hardships/crises for Allah to rescue and protect the community.	• Awareness creation • Conflict resolution • Improve on faith through *Qur'anic* teaching	All community members
Water Management Committee	Internal	• Community members are involved in managing their natural resources and catchment areas • Mobilize resources towards putting up water infrastructure. • Community members take part in planning and setting up water points • Coordinate with water agencies and enterprises for water supply	• Awareness creation on conservation of natural resources and catchment areas • Increased water availability through availing more water points	All community members
Community Education Committee	Internal	• School principals (Men and women), and Ministry of Education • They work towards the overall eradication of illiteracy. • CEC educates teachers and students, and advocates for enhancement of educational resources	• Improved education systems • Improved literacy • Liaison with parents & teachers on education	All community members; especially education institutions
Diaspora organization (*Qurbo-joog Arabsiiyo)*	External	• **Elders and scholars** lead the coordination. • **Women** collect cash or money from the community members. • **Youth** mobilize other youth to engage in various youth-led initiatives.	• Improved public institutions • Helps poor people	All community members
NGOs	External	• NGO workers and consortiums (Composed of both men and women)	• Report on crises • Advocacy • Food distribution	All community members; especially vulnerable groups

Institution/Group	Type of institutions	How community members participate in the institution/group by gender	Types of Benefits	Beneficiaries
		• They advocate for community needs and prioritize community needs	• Assist in development projects	

Table 2.7.4: Mapping of Institutions Supporting the Community During Crises

Table 2.5 below presents a summary of the community institutions engaged in natural resource management, as well as addressing social and political issues. In this regard, the table outlines the nature of engagements and the results or effects of their engagement with various institutions within the community.

Table 2.7.5: Institutions that Provide Support during Crises

Group/ Organization/ Institution	Type of institutions	Support to Community	Targeted community groups (by gender, age, special needs)
VDC	Internal	• Links the community and the government (up to district level). Delivers information gathered from community to the district level • Plans and prioritizes emergency activities • Mobilizes resources; including seeking external support • Collects local contributions, • Shares information and creates awareness	All community members
Local authority	Internal	• Declares emergencies	All community members
Elders' Committees	Internal	• Creates awareness on various community-led initiatives • Oversees food sharing and distribution in the community.	All community members
CEC	Internal	• Educates and create awareness among community members using targeted messages through teachers and students • Advocates for more resources • Links existing associations to NGOs	All community members
NGOs	External	• Provides donations • Supports in health & education	All community members
VSLAs	Internal	• Supports Vulnerable groups • Mobilizes the community for contributions	Vulnerable groups
Qurbo-joog **(Diaspora organization)**	External	• Raises funds to support Assessed community • Contributes resources (in cash or in-kind). • Mobilizes resources from other well wishers	All community members

Religious groups	Internal	• Mobilizes funds, then gives it to the community.	• HHs with children under-five years • Female headed HHs, Older persons
Water Management Committee	Internal	• Manages natural resources and catchment areas • Plans and manages water points • Mobilizes resources towards putting up water infrastructure • Coordinates with water agencies and enterprises for water supply	• All community members

3.0 Gender Based Climate Vulnerability and Capacity Analysis (CVCA)

The assessment team decided to gauge communities' understanding regarding gender-based climate vulnerability and capacity analysis (CVCA-G). Targeting pastoral and agro-pastoral and fisheries households living in Bari, Mudug and Sanaag regions in order to:

Photo 2: old Women key informants Discussion in Mudug region

- Analyze vulnerability to climate change and adaptive capacity at the community level in the assessed district (in Bari Region), and
- Combine community knowledge and scientific data to yield greater understanding about local impacts of climate change.

By combining local knowledge with scientific data, the CVCA process builds people's understanding about climate risks and adaptation strategies with a lens that includes participation by all gender. It provides a framework for dialogue within communities, as well as between communities and other stakeholders (e.g. local and government agencies). The results provide a solid foundation for the identification of practical strategies to facilitate community-based adaptation to climate change.

Women are traditionally responsible for raising livestock, growing food, gathering fuel and water, cooking, and raising children. The division of labour, along with unequal access to both material and non-material resources, and diminished participation for women in decision-making in political and private spheres increases their vulnerability against the impacts of climate change. However, disparities were also noted between communities living in the assessed districts: women have more flexibility and decision-making opportunities in settled communities (such as dryland agriculture-practicing communities and also in fishing community e.g. in Bosaso) than in the pastoralist ones.

To support community-led climate adaptation activities, focus should be given towards water capture using small-scale infrastructure and flood impacts reduced with water diversion techniques and reforestation. With much of the population under 30 years of age, youth should be sensitized on climate change knowledge so that they can support communities' own efforts on-the-ground. Furthermore, MoHADM together with their partners should empower women to market and to scale-up distribution of adaptation technologies, providing women an improved asset base.

- Community's own future projections of climate change show increased average temperatures, and unpredictable precipitation.
- Residents in Target districts reported a similar set of hazards, identifying droughts as the main concern: however, in Target districts , livestock diseases were more of a concern.
- Gender roles are important in livelihoods and division of labour, and lead to differential vulnerability for different genders.[10]
- Strategies for dealing with hazards, including the shocks and stresses due to climate change, are diversified.
- Coping strategies such as increased cutting and sale of firewood are not sustainable, while longer term strategies such as the development of small-scale water infrastructure and the increased use of irrigation continue to build adaptive capacity.
- There are limits to the degree to which people can continue to diversify strategies without
    - Achievement of stable governance
    - Increased capacity in infrastructure and markets, and
    - Administrative capacity of local governments in Target districts district.
- Teenage girls have the least autonomy of all groups for decisions concerning their futures.
- Men have more access than women to institutional services.

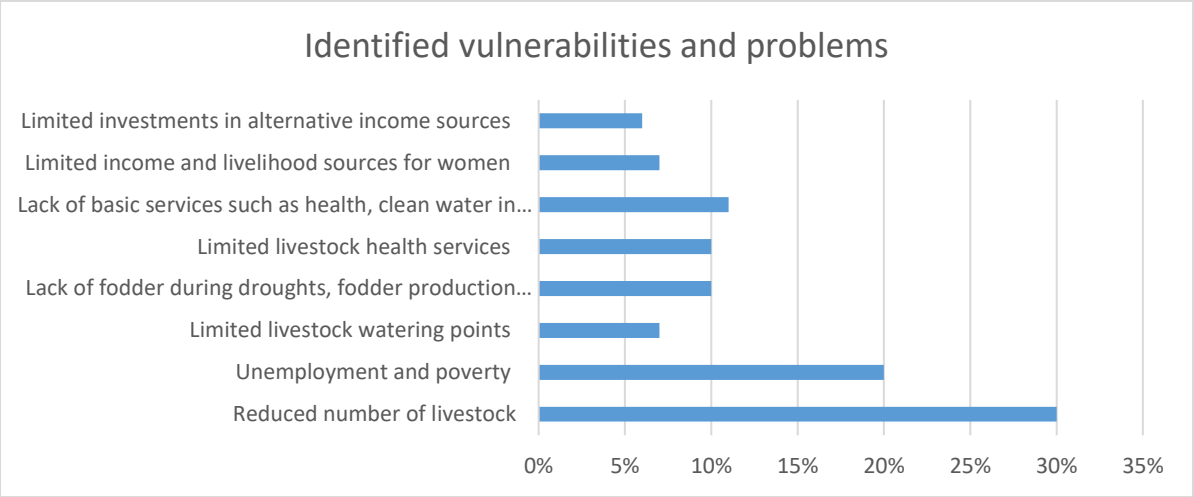
3.1 Prevalent problems and vulnerabilities

The VCA process has enabled communities to identify priority problems and vulnerabilities that influence their livelihoods and basic needs. The process of this exercise also provides an insight into

[10] For an in-depth discussion of gender and climate change matters, please see Section 6 of this report

the resources and opportunities needed to reduce the impact of identified vulnerabilities. Within this participatory approach the specific needs of women, men, boys and girls have been considered to be able to better target activities to address their specific needs. A wide range of vulnerabilities were identified by the VCA participants, and some variances were found between men and women's perception. However, most of the identified issues were relatively similar in different communities, for example poverty and unemployment were the common concerns in substantial numbers of communities either in low or higher ranked. The below graph illustrates the major vulnerabilities identified through the VCA exercises:

Figure 3 Women mapping their vulnerabilities



A large number of the community (around 30 percent) identified reduced livestock holdings due to recurrent droughts as a top priority issue. This is not only droughts, but also many factors that are linked including, Limited access to remunerative markets or job opportunities and Lack of range reserves and lack of rotational grazing systems also lack of folder and folder production in Puntland.

Unemployment and poverty come as subsequent priority issues with almost 20 percent of participants of them 15 percent highlighted the vulnerability as 'unemployment' and 5 percent as 'poverty'. We found a clear correlation between both issues. As observed during VCA discussions, a substantial number of participants, particularly women raised the issue of unemployment for their own and family members. Some of them have adult children (boys and girls), have completed secondary to graduate level of education but are currently struggling to find an appropriate work. In some cases, the husbands have no work or stressed to finding regular employment.

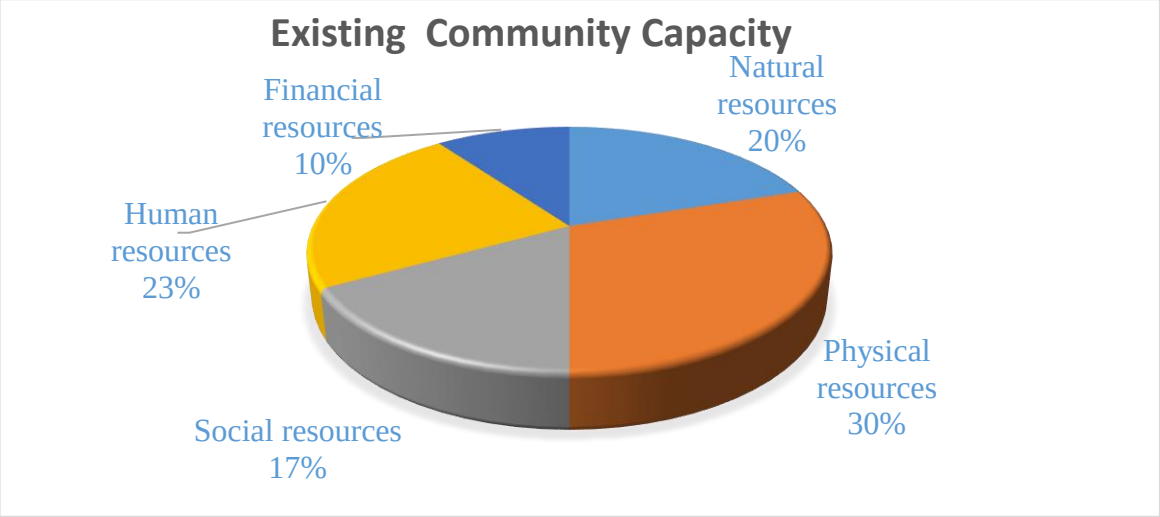
Limited livestock health services such as Vetenary shops in Remote rural areas in Bari, Mudug and Sanaag regions were a significant issue that appeared from the assessment. A total of 10 percent of participants raised this concern, mainly from those communities living in rural areas,

Around 8 percent of participants stated that decreased incomes and livelihood base for the communities assessed due inflation/deflation, lack of usage of Somali shilling, and climate shock impacts.

Around 6 percent responded mentioning limited investment and alternate income sources as a major concern, particularly for women and young girls, they also added that use VSLa rather than looking investment from private banks or companies in the major urban towns. They also highlighted lack of vocational training opportunity, restriction of vending/small trades at streets, lack of transport services, unhealthy accommodation, Wasta (nepotism in hiring or offering employment) and other social problems.

3.2 Existing Capacities and Potentials

The VCA exercises also examined the existing capacities and potentials in the assessed communities. During discussions, the VCA participants mentioned a wide range of capacities or potentials. Currently these capacities (e.g. public facilities) have limited influence to reduce the identified vulnerabilities and problems. However, the assessed communities mentioned that they have relatively better access to the public facilities and physical resources, and they can mobilise the public supports services if they plan for any collective initiatives. The following chart provides an idea about existing natural, physical, social, and human capitals or capacities:



The VCA discussions provided a long list of existing physical resources such as: educational facilities, health centres and hospitals, libraries, playground, roads and markets, available transport facilities, government and equipment, governmental/municipality buildings, supply of electricity and water. A total of 30 percent of communities mentioned the physical structures and facilities as a major capacity.

One of the key potentials identified by the community people is human resources. A total of 23 percent of communities emphasised existing human resource capacity or organisation such as youths and women who are ready to work or volunteer in community development initiatives and availability of skilled persons within the communities. Some communities mentioned that local organisations such as NGO/CBOs, youth clubs and religious charities have a good number of members/volunteers and support different community initiatives.

Almost 17% of the participants referred several social resources such as government service facilities like security centres, police stations, NGOs and local charities, hospital/health clinics, social committees' religious centres (mosques). Municipal government involvement and assistance was a widely discussed issue and most of all of the groups appreciated local authorities' involvement and support, despite their limited resources and capacities.

However, 10% none of the community groups mentioned anything about financial resources or their accessibility to financial support services, which is crucial in livelihoods and community resilience building. While cross-checked, we found that few beneficiaries were supported by banks in receiving loans.

2.4.1 Notable changes in seasonal patterns on gendered daily activities

Table 2.6 outlines the recent observed/notable changes in environment, seasonal patterns and economy. It further provides a summary of how various daily activities have positively or negatively changed in the last 10 – 20 years. It also highlights the positive and negative effects of observed changes in daily activities on livelihoods.

Table 2.7.8: Observed changes in seasonal patterns on gendered daily activities

Recent changes in environment, seasons & economy	How daily activities have changed (positively and negatively)	Effects of changes in daily activities on livelihoods (positively and negatively)
Environmental changes		
Reduced pasture	**Negatively-** Loss of livestock, decreased production meat and milk	Feeding livestock on fodder, instead of grazing animals
Water shortages	**Negatively**- Decreased productivity of crops and livestock, higher water prices, and poor health	Consumption rates reduced Changing livelihoods Urbanization
New pests' infestations and increased incidences of pest attacks	**Negatively** – Poor crop and livestock production **Positively** – Adoption of new and improved crops	Poor livestock health leading low quality and quantity of products (e.g. milk and meat)
Seasonal changes		
Seasonal Variations Changing rainy seasons - Starts late and ends very early) with poor distribution.	**Negatively-** Rain delays lead to interrupted and reduced farming activities.	• Decreased agricultural productivity e.g. Poor crop and livestock yields.
Increased awareness on climate change and investment in green energy	**Positively** • Reduced fetching of firewood • Increased manufacturing of cooking gas (S*om Gas*) • Affordable/lower prices of cooking gas	• Improved living standards • Reduced carbon emissions
Economy		
Inflation	**Negatively-** • Increased prices of commodities • Working long hours • School dropouts	• Currency exchange fluctuation • Increase in poverty • Family separation and divorce sometimes due to limited incomes for families
Building houses	• Positively – Emergence of modern houses	• Improved living standards
Education system	• Has positively changed the gender perception (Affirmative action advocating for more investment in the education of girls)	
Increased unemployment/lack of jobs	• Negatively - The husband is jobless • Positively–The joblessness has resulted in wives and husbands working towards supporting each other to fend for the family.	• Improved household incomes
Increased human population that puts pressure on scarce resources.	• Negatively – Overgrazing • Positively – Proper management of rangelands and grazing zones to regenerate enough feed for livestock.	• Increasingly limited land for crop cultivation and livestock grazing.
Technological changes		
Increased research and innovation on agriculture and climate change	• Positively – Adoption and introduction of new and better farming technologies. • Application of new improved agricultural seeds.	• Improved quality and quantity of agricultural produce and products.

These changes were further echoed by a representative of persons with disability (PWD), who reaffirmed that the observed changes in weather and seasonal patterns over the last 20 years includes

periodic drought, short rainfall seasons, lowering of the water table, and reduced number of community members who depend on livestock and farming. It was noted that currently, most farmers use mechanical machines for irrigation; which tend to be expensive.

4.0 Climate Hazards ,Impacts and coping mechanism

The CVCA data was analyzed qualitatively and quantitatively. The findings below emerged from the analysis.

- **More variable and less predictable weather have been observed.** Temperatures are warmer in most seasons, and winters are colder. The duration of rainy seasons has become shorter, with spring rains falling for 2 months,
- **Drought is the first hazard affecting communities**. The main impacts of drought are shortage of water and pasture; as well as loss of livestock, crops and trees. Communities cope with the impacts by trucking and rationing water; moving to areas with water and pasture; purchasing hay to feed young and lactating livestock; and cutting trees to burn charcoal and sell firewood among other strategies.
- **Floods are the second major hazard**. Impacts of floods include gully formation and extension; soil erosion; damage and destruction of buildings, livestock shelters and roads; and loss of livestock and crops. Communities cope with floods by filling gullies with logs and stones, re-constructing buildings and shelters, moving to safer areas and replanting crops
- **Livestock diseases are the third major hazard**. The impacts of these diseases include loss of livestock and transmission of some infections to humans. Communities cope by treating livestock and humans using local knowledge, or with the help of community livestock and human health workers respectively
- **Strong winds**, frost and pests are other hazards experienced.

All the impacts of these hazards ultimately lead to reductions in household incomes, thereby affecting community livelihoods and adaptive capacities negatively.

4.1 Most and Least Affected Livelihoods in Times of Crises

With respect to the most affected livelihoods, it was reported that when climate shocks occur; farming and livestock rearing are most affected. The most affected community members include pastoralists, farmers, and internally displaced persons (IDPs). Table 4.1. below highlights the livelihoods and categories of community members affected differentially by major hazards.

Table 4.1. Most and Least Affected Livelihoods in times of Crises

Hazard	Community members & livelihood activities MOST affected	Reasons why they are MOST affected
Drought	Farmers and livestock owners	• Animals get inadequate water and pasture

		• Water shortages lead to loss of crops and poor harvests
Floods	Farmers, and agro-pastoralists	• Crops are mostly located in valley or riverbeds. • Floods destroy, wash away crops and take away fertile soil.
	IDPs	• They are stay close to rivers • They have very limited resources to cope with the hazards
Pests and Diseases	Crop farmers	• The crops are prone to attacks by diseases
Hazard	**Community members & livelihood activities LEAST affected**	**Reasons why they are LEAST affected**
Drought	Urban community – Businesses (e.g. shops)	• They are the least dependent on livestock
Floods	Urban community Businesses (e.g. shops)	• They are the least dependent on livestock

It is worth noting that there was a mismatch in alignment of the desired strategies against the current coping strategies. This points to the data quality concerns separately documented in the ***Reflections and Recommendations on Data Quality Concerns***. For example, constructing a veterinary centre within the community was documented as the desired coping strategy for *selling food in storage, and sending children to other family members*. The analysis also flagged some duplication of information documented in a completed vulnerability and capacity data collection for a different village under the targated disticts In this regard, few sections of the vulnerability and capacity were excluded from this analysis. This was done as a data quality control measure in quest of ensuring data integrity, and producing a credible report.

4.1 Coping mechanisms of climate change shocks

Many social support networks and mechanisms exists in the districts to support vulnerable groups in the community. Based on the number of times cites, the most frequent social support networks and mechanisms include women organizations and groups, youth organizations and groups, diaspora and inter community support. Other networks that were identified but were not frequently cited include local NGOs, private business, religious leaders and professional associations had more social support networks and mechanisms compared to the other districts and region of Somalia.

Beyond the social support networks and mechanisms identified in the FGDs, the study further explored other social networks and mechanism that can be used to reach communities impacted by hazards. The additional social support networks and mechanisms identified are summarized below:

- **Alms (Seko)**: This is a faith-based mechanism ordained in The Holy Quran as Islamic teaching to take care of the poor and people struck by disaster. This benefits people who are poor and are effected by hazards such as drought and floods. The well-off individuals give alms to the vulnerable groups to ensure they are resilient to the effects the hazard

- **Leased transport (Gaadiid Celis)**: This is a mechanism practiced by pastoral communities where families who are very vulnerable are given a donkey, mule, or camel to transport water from distant water source. This allows them to take care of their families and their livestock especially where the livestock are too weak to reach the water point. The leased animal can either be returned after the drought or left for good in the hands of the leased families.

- **Leased dairy animal (Maal)**: This mechanism is practiced by the pastoral communities to address nutritional needs of poor families who do not have dairy animal and cannot get milk for the children, lactating mothers and elderly people during drought.

- **Charity and social contribution (Kaalo)**: This is a faith based mechanism ordained in The Holy Quran as Islamic teaching but also a traditional practices of the Somali community. It help individuals and families reduce vulnerability and lessen the impact of the hazards such as drought, floods, and fire outbreak.

- **Resource sharing [Qardo]**: This is a mechanism practiced by pastoralists to support the vulnerable members of their communities. Resource sharing range from milk and other food items to contributing heads of livestock in order to restock the herds of affected families with the goal of reducing vulnerability to disaster especially where large numbers of animals have been lost due to droughts or diseases. The families who received the support in turn contribute to the community by helping other through labour work and livestock herding. Although traditionally practiced by pastoralist, this mechanism is also now practiced by urban and IDP communities where money is lead to close or distant relatives to start small business and them return the borrowed money

4.2 Gender Roles, Responsibilities and decision making

This section focuses on key roles and responsibilities of men and women in the context of livelihoods, vulnerability, and adaptive capacity. Specifically, it is based on the perspective of implementing the desired coping strategies in strengthening their livelihoods; mitigating vulnerability; as well as enhancing community adaptive capacity to climate change. See the summarized distinction of roles below.

Female are listing their roles and responsibilities in Ufayn District

Men	Providing labour e.g. preparing land, digging wells, providing technical support, and sharing information. Conflict resolution, holding meetings, allocation of resources is mostly the role of men (young and old). Overall management and leadership of the family
Women	Collecting and delivering stones, preparing food for workers, collecting financial contributions from the community, sharing information, motivating men during community work (e.g. construction of gabions), The role of women include household management when the men away form the family
Young boys	Rearing livestock and transporting them to the major towns for sale.
Young girls	Monitoring of farms and keeping goats, delivering food for men engaged in farm work, rearing livestock and helping their mothers.

Decision-making and Consequences on Livelihoods, Vulnerability and Adaptive Capacity

In terms of who makes decisions and manages each of these resources, it was reported that voting is usually adopted in order to arrive at consensus while making key decisions on public resources, especially where there are dissenting voices in the community. Though according to women leader, men are the majority decision makers in community.

According to the women leader, there has been a tremendous change in decision making processes amongst women in assessed districts. Increased participation of women in decision-making at HH and community levels has contributed to:

- Enhanced knowledge and skills amongst women.
- Empowerment to engage in various IGAs for financial independence.
- Women working and accumulating wealth.

- Youth with fresh minds and physically active.

> *"...Decision making at household level should be made jointly between the men and women, as it brings different useful ideas together. Women are spenders therefore, they will put back all they have earned into the household...",* **KII Women's Leader**

5.0 Conclusions

Puntland is highly vulnerable to the current and future impacts of climate change. This vulnerability is further compounded by the fact that the much of the state can be described as either coastal, low-lying, poor or disrupted by recurrent climate change. The climatic changes projected to occur are likely to increase in both frequency and severity. Puntland's environmental problems include deforestation, overgrazing, soil erosion and desertification.

5.1 Recommendations

Based on feedback from communities during the CVCA, this report makes the following recommendations for future programming in Puntland:

- Strengthen the development of concise climate information and early warning systems at the community level by creating a two-way communication system, communities [11] to scientists and scientists to communities.

- Support existing adaptive strategies of marginalized groups such as women: this can be achieved cost-effectively by, for instance, the promotion of revenue producing activities such as home gardening, fish farming, poultry, sheep fattening, agricultural and livestock processing, and marketing of products.

- Strengthen the existing VSLA system of productive finance beyond women only by incorporating men too.

- Promote various agroecological methods, including crop varieties adapted to the climate and technologies which increase soil fertility and structure (such as Zai pits, semi-circular bunds, organic manure, and naturally assisted regeneration).

- Promote the cultivation of forage, especially *Caliandra calothrysus*, as it is suited to the ecologies in Somalia and will also contribute to the development of good soil quality.

- Increase support to livestock through a) animal health training and organization of producers and b) advocacy at the regional level to provide resources to the districts to strengthen the livestock sector infrastructure.

- Support community-based producer groups – livestock, vegetables, grains, etc. – by linking them more closely to state, national (Somalia) producer and marketing networks that provide personal profits.

- Promote innovative ideas (household scale fish farming, solar pumping systems for irrigated agriculture and home gardens).

- Integrate gender perspectives into mitigation and adaptation initiatives: investing in women as part of the climate change response leads to environmental gains and greater returns across the SDGs and broader development objectives.

- MoHADM activities and projects need to bring women into the planning, financing and implementation of climate responses, including adaptation and mitigation, food security and agriculture, health, water and sanitation, forestry, disaster risk reduction, energy and technologies, and infrastructure.