Food and Agriculture Organization
of the United Nations

FOOD AND NUTRITION SECURITY RESILIENCE PROGRAMME

Building food system resilience in protracted crises

Report of the multidisciplinary context and fodder value chain analysis in **Sool** and **Sanaag (Somaliland)**

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Executive summary

The four-year Food and Nutrition Security Resilience Programme (FNS-REPRO) has been funded by the Government of the Netherlands through the Food and Agriculture Organization of the United Nations (FAO) since 2019. The USD 28 million programme addresses the "cause-effect" relationship between conflict and food insecurity in the Republic of South Sudan, the Republic of the Sudan (Darfur) and Somaliland. The multi-year livelihood- and resilience-based approach is designed to allow FAO and partners to set examples of building food system resilience in protracted crises, which have until now been emergency intervention areas. In addition to the analysis undertaken during the development of the proposal, further in-depth context and value chain analysis during the inception phase of FNS-REPRO was required to inform the area-based intervention in each target area. The key purpose of the in-depth analysis was to identify the multidisciplinary and multidimensional nature of the threats and risks to target community livelihoods and livelihood strategies (represented by the value chains) and opportunities that have enabled these communities to withstand the risks; and even when they have succumbed, to bounce back to, or above, their previous (pre-risk) livelihood and livelihood strategies position. This report discusses the recently completed Somaliland context analysis study that has been validated by study participants from the field and by Somaliland government officials, as well as recommendations from the donor and the findings of the two field missions undertaken by FAO staff between August and September 2020.

The analysis was conducted by teams from the FAO Representation in Somalia, including experts from the Livestock, Somalia Water and Land Information Management (SWALIM)[1] and Food Security and Nutrition Analysis (FSNAU)[2] sectors. The teams were assisted by two consultants – an international gender consultant who led the analysis and a national conflict consultant with a grounded understanding of the context of conflict in the greater Somalia, Somaliland and Puntland.

Mainly qualitative and some quantitative data were collected from young (less than 35 years old) and older (older than 35 years) men and women hailing from six villages in the Sool region and two in the Sanaag region. Sanaag and Xudun in Sool were largely inaccessible because the already poor roads were rendered impassable by heavy rains experienced in the weeks before the study was conducted in December 2019. RIMA baseline results will provide the missing information on the villages of Ceelcade and Sincaro (Sanaag) and Lafweyn in Xudun (Sool).

Secondary data were collected through a review of published and grey literature, whereas primary data were collected through gender disaggregated focus group discussions (FGDs), key informant interviews (KIIs) and in-depth individual interviews (IIIs). Data were entered into Excel workbooks, from where qualitative data were analysed inductively and quantitative data were analysed using descriptive statistics. Initial results were validated with selected representatives of community members interviewed, local leader representatives and national level government officers.

Results revealed that both Sool and Sanaag have varying degrees of conflict, which respondents associated with the fragility of the Somaliland state that is characterized by inter- and intra-clan tensions; environmental degradation; poverty and destitution of pastoralists from the three-year drought that ended in 2019; and poor rural road, health and education infrastructure. Despite these hardships, Sool and Sanaag are economically active areas where sheep, goats and camels are produced for domestic and international consumption through the major markets of Burco in the mainland and the ports of Barbera and Bosasso. A large part of Sool and Sanaag is constituted by a mix of savannah grasslands, shrublands and woodlands, but the woodlands are rapidly being depleted.

Trade in fodder of different quantities takes place in all the villages visited except in Balanbal in Sanaag, where respondents stated that they do not cut grass and have a pasture governing system. Smallholder farmers interviewed at the validation workshop were unable to provide information required to analyse the monetary

1 Somalia Water and Land Information Management (http://www.faoswalim.org/)
2 Food Security and Nutrition Analysis Unit (https://www.fsnau.org/)

costs of, and benefits from, the fodder value chain. This can be explained by the fact that they most likely do not have the necessary skills to conduct cost-benefit analyses nor other business management skills.

Gender stereotypes were found to be strong in the community and women were relegated to retailing small quantities of commodities such as tea, khat[3], milk, meat, grains, sugar and fodder in low-business local markets with low profit margins, whereas men mainly sold livestock in large numbers and fodder in large quantities in distant markets that are big and lucrative. Additionally, women had more limited access to credit and income as well as to health facilities compared with men.

The following is a summary of recommendations based on data analysis. A detailed presentation of these and additional recommendations can be obtained in chapter 5 of this report.

1. Partnerships

a. FAO Representation in Somalia projects: FAO emergency interventions in addition to cash for work; FAO development and resilience Rome-based Agency (RBA) and Somalia Information and Resilience Building Action (SIRA).
b. Traditional elder and local leader consortia as partners in conflict prevention and resolution and mitigation of its effects.
c. International (e.g. Wageningen University and Research Centre – WUR) and national agricultural research organizations (NAROs) (including universities, colleges such as the Intergovernmental Authority on Development [IGAD] Sheikh Technical Veterinary School and national government research institutions) to implement seed identification, selection and multiplication as well as conduct action research.
d. International, regional and local non-governmental organizations (NGOs) and the private sector to co-implement the various development interventions. These include soil and water conservation, capacity development for alternative livelihood options such as beekeeping and rearing poultry, facilitation of access to credit for women, intervention in reduction of drudgery for women, interventions in livestock production and health, implementation of farmer field schools, establishment of cooperatives, input supply and support for peacebuilding between traditional elders and local leaders.

FNS-REPRO will carefully document lessons from the processes and outcomes of the activities with partners and use these in the evaluation of partnerships for feasibility and sustainability.

2. Capacity development

a. Through consultations with government, local authorities and communities, FNS-REPRO should explore the possibility of sustainable commercialization of fodder from the extensive natural rangeland grazing areas within some of the production valleys, especially in Sanaag region, while providing support for fodder storage and processing infrastructure as well as capacity development (especially training) in good grazing management practices.
b. FNS-REPRO should train smallholder fodder producers in good agronomic practices for fodder production. Training should extend to management and processing techniques.
c. FNS-REPRO should provide good quality inputs including locally sourced (from Somaliland) fodder seeds, requisite tools and equipment. The provision of locally sourced seeds, tools and equipment will build on adapted genetic resources (seeds) and boost local markets/producers. This will ensure the sustainability of the project after closure.
d. FNS-REPRO should design and construct storage facilities or warehouses (Table 16 provides a breakdown of and identifies development and action research interventions).
e. All fodder producers need to be trained in business planning and financial record keeping (that include the cost of their own labour) so that they can make

[3] Khat, chat or qat (*Catha edulis*) is a flowering plant native to the Horn of Africa and the Arabian Peninsula. It is chewed and contains an alkaloid cathinone, a stimulant.

decisions on their fodder and other businesses informed by representative cost-benefit analyses. Once they acquire the skill, FNS-REPRO can compile an inventory of data on different farmers and monitor and learn from how their businesses progress. FNS-REPRO may use the changes in profit over time as one of the outcome indicators in its outcome and impact evaluation.

f. FNS-REPRO should provide or support the provision of extension services through the formation of pastoral and agropastoral field schools that benefit men and women equally/equitably and facilitate the establishment of existing and new agrodealer supply shops for sustainable provision of inputs as well as extension and advisory services.

3. Addressing conflict

a. FNS-REPRO can support peace efforts led by traditional and local leaders by supporting joint ventures between them such as building their institutional capacity to prevent conflict and mitigate its effects as proposed in section 5.3.

b. If InterPeace became the peacebuilding facilitation partner for FNS-REPRO, it could facilitate the peacebuilding process among the traditional elders and community leaders.

c. FNS-REPRO should avoid getting involved in the fencing of fodder fields and provision of large water storage facilities and should leave the responsibility to the beneficiary farmer groups, the community and community leaders.

4. Gender considerations

a. FNS-REPRO interventions should be modelled to benefit women and men as individuals as well as in single or mixed gender groups by aiming to use individual men and women as well as single and mixed gender groups equitably as conduits of interventions and benefiting them equally as primary and secondary beneficiaries in project interventions.

b. To ensure that women derive equal benefit from fodder production and marketing, women should join producer and marketing cooperatives as groups. They should be given access to productive community land as landless women groups, as well as to inputs, financial knowledge, credit and cash to start or grow the group fodder business.

5. Sustainable environment by water harvesting and value addition to livestock

a. FNS-REPRO should support rainwater harvesting through the rehabilitation of water catchments (reinforced with activities such as the preparation of contour bunds and planting of fodder on the bunds) by partnering with the FAO cash-for-work activities in project target areas. This complementary activity adds value to livestock by eliminating chronic thirst, which improves the efficiency of their fodder utilization and productivity. Enhanced livestock productivity enables fodder producers to diversify their livelihoods.

6. Providing market linkages and credit opportunities for fodder producers

a. FNS-REPRO should consider linking their fodder producer beneficiaries with livestock traders, for example at Burco and at livestock quarantine facilities at Bosasso and Barbera ports so that these producers may obtain supply contracts from them.
b. Such contract arrangements can include pre-financing of suppliers to help them offset some of the fodder production, processing and transportation costs. The management at the quarantines may specify the fodder standards they consider best for their livestock. This component can be an action research project undertaken by WUR and NAROs.

7. Action research opportunities

a. FNS-REPRO should investigate the benefits of food crop residues as fodder (starting with Wadamagoo village) in addition to the nutritional benefit of the crops to humans. The project should determine the nutritional and economic values of the crop residues and ways of enhancing these (WUR and NAROs).
b. FNS-REPRO should investigate the processes, outcomes and lessons associated with the various innovations linked to the project, such as the different partnership engagements and affirmative action interventions for enhancing engagement of women in mixed-gender fodder producer and marketing cooperatives.
c. A long-term action research project on [Somaliland national variety] seed identification, selection, multiplication/breeding, testing and dissemination as a collaborative project between FAO, WUR and NAROs can help identify fodder seed and food seed (to produce residues for use as fodder) varieties that work best for Sool and Sanaag. For example, this study revealed that Garagaro *(Paspalidium desertorum*, aka water Crown-grass) might benefit the most from improvement, but it might be advisable for the FNS-REPRO action research component to work on improving seeds for all or most of the grass species mentioned.
d. FNS-REPRO should also conduct action research on the preparation and marketing of *Prosopis* spp. fodder blocks with women from Daryare, who are familiar with *Prosopis* spp. and its uses as fodder.

Abbreviations and acronyms

ADRA	Adventist Development and Relief Association
CAP	Community Action Plan
CCPP	Contagious caprine pleuropneumonia
CDI	Compiled Drought Index
DfID	Department of International Development
DINA	Drought Impact and Needs Assessment
EADD	East Africa Dairy Development Project
ESWE	Empowering Somali Women Entrepreneurs
FAO	Food and Agriculture Organization of the United Nations
FEWS NET	Famine Early Warning Systems Network
FGD	Focus group discussion
FMD	Foot-and-mouth disease
FNS-REPRO	Food and Nutrition Security Resilience Programme
FSNAU	Food Security Nutrition Assessment Unit
GDP	Gross domestic product
GEC	Girls' Education Challenge Fund
GEEL	Growth, Enterprise, Employment and Livelihoods
(GIZ) GmbH	Deutsche Gesellschaft für Internationale Zusammenarbeit
HAVAYOCO	Horn of Africa Youth Committee
HIV	Human immunodeficiency virus
HS	Haemorrhagic septicaemia
IFAD	International Fund for Agricultural Development
IGAD	Intergovernmental Authority on Development

III	In-depth individual interviews
ILO	International Labour Organization
IPC	Integrated Phase Classification
ISTVS	IGAD Sheikh Technical Veterinary School
KII	Key informant interview
LSD	Lumpy skin disease
MCH	Maternal and child health
MoLFD	Ministry of Livestock and Fisheries Development
MoNDP	Ministry of National Planning and Development
NARO	National Agricultural Research Organization
NDP	National Development Plan
NGOs	Non-governmental organizations
NOVIB	Nederlandse Organisatie Voor Internationale Bijstand (Oxfam Netherlands)
NRC	Norwegian Refugee Council
OCVP	Observatory of Conflict and Violence Prevention
PAC	Practical Action Consulting
PENHA	Pastoral Environment Horn of Africa
PET	Pictorial evaluation tools
PL	Puntland
PPR	Peste des petits ruminants
RBA	Rome-based Agency
RIMA	Resilience Index Measurement and Analysis
SFVCD	Sustainable food value chain development
SGP	Sheep and goat pox
SIRA	Somalia Information and Resilience Building Action
SLF	Sustainable livelihoods framework
SOMGEP-T	Somali Girls' Education Promotion Project – Transition
SomReP	Somalia Resilience Programme
SVO	Steadfast Voluntary Organization
SWALIM	Somalia Water and Land Information Management
TLU	Tropical Livestock Unit
UK	United Kingdom
UN	United Nations
UNSF	United Nations Strategic Framework
USC	United Somali Congress
USD	United State Dollar
VSF	Vétérinaires Sans Frontières
VSLA	Village Savings and Loan Association
WFP	World Food Programme
WUR	Wageningen University and Research Centre
WVS	World Vision International – Somalia Programme, including Somaliland

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CHAPTER 1

Introduction

1.1 Food and Nutrition Security Resilience Programme

The FNS-REPRO funded by the Government of the Netherlands through FAO is a four-year programme of USD 28 million that contributes directly to the operationalization of the United Nations Security Council resolution 2417 by addressing the "cause-effect" relationship between conflict and food insecurity in the Republic of South Sudan, the Republic of the Sudan (Darfur) and Somaliland. The programme became operational in October 2019.

FNS-REPRO is the first programme in Eastern Africa specifically designed to foster peace and food security at scale through a multi-year livelihood and resilience-based approach in some of the least stable regions, where interventions have been, until now, of a humanitarian programming nature exclusively. Its design allows FAO and partners to set examples of building food system resilience in protracted crises. In this programme, resilience is defined as "the ability to prevent disasters and crises as well as to anticipate, absorb, accommodate or recover from them in a timely, efficient and sustainable manner. This includes protecting, restoring and improving livelihoods systems in the face of threats that impact agriculture, nutrition, food security and food safety" (FNS-REPRO proposal 2019; 6).

FNS-REPRO deliberately focuses on unstable regions in the Horn of Africa with a view to address root causes and consequences of protracted crises and food and nutrition insecurity from a conflict-sensitive perspective. FNS-REPRO contributes to the potential of sustainable, inclusive growth and climate action by working with other actors and stakeholders on the humanitarian-development and peace nexus.

The programme adopts an innovative area- and livelihood-based approach that looks at the multidimensional threats and risks that communities are exposed to, while identifying and utilizing opportunities for improved livelihood resilience. Value chains that can contribute to more resilient food systems, resulting in improved food and nutrition security and localized peace dividend, were agreed in the proposal. These are fodder (Somaliland), seeds (South Sudan) and gum Arabic (the Sudan – Darfur). FNS-REPRO activities will be built around these value chains.

In addition to the analyses undertaken during the development of the proposal, further in-depth context and value chain analyses during the inception phase of FNS-REPRO were required to inform the area-based intervention in each target area. The key purpose of the in-depth analyses was to identify the multidisciplinary and multidimensional nature of the threats and risks that target community livelihoods and livelihood strategies (represented by the value chains) face, and opportunities that have enabled these communities to withstand the risks and even when they have succumbed, to bounce back to, or above, their previous (pre-risk) livelihood and livelihood strategies position.

These analyses have contributed to creating a common understanding of the livelihood and livelihood strategy context in terms of threats and subsequent risks that affect them and inherent and external opportunities that enable their resilience. The FNS-REPRO learning agenda integrated in this evidence-based programming project from inception, will strengthen the understanding and documentation of actors, actions, processes and lessons learned from the project. The lessons will inform on-course adjustments of the project, as well as ways to intervene in other projects in politically and socio-economically fragile contexts. The lessons from the analyses undertaken during the inception phase feed into FNS-REPRO's first annual plan, which outlines the plan of work, timelines, detailed activities and budget for the March 2020 to September 2021 implementation period.

1.2 FNS-REPRO in Somaliland

In Somaliland, FNS-REPRO is aligned with priorities of the Somaliland National Development Plan II (2017–2021) to achieve Economic Development (Pillar 1) and Environment Protection (Pillar 5) and contributes to Sustainable Development Goals 1, 2, 5, 8, 9, 10, 12, 13, 15 and 17[4].

This project primarily contributes to the FAO Representation in Somalia's draft Country Programming Framework Outcome 2: Resilient agriculture, livestock, fisheries and forestry sectors, leaving no one behind, malnourished or hungry. Within the United Nations Strategic Framework (UNSF) for Somalia 2017–2020, the project will contribute to UNSF Strategic Priority 5: "Political and socio-economic opportunities enhanced, leading to meaningful poverty reduction, access to basic social services and sustainable, inclusive and equitable development".

Project interventions will also contribute to Somalia's upcoming Recovery and Resilience Framework, which aims to promote a sustainable recovery from the recent drought while addressing the underlying drivers of drought vulnerability.

In Somaliland, FNS-REPRO will focus primarily on people in Integrated Phase Classification (IPC) Phase 3 and above (although acutely food-insecure households in IPC 2 may also be targeted) and on so-called "poor pastoralists". The project will focus on the fodder value chain in the predominantly pastoral north, where frequent shortage of animal feed severely affects pastoral livelihoods, food security, nutrition and overall well-being. The fodder value chain is a priority that cuts across humanitarian and development interventions, with numerous missing

[4] Sustainable Development Goals 1 – no poverty; 2 – zero hunger; 5 – gender equality; 8 – decent work and economic growth; 9 – industry, innovation and infrastructure; 10 – reduced inequalities; 12 – responsible consumption and production; 13 – climate action; 15 – life on land; and 17 – partnerships for the goals.

links in between (particularly its access and use by poor pastoralists). Fodder represents both a major need and an opportunity, considering its scarcity, demand and market potential, and it being a recurrent need in humanitarian response that is difficult, costly and inefficient to import (as experienced during the 2016/17 drought).

Specifically, FNS-REPRO seeks to build food system resilience in Sool–Sanaag through support to the production of fodder/feed, but will not be exclusively geared towards the commercial potential of the value chain *per se*. Although commercial fodder exports and the links with regional trade will be explored, improved availability and quality of fodder/feed in Sool–Sanaag (and bordering areas) is the key focus of the interventions. Throughout, FAO will develop participatory approaches that specifically include women and youth in various links of the value chain.

The programme will improve fodder availability and access while responding to these nexus challenges by (i) deliberately engaging poor pastoralists in animal feed production and range-management practices; and (ii) supporting communities to produce fodder in ways that are climate-savvy and protect the environment. The latter includes sourcing scarce feed ingredients from harvests (crop residues) and from invasive plants that resist drought (*Prosopis* pods and leaves), while contributing to control their spread and expansion.

FNS-REPRO activities are also designed to help communities make the best sustainable use of local resources and manage challenges in innovative ways. The activities will increase the resilience of communities and their food security status by providing technical support and advisory services to increase productivity of fodder/feed; promoting good agricultural practices; restoring degraded rangelands; initiating actions against desertification; establishing linkages between fodder/feed producers, traders and consumers; supporting storage; and processing feed/forages, among other actions.

1.3 Objectives of the study

i. To develop a programme-level understanding of the local context of community livelihoods and the fodder value chain; and

ii. To generate evidence for context-relevant and conflict-sensitive programme design, implementation, monitoring and evaluation – all along the fodder value chain.

The information obtained from the analyses will be used for the review and refinement of the log frame to adjust indicators, establish targets that are more detailed and modify output statements and activities.

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CHAPTER 2

Somaliland and Sool/Sanaag context

2.1 Somaliland overview

2.1.1 Political history

Somaliland is located at the Horn of Africa between latitudes 80º and 11º30' North and longitudes 43º and 49º30' East. It borders the Gulf of Aden to the north, Somalia to the east, Ethiopia to the south and Djibouti to the northwest. It has an estimated area of 137 600 km² with a coastline of 850 km (MoL, 2006). Somaliland is divided into six regions, namely Togdheer, Sahil, Awdal, Marodi Jeex, Sanag and Sool. The six regions are subdivided into 32 districts and subdistricts. No census has been carried out since the 1997 census, when the population of Somaliland was estimated to be three million with an estimated population density of 22 persons per km²; with about 55 percent of the population living in the rural areas and the rest (45 percent) in urban centres (MoLFD, 2006).

Somaliland, a former British Protectorate, achieved its independence on 26 June 1960 and united with the former Italian colony of Somalia on 1 July 1960 to form the Republic of Somalia. The democratically elected government ruled for nine years (1960–69). A military revolution took place on 21 October 1969 and the military regime took control of the country. The military rule lasted for 21 years during which economic development deteriorated and, together with the occurrence of many civil conflicts, led to the collapse of the military government in early 1991, followed by the destruction of all vital infrastructures. As the civil war intensified, the military regime of Siad Barre almost destroyed Somaliland's entire infrastructure, including natural resources such as water reservoirs that underpinned the pastoral economy (MoNPD, 2017). Soon after the collapse of the military regime, Somaliland separated from the rest of Somalia, based on the original

colonial boundaries, and restored a democratic rule on 18 May 1991. A series of negotiations and reconciliation meetings involving representatives of different clans (congress of elders) led to the attainment of this political state. Constitutionally, Somaliland has a multi-party system of democracy, with an elected president and local council. Somaliland combines elements of Somali culture and modern democracies; for example, the Somaliland upper house comprises clan elders, while the lower house includes other clan representatives (Adam, 2013).

Numerous conflicts have occurred since the early collapse of the previous military government. The conflicts are complex, with multiple combatants, motives and interests, and with the seeds of the instability sown during the predatory military regime between 1969 and 1991 (Adam, 2013). Despite the challenges, Somaliland has established regional administrations bringing relative stability, which are the product of a local peace process uniting different clans to form a joint administration (Adam, 2013).

2.1.2 Livestock policy environment

The government of Somaliland has an established monetary as well as several national policies to guide its development. In 2011, the Ministry of National Planning and Development (MoNPD) produced the first policy, The Somaliland National Vision 2030, an overarching policy that sets the roadmap for Somaliland's long-term development aspirations and goals. Vision 2030 is anchored on five key pillars: Economic Development, Infrastructure Development, Governance and Rule of Law, Social Development and Environmental Protection. The policy guides development partners to align their assistance with national priorities and aspirations, as well as providing a framework upon which national strategies and implementation plans are operationalized.

Vision 2030 forms the foundation upon which the National Development Plan (NDP II) reflecting the priorities of the Somaliland Government is based (MoNPD, 2017). The NDP declares the agricultural sector, including livestock, to be a top priority as most of the population derive their livelihoods from it. The NDP highlights major priorities in the areas of increasing food security and poverty alleviation, and for building a foundation for long-term agricultural (crop production, livestock, fisheries and natural resources management) development.

Sector strategic plans have been developed to expand the development planning into the subnational levels. These include the Livestock Sector Policy for Somaliland (MoLFD, 2006), while further drawing inspiration from the Somaliland National Vision 2030 and the NDP II. The livestock policy defines the overall objective of the Ministry and sets out specific policy guidelines and strategies for achieving the sector objectives. It also sets priority areas on which all the stakeholders should focus in livestock production, animal health and livestock marketing (MoLFD, 2006). The projected growth and full potential of the livestock sector – and therefore its contribution to the general livelihoods of the farmers and the national economy – may not be realized unless various challenges are addressed. Challenges include those of a technological and institutional nature, including providing a conducive environment for policy development.

According to the Somaliland Livestock Policy (2006–2016) document, challenges to livestock development include scarcity of pastures and fodder, rangeland degradation due to climate change and human-induced activities, animal health problems, disease burdens, limited animal health services, shortage of pasture and water, and improper use of land and surface water. Because of these challenges, livestock production is characterized by poor productivity performance and low income derived by pastoralists. This leads to low quality of life for pastoralists, an increase in poverty and consequently increased migration to urban centres with limited employment opportunities.

2.1.3 Socio-economic importance of livestock

Livestock has traditionally been the backbone of Somaliland's economy, contributing 28.4 percent of Somaliland's gross domestic product (GDP) and about 85 percent of foreign export earnings from the export of live animals, hides and skins and employing over 70 percent of the population, including 27 percent in the labour force (MoLFD, 2006; MoNPD, 2017). Livestock is also a symbol of social status and the main source of nourishment for entire households through the

consumption of milk and meat. It is estimated that women manage 75 percent of the small trade businesses in Somaliland, including trade in meat and milk. Milk and meat trade businesses are therefore an important source of income for women in the urban and in the rural contexts. It is important to recognize and understand pastoral women's vital role in livestock production and management in order that their skills and knowledge can be improved to benefit the livestock trade.

Livestock marketing and trade generate revenues for local administrations through taxation of livestock destined for trade. The livestock sector provides employment and sustains several enterprises and interest groups linked and associated with the livestock value chains such as the livestock traders, transporters, slaughter facilities/processors, government (veterinary/animal husbandry departments), local authorities and veterinary drug suppliers. Based on 2018 FAO estimates, Somaliland has about 15 million animals. The Sool, Sanaag and Togdheer regions are the main hubs for livestock, accommodating about 75 percent of all livestock in Somaliland (MoNPD, 2017).

2.1.4 Livestock-rearing systems

Livestock production systems in Somalia remain largely traditional and are generally low input, low output, extensive rangeland grazing systems. Somalia has the greatest proportion of pastoralists in Africa (Unruh, 1995). Transhumant pastoralism is the most widespread in rural Somaliland followed by agropastoralism. Transhumant pastoralism involves the movement of people with their animals in search of pasture and water, often in organized regular patterns in which each group or all groups have their traditional grazing areas and/or common watering points and temporary camps. In some parts of Somaliland, the transhumant pastoralists cohabit with farmers to access crop residues and fallow grazing lands for their livestock. In other places they take advantage of heavy rains and floods and plant in cleared areas to produce fodder or grains, usually in a permanent settlement of some kind (MoL, 2006).

The types of animals kept by transhumant pastoralist families depend on several factors, including the area inhabited and the labour available. Cattle are predominant in the western parts of the Somaliland that receive relatively more rainfall, while goats and camels are reared mainly in the drier central and northern regions. Most transhumant pastoralists prefer to keep mixed species of animals, which have numerous benefits including the ability to exploit different rangelands, produce different products and have different survival and recovery rates following droughts. When the need arises, transhumant pastoralists practise a split herding system in which camels and sometimes goats are separately herded away from cattle, milking camels and sheep.

There is a distinct division of labour among family members – young men herd camels, while cattle and small ruminants are taken care of by women, children and the elderly. The maintenance of a herd of livestock by a family with a permanent home base in a farming area characterizes an agropastoral system, the second livestock production system practised.

There are several different forms of agropastoral systems, ranging from farmers owning large herds and keeping only a few resident animals to small-scale farmers owning only a few animals. This production system was initially practised in the southern and north-western farming regions, but it is becoming more common even in the drier regions of Somaliland following gradual deterioration of the rangelands (MoL, 2006).

Under the agropastoral system, crop residues form the main source of feed for livestock especially during the prolonged dry seasons. A third rearing system is emerging – the urban and peri-urban stall-feeding system, commonly referred to as "zero-grazing" in Kenya, in which dairy camels and cattle are fed on imported concentrate feeds and fodder sourced from rural production areas. An example is the Som dairy, a high-investment Holstein cattle dairy farm at the heart of Hargeisa city in Somaliland (Africanews, 2020).

2.1.5 Animal production

Animal productivity in Somaliland, like in many other sub-Saharan countries, is generally low. This situation arises from traditional management practices including the use of low-yielding breeds (slower growth rates, first kidding

and calving at a later age, long kidding and calving intervals), lack of adequate nutrition and water, and inadequate provision of health inputs and animal feed supplements (Winrock International, 1992). Poor nutrition represents the biggest constraint to increased animal productivity in Somaliland and feed deficiency in most regions for most parts of the year is a predominant aspect of livestock production (MoLFD, 2006; PAC, 2011). Poor nutrition directly affects milk production and animal body weight. Livestock largely depend on extensive rangeland pasture grasses, browse tree forage for most parts of the year and agricultural crop residues derived from maize, sorghum, beans and sesame during the periods after crop harvests. The poor quality and quantity of both the natural rangeland grasses and agricultural crop residues are the greatest constraints to improving the productivity of the livestock sector in sub-Saharan Africa as well as in Somaliland (Winrock International, 1992). There are no systematic ways of managing the rangeland for improved forage production and only a few (or no) feed markets to supply concentrate feeds to bridge the nutrient gaps when natural pastures are inadequate. Fodder conservation to mitigate dry season feed shortage is hardly practised.

A myriad of factors has resulted in the dwindling of grazing resources in Somaliland. These include overgrazing, rapid degradation of forest cover due to charcoal production, unregulated grazing and animal mobility due to a breakdown of customary and state institutions, as well as vague tenures or resource ownership and illegal land encroachment of former grazing areas (MoNPD, 2017).

Water stress is a constant reality, especially during dry seasons and droughts. Adaptive strategies include trekking long distances in search of water and pasture, which weakens the already undernourished and dehydrated animals and causes their physical condition to deteriorate even further. Climate change and variability characterized by floods and protracted droughts has aggravated the situation, which has resulted in most grazing areas left bare and prone to serious soil erosion from winds and floodwater.

These complex challenges to livestock production have led to multiple threats, ranging from irreversible natural rangeland degradation and perpetual conflicts to poverty, famine and unsustainable livelihoods (MoNPD, 2017). While rangeland degradation continues at the same pace, without a systematic way of managing the rangelands resources, the Horn of Africa remains at risk of desertification, pushing hundreds of thousands of already struggling Somaliland pastoralists and agropastoralists into destitution (Winrock International, 1992).

2.1.6 Land tenure

Land is a basic resource for livestock development, hence the need to encourage its optimal use. A large proportion of the land is under communal ownership. Lack of guaranteed security of land tenure and appropriate mechanisms for land ownership for livestock production has increased social conflicts between livestock farmers and other land users (MoNPD, 2017). In addition, there is no incentive for rational rangeland management, which discourages investments in improved pastures and water supplies. Expansion of illegal enclosures in rangelands has resulted in the reduction of grazing areas and concentration of large numbers of animals in the marginal lands, leading to overgrazing and environmental degradation. Furthermore, there is a scarcity of land-use planners for the demarcation of land for various uses.

The Somaliland Livestock Policy (2006–2016) recognizes the need to ensure proper land ownership with better management and utilization for sustainable livestock production and productivity. There is a need to promote a consultative and participatory mechanism to ensure land use and security of land tenure for livestock farmers in the rangeland areas. Community-based management of natural resources among pastoralists will be developed and promoted. Participatory and sustainable pastoral and agropastoral associations that recognize traditional customary land rights also need to be promoted.

2.1.7 Gender in livestock production

Gender equality considerations and mainstreaming into livestock production processes have become increasingly important in recent years. Women and youth in Somaliland bear substantial responsibilities in livestock production. Women have increasingly become involved in herding and milking the camels following the migration of men to urban areas in search of better jobs;

a role traditionally reserved for men. Anecdotal evidence indicates that women are involved in fodder production and retailing in local markets.

Factors that limit women's optimal performance include a lack of skills and knowledge in diverse areas such as improved fodder production practices, animal husbandry and entrepreneurship. The Somaliland Livestock Policy (MoLFD, 2006) recommends gender mainstreaming to address the gender imbalances in livestock farming through several strategies, specifically promoting capacity building in gender mainstreaming in government and within pastoral communities; support to women by means of energy-saving technologies appropriate to pastoral communities; and empowering women and youth to access resources that enhance income generation and participation in markets.

2.1.8 Livestock trade

Generally, small ruminants (sheep and goats) are an important alternative to cattle in pastoral areas because of their resilience to droughts, faster reproduction rates and easier sales for loss mitigation during severe droughts (Lebbie, 2004). A significant number of small ruminants are therefore marketed domestically, generating employment for the local population, especially women. Sale of sheep and goats in Somalia is widespread across households (>80 percent of households), standing at an average of about 10 animals per household per year (Wanyoike *et al.,* 2015).

Besides domestic trade, a vibrant export market for the small ruminants has greatly benefited all actors in the small ruminant value chain in Somaliland. For example, the principal source of small ruminants transported to Mecca for the Eid festival is the Horn of Africa, including Somaliland (Sherman, 2011). Major livestock export markets are Djibouti, Ethiopia, Oman, Saudi Arabia, the United Arab Emirates and Yemen. After the Saudi Arabian ban on Somaliland's livestock was lifted in 2009, exports grew rapidly in the years that followed. For instance, in 2014, Somalia exported over 4.6 million sheep and goats to the Gulf countries (MoPIED, 2016). This increased to a record 5.3 million heads in 2015, the highest number of live animals exported from Somalia in 20 years, injecting more than USD 360 million into the national economy (FAO, 2015). The local demand for livestock, livestock products and fodder will also continue to grow due to the escalating population.

Despite the great potential, Somaliland continues to face major challenges that affect the livestock trade. These include inadequate institutional support services, low phytogenic standards to ensure the quality of milk and meat in acceptable quantities, and the poor state of infrastructure including processing and storage facilities and road transportation networks (MoLFD, 2017). Pastoralists normally get lower prices for their products as they cannot access markets directly and require intermediaries to sell their produce. Furthermore, a few firms dominate (monopoly and cartels) the livestock export sector, which leads to a reduction in the price that pastoralists get from the sale of their livestock.

The pastoral system, in which the bulk of animals are marketed, solely depends on natural rangeland pasture and browse trees forage and is therefore highly susceptible to climatic shocks such as droughts and floods. Long-term economic growth will require investments and strategies to adapt to and mitigate the effects of climate change, which include actions on sustainable fodder production/supply. Health standards for export animals need to be improved through better functioning quarantine centres to make the livestock trade more competitive. In addition, there is a need to diversify Somaliland's target markets – the end destination for about 80 percent of Somaliland's exports is the Saudi market and the rest go to markets in other Gulf countries (Too *et al.,* 2015; MoNPD, 2017). However, consumption behaviour in the Gulf has changed, with a lower demand for live animals and an increase in the demand for pre-chilled meat. Somaliland also faces greater competition from other livestock exporters such as Australia and the Sudan (MoNPD, 2017).

2.2 Sool and Sanaag conflict and peace dynamics

2.2.1 Somali conflict

Conflict in Somalia has existed from before 1969 when the self-declared president, Siad Barre, took over power after the assassination of his predecessor. The collapse of the central government in 1991, when Siad Barre was ousted from Mogadishu by forces of the United Somali

Congress, set in motion a period of conflict, instability, food crisis and famine that continues today. In the months following the collapse, Somaliland was torn apart by clan-based warfare and factions competing for what remained of the state's assets and power. Throughout the conflict there have been ongoing contradictions between a centralized state authority, a fractious kinship system and the Somali pastoral culture in which power is diffused. This is borne out in different ways throughout Somaliland.

2.2.2 Conflict between Somaliland and Puntland

Since the establishment of self-declared autonomous authorities in Somaliland and Puntland, there have been more stability and peace than in war-torn south-central Somalia. However, both Sool and Sanaag regions are contested by Somaliland and Puntland. The conflict between Somaliland and Puntland is based on overlapping territorial claims over the border regions of Sool and Sanaag. This has led to continued armed clashes in these regions as well as population displacement as local villagers flee armed confrontations between the two political factions. Military confrontations in the two States since 2002 have severely affected the security, livelihood and development of the people of the regions.

Somaliland declared its independence in 1991, but this has not been recognized by the international community. Puntland State, on the other hand, was formed in 1998 as an autonomous subnational state administration within the framework of a federated Somalia. The dispute between Somaliland and Puntland stems from 1998, when Puntland formed and declared the region as part of its territory. Both entities claim the regions of Sool and Sanaag, which lie in their borderland as part of their territory. Somaliland argues that the borders are part of the original boundaries of the former British Somaliland Protectorate, whereas Puntland's claim is largely based on kinship ties with the regions' dominant Darod clans.

The portion of Sool in dispute, which includes the Las Anod and Taleh districts, is primarily inhabited by the Darod/Harti/Dhulbahante. The portions of eastern Sanaag in dispute, which include the Badhan and Dahar districts,

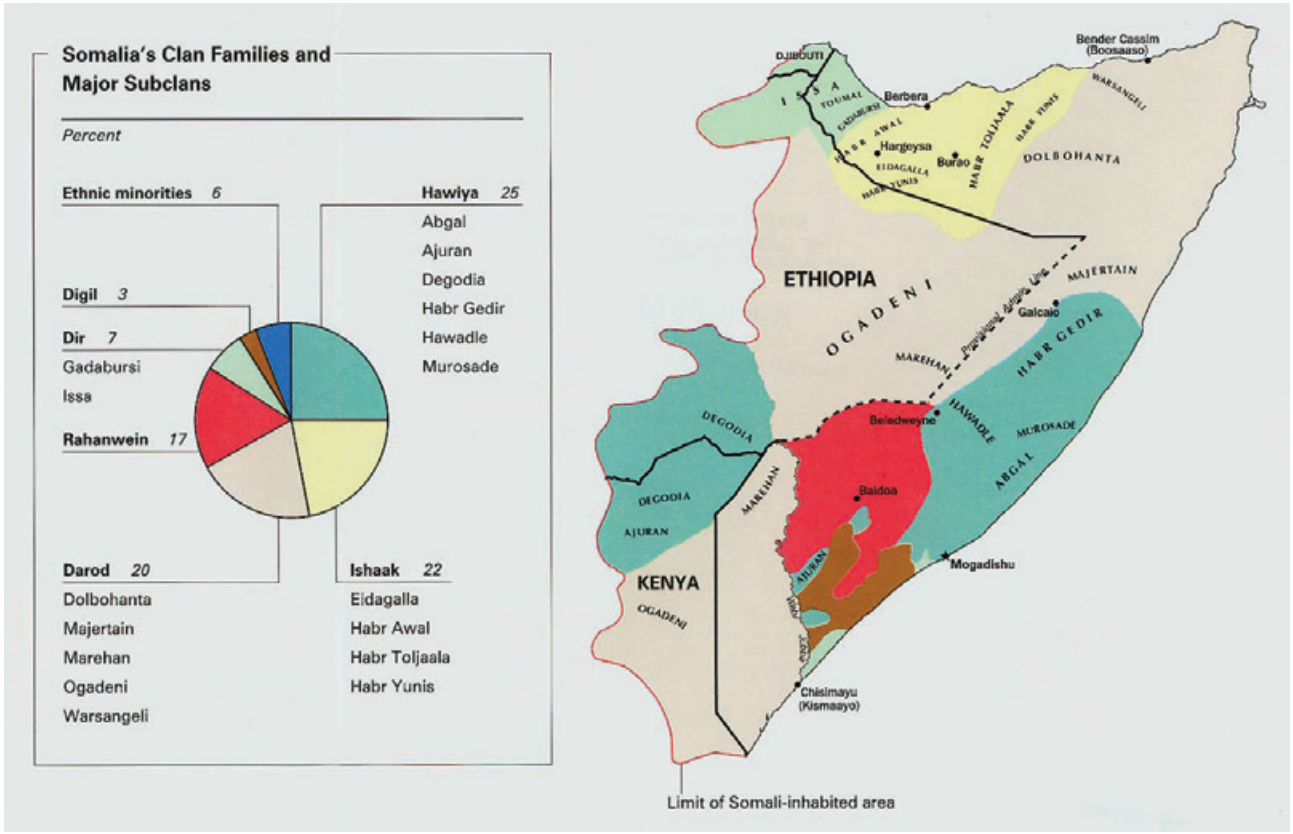

Figure 1. Somali clan map
Source: Ethnic Groups from Somalia Summary Map, CIA 2002 (https://www.lib.utexas.edu/maps/africa/somalia_ethnic_grps_2002.jpg). Perry-Castaneda Library Map Collection, University of Texas at Austin.

are largely occupied by the Darod/Harti/Warsengeli, although the Dhulbahante are also present in parts of southern Sanaag south of Erigavo district.

Part of the challenge faced by Sool and Sanaag is that the conflict plays out across several different layers, including local, regional and national layers. Each layer contains its own internal contradictions that complicate conflict-resolution efforts. It is widely understood that a segment of the local politicians and their supporters are politically affiliated with different external entities behind the conflict in Somaliland, Puntland and Somalia.

The relationship between Puntland and Somaliland remains fragile and the lack of an even-handed and sustained mediation and peace process compounds the problem. The Intergovernmental Authority on Development (IGAD) and the United Nations (UN) instituted an informal ceasefire in 2019 that has prevented further violence around Sool, but it is unclear if this will lead to permanent solutions.

2.2.3 Interclan conflicts in Somaliland

In Somaliland, the population primarily comprises five major clans – the Isaaq, the Gadabursi, the Harti (consisting of Dhulbahante and the Warsangeli), the Isse and the Gabooye. Somaliland has struggled to contain pockets of discontent in recent years. The administration has faced a recurrent interclan conflict in Ceel Afweyn in Sanaag region that pits two major branches of the Isaq clan – Baho Farah Biciide/Habarjeclo and Sacad Yonis/Habar Yonis – against each other. The main area of contention is the politicization of natural resource-based (land) conflict drawn along clan lines. This conflict was finally resolved in 2019 by efforts of both the government and traditional leaders.

2.2.4 Conflict between the Government of Somaliland and Khaatumo state

Towards the east, mainly in Laas Caanood district, political tensions between the Somaliland Government and elements of the separatist or autonomist Khaatumo state, constituted mainly by the Dhulbahante clan and a few members of other Harti clans, should be taken into consideration. Khaatumo's original goal was to avoid domination from either Somaliland or Puntland and to form a separate political entity that could eventually pursue reunification with the federal government structures in Mogadishu. That was unacceptable to the Somaliland Government, which showed willingness to negotiate a peaceful local settlement and held several meetings with the Khaatumo leadership. In 2017, Khaatumo and Somaliland signed a five-point agreement over the integration of Khaatumo and Somaliland. One of the key provisions of the agreement was to formalize, within the Somaliland Constitution, an expanded power-sharing arrangement with the Dhulbahante. However, some of the Dhulbahante leaders disagreed, thereby putting a stop to the agreement. Thus, owing to the insurgencies associated with the pro-separatists, there is a heavy Somaliland police and military presence to keep the peace. The public appears to be ambivalent about separation because they feel marginalized in terms of development support and employment opportunities that currently mainly benefit communities from the more dominant ruling clans (OCVP, 2015).

2.3 Sool and Sanaag socio-economic outlook

2.3.1 Population economy and access to basic services: Main livelihoods and livelihood zones

According to FSNAU/FEWSNET, livelihood profiles offer an analysis of livelihoods and food security on a geographical basis. These profiles have various sections:

The General Livelihood Zone Description offers a general description of the ***climate, topography, natural resources and local livelihood patterns*** (such as livestock rearing, crop production and off-farm income generation). The Markets section contains basic information on marketing. Two sections that provide the core information on the 'household economy' of the zone are the Wealth Breakdown Section and the Sources of Food and Income and Expenditures Section. The Wealth Breakdown Section describes four main wealth groups ('very poor', 'poor', 'middle' and 'better-off'), explaining the differences between these groups. The Sources of Food and Income and Expenditures Section examines patterns of food and income access at each level of wealth, relating these to the characteristics of each group. The section on Hazards, Response and Monitoring Variables provides information on the different types of hazards that affect

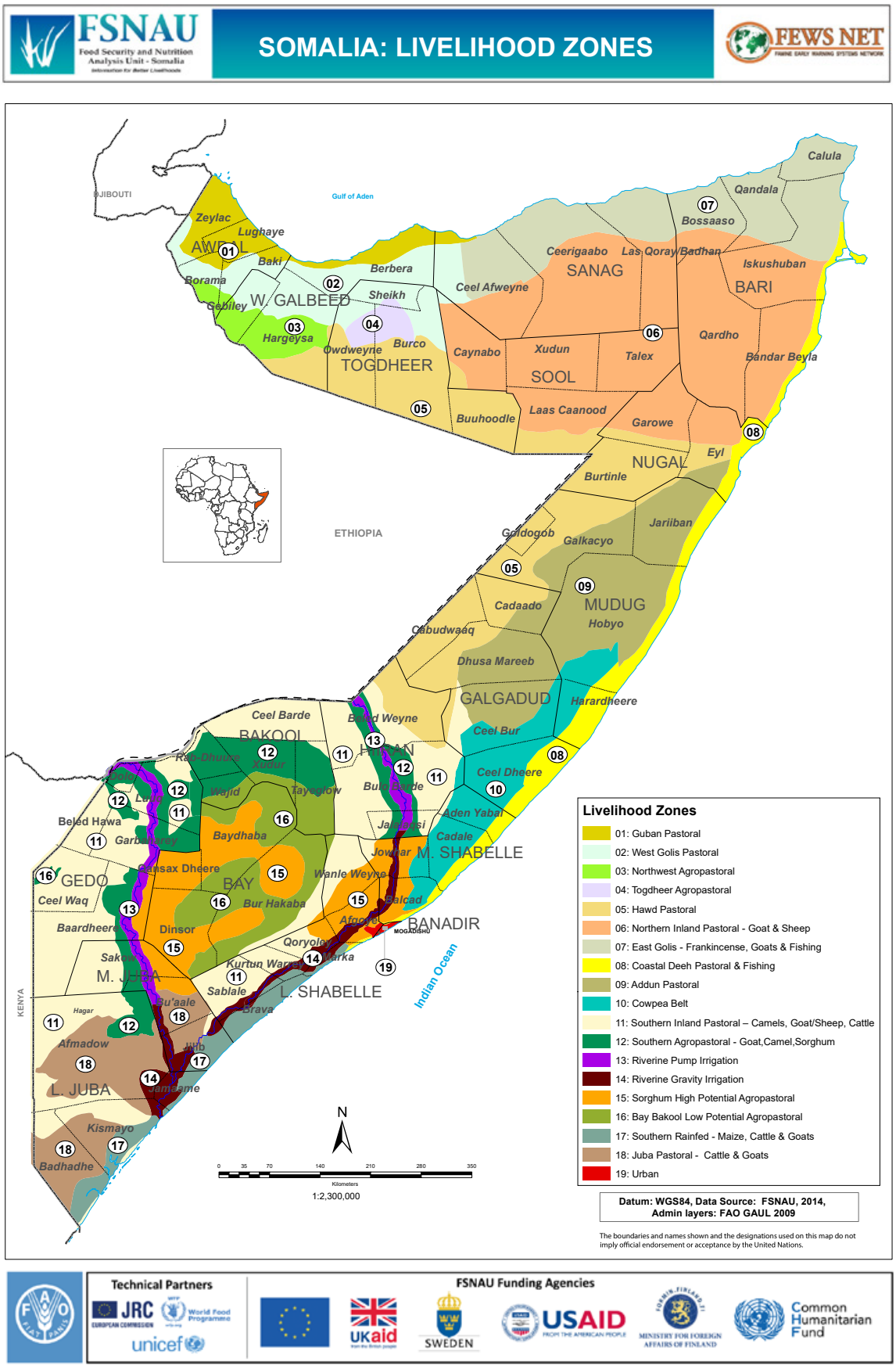

Figure 2. Somalia livelihood zones
Source: FSNAU, 2014. Modified to match UN Geospatial. 2020. Map of the World. In: *United Nations* [Online]. Washington, D.C. [Cited 8 November 2021.] https://www.un.org/geospatial/content/map-world

the zone, differentiated by wealth group where this is appropriate.

The analysis therefore provides the socio-economic as well as natural resource outlook of the different rural livelihood profiles in Somalia. There are four broad categories of rural livelihoods: ***pastoralism, agropastoralism, riverine agriculture*** and ***coastal agriculture.***

Sool and Sanaag regions fall in the ***pastoralism*** category and are comprised of five of the 18 main livelihood zones of Somalia (FSNAU/FEWSNET, 2016):

- Guban Pastoral (zone 01);
- West Golis Pastoral (zone 02);
- Hawd Pastoral (zone 05);
- Northern Inland Pastoral (zone 06); and
- East Golis Pastoral (zone 07) (Figure 1) (FSNAU/FEWS NET, 2016).

2.3.1.1 Guban Pastoral (Zone SO01)

The Guban refers to the coastal plain in north-western Somalia, which runs parallel to the Gulf of Aden for about 241 km between Seylac district (Awdal region) in the west and Berbera district (Woqooyi Galbeed region) in the east. The Guban plain narrows gradually from 56 km in the west to about six km in the east but remains low-lying throughout – less than 100 metres above sea level. It is bordered by the much higher Golis mountain range to the south. The Guban Pastoral livelihood zone covers the same geographic area. The area is sandy and has a sparse vegetation cover, characteristic of steppes. The zone experiences high temperatures and high humidity, but little rainfall – in fact, guban means "burnt area" in Somali. The basis of the economy is pastoralism. The total estimated population for the livelihood zone is 205 202 (UNFPA, 2014).

The Guban livelihood zone has two main seasons. The jilaal season lasts from December to May. In this zone, jilaal is the only season in which some rain is experienced; the locally named xays rains of December–January. The second season is the guhagaa, which is a dry period in this area lasting from June to November. The jilaal in the Guban livelihood zone does not reflect the jilaal experienced in the rest of Somaliland and the guhagaa season in this zone is also different. The area receives a mean annual rainfall of 57 to 93 mm. The hottest period is between June and August, with temperatures of over 40 °C. The cooler months are from November to February.

Temperatures are so high between June and August that any rainfall during that period is largely ineffective – it evaporates before it can contribute to pasture growth. On the contrary, the xays rains of January and December fall in the cool season and do promote pasture growth, but these rains have decreased in recent seasons and the zone has received unseasonal rains – the effects of climate change are evident.

Soil type varies from sandy alluvium on the coastal plain to sandy deposits mixed with marine soil. The dominant vegetation types are dune grasses (locally called *darif*) with pockets of acacia trees (*qurac*), argan trees (*kulan*) and shrubby seablite (*Suaeda fruiticosa*, locally known as *xudhun*). When the rains arrive, the vegetation is quickly renewed and for a time the Guban provides some grazing for pastoralists' livestock.

The zone is criss-crossed by broad, shallow watercourses that are beds of dry sand except in the rainy seasons. Water scarcity is prominent in the Guban area and there are only three main boreholes (in Ceel gaal, Karuura and Kalowle). Animals are heavily concentrated in these areas during the dry season. Additionally, there are shallow wells that have been hand dug for domestic use. Due to the sparse vegetation cover and scarcity of water, milk production is relatively low compared with other pastoral areas in Somaliland.

The livelihoods of the dominant pastoral economy are based on rearing camels and small livestock for milk production and trade. Due to successive droughts and diseases that have mainly affected sheep, goats have become the dominant species among the small stock. Camels are the most valuable animals – they provide milk during the dry seasons, they serve as pack animals and they are prized trading commodities. Most households do not own cattle. Agriculture is completely absent from this zone, which means all cereals and non-staple foods must be purchased (or bartered).

Normal livestock migration routes are limited to the Guban area if the xays rains have been normal. These

rains also attract pastoral communities from further south in Somaliland. During a bad year, livestock are moved south to the Golis, to the Galbeed region and up to the Haud of Hargeisa or to as far as the Shinile or Siti zones of the Somali region in Ethiopia. Family members move with livestock, particularly the father and the eldest son, sometimes accompanied by additional family members. Clan ties are strong within this livelihood zone.

Markets

Livestock markets

Trade in livestock and livestock products is the fundamental economic activity for the communities living in the Guban Pastoral livelihood zone. Local and export-quality goats and camels are the main species traded and camel milk is the main animal product sold. The major markets are listed below. These markets serve as livestock trading points, as supply centres for essential food and non-food items and as sources of labour opportunities during bad years.

- *Main markets:* Seylac (or Seila), Lawaya-Adde, Lawyacado and Djibouti
- *More distant markets:* Tog Wajaale (close to the Ethiopian border), Borama, Hargeisa, Burao, Berbera

Export-quality livestock are concentrated in Hargeisa and Berbera to be shipped out of Somaliland to Egypt, Saudi Arabia, Yemen and other Gulf states.

Cereal markets

With respect to the food trade, this livelihood zone's market routes veer mostly towards the large urban centre of Djibouti city. Most of the staple cereals consumed locally are imported from Djibouti, while sorghum is mainly obtained from the Northwest agropastoral livelihood zone, which is located further south (especially from Borama, Gebiley and Baki).

Credit

Credit is a common source of income for pastoral households. As borrowing arrangements are informal and flexible and repayment deadlines are not fixed, this source of cash income should be interpreted as a gift. Credit is usually arranged with wealthier households of the same community or with livestock traders.

Wealth breakdown

The size and composition of herds are the determinant criteria of wealth in this livelihood zone. Poor households in this livelihood zone are those who own between three and five camels and between 30 and 45 sheep and goats (shoats). Middle-income households are those who own between seven and 10 camels, rarely more, and keep herds of between 50 and 75 shoats. Their livestock holdings are sufficiently large to sell animals, slaughter a small number and give some animals away. Better-off households own significantly larger herds which, on average, total between 20 and 30 camels (over three times the number of camels owned by middle-income households) and between 85 and 135 shoats (almost twice as much as middle-income households). Overall, livestock holdings in this zone are somewhat lower than in the neighbouring West Golis Pastoral zone because climatic conditions are harsher in this zone and water and pasture more difficult to find.

Sources of food and income and expenditure patterns

There are two main sources of food in this pastoral livelihood zone: own livestock products and market purchases. Market purchases of cereals, oil and sugar provide most of the energy requirements for the three wealth groups defined in this livelihood zone – between 75 and 95 percent of their minimum annual kilocalorie needs. As a result, vulnerability to market price fluctuations is high. Milk and meat from the households' own supplies supplement the local diet, providing an important source of protein but also an important additional source of calories – approximately 10 percent of their annual needs for poor households, but closer to 30 percent for middle-income and better-off households. At certain times of the year, especially when household members are away with their herds, milk can be the only source of food for the day.

The sources of income and income levels are determined by livestock holdings. Export prices are around 30 percent higher than local sale prices. To supplement the

income derived from the sale of milk and livestock, poor households sell firewood and charcoal. It is mostly men who collect firewood and burn charcoal. Poor households do not typically have members of their family who can send them remittances, as is the case for middle-income and better-off households, and rely on cash gifts or loans from wealthier local households. Traders working locally also supply loans. Remittances represent around 10 percent of annual income for middle-income and better-off groups.

With regards to expenditure patterns, food represents the largest expenditure category across the wealth groups. The relative weight of this item is similar for all households – approximately 65 percent of their annual income. Roughly half is spent on staple purchases (rice and wheat flour) and half on other foods (mainly oil, sugar and a small variety of cooking ingredients: tomatoes, onions and potatoes). All households purchase similar products but in varying quantities. The low purchasing power of poor households means that their diets only just meet the minimum annual energy requirements. Household products constitute a large expenditure. These products include tea leaves, salt, soap, utensils and batteries for lanterns, the only source of light in the evenings. Additionally, households purchase water for human consumption. Small amounts are spent on family health and schooling as education and health services are limited due to poor infrastructure. Clothing, which includes school uniforms and footwear, represents a considerable expense, equalling and even tripling expenditure on basic social services. Household income is also spent on production inputs, including livestock drugs and, in some cases, water for animals. Other expenses include loan repayments (by the poor households), monetary gifts (mainly by the better-off households), the purchase of qat and tobacco and other non-essential miscellaneous items.

2.3.1.2 West Golis Pastoral (Zone SO02)

The West Golis Pastoral zone covers the highlands of the Golis mountain range and stretches from the international border in western Awdal region into Woqooyi Galbeed region and northern Togdheer region. The zone includes a small section in the west of Sanaag region (the district of Ceel Afweyn). The general elevation along the crest of these mountains averages 1 800 metres above sea level, interspersed with shallow plateau valleys. The ecology of the zone is semi-desert and the basis of the economy is pastoralism. The total estimated population for the livelihood zone is 335 989 (UNFPA, 2014).

On average, this livelihood zone receives more rain than the adjacent Guban Pastoral zone (SO01). There are two main rainy seasons, gu and deyr, but annual rainfall patterns vary across the livelihood zone from east to west. The Golis of Togdheer mainly receives gu and deyr rains, while the Golis of the Woqooyi Galbeed and Awdal regions receive gu rains (April–June), karan rains (late July–August) and only minor deyr rains (October–November). The Golis in Borama, facing the Guban Pastoral zone, receives xays rains (December–February). The average annual temperatures range from 20 to 22 ºC.

The zone is vulnerable to water scarcity. The main water sources in the zone are shallow wells in the valleys, ballis (water catchment areas on the slopes of the mountains), springs and small seasonal streams and cascades that allow bushes and trees to flower after the rains. As watercourses are usually dry outside of the rainy seasons, private and communal wells become the only sources of water for the animals and population alike.

Grasses, shrubs and forest trees, including ancient cedar forests on the highest peaks, dominate the vegetation cover. Acacia trees are the most important livestock feed, especially during the dry seasons. Forest resources also permit the production of charcoal, which is sold by poor households in times of need.

The livelihoods of the dominant pastoral economy are based on rearing camels and small livestock for milk production and trade.

Livestock migration routes are usually contained within the region towards the Guban coastal area and the Hawd plateau pasturelands. The Guban provides watering holes during the dry seasons, while the Hawd provides more extensive pastures during the wet seasons. Camels, goats and sheep migrate together with the herdsmen and herd boys in search of pastures. Milking camels get priority access to watering points. Sick animals, some goats and a small number of milking camels stay behind with the women, young children and the elderly.

Markets

Livestock markets

Trade in livestock and livestock products is the fundamental economic activity for the communities living in the West Golis livelihood zone. Local and export-quality goats and camels are the main species traded and camel milk is the main animal product sold. The major markets are listed below. These markets serve as livestock trading points, as supply centres for essential food and non-food items and as sources of labour opportunities during bad years.

- *Main markets:* Borama and Hargeisa
- *More distant markets:* Tog Wajaale, Oodweyne, Burao, Berbera, Djibouti

Export-quality livestock are concentrated in Hargeisa to be airfreighted out of Somaliland and, more importantly, in Berbera where animals are shipped on dhows or cargo ships to Egypt, Saudi Arabia, Yemen and other Gulf states. Animals are quarantined in Aljaberia and Indhodeero (near Berbera) before export. Animals are also trekked and trucked to Tog Wajaale (situated close to the Ethiopian border) for sale in Ethiopia and Djibouti. Burao market on the Haud plateau is the largest assembly market for sheep, goats and camels due to its central location and proximity to the Ethiopian–Somali region as well as to Central Somalia.

Livestock prices are influenced by numerous factors, primarily the animal's age, gender and breed and especially body condition, which is linked to rainfall and the availability of water and pasture.

Cereal markets

The main markets for cereals are Borama and Hargeisa, where retail, wholesale and assembly markets can be found. Ethiopian agricultural produce is also traded in these two urban centres.

Credit

Credit is a common source of income for pastoral households. As borrowing arrangements are informal and flexible and repayment deadlines are not fixed, this source of cash income should be interpreted as a gift. Credit is usually arranged with wealthier households of the same community.

Wealth breakdown

The clear determinant of wealth in this livelihood zone is the ownership of livestock. Poor households are defined as those who have up to five camels and between 40 and 60 shoats (mixed herds of sheep and goats, although goats are the dominant species). Middle-income households are those who own more than five camels but fewer than 15–16 and keep herds of between 100 and 150 shoats. Their livestock holdings are sufficiently large to sell animals, slaughter close to 10 animals a year and give some away. Better-off households own significantly larger herds, which, on average, number more than double the camels owned by middle-income households and twice as many small livestock.

Sources of food and income and expenditure patterns

Market purchases of cereals, oil and sugar provide most of the energy requirements for the three wealth groups defined in this livelihood zone – approximately 85 percent of their minimum annual kilocalorie needs. As a result, vulnerability to market price fluctuations is high. Milk and meat from the households' own supplies supplement their diet, providing an important source of protein.

Income patterns are equally determined by livestock holdings. Middle-income and better-off households who own larger herds, support their livelihood through the sale of camel milk, at least one live camel per year and between 30 and 40 small livestock, mainly goats. Most of these animals are sold for export to the Gulf States. Export-quality livestock fetch prices around 60 percent higher than local sale prices. Male animals are preferred for the export market.

Poor households sell camel milk but will not sell any large livestock if this can be avoided. Instead, poor households sell between 10 and 15 small livestock; mainly goats at local markets as they have fewer opportunities to access the brokers that manage export markets. To supplement their income, households in the poor income group sell

charcoal during the dry seasons (for approximately five months of the year) and rely on money borrowed from wealthier households. Although most poor pastoral households are in debt, borrowing arrangements are flexible and households are not under pressure to return the loans. Poor households also receive monetary gifts.

In addition to the sale of livestock, better-off households top up their annual income through petty trade activities and remittances from the diaspora or from family members based in urban areas inside Somaliland. Remittance flows to the pastoral communities are common, but not typical for all wealth groups, differing from urban communities. Like better-off households, middle-income households offer gifts to poorer households and may receive gifts or remittances from family members, but the latter are not common strategies for their livelihoods.

With regards to expenditure patterns, food represents the largest expenditure category across the wealth groups. The relative weight of this item is heaviest for the poor households (approximately 65 percent of their annual income). All households purchase similar products but in different quantities. Household products include tea, salt, soap, batteries and phone-charging costs. Small amounts are spent on family and animal health and schooling, as education and health services are limited due to poor infrastructure. Schooling is mainly Quranic. Clothing is the next largest expense after food; this category includes school uniforms and footwear.

2.3.1.3 Hawd Pastoral (Zone SO05)

The Hawd Pastoral Livelihood Zone is one of the three largest livelihood zones in Somaliland (the other two are the Northern and Southern Inland Pastoral Zones). This semi-arid zone, with altitudes of between 800 and 1 200 metres above sea level, stretches from just inside Hiran, where it meets the Southern Inland Pastoral Zone, through Central Somalia and far into Somaliland. The Hawd is essentially a vast plateau that forms the prime grazing and browsing area, with patches of flat lowland covered with extensive bush and shrubs. The soil type in the Hawd is reddish loamy sands that are widely distributed in the Somali peninsula and found in the northeast and northwest regions. Vegetation cover is mainly composed of *Acacia* (*geed qodaxeed*) and *Commiphora* (*geed hagar*), which extend over a large area, together with a mix of numerous trees and shrubs. There are also extensive grassy plains (*banka*), which are a distinctive feature of the ecology. Vegetation density varies from one place to another. In the plains of the northwest region, open grasslands are more dominant and suitable for sheep. As these become overgrazed, the finer soil particles are loosened and washed or blown away by the agents of erosion (flash floods and wind), leaving a surface less favourable to grass growth. Overall, both the area and the extent of the pastoral livelihoods are shrinking.

This long zone sees some variation in the bimodal rainfall regime, although the differences are not substantial overall. With a mean annual rainfall total of around 200 mm, the Hawd follows the particularly low rainfall pattern of the northern pastoral zones. Gu (April–June) is the main rainy season and its failure can have devastating effects on livestock productivity. Deyr (October–December) is the shorter rainy season. Some parts of west Togdheer and South Galbeed regions experience short karan rains (mid-August to September). Generally, in Somalia, seasonal monsoon winds influence the onset and cessation of rainfall/dry seasons. The north-easterly winds emanating from Asia and Saudi Arabia produce little rain. There is a correlation between temperatures and altitude, with average monthly temperatures ranging from 30 to 41 °C in March. Two dry seasons, hagaa (July–August) and jilaal (January–March), separate the rainy seasons. High temperatures in jilaal and increased soil moisture loss lead to the wilting of vegetation (moisture deficiency) and a reduced quantity of surface water and forage. This forces pastoralists to migrate, separate herds, increase livestock sales or increase the use of boreholes, with potential for conflict.

The zone's rainfall is precious beyond the obvious need for regeneration of the pastures that allows a herding economy to exist – the general rule in the Hawd ecology is that there is no water table that allows wells to be used successfully and therefore the main source of water for humans and livestock alike is rainfall run-off collected as groundwater guided into cement-lined, open water tanks set in the ground – berkads. There are also uncemented rainwater catchments (balli) and where soils offer better water retention, shallow wells are used for water harvesting (muqsiid). Sometimes water is collected

behind small dams. Muqsiids are found in settlements with clay soils such as Dhoqoshay and Harada Gobato (Burco district) and Harosheikh (Owdweyne district). Ballis can be found in all areas.

The livestock population consists of camels, goats and sheep. Goats are at least three times more numerous than sheep because the vegetation cover offers more extensive and dependable browse than grasses throughout the year (even given the 'banka' grassy plains where sheep dominate) and the watering regime is limited.

Markets

The main markets for all purposes within or near the zone are at the urban centres – Beletweyne, Garowe, Burtinle, Galka'yo, Buhoodle, Goldogob, Burao, Dusa Marreb, Las 'Anood, Abudwaq and Hargeisa.

Livestock markets

Burao is the biggest collection market for livestock, from where export-quality animals are taken on to Berbera Port for shipping across the Red Sea. A secondary route is through the port of Bosaso.

Cereal prices

The fluctuation of cereal prices is of critical concern to the pastoralists, for all of whom, rich or poor, the purchased cereals provide 55 to 65 percent of their annual basic food requirement in calories. This is even more important in the dry seasons when milk production declines sharply and, with it, not only consumption but sales as well. Big traders export livestock to Gulf states and other commercial traders import food and non-food items through Berbera and Bosaso ports, where storage facilities and capacities are adequate for the wholesale offtake by other medium traders. These in turn transport the commodities to other big towns (Beletweyne, Dhusamareeb, Galkayo, Las 'Anood, Hargeisa, Burao and Buhudle). These markets also act as transit points for livestock from other parts of Somaliland and Ethiopia's Region 5 to Berbera and Bosaso.

Credit

Loans are mostly taken from livestock traders and shopkeepers, especially in the long jilaal dry season that is the harshest and potentially the hungriest season. These loans may be in the form of staple and non-staple foods as well as non-food items, the value of which must be reimbursed during the next seasons.

Wealth breakdown

The clear determinant of wealth in this livelihood zone is the ownership of livestock. Poor households are defined as those who have up to nine camels and between 40 and 60 shoats. Middle-income households are those who own more than 20 camels and keep herds of between 80 and 100 shoats. Better-off households are those who own more than 50 camels and keep herds of between 150 and 180 shoats.

Sources of food and income and expenditure patterns

The level of milk consumption is low for pure pastoralists, even for the poor. However, many pastoralists these days raise animals specifically for the market. In their own estimation, successful pastoralism still also means the copious consumption of milk.

Middle-income households are markedly closer to the poor than to the better-off households in terms of total income. Apart from selling animals for the money required by their expenditures, people keep their wealth in their living livestock.

Apart from cowpeas and a small quantity of vegetables bought by the better-off households, the non-staple foods are sugar and vegetable oil exclusively. As is common for pastoralists elsewhere in Africa, sugar forms a big part of the diet and oil is an essential element for preparing staples in a palatable way. The poor and middle-income households spent 23 percent of their total budget on these items and the better-off households spent 16 percent.

Apart from expenditure on water for animals, if not for humans, the other livestock production inputs are divided between veterinary drugs and salt. The poor and

middle-income households spend four times as much on education as on health; the better-off households twice as much.

2.3.1.4 Northern Inland Pastoral (SO06)

The Northern Inland Pastoral Livelihood Zone (SO06) covers much of northern Somalia (incorporating both Puntland and Somaliland) and includes parts of four different regions (Sool, Sanag, Bari and Nugal). It brings together three pastoral subzones: the Sool Plateau, Kakaar Dharoor and the Nugal Valley. The most recent population estimate for this zone is 580 583 (UNFPA, 2014).

There are roughly three underlying causes behind environmental decline and hence economic change in this zone. First, uncontrolled high rates of charcoal production for export as well as firewood sales to regional urban centres have led to significant environmental destruction. Second, urbanization and the demand for timber to feed the construction industry have meant further damage to woodland areas especially on the Sool Plateau. Third, the construction of private berkads (water catchments) and the use of private water trucking (two events that paralleled the switch from subsistence pastoralism to export-driven livestock production) accelerated environmental decline especially around water points. Environmental degradation has led to a new vulnerability to rain failure made evident by a recent history of food crises. The 'new' pastoral economy is one that is centred primarily on sheep and goat production supported by small herds of camels and very few, if any, cattle.

The zone covers a large territory where the population density is extremely low (an estimated two to three people/km^2). In the north-west, the zone includes parts of two regions, namely Ceel Afweyne, Ceel Gaabo and Las Qoray districts in Sanag Region and Laas Caanood, Caynabo, Taleex and Xudun in Sool Region. In the north-east, the zone covers Garoowe, Dan Gorayo and Eyl Districts in Nugaal Region and Bossaso, Bandarbayla, Iskushuban, Qardho and Qandala districts in Bari Region. The local pastoral people are of Somali ethnicity mainly, belonging to Warsangeli, Dulbuhante, Haber Yunis, Haber J'alo, Isaaq and Mujarteen clans.

The topography of northern Somalia consists of subcoastal mountainous areas, a high inland plateau and valleys (such as the Gebi, Dharoor and Nugaal valleys). The areas of higher elevation range from 900–2 100 metres above sea level, but these highlands slope gently downwards towards the Indian Ocean in the east where the land eventually flattens into delta plains along the coast. The climate is arid with rainfall typically in the range of 100–200 mm, spread out over two rainy seasons (the Gu and the Deyr). The plateau itself is in rain shadow and hence rainfall is naturally low in this area. Temperatures during the day are hot throughout the year with an average daily mean of 24–26 °C. In the Nugaal Valley humidity is high (60–70 percent), with mist falling during the northeast winter monsoon from December to February. Strong winds are associated with the monsoons and these winds are particularly forceful during the dry season months. The strong winds and rainstorms aggravate soil erosion and have created gullies in some areas, especially where soils are shallow. In general, there is a mix of soil types including sandy soils near the coast with increasing calcium carbonate and/or gypsum inland. Soils are generally not suitable for cultivation but support mainly scrub bush and *Acacia* trees. On the plateau, sparse woodland areas are found along seasonal streams. In the valleys there is savannah grassland. Diminishing tree cover has contributed significantly to soil erosion.

Prior to the 1950s, the Sool Plateau had areas of thick *Acacia* forest. Large parts of the old forests have disappeared due to charcoal production and increasing urban demand for firewood and construction material.

Water is a vital resource in this arid zone. In the Nugal Valley there is an extensive network of seasonal watercourses. In the valley there are hand-dug shallow wells and boreholes along seasonal riverbeds where the water table is relatively high. In the mountains and in the high plateau of Sool, Sanaag and Bari regions there are no wells. Instead, there are community-owned water catchments, a few boreholes and private berkads.

Services and infrastructure in the zone are relatively sparse. There are all-weather feeder roads linking village markets with district towns. However, these roads get washed away during the rains and have been poorly maintained over the years. There is one primary paved

road that links Bosaso Port with Burao (Togdheer Region, Somaliland) and then to Garowe city (the administrative capital of Puntland). Services in this zone are minimal except in the case of telecommunication coverage, which is good in district and regional towns and provides about 50 percent coverage in villages. Health and education facilities are few and those people with access to such facilities generally find them poorly staffed and stocked.

Livestock production is centred on sheep, goats and camels. Some households have donkeys as pack animals. Sheep predominate in the Nugaal Valley, but on the Sool Plateau herds consist of a mix of goats and sheep.

Markets

Livestock markets

The key markets for the Northern Inland Pastoral Zone are located both inside and outside the zone. Garowe (capital of Nugaal Region) and Las Anod (capital of Sool Region) are important market hubs for their regions and for the zone itself. Burao (Togdheer Region), Engabo (Sanaag Region) and Bosaso (Bari Region) serve a broad area, including this zone. District capitals within the zone are also important trading centres. Village markets are used more by poor households who cannot afford transport costs to major market centres. In the dry season, all the market hubs are accessible although transport may be too costly for poor households. However, during the rains, roads from the interior to regional hubs are often impassable.

Livestock are exported to the Middle East (including Dubai, Oman, Saudi Arabia, the United Arab Emirates and Yemen), transiting through the Berbera and Bosaso ports. Burao is an important feeder market to Berbera Port for livestock from Sool and Sanaag regions. Livestock from Nugaal Region feed into Garowe market and from there to Bosaso Port. After Saudi Arabia imposed a ban on livestock exports from the Horn of Africa in 1998 due to disease, livestock holding grounds were established at Berbera and Bosaso ports.

Cereal markets

Except for milk, ghee and meat, pastoral households buy most of their food from the market. Their staple grains are (red) rice and wheat flour which are imported from outside the zone. Sugar and vegetable oil are the two most important non-staple food items bought throughout the year. These key commodities are distributed by truck from port to regional market hubs and then to district and village markets.

Credit

Access to credit is important in the Northern Inland Pastoral Zone. Credit is not specific to a single wealth group but common to all household types. Notably, urban traders give credit, but they also give zakat annually to herders in need. Access to credit depends on how much debt a household has accumulated and whether they are able to repay at least some of their debt.

Wealth breakdown

The number of livestock owned by a household determines its wealth. Camels are an especially valuable productive asset and significant numbers of these indicate wealth at the upper end of the spectrum. However, goats and sheep form the foundation of this livelihood zone's economy and households attempt to acquire and maintain large herds of these small ruminants.

Poor households comprise around 30 percent of the households. These households are also the smallest in size (typically around six people per household), whereas better-off households have the most people (around 10 people per household) and they are also likely to contain more than one wife. Better-off households make up around 20 percent of the households in this livelihood zone and those in the middle-income wealth group around 50 percent.

Sources of food and income and expenditure patterns

As in the other pastoral zones of Somalia, households here eat a diet rich in milk, grain, sugar and oil, with a fair quantity of meat added to the mix at certain times of the year. The milk and meat come from households' own livestock, primarily from goats for poor households and from goats and camels for middle-income and better-off households. The grains, sugar and oil all come from the

market. In years of adequate rainfall, and at those times of the year when pasture and browse are plentiful, milk supplies are abundant and people consume milk as part of every meal.

With less income from livestock and milk sales, poor households need to bridge their cash flow gaps through other means and depend on cash income earned from casual labour and from self-employment activities. Poor households earn a small amount of cash from self-employment activities, which mainly include firewood and charcoal sales sustained by the demand from towns like Bossaso, Erigavo, Garowe, Xudun, Talex and others.

Gifts of cash from better-off neighbours and relatives and loans constitute the remaining sources of cash income for poor households. Loans are a common means of covering seasonal cash flow gaps. Middle-income and better-off households typically take out loans just before the peak of the livestock export period and repay the loans immediately after this period when they are paid for the livestock they sell.

This livelihood zone experiences chronic water shortages. Free water is only available five months of the year – two and a half months in the gu and two and a half months in the deyr. During the remainder of the year, water is trucked into the zone. People purchase water in drums starting as early as the last month of the wet season and continuing until the onset of the next rains.

2.3.1.5 East Golis Frankincense, Goats and Fishing (Zone SO07)

The East Golis Frankincense, Goats and Fishing Zone covers an area which includes the districts of Calula, Iskushuban, Qandala and Bosasso in northern Bari region and Las Qorey, Ceerigaabo and Ceel Afweyne districts in northern Sanaag region. The zone is characterized by rugged terrain as it contains the central and eastern sections of the Golis mountain range, a succession of barren mountain peaks interspersed with incised valleys and dry seasonal rivers and ravines. The topography gently slopes towards Calula before flattening towards the Gulf of Aden. The morphology is characteristic of hills and mountain ridges, with alluvial plains to the west of Bosasso and Qandala and deltas and coastal plains in Calula. The ecology of the zone is semi-desert and the basis of the economy is frankincense trade and livestock rearing. The total estimated population for the livelihood zone is 225 750 (UNFPA, 2014).

The zone enjoys a more hospitable climate than most regions in Somaliland and features dense forests especially on the steeper northern slope of the Golis mountain range, which receives considerable rainfall from the monsoon weather systems that move south of the Gulf. The average temperatures range between 25 and 35 ºC in the coastal areas but become colder in the mountainous areas.

Rainfall levels average 130–150 mm per year (although levels are lower in the coastal areas). As in most parts of Somaliland, there are two rainy seasons. Both rainy seasons contribute significantly to the restoration of pasturelands, especially in the mountain areas. The gu rains are most significant in April and May, while September is usually the month with the highest deyr rainfall levels.

The vegetation cover in the zone comprises evergreen trees (Angeel, Hambaruur, Gob, Quud), shrubs and acacia species, which mainly grow along the banks of the seasonal streams (wadis). This area is one of the few along the Gulf of Aden where Boswellia (*Boswellia neglecta*), the frankincense-producing tree, is found. The Boswellia tree is the species used for extraction of the resin. Different varieties of grasses, locally known as Doremo, Taaug and Sifaar, are commonly found in areas where frankincense trees are less dominant. These types of grasses have been used by pastoralists for a long time to graze livestock, mainly sheep and goats.

Permanent water sources are found mainly along the coastal areas. The highland areas have fewer permanent water sources. The main water sources available to the local population and livestock include shallow wells and boreholes, seasonal springs, berkads and seasonal catchment areas, although the latter become depleted during times of prolonged droughts.

Frankincense production is the key economic activity for households in the livelihood zone – it provides income through the sale of frankincense and creates employment opportunities for men and women in the tapping, harvesting and sorting of resins. Frankincense trees grow in the wild and are not subject to any management practices. Traditionally the ownership of frankincense

fields is clan-based. Each family has a right to work directly in the fields where the trees grow to collect the incense, to rent out the land for exploitation by someone else or to engage in sharecropping.

Livestock is second to frankincense in terms of economic importance in the livelihood zone. The mountain goat is the dominant livestock species, an animal highly adaptable to the topography of the zone, but sheep and camels are also reared. The species of sheep and goats kept in the zone are low in meat and milk production and they mature later than species kept in other zones.

Markets

Frankincense markets

Trade in frankincense, livestock and livestock products are the fundamental economic activities for the communities living in the East Golis livelihood zone. Frankincense is processed into different commercial grades, of which the best grades are exported. Frankincense is channelled into Bosasso where much of the sorting takes place, providing local employment opportunities. The city of Ceerigabo is also an important hub for gathering, sorting and storing resins.

Livestock markets

With regards to livestock trade, local and export-quality goats and sheep are the main species traded in the zone. Once again the major market is Bosaso. This urban centre serves as livestock trading point, as supply centre for essential food and non-food items and as a source of labour opportunities during bad years. Export-quality livestock are concentrated in Bosasso to be shipped out of Somaliland to Egypt, Saudi Arabia, Yemen and other Gulf states.

Livestock prices are influenced by a number of factors, most important of which are the animal's age, gender and breed and especially body condition, which is linked to rainfall and the availability of water and pasture.

Cereal markets

The main market for staple food in the region is Bosasso, while more distant markets include the urban centres of Garowe and Burao. Poor households typically purchase staple foods such as rice and wheat flour from frankincense traders, who travel to production areas and processing centres. The availability of traders makes it easier to access staple foods and households are often given the option to purchase food on credit. Such arrangements, however, can lock households into obligations to sell their frankincense harvest to specific traders at lower prices than in the open market.

Credit

Access to credit is an integral part of livelihoods in this zone. Most households purchase food and essential household items on credit from merchants who deal in the frankincense export trade. Debts are normally non-conditional and are paid back after the harvesting and sale of frankincense or when livestock body conditions improve and livestock fetch better sale prices.

Wealth breakdown

The determinants of wealth in this zone are livestock holdings and access to Boswellia trees for frankincense extraction and sale. In general, the poorer the household, the smaller the size of the field of frankincense trees. There are three traditional categories of frankincense-producing land: kob, jaan and jaan weyn, which differ mainly in size and accessibility. The smallest viable field is known as kob, which means "miniscule field" and often refers to sections of land with more difficult conditions: rough and rugged terrain, distant water points and relatively inferior resin quality. Larger fields are called jaan, which roughly translates into "fecund and large fields". They are located in more accessible areas, within shorter distances to a water-hole. Jaan weyn are even larger fields, with easier access and the most productive trees. Most poor households only have access to kob land, middle-income households have access to jaan plots and better-off households to jaan weyn fields. Access to land is assured through hereditary ownership and rental – all

households rented frankincense fields in the reference year, usually from absentee pastoral landowners.

There is no precise measurement of the size of the field nor the number of trees per field and productivity is measured by the number of kilos of frankincense that can be tapped in a year. Kob fields can be expected to provide around 150 kg of frankincense, jaan fields between 150 and 250 kg and jaan weyn fields up to 300 kg per year.

The second determinant of wealth in the livelihood zone is the ownership of livestock, although here ownership trends are less clearly defined. Poor households do not commonly own large livestock; they keep flocks of between 20 and 60 shoats, among which goats are the dominant species. Middle-income households own up to five camels, however not all middle-income households own camels. Their flocks consist of between 50 and 100 shoats. Better-off households own up to 15 camels and 100 to 200 small livestock.

Sources of food and income and expenditure patterns

Livestock production and especially milk production is lower compared with other pastoral areas because herd sizes are smaller and include fewer camels, the animals with the best milk production. As a result, market purchases provide the main source of food for all households in this livelihood zone, covering upwards of 90 percent of minimum annual energy needs (based on 2 100 kilocalories per person per day). The staple foods are rice and wheat flour, complemented with wheat pasta on occasion. Dependency on markets for food security is high and so is vulnerability to market price fluctuations.

Households have access to some meat and milk from their own herds. Sheep are not commonly milked in this livelihood zone. Goats are milked for around 90 days, split between the two rainy seasons. Poor households have access to around 10 milking goats, a number that doubles for middle-income households and triples for better-off households. In the months with higher milk yields (0.4 litres per day), poor and middle-income households sell some of their goat's milk and even have sufficient to donate some of the milk. Better-off households do not sell any goat's milk and give away a large amount (10 percent of their production). The number of animals milked is lower when milk yields fall; during this period, the entire milk output is reserved for household consumption.

With regards to household income patterns, frankincense sales provide just over half of the annual income (55–60 percent) across the three wealth groups. In absolute terms the difference is more noticeable: middle-income households generate 30 percent more income from the sale of frankincense than poor households, while better-off households gain twice as much as poor households.

Livestock trade is an important secondary source of income in the zone. Together, the sale of local and export-quality sheep, goats and occasionally camels, as well as camel and goat's milk and animal hides represent around 20 percent of annual income for poor households, 35 percent for middle-income households and close to 45 percent for better-off households.

Another important source of income for households in this zone is credit. Loans are arranged with traders involved in the frankincense export business and repaid with the sale of the harvest, or when livestock are in prime condition and can be sold for a better profit (during the rainy seasons or before the major Islamic celebrations). This source of income allows poor and middle-income households to buy food and other necessary items as well as being able to afford the rent for frankincense fields.

In terms of expenditure patterns, it is food that represents the largest expenditure category across the three wealth groups, which reiterates the high level of dependency on markets for food and the vulnerability to food price fluctuations of all households. The remainder of the expense categories are of approximately equal importance. Household products include tea, salt, soap, utensils, torches and batteries. Additionally, middle-income and better-off households purchase drinking water for their families, while poor households rely on freely available water sources. Production inputs refer to veterinary drugs and especially land rental, as discussed previously. The low levels of service provision in the livelihood zone limit expenditure on health and education. Most poor and middle-income households make use of Quranic schools in the main villages inside

the zone as well as along the water points, while some better-off households send their children to the main towns or large villages for formal education, but this option is relatively limited. A small amount of annual income is spent on transporting incense to sorting centres.

2.3.2. Hazards, response and monitoring variables

The main hazards that affect the pastoral economies of the five livelihood zones are:

2.3.2.1. Drought/weather shocks

By far the most significant hazards are the lack of pasture and water due to reductions or delays in rainfall and drought situations, which lead to loss of animal body weight and value. Insufficient water and pasture also reduce milk production. Recurrent and persistent droughts affect livestock production and herd viability as miscarriages can occur alongside the death of young animals. The drying up of water sources can result in households having to rely on water trucking (and escalated household expenditure on water) and increased migration and family separation. In addition to reductions and delays in rainfall, strong winds during the hagaa season, locally referred to as asow, and high temperatures rising above 45 ºC, cause the pasture to dry out early and contribute to the acceleration of sand dune movements that eventually cover the vegetation.

Somaliland experienced 11 major droughts in the period between 1964 and 2017 as indicated in Table 1. The droughts that occurred in 1973–1974, 1984, 1991, 2010/2011 and 2016/2017 were the most intense and widespread. In some areas of Sanaag, Togdheer and Sool Regions, drought conditions persisted even longer (Abdulkadir, 2017).

Table 1. Historical drought disasters in Somaliland

Disaster	Date/Year
Drought	1964
Drought	1973/1974
Drought	1978/1980
Drought	1984
Drought	1987
Drought	1991
Drought	1994
Drought	2003/2004
Drought	2006/2007
Drought	2010/2011
Drought	2016/2017

Adapted from Abdulkadir (2017)

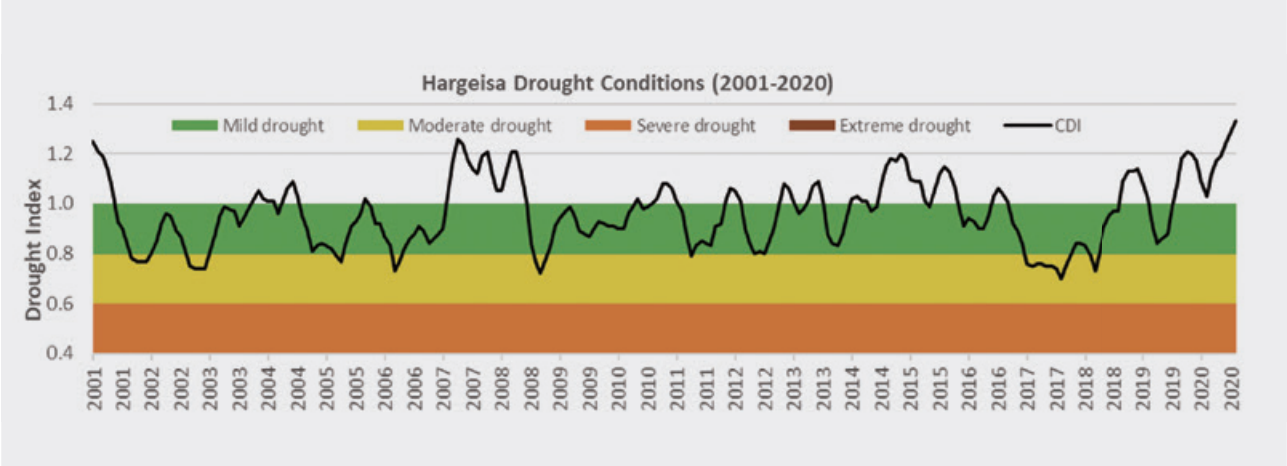

Figure 3. The calculated Compiled Drought Index (CDI) time series for Hargeisa between the years 1982 and 2010

Consequently there is a need for increased and integrated efforts in drought mitigation to lessen the negative impacts of recurrent droughts. Fodder scarcity is understood to have had a direct impact on livestock production in the last droughts. According to assessments made with households affected by the 2016 drought, 88 percent of the respondents who reported livestock as their main source of income also reported that the body condition of their animals was "thin", with 82 percent reporting the body condition of their animals to be "very thin" (MoNPD, 2017). The most affected regions, where the body condition of the animals was reported to be "very thin", were Sanaag (36 percent of households), Toghdeer (25 percent) and Sool (20 percent). Of the households that reported the body condition of their animals to be "very thin", 96 percent reported that they had no stock of fodder. Damages caused by drought in Somaliland are estimated at USD 257 million, whereas losses are estimated at USD 617 million (ibid), and may exceed USD 874 million (UNDP, 2018) if environment and natural resource management, comprising 63.6 and 30.1 percent of the total effects respectively, are accounted for.

2.3.2.2. Livestock diseases

Livestock diseases follow drought and weather shocks in importance and are frequent, especially during the dry season when the condition of the animals has deteriorated. The most common diseases are endo- and ectoparasites, contagious caprine pleuropneumonia (CCPP), peste des petits ruminants (PPR) (called susun locally), foot-and-mouth disease (FMD), haemorrhagic septicaemia (HS), sheep and goat pox (SGP), lumpy skin disease (LSD) and camelpox. Camels also suffer from respiratory diseases. Limited pest control services, restricted supplies of good quality veterinary medicines and a poor animal health infrastructure reduce local capacity to manage these diseases.

There is a dearth of data on the number of animals affected by livestock diseases in Somalia. Most livestock mortalities (up to 60 percent of the herds) are caused by drought. These mortalities have a severe impact on the livelihoods of pastoralists (FAO, 2017b). Poor animal health contributes to some of these mortalities.

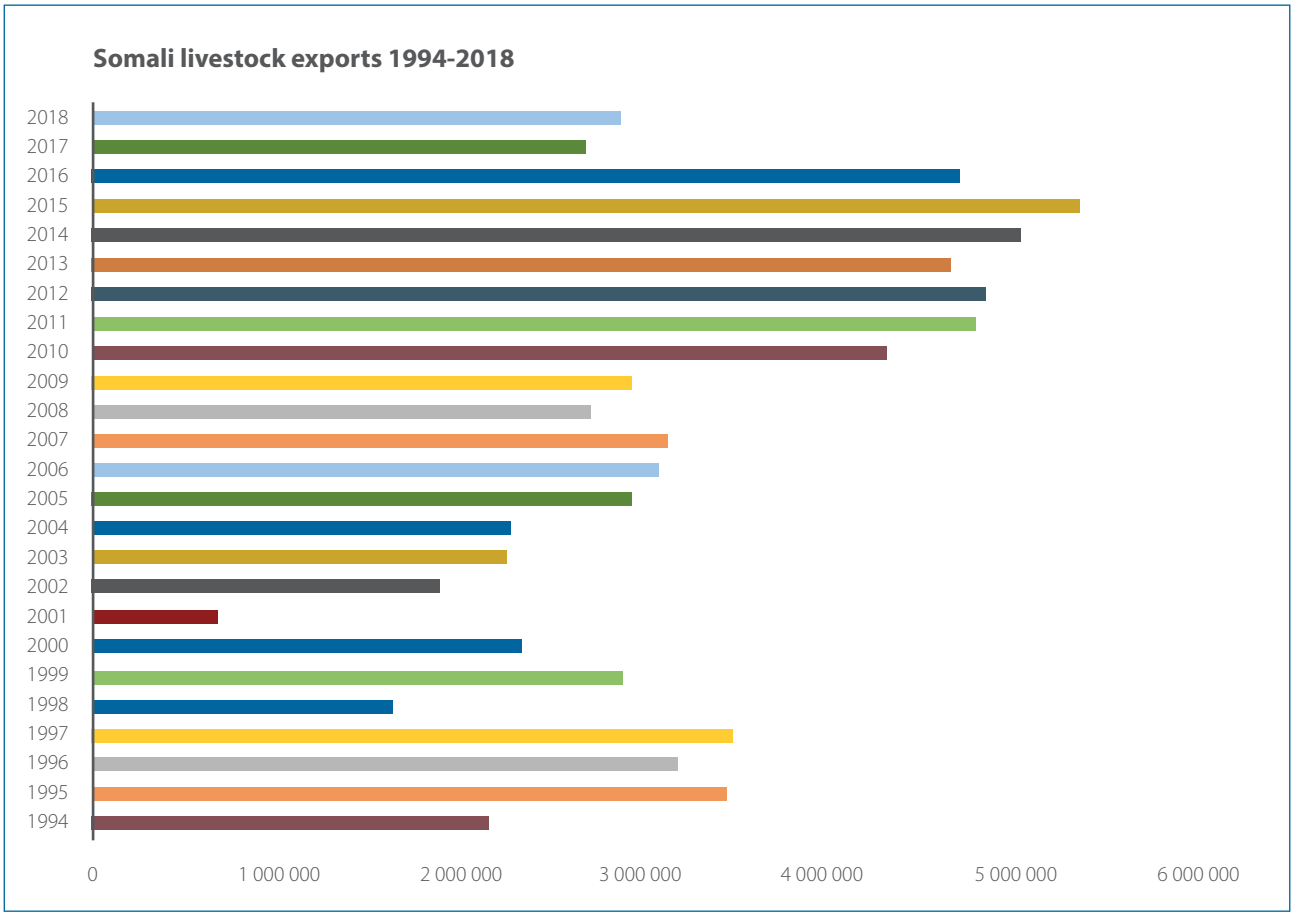

Figure 4. Somali livestock exports
Source: FSNAU/FEWSNET, 2015.
* The decline in 2017 was due to a ban by main livestock importer Saudi Arabia.

2.3.2.3 Livestock ban or restrictions

Bans or restrictions mainly affect livestock exports. The recent construction of quarantine facilities has improved the control over possible disease transmission across borders. The last such ban was in place between 2000 and 2009. Saudi Arabia is the main livestock importer from Somaliland and bans from Saudi Arabia alone, such as the one in 2017, have a drastic effect on this trade (Figure 4).

2.3.2.4 Insecurity

Insecurity is mainly due to conflict over pasture and water sharing among different clans of this livelihood zone and neighbouring zones. Civil insecurity causes frequent displacement of pastoralists and it can disrupt trade, increasing the cost of essential food items. Sometimes conflict results in death.

2.3.2.5 High food prices

High prices especially for rice, wheat flour, sugar and oil, all of which need to be imported into the livelihood zone.

2.3.2.6 Overexploitation of the gum resin trees

Overexploitation is caused by overtapping and not respecting the intervals between harvests.

2.3.2.7 Environmental degradation

This is an endemic problem contributing to the loss of pastures due to changing climatic conditions and lack of proper land and water resource management systems. In order to cope with changes in weather patterns and other hazards, households resort to certain strategies. Many of these are used every year, such as adjusting the

timing of mating and birthing, migrating, hand feeding animals, selling older animals and/or exchanging them for younger ones, storing ghee for consumption during the lean season or selling top quality goats to build a cash reserve.

2.3.3. Food security and nutrition

Populations in Somaliland are recurrently acutely food insecure. According to FAO's IPC, Somaliland is in phase 3 and above, with the Sool and Sanaag regions often being the worst affected at phase 3 and below. The recurrence of populations falling back into food insecurity in Somaliland demonstrates that their resilience and the resilience of their food systems are low. The needs of rural communities have been addressed largely through humanitarian assistance and short-term funding mechanisms.

Current situation

The October to December 2019 Deyr rainfall season facilitated the most productive Deyr season since the 2016/2017 drought (SOMALIA Food Security Outlook, FSNAU/FEWS NET, 2020). In pastoral areas, the above-average Deyr rains led to dramatic improvements in pasture and water availability despite the ongoing desert locust outbreak. Desert locusts have thus far only caused localized damage to rangelands in central and northern Somalia. According to the Normalized Difference Vegetation Index, vegetation conditions at the end of December exceeded 140 percent of normal across most of Somaliland. In February, at the mid-point of the January to March Jilaal dry season, vegetation conditions were seasonally declining but were still above normal in many areas. In addition, rural demand for water trucking has atypically declined and water prices have plummeted in rural markets.

As a result, most pastoral livelihood zones are experiencing relative improvements in livestock health and value, milk productivity and livestock reproduction. Livestock body conditions have improved significantly and livestock migration between and across livelihood zones is normal for the dry season, as are the costs associated with migration. In livelihood zones where medium conception levels occurred during the 2019 Gu, medium kidding and lambing took place during the Deyr and has provided households with some access to milk. However, low kidding and lambing occurred in livelihood zones where drought conditions during the 2019 Gu resulted in low conception levels, including Guban Pastoral livelihood zone and central parts of Addun Pastoral, Hawd Pastoral and Coastal Deeh Pastoral and Fishing livelihood zones.

Despite these relatively positive trends, the average poor household's herd size remains below baseline levels in most central and northern pastoral livelihood zones according to information collected from focus group discussions during the FSNAU and FEWSNET 2019 post-Deyr assessment. Except for the East Golis Pastoral livelihood zone of Northeast (Bari region), where sheep/goat holdings are now near baseline, and West Golis Pastoral livelihood zone, where camel holdings are above baseline, the average poor household' s livestock assets in most central and northern pastoral livelihood zones range from 50 to 80 percent of baseline. During the 2019 Deyr, livestock conception levels increased relative to the 2018 Deyr and are medium for camel and cattle and medium to high for sheep/goats across Somaliland. Full livestock herd recovery will take several consecutive seasons of average to above-average rainfall after substantial losses of livestock during the 2016/17 drought and limited births and high offtake in the 2018/19 drought.

Following an extended period of high staple cereal prices in late 2019, sorghum and maize prices declined by up to 20 percent from December to January in anticipation of the incoming Deyr harvest and due to rising cross-border imports of sorghum, maize and wheat from Kenya and Ethiopia. Across Somaliland, the goat-to-cereals terms of trade are generally above the five-year average due to favourable livestock prices and declining cereal prices. In rural areas and in major markets, including Mogadishu, livestock prices range from near the five-year average in the south to above the five-year average in central and northern Somalia, driven by improved animal body weight, low supply as pastoralists rebuild their herds and a seasonal decline in marketing as livestock are currently in wet-season grazing lands for fattening.

According to district-level food assistance distribution data from the Somalia Food Security Cluster, an average of 1.6 million beneficiaries were reached monthly from November 2019 to January 2020 with either cash/voucher


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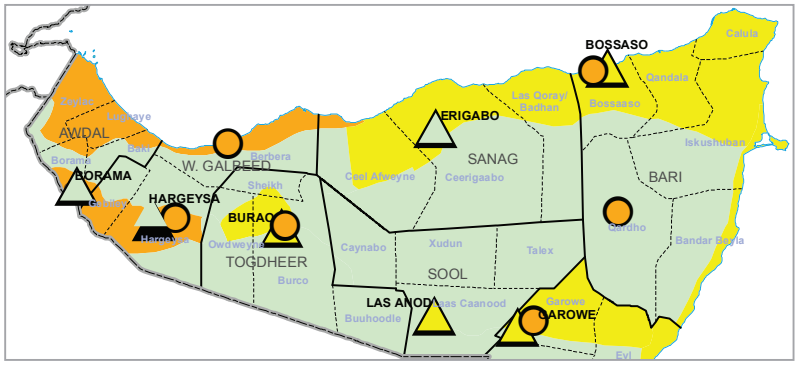
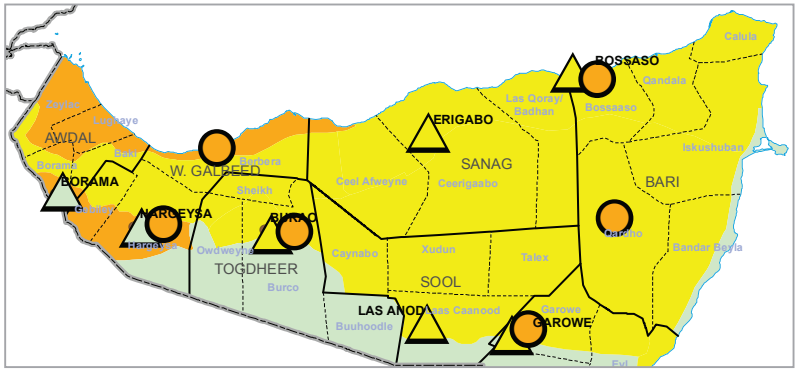
assistance or in-kind assistance equivalent to at least a quarter of the minimum monthly kilocalorie requirement. During this period, food assistance reached more than 25 percent of the local population in parts of Guban Pastoral and Northern Inland Pastoral livelihood zones.

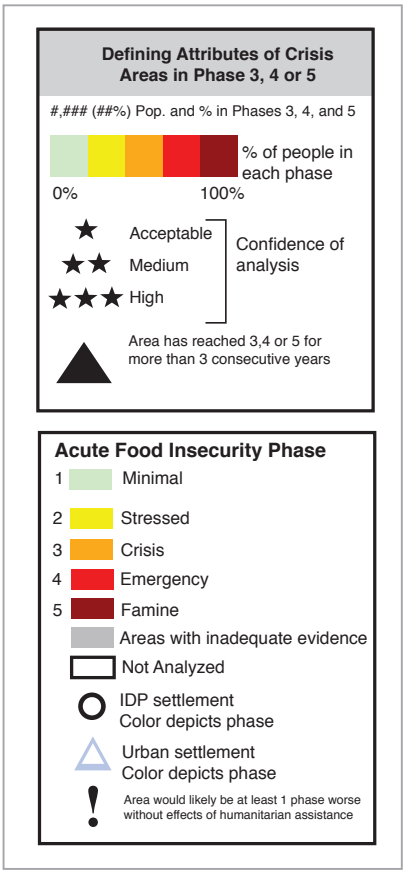
In January, the food security outcome indicator and contributing factor data collected during the post-Deyr assessment were indicative of Stressed (IPC Phase 2) outcomes in most pastoral and agropastoral areas in the presence of food assistance. By February, the arrival of the above-average, main season Deyr harvests and associated improvements in household purchasing power have supported some additional improvement to Stressed (IPC Phase 2), despite the relative decline in food assistance distribution. In the northern and central pastoral areas, a relative increase in herd sizes from the Deyr birth cohort and access to milk for consumption and sales, coupled with access to food assistance, have largely prevented food consumption gaps. However, the typical poor household has higher-than-normal debt levels that range from 17 to 27 percent above the level of debt reported in December 2018, due to high reliance on credit to purchase food and non-food items during the preceding drought period (i.e. debt accumulation). In areas such as Northern Inland Pastoral, food assistance has played a critical role in mitigating unsustainable livestock sales for food purchases and supporting herd recovery among poor households. However, Crisis (IPC Phase 3) outcomes were observed in Addun Pastoral of Central livelihood zone, where herd sizes have stagnated at unsustainable levels. Although Stressed (IPC Phase 2) is currently observed in Guban, key informant information indicates that there are still at least 10 percent of households that have few to zero livestock and have remained destitute since losing their herds in the drought and Cyclone Sagar. These households remain most at risk of Crisis (IPC Phase 3) or Emergency (IPC Phase 4).

Post *Gu* 2015

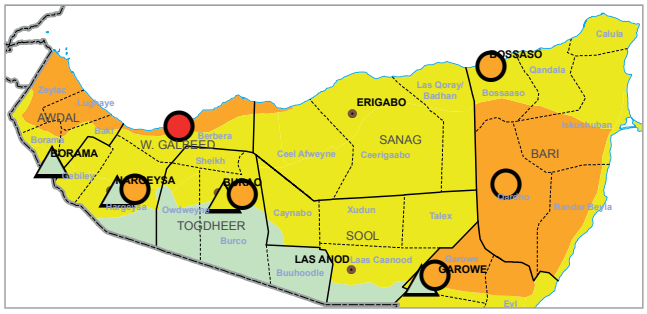


Post *Deyr* 2015/2016

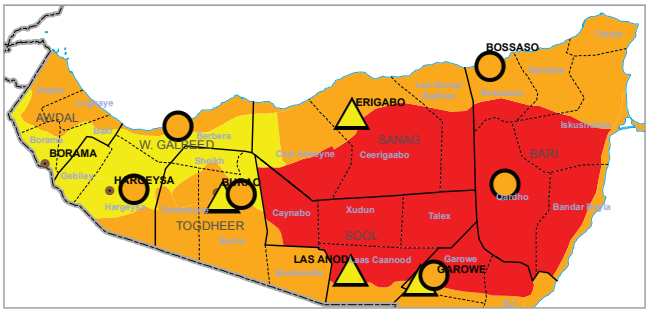




Post *Gu* 2016



Post *Deyr* 2016/2017



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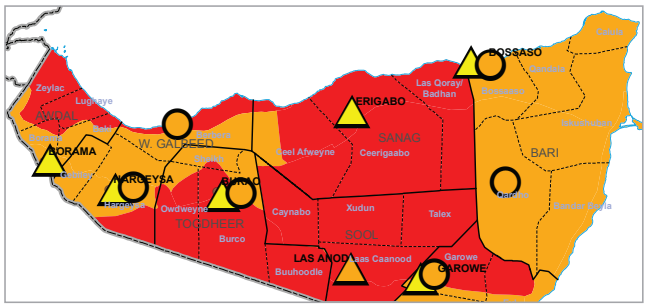
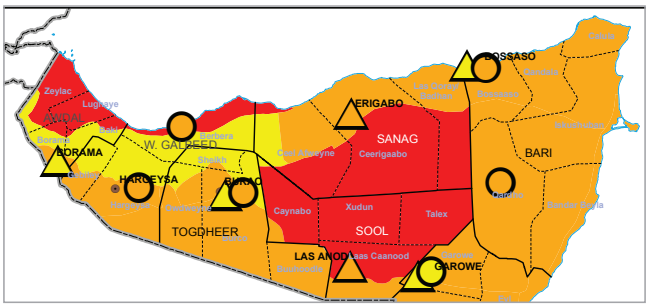
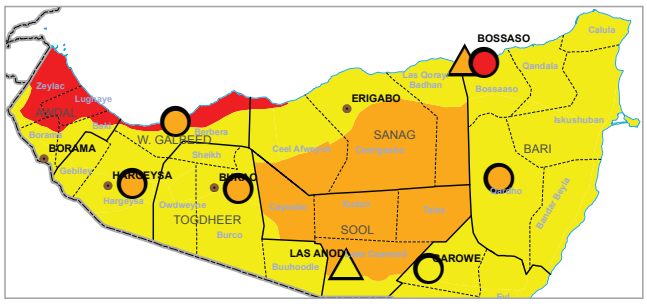


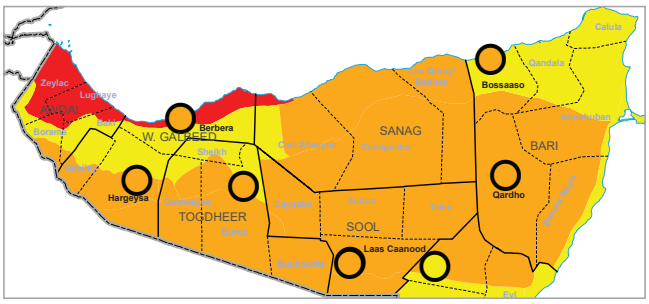
Post *Deyr* 2017/2018



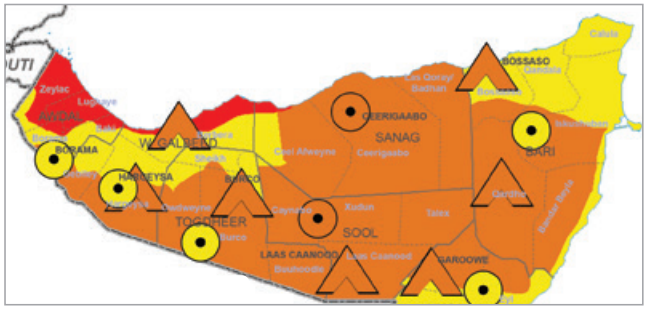
Post *Gu* 2018



Post *Deyr* 2018/2019



Post *Gu* 2019



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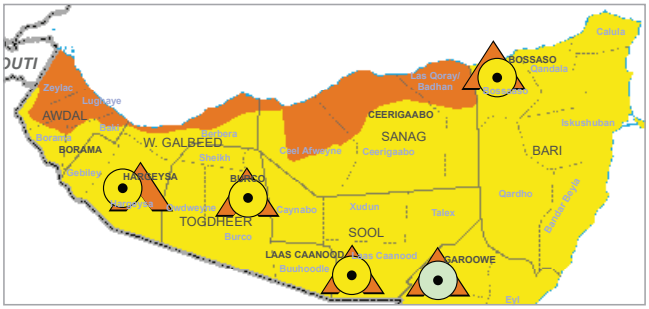

Figure 6. IPC maps for Gu 2015 to Deyr 2019/20 for northern Somalia and covering the Sool and Sanaag regions

Source: FSNAU, 2020. (https://www.fsnau.org/ipc/ipc-map)

2.4. Climate and rainfall pattern

During the month of January 2019, hot and dry conditions prevailed throughout Somaliland, consistent with seasonal trends for this time of the year.

Due to average to above-average rainfall received in the 2019 Deyr (October–December) season, pasture and water remained available across most parts of Somaliland. As a result, livestock body conditions throughout Somaliland were average to good (PET score of 3–4).

While desert locust infestation and upsurge pose a significant threat to pasture availability for livestock (and crop cultivation during the forthcoming Gu season), the impact remained localized and minimal.

In Figures 7a and 7b time series maps of the rainfall patterns in Sool and Sanaag are presented for the last five years. Sool and Sanaag have varying rainfall patterns and these are explained across the five livelihood zones covering the two regions.

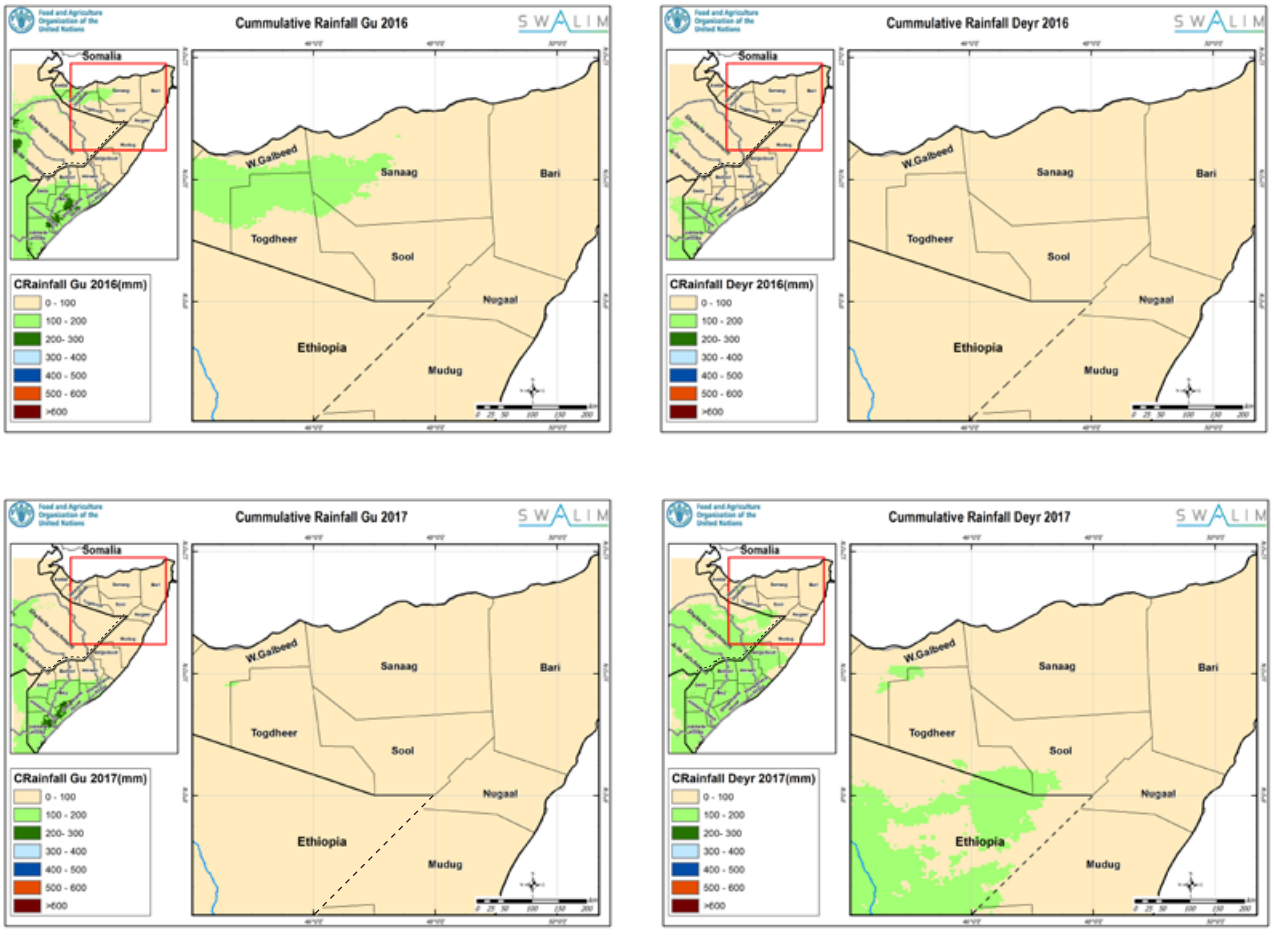

Figure 7a. Rainfall patterns: Gu 2016 to Deyr 2017

Source: http://www.faoswalim.org/swalim-publications

Modified to match UN Geospatial. 2020. Map of the World. In: *United Nations* [Online]. Washington, D.C. [Cited 8 November 2021.] https://www.un.org/geospatial/content/map-world

The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

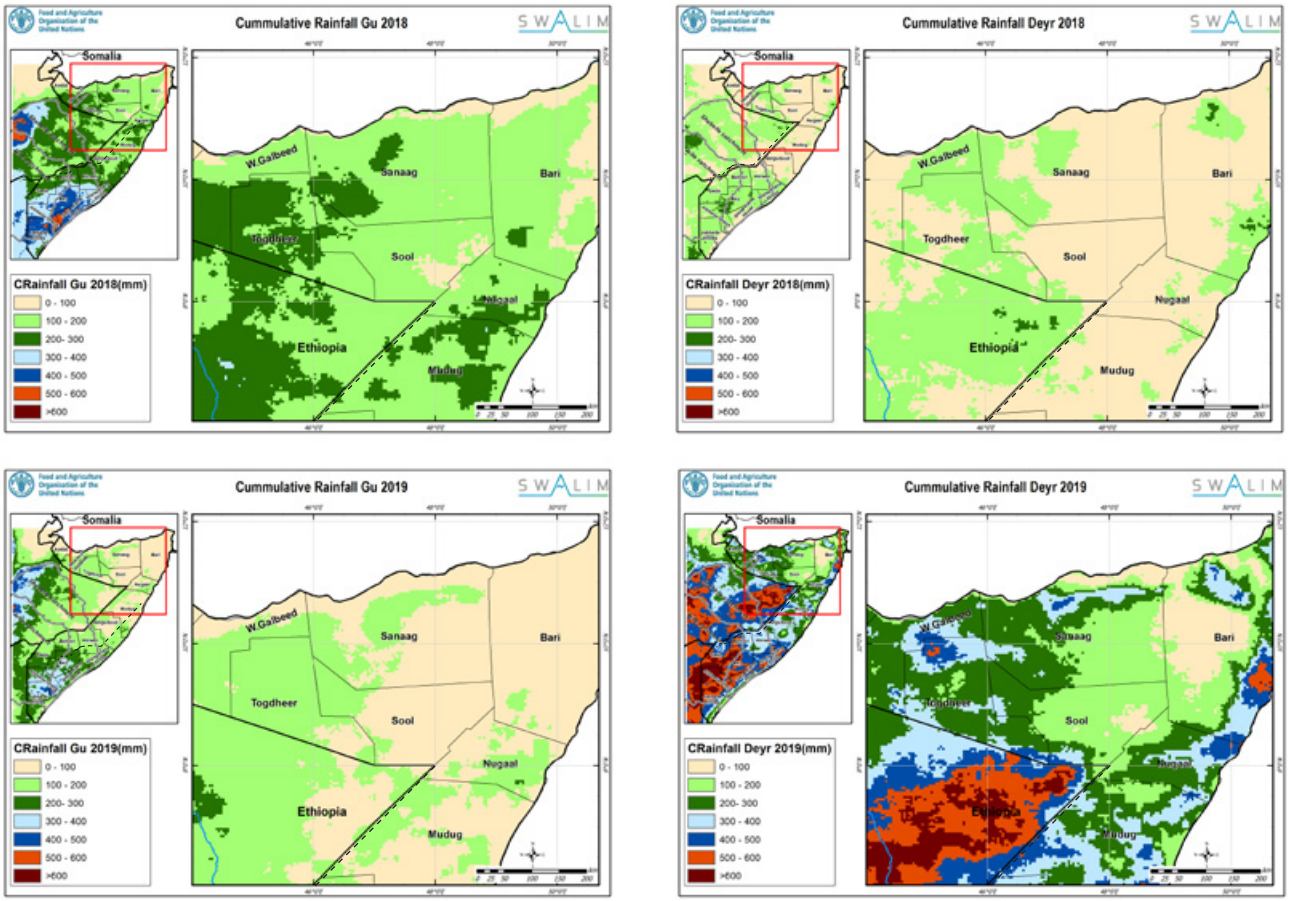

Figure 7b. Rainfall patterns: Gu 2019 to Deyr 2019

The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.
Source: http://www.faoswalim.org/swalim-publications
Modified to match UN Geospatial. 2020. Map of the World. In: *United Nations* [Online]. Washington, D.C. [Cited 8 November 2021.] https://www.un.org/geospatial/content/map-world

2.5. Land and other natural resource use

Land use/land cover ranges from bare areas, sparse and closed-to-open natural woody vegetation across the five livelihood zones covering Sool and Sanaag (see details under each of the five livelihood profiles).

2.6. Fodder value chain in Somaliland

2.6.1. Fodder production practices

In Somaliland, fodder is produced using several methods:

Natural regeneration of rangeland pastures within flooded plains and depressions within the rangeland areas

The bulk of the fodder marketed at Berbera Port comes from extensive floodplains in Togdheer Region, especially in Burao District. The floodwater from one of the major seasonal rivers (Beer River) in Burao District is also systematically directed to the floodplains as a spate irrigation practice. Under a spate irrigation practice, land is cultivated prior to flooding before redirecting the water for fodder and crop production. The residual water maintained in the soil allows the fodder to grow to maturity with at least two harvests per season. There is no fertilizing or manuring of the pastures to boost forage productivity.

Reseeding of degraded rangeland areas to trigger biological revival and plant recolonization

The preferred reseeding method is sowing of seeds within semicircular, crescent-shaped micro-catchments dug using hoes or oxen-drawn ploughs. FAO has successfully introduced drought-tolerant pasture species for reseeding degraded areas in the Togdheer and Awdal Regions of Somaliland, which include *Cenchrus ciliaris*,

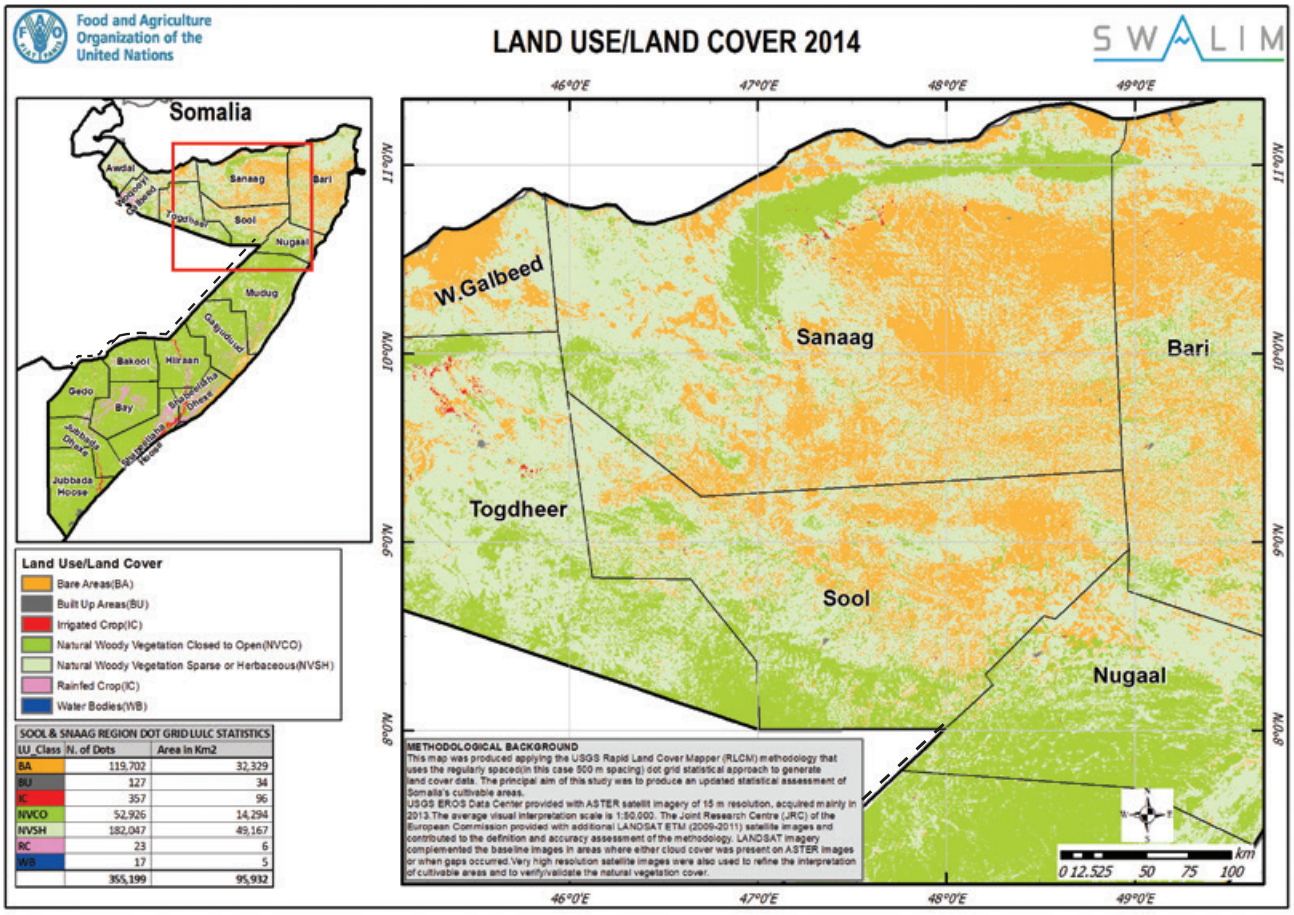

Figure 8. Land use/land cover map for Sool and Sanaag

The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations. Source: SWALIM, 2014. Modified to match UN Geospatial. 2020. Map of the World. In: *United Nations* [Online]. Washington, D.C. [Cited 8 November 2021.] https://www.un.org/geospatial/content/map-world

Chloris roxburghiana and *Enteropogon macrostachyus* (FAO, 2015). The traditional practice of collecting dry animal dung and broadcasting this in the degraded areas with the expectation that the seeds imbedded in the dung will germinate to improve vegetative cover, is no longer applied. It is common to find farmers burning manure rather than applying it into pasturelands. Complementary soil and water-harvesting structures such as contour earthen bunds improve water recharge/infiltration and reduced runoff within the reseeded areas.

Cultivated fodder

This involves planting of crops such as maize and sorghum principally for food. The resultant crop residues (maize/sorghum stovers) are valuable sources of fodder especially during the dry seasons. This is the commonest fodder production practice in the agropastoral areas of Awdal, Woq Galbeed and Togdheer regions. Surplus fodder destined for the livestock export markets at Berbera Port and Djibouti is sold to traders. Farmers sometimes utilize the intermediate rains observed in Somaliland (Karal and Hais) that may not be adequate for cropping for fodder production.

The local demand for fodder, especially along livestock marketing routes and export ports, is higher than the local supply. Fodder exports from Ethiopia bridge this fodder supply gap (MoNPD, 2017; FAO, 2019a). There are also pockets of specialized dairy farms located in peri-urban areas which put pressure on the demand for fodder.

2.6.2. Fodder marketing

Fodder marketing is an important value chain within the livestock sector. The key players in the fodder value

chain in Somaliland are a few fodder producers (mainly smallholder farmers), fodder transporters/traders, livestock traders and end consumers (FAO, 2019a). The fodder value chain has low or weak involvement of key value chain enablers such as government authorities, who should be playing a big role in creating conducive policy and regulatory environments that provide incentives for all other value chain actors (Guthiga *et al.*, 2015).

Men and women of different ages participate in the fodder value chain, but a gender analysis of this value chain has not been conducted to establish if all gender and age categories of actors benefit equally or equitably from this participation.

There are no formal linkages among producers, traders and consumers, including high-end fodder consumers at livestock export points of Berbera and Bosaso ports. Neither is there fodder marketing infrastructure or institutions/organizations working with the different actors in the value chain. The producers and traders largely operate at individual capacity. As such, no formal fodder producer and trader associations or cooperatives exist to maximize economies of scale or enhance organizational capacities. Older fodder cooperatives formed during pre-war times in parts of Somaliland such as Togdheer Region, are still functional but informally. The Somaliland Livestock Policy (MoLFD, 2017) recognizes the importance of producer cooperatives and pastoral associations in providing several services such as extension, input supplies, credit mobilization, processing and marketing channels to support increased livestock production and productivity. These also facilitate adoption of new technologies.

A typical fodder value chain mapping for Somaliland and mapping of actors involved are shown in Figure 9 and Table 2 respectively.

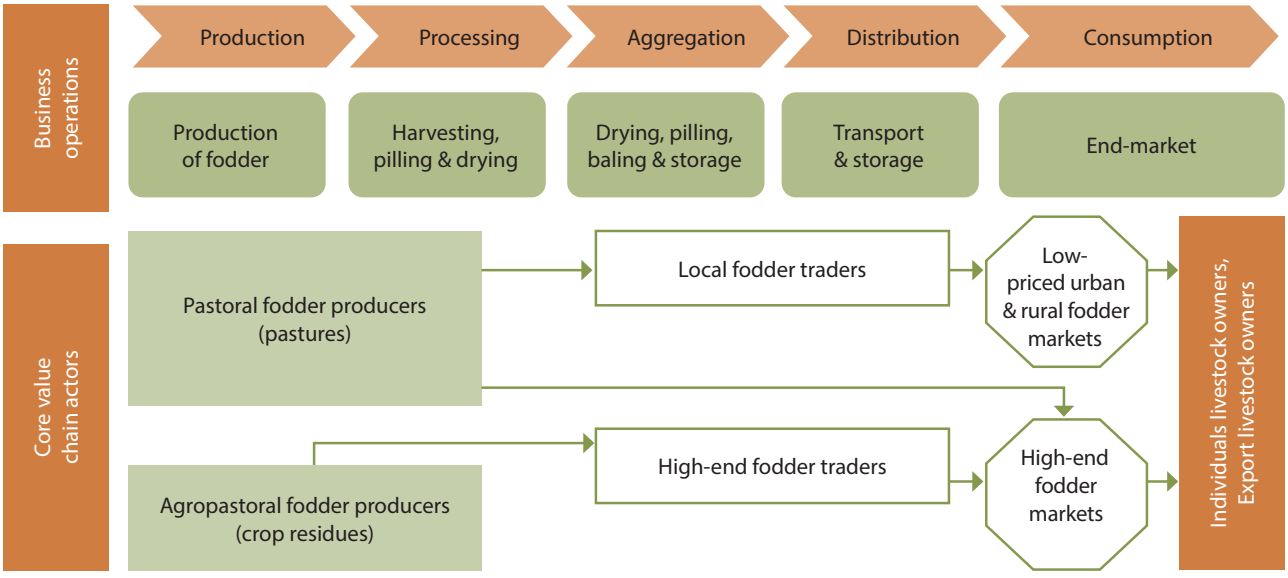

Figure 9. Fodder value chain actors in Somaliland

Table 2. Actors in the fodder value chain, including enablers

Actors		Level/Scale	
Primary actors	**Names and roles**	**Local**	**National** (Export ports)
Local input suppliers (agrodealers/fodder seeds sellers and farm tools)	Agrodealers in Borama, Hargeisa, Burao	+	
Fodder producers (small-scale retailers)	Farmers in Awdal, Togdheer and Wog Galbeed Regions	+	
Informal local producer groups/ cooperatives	E.g. Mandeeq cooperative in Burao District	+	+
Fodder traders (collectors) – small-scale retailers (bundles)	Men and women fodder traders in Awdal, Togdheer and Wog Galbeed Regions; includes Djibouti and Ethiopia border points	+	
Fodder traders (collectors) – bulk truck transportation	Fodder growers, private truck owners	+	+
Fodder consumers (retailers)	Livestock owners in Borama, Hargeisa and Burao towns	+	+
Fodder consumers (livestock quarantine export points)	Livestock owners/traders at quarantine centres – Berbera and Bosaso Ports, Djibouti and Ethiopia border points	+	+
Fodder consumers (peri-urban cattle and camel dairies)	Emerging dairy cattle and camel owners in peri-urban Borama, Hargeisa and Burao towns	+	
Secondary actors/enablers			
FAO and partners	Partners, such as PENHA	+	+
International organizations	Interpeace	+	+
Line ministries (MoLFD) – Limited extension/advisory services, includes fodder quality assurance inspection at quarantine points	MoLFD Somaliland	+	+
Local/national government authorities (fodder taxation)	Municipal authorities, local administration	+	+
NGOs, community-based organizations	APFS	+	+
Financial institutions/microfinancing (money transfer services to primary value chain actors such as ZAAD)	Dahabshil, ZAAD	+	+
Communication companies	Telesom, Somtel	+	+

The capacity of producers to enhance fodder production to make the fodder trade competitive is limited due to the unavailability of seeds. Many producers relying on naturally growing pastures as the source of fodder depend on the natural regeneration of pastures at the onset of rains (FAO, 2019a). The bulk of fodder is sold on an "as is" basis mainly in semi-dried form and is cut while at advanced stages of maturity, which implies it is generally of low nutritional value (FAO, 2019a).

Stacking the fodder – either harvested grass or crop residues – in the open fields before marketing is a common practice due to limited options for controlling post-harvest losses (FAO, 2019a). The practice results in mould formation on the fodder, making it prone to accumulation of aflatoxins (toxic compounds produced by moulds that are harmful to animals when consumed in large quantities). Animals fed with contaminated fodder could also impart the toxins to humans through their milk.

There are generally poor perceptions of the quality of fodder produced. A recent field assessment showed that some fodder traders operating at the quarantine centres prefer fodder that is not contaminated with mould (FAO, 2019b). Lack of fodder bulking facilities does not allow farmers to store fodder for marketing when prices are more favourable, which normally coincides with the drought periods.

Producers also lack the necessary skills and knowledge to improve fodder production and processing, especially of crop residues, to enhance market access. Due to weak and ineffective government ministries and a poor enabling environment for private sector development, limited technical information and advice about production techniques or any aspect of value chains are available to producers (FAO, 2019b). This particularly disadvantages women as they play a key role in the production and marketing of fodder in Somaliland (FAO, 2019a). Although they are engaged in day-to-day farm work, including fodder production, women in Somaliland are traditionally excluded from social activities, including training. Special efforts to involve women in the training should provide significant benefits.

The available livestock extension technical personnel are too few to meet the demand by producers for technical training. Besides being under-capacitated, they have limited knowledge and skills to train producers in best agricultural (livestock) practices, including fodder production and how to facilitate the formation of public-private sector linkages in the fodder value chain. The limited training of producers during the implementation of donor-funded projects is not sustained, as no mechanisms to ensure this knowledge is embedded within the community have been put in place.

There are no mutually supportive investments from the private sector to provide extension and financial services to fodder producers, develop infrastructure such as fodder stores and fodder-irrigation water-harvesting structures or rehabilitate rural access roads (FAO, 2019a). The government does not have a framework to regulate the fodder trade domestically within border points and animal quarantine and holding centres, which would provide a level playing ground among all fodder value chain actors. Similarly, there is no system in the fodder value chain for sharing market knowledge and intelligence, especially on fodder market prices and trends to allow value chain actors such as producers and traders to make informed choices and decisions. Fodder in Somaliland is mainly traded in loads, either camel or truck loads, and in bundles (FAO, 2019a).

A rapid field assessment of the fodder value chain conducted in the Sool and Sanaag regions of Somaliland in 2019, indicated that fodder producers receive an average of USD 250–500 as farmgate price for a 10-tonne truckload of fodder. Traders then sell a 10-tonne truckload for USD 900–1 000 at the livestock export market in Berbera Port, with the higher price earned during the dry seasons (FAO, 2019b). In the commercial fodder-growing areas of the Togdheer Region, prices for all types of fodder are between USD 100–150 per 10-tonne truck load at farm level and USD 200–250 per truck load at retail level, which increase to USD 300–450 per 10-tonne truck load during dry seasons (FAO, 2019a). Even after accounting for transportation costs, the price differentials show that traders tend to overexploit the producers as they seem to determine the prices. The producers' poor

access to market information and the traders' apparent unwillingness to share this information with producers could explain this price disparity. It is also not clear from the current value chain arrangements what share of benefits accrue to women fodder growers and traders.

The demand for fodder in Somalia, especially along livestock-marketing routes, is substantial and will continue to increase as live animal exports grow and extreme weather events become more frequent. Part of the feed to meet the extra demand is sourced from Ethiopia (MoNPD, 2017), especially during Hajj periods when large numbers of animals are held at the quarantine centres prior to exportation. The demand for fodder is likely to grow in the years ahead as the number of livestock exported increases following improvements in the quarantine facilities. The demand will also grow with the increased proliferation of dairy farms in peri-urban and urban areas that have become new niche markets for fodder. A solid understanding of the entire fodder value chain in Somaliland is required to inform the appropriate interventions required, not only to boost fodder turnover sales and create a win-win situation among actors but also to make fodder marketing competitive.


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CHAPTER 3

Methodology

3.1. Geographic scope

The context analysis was conducted in eight villages of Somaliland – six in the Sool Region and two in the Sanaag Region. The villages were purposively selected based on their potential for fodder production from existing fodder-production practices (cultivated or natural rangeland grasses, shrubs and their mixtures), absence of overt or covert conflict during the time of the study and accessibility in terms of weather and road infrastructure.

The initial intention was to visit eight villages, two in Ceel Afweyn in Sanaag and six in Sool – three in Caynabo, one (Lafweyn) in Xudun and two in Laascaanood. All four districts had been cleared for security by the United Nations Department of Safety and Security, but the team decided to identify the specific villages to visit once on the ground. Owing to heavy rains experienced in the area and poor roads, the team was able to access only two villages, namely Turka and Balanbaal in the Ceel Afweyn district of Sanaag Region (near Garadag close to the border with Caynabo). It was not possible to reach Ceelcade and Sincaro, the villages selected in Ceel Afweyn. The road to Balanbaal village was heavily waterlogged and one of the armoured vehicles got stuck in the swamp. Similarly, Lafweyn village in Xudun that was in the original plan was inaccessible. The team then requested a lighter vehicle to transport focus group discussants from Balanbaal village and back.

In Sool, interviews were conducted in the following villages: Habari Heshay, Caynabo and Wadaamagoo in Caynabo district and Kalabaydh, Waqdari and Daryare in Laascaanood district (Table 3 and Figure 10). Two of the key informants interviewed hailed from Adhi Adeeye and Oog villages in Laascaanood and Caynabo districts respectively.

Table 3. Study villages, districts and regions where interviews were conducted

Village	District	Region
Habari Heshay	Caynabo	Sool
Caynabo	Caynabo	Sool
Wadaamagoo	Caynabo	Sool
Kalabaydh	Laascaanood	Sool
Waqdari	Laascaanood	Sool
Daryare	Laascaanood	Sool
Sindhoobo	Laascaanood	Sool
Odagooye	Laascaanood	Sool
Turka	Ceel Afweyn	Sanaag
Balanbaal	Ceel Afweyn	Sanaag
Dagaar	Erigabo	Sanaag
Marawade	Erigabo	Sanaag
JiidAli	Erigabo	Sanaag
Dibqarax	Erigabo	Sanaag
Laasqacable	Erigabo	Sanaag
Booca	Erigabo	Sanaag
Dhuurmadare	Erigabo	Sanaag
Kulmiye	Erigabo	Sanaag
Laanqiciya	Erigabo	Sanaag
Dhaxamo	Erigabo	Sanaag
Ceel lamaan	Erigabo	Sanaag
Yufle	Erigabo	Sanaag
Dayaxa	Erigabo	Sanaag
Dabablaha	Erigabo	Sanaag
Karin	Erigabo	Sanaag

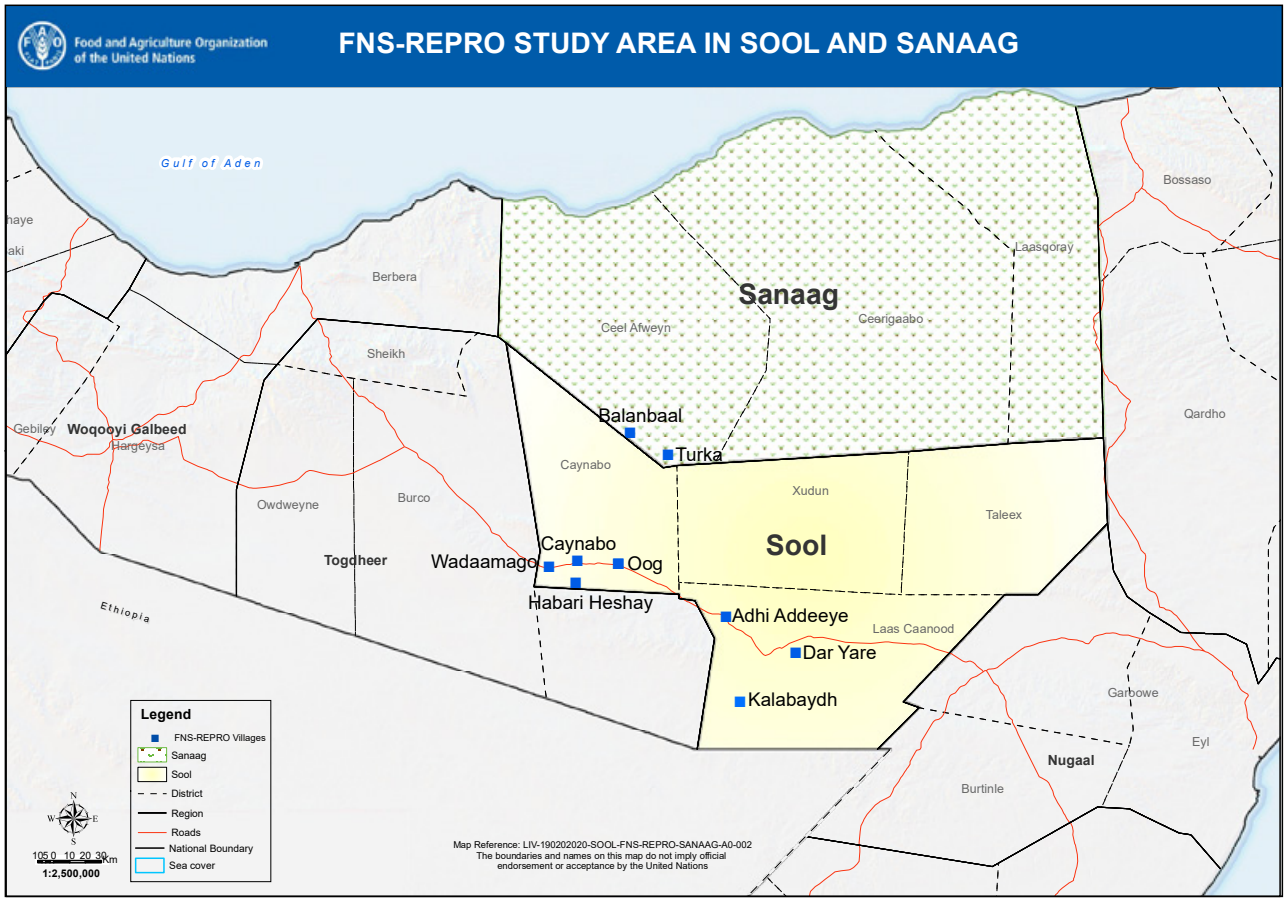

Figure 10. Map of the study area showing the villages from which data were collected
Source: FAO, FNS-REPRO programme. 2020.

So as not to exclude the three villages that were inaccessible due to the heavy rains and poor road infrastructure, the Resilience Index Measurement and Analysis (RIMA) will provide the missing information on Ceelcade and Sincaro (Sanaag) and Lafweyn in Xudun (Sool). Based on the RIMA findings, two of the three villages, Ceelcade and Sincaro, were replaced by Yubbe and Hadaftimo. Two other villages, Midhasho and Jiddali, were added to balance the regions.

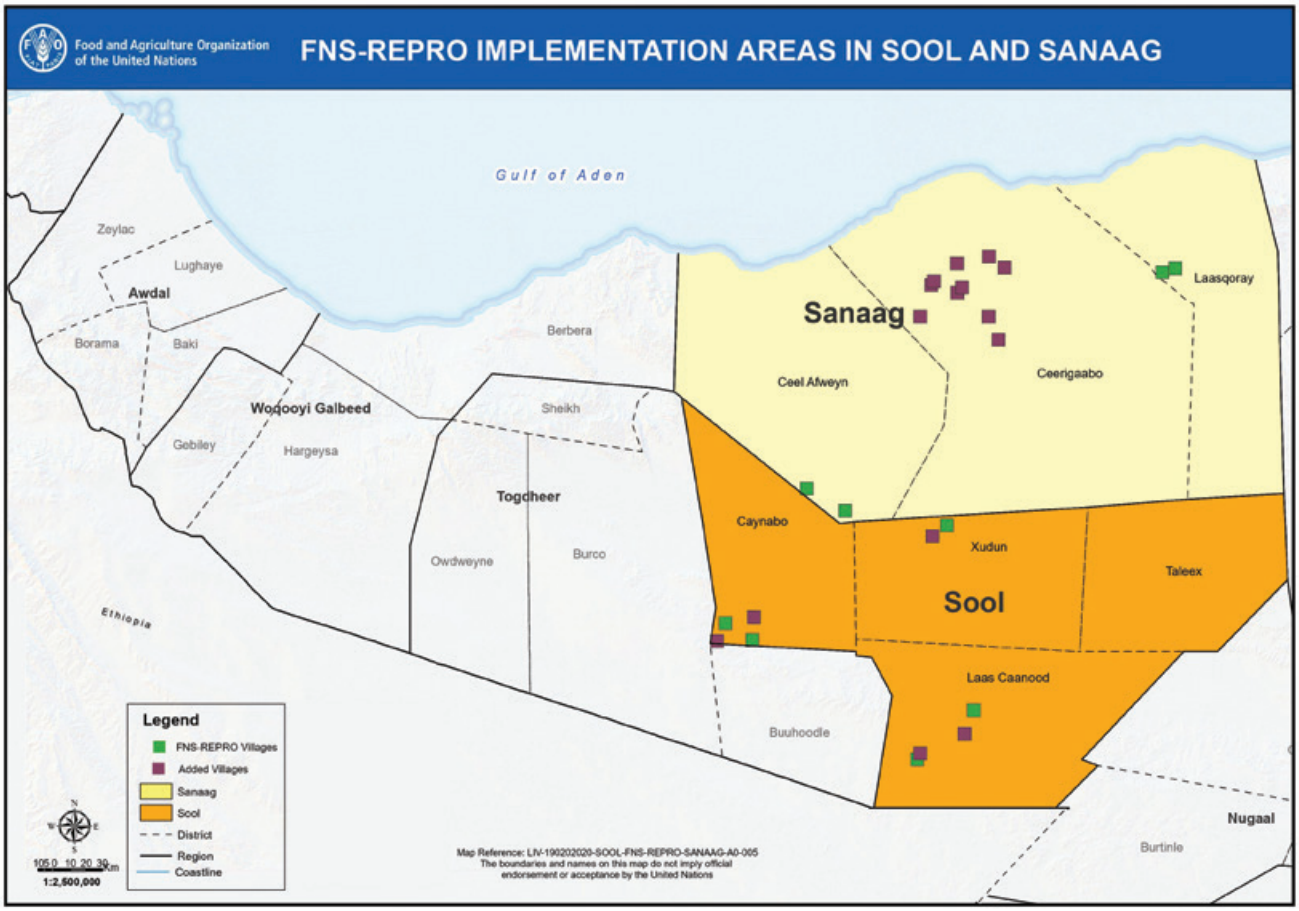

Figure 11. Map showing the areas visited in August and September 2020 (coloured purple)
Source: FAO, FNS-REPRO programme. 2020.

3.2. Data collection

Gender-disaggregated primary data were collected using focus group discussions (FGDs), key informant interviews (KII) and in-depth individual interviews (III). These interviews and discussions were conducted with 18 participants (nine women and nine men) in the case of FGDs; 16 (one woman and 15 men) for KIIs and six (three men and three women) for fodder-producer and trader IIIs. The KIIs were male-dominated because they were constituted by regional or district leaders, who were mostly men. There are very few women leaders beyond the village setting. During fieldwork two case studies were conducted, one on gender-based violence reported by women harvesters of indigenous grass fodder at Waqdari village in Laascaanood district and another at the Al Jabiri livestock export quarantine station at the Berbera port (Table 4).

Table 4. Summary of field data collection (topics of inquiry)

Component of study / Tool/Method	Number and gender interviewed		Shocks and stresses (threats)		Structures and processes	Livelihood strategies	Fodder value chain analysis
	F	M	Vulnerability	Livelihood assets			
Focus group discussion (FGD)	9	9	+	+	+	+	+
Key informant interview (KII)	1	15	-	+	+	-	-
Individual in-depth interview (III)	3	3	+	+	-	-	-
Case study (Waqdari smallholder female fodder retailers)	1	0	-	-	-	-	+
Case study (Al Jabiri holding ground manager)	0	1	-	-	-	-	+

Informed by the sustainable livelihood framework, questions were asked about the impact of shocks (threats) on the people's vulnerability and assets, structures, processes and livelihood strategies, in this case engagement with the fodder value chain[5]. More specifically, the following questions were asked (Annex I).

3.3 Data validation

After data collection and analysis, a Multidisciplinary Context Data Analysis validation and National Inception Phase validation workshop was held from 27 to 30 January 2020 to:

a) validate, with representatives of relevant stakeholder communities and government departments, the findings of the FNS-REPRO multidisciplinary context assessment conducted in Sool and Sanaag regions in December 2019;

b) develop, with stakeholders present, a tentative Community Action Plan (CAP) with recommended and prioritized areas of intervention and resources required to implement the plan in the fodder value chain.

The workshop was attended by all 40 invited stakeholders. Participants included representatives from regional and local authority administration, from the Ministry of Livestock, Agriculture and Environment, the Ministry of Planning, the chamber of commerce, the private sector, non-governmental organizations and representatives from pastoral and agropastoral villages. The participants consisted of 50 percent each of women and men from the villages (fodder producer/traders and village leaders) and 100 percent men from regional leadership (there were no women leaders beyond the village committee). This reduced the ratio of women participants from 43 percent on day one to less than 35 percent on subsequent days when the national leadership joined the workshop as only one woman and about ten men attended the meeting from the ministry.

The workshop involved presentations, several group exercises and plenary sessions to validate data provided on the various dimensions of vulnerability in terms of threats and risks and how these affect the livelihoods assets. Greater emphasis was placed on the fodder value chain and how to increase the resilience of fodder producers/traders and communities from fodder-

[5] Initially there were questions about shocks and stresses, which were difficult to distinguish in real-life situations. The field workers opted to use the term 'shock' and drop the term 'stress'.

producing areas while ensuring gender inclusion. Lunch-time consultations were held with women on ways of ensuring that they will participate in the planned CAP interventions and benefit equitably with men.

Most of the validation workshop participants (individually and collectively) concurred with data collected in the field as a true reflection of the context. The following areas were validated:

- Critical vulnerabilities affecting the livelihoods of pastoral and agropastoral communities in Sanaag and Sool regions, including those that had been documented to affect fodder production and opportunities to overcome these vulnerabilities in the context of fodder value chain improvement.
- Fodder value chain mapping with regards to the common fodder species, fodder production systems, processing practices, costs of production (harvesting/baling/loading/transportation), marketing systems and associated fodder market prices.
- Low participation of women, especially in the profitable components of the fodder value chain. More specifically, discussions affirmed findings that women were time-poor and heavily disadvantaged in terms of access to resources including land, appropriate farm tools, income and credit and access to medical services. Women's time poverty, combined with a cultural socialization of keeping their health ailments private, was associated with their failure to visit health services and their frequent self-medication. All these barriers contribute to their low participation in the fodder value chain. Despite the denigration, women have great potential to participate in and benefit from the fodder value chain.
- Interventions in addition to, or supporting, opportunities to build and sustain resilience of the fodder value chain actors were suggested and a draft CAP was developed.

The multidisciplinary context analysis data/results validation and project inception workshop was successful as it met the set objectives. More significantly, the data collected during the field assessment informed the findings that were declared valid by study participants and local and regional officials. Details on the workshop recommendations under each of the study areas are contained in the workshop report (see Annex 1) and are captured in the results section.

3.4. Theoretical frameworks

The study described in this report was informed by two main theoretical frameworks: the sustainable livelihoods framework and the sustainable food value chain framework. Gender has been mainstreamed in the study – all data collection was disaggregated by gender and in the analysis, all data was checked for convergence or divergence of roles, responsibilities and benefits between women and men. Conflict too was integrated in data collection whereby questions on conflict were strategically asked. Both gender and conflict were analysed inductively by seeking patterns from repeated observations.

3.4.1. Sustainable livelihoods framework (adapted for Sool and Sanaag context)

Livelihoods consist of the capabilities, assets and activities required for a means of living. A livelihood is considered sustainable when it can cope with, and recover from, stresses and shocks; maintain or enhance its capabilities and assets; and provide net benefits to other livelihoods locally and more widely, both now and in the future, while not undermining the natural resource base (Chambers and Conway, 1992). The extent to which a livelihood is sustainable is determined by the interaction of several forces and elements. These are set out conceptually in the sustainable livelihoods framework as indicated in Figure 12.

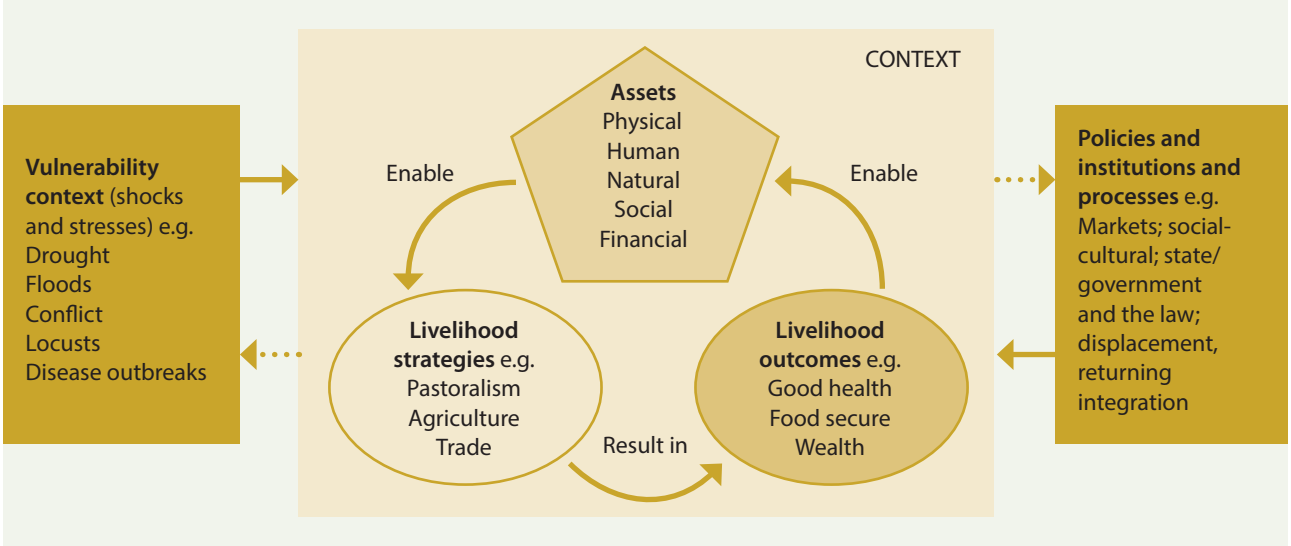

Figure 12. A schematic presentation of the sustainable livelihoods framework (adapted for the Sool and Sanaag context)
Source: From ILO and FAO, 2009.

The sustainable livelihoods framework consists of four key elements:

1. Livelihood assets and activities;
2. Vulnerability and coping strategies;
3. Policies, institutions and processes;
4. Livelihood outcomes.

In the livelihoods framework, assets are at the core because they constitute the resources that are drawn upon to produce certain livelihood outcomes. Assets exist in a context whose characteristics are influenced by institutions and policies affecting people from the microsystem (the extended family and local community) to the macrosystem (national state and beyond). The vulnerability context, which describes the set of external social, economic and political forces and stresses to which people are subject, also influences the context in which assets exist.

In this study, therefore, the potential effects of threats (shocks and stresses), when they are realized to the extreme, would be to erode the livelihood assets to a point where they become liabilities and the resilience of individuals and communities is depleted to a point where they succumb. In many situations, however, individuals and communities have opportunities/coping strategies they can draw upon to protect their assets from depletion during shocks and stresses. In this case, the individuals and communities can prevent or avoid the occurrence of, and/or overcome, the shock/stress and bounce back to, or above, where they were before the shock or stress. They could also bounce back to below or above the initial stress level. Interventions in this project should be aimed at supporting development and/or sustenance of resilience without other negative consequences such as environmental degradation.

3.4.2. The sustainable food value chain framework (adapted for fodder)

The sustainable food value chain development approach was designed for upgrading a fodder-production sector. The approach is based on the following principles:

(i) Measuring performance: whereby the three dimensions of sustainability – economic, social and environmental, and their synergies – must be considered holistically.

(ii) Understanding performance: The approach takes a holistic perspective that the systems considered are interconnected and dynamic, governance-centred and market-driven.

(iii) Improving performance: Translating value chain analysis into effective interventions requires a clear vision and upgrading strategy, but the process must also be scalable and multilateral. To better understand

how the sustainable food value chain development approach can help achieve the objectives, it is useful to consider the main opportunities and challenges facing small-scale food producers.

Lessons from sustainable food value chains can be applied to non-food agricultural value chains such as the fodder value chain in the current context. In all value chains, the value-addition cost is the difference between cost of production and the price consumers are willing to pay. The cost can be shared among different stakeholders and exists in various forms such as salaries or wages for employees, net profits for enterprises and tax revenues for the government. Sustainability of a value chain has various dimensions: economic (it is profitable in all its stages), social (it has broad-based benefits for society) and environmental (it has a positive or neutral impact on the natural environment) (Figure 13).

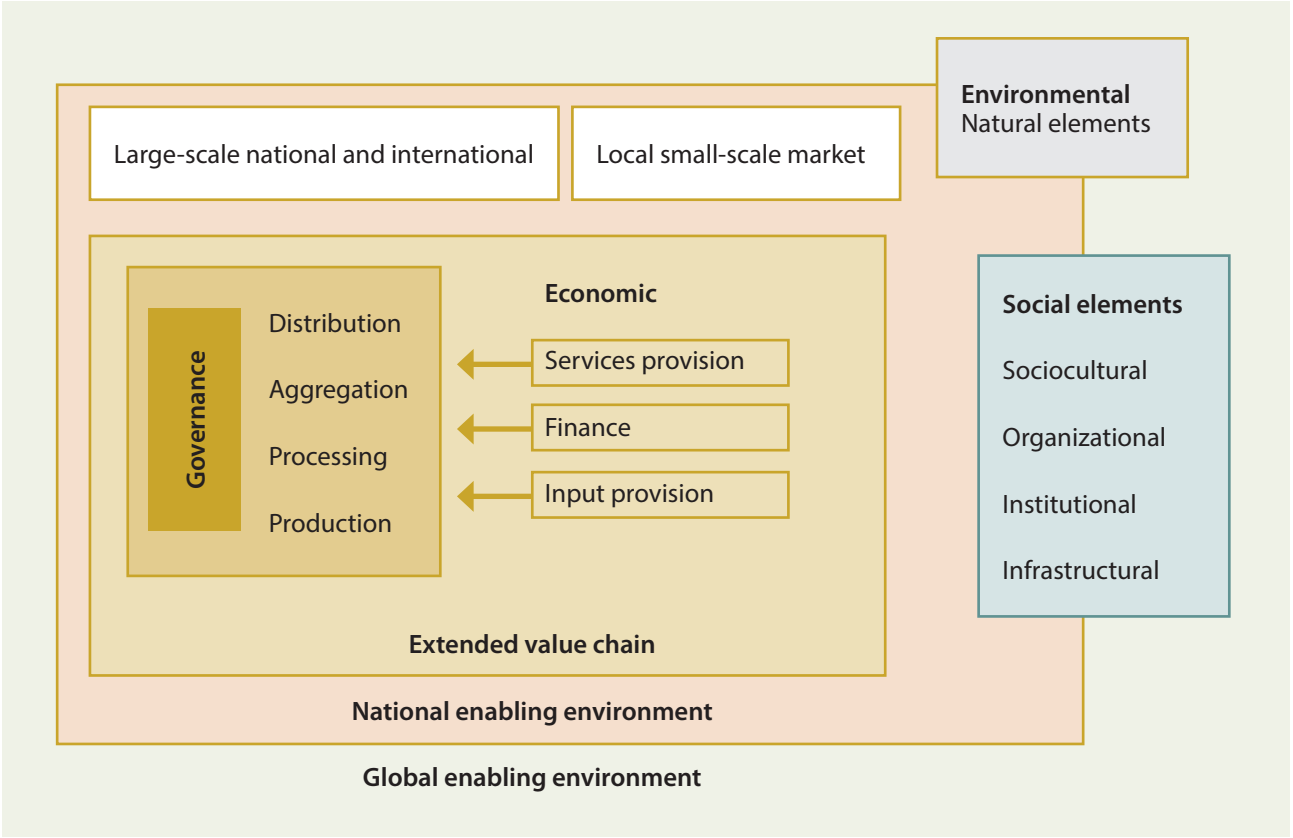

Figure 13. Elements of a sustainable fodder value chain

Source: Adapted from FAO, 2019a.

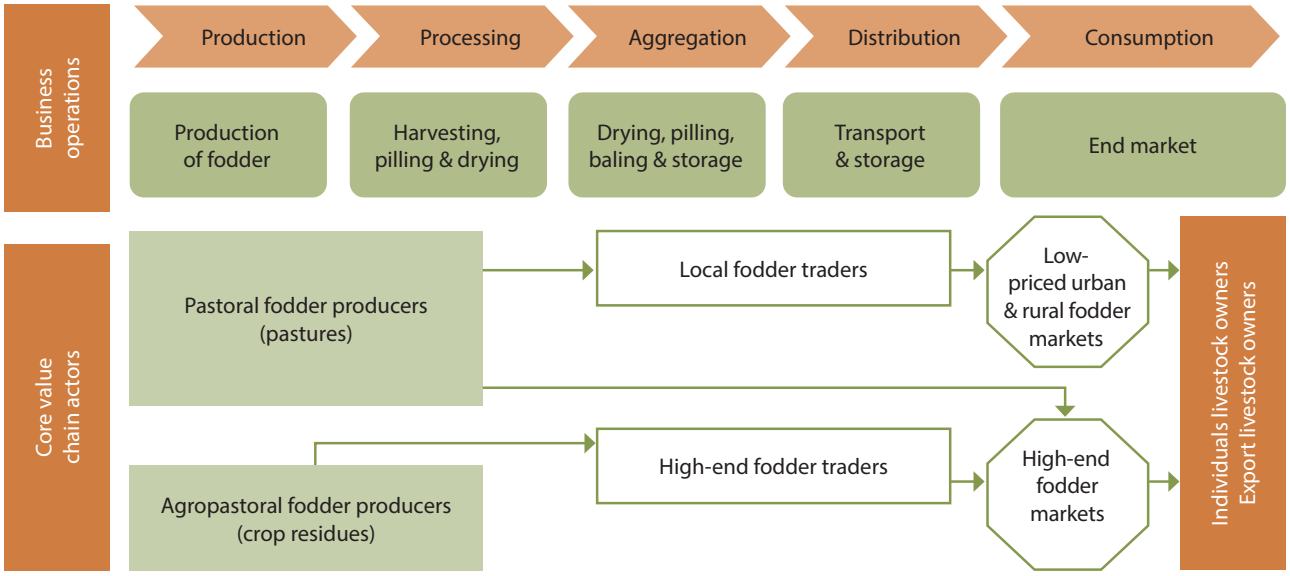

Figure 14. A schematic representation of the fodder value chain, its actors and linkages

Source: Adapted for fodder from FAO, 2019a.

Different stakeholders/actors in value chains and their activities interact in various ways that define the context of the value chain, e.g. the enabling environment, what drives actors' behaviour and what governs the value chain. Considering the performance of the value chain in all three dimensions (economic, social and environmental) makes it possible to identify root problems, leverage opportunities to upgrade the targeted value chain and develop (together with the stakeholders) action plans to support the vision and value chain development strategy. Value chains also require a focus on social inclusion, which is represented by the participation and distribution of benefits for women and men of different ages. Economic inclusion allows smallholder actors to participate and benefit like the large-scale traders.

For most agricultural value chains, the steps in the value chain are generally ordered as follows: Production > aggregation > processing > distribution > consumption; but for the fodder value chain, processing (harvesting and drying) comes before aggregation. The study therefore adapted a fodder value chain that is considered typical of Somaliland (Figure 14).

Value chains with strong linkages between small-scale producers and the market are likely to be more inclusive and efficient, increasing the productivity and sustainability of agriculture, reducing rural poverty and eliminating hunger and malnutrition. Designing interventions for the development and improvement of sustainable value chains with beneficiaries and other stakeholders can yield the following outcomes:

(i) reduced poverty for small-scale producers and rural poverty in general;

(ii) increased sustainability and resilience of small-scale producers in a context of environmental and climate change; and

(iii) inclusive economic and political empowerment of small-scale producers.

During the field assessment, fodder value chain actors in the two target regions of Sool and Sanaag will be identified. Activities of these actors will be documented within in each chain function, including enabling activities such as by government and private institutions.


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CHAPTER 4

Results from the fieldwork

Meeting with Habari Heshay community. Caynabo district community consultations took place in September 2020.

4.1. Shocks and vulnerability

4.1.1. Effects of shocks and stresses on the community

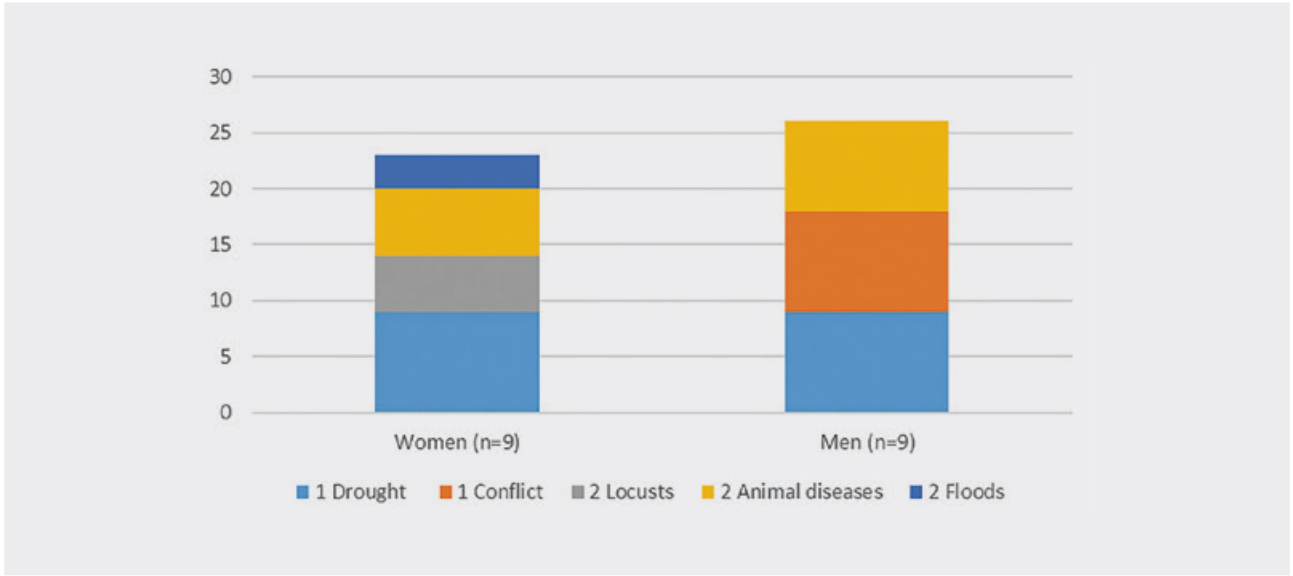
Community members, through gender-disaggregated FGDs, responded to the question, "What are the common shocks that this community normally faces?" Disaggregated by gender, responses to this question included drought, locusts, animal diseases and floods according to women; and drought, conflict and animal diseases according to men (Figure 15).

The most frequent shock, according to men, and mentioned at equal frequency as conflict and animal diseases, was drought. Women mentioned drought, animal diseases, locust infestation and floods, in that order. During the validation workshop, however, men and women at the workshop indicated that men also experienced the shock of floods and locusts, just as women experienced shocks related to conflict. Other shocks and stresses identified by women and men combined during the action planning sessions at the validation workshop included wildfires, human disease outbreaks, cyclones, soil erosion, charcoal burning, poverty and tribalism.

Meeting with Nugaal University, Sool in September 2020.

The differences in frequency of mention of shocks suggest that shocks affect women and men differently, with droughts affecting both women and men equally, conflict and animal diseases affecting men more than women and floods and infestation of locusts affecting women more than men. Systematic differences in perceptions between men and women have been attributed to gender structures, reflected in gendered ideology and practice (Gustafson, 1998). The reported gendered differences in the effects of shock could therefore be attributed to

Figure 15. Common shocks faced by community by gender



Source: FGD data.

the different gender roles and responsibilities in this community, with women's roles being those of obtaining crop-based food for the family, hence their being affected by locusts and floods more than men, and men being the managers of livestock and hence affected more than women by livestock diseases and conflict. According to focus group discussants and key informants, competition for grazing resources is considered a major cause of conflict in the study area.

Gender differences have been known to affect the development of activities intervened upon and their gendered recognition during interventions is likely to allow for the development of more effective strategies (Simen-Kapeu and Veugelers, 2010). FNS-REPRO interventions are therefore likely to be more successful if they incorporate gender considerations in their mainstream by ensuring that benefits for men and women are equal, or at the least, equitable.

The effects of the shocks and stresses identified by women and men interviewed in the field and at the workshop, are similar depending on severity of magnitude. Among the focus group discussants and participants in the validation workshop, outcomes of the shocks and stresses included migration, injury, weak economy, poor nutrition, famine, desertification, interruption of trade and movement, family breakdown, increase in number of orphans, increase in crime such as theft and highway robbery, increased gender inequality and ultimately death, sometimes by suicide.

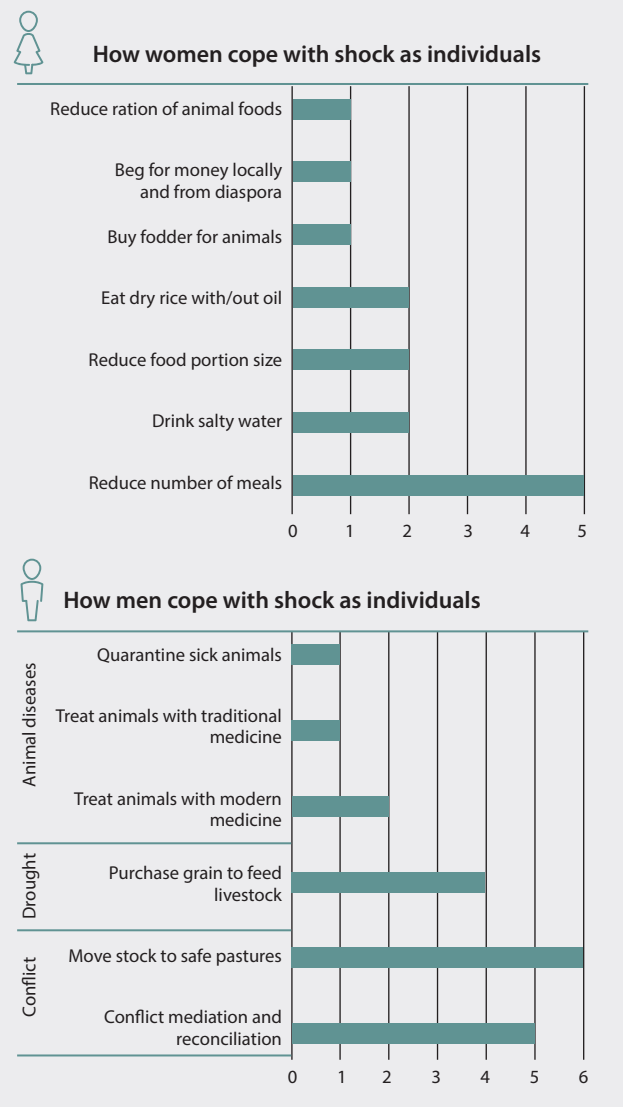
4.1.2. Gendered coping mechanisms for shocks and stresses

Shocks and stresses affect the vulnerability of communities in similar ways. They cause a reduction in food production, food consumption and production of surplus for the market. Consequently, markets become compromised and incomes decrease. Men and women cope with these effects in different ways.

a) Gendered coping mechanisms as individuals

Responses to the question as to how community members coped with shocks and stresses as individuals, differed markedly between the gender groups. Women talked mainly about managing food within the household such as reducing the quantity of food eaten and frequency of eating in a day. They also changed the type of food eaten by reducing the portions of nutrient-dense animal-source foods and leaving starch foods with or without oil. Interestingly, they also preserved fresh water for children and the elderly by giving the rest of the household members salty water (Figure 16). Men responded to conflict according to their roles in rearing livestock. In case of conflict, they move livestock away and engage in conflict mediation and reconciliation. In times of drought, they purchase grain for livestock and in case of disease outbreaks, they practice quarantine and treat sick animals using traditional or conventional medicines (Figure 16).

Figure 16. How women and men cope with shock as individuals



Source: FGD data.

b) Gendered coping mechanisms as a community

Men and women collectively demonstrated gender-distinct coping mechanisms as demonstrated in Box 1.

Box 1. Gendered coping mechanisms as a community

Some quotes from women and men about how they deal with the effects of shocks and stresses as a community

Women

"During the early stages of drought, we receive support from relatives in diaspora and towns, government and non-governmental agencies … during flooding, the agencies help us to improve our water catchment areas … in case of animal diseases – we treat using traditional remedies."
(Wadaamagoo agropastoral women; >35yrs)

"We have women groups that are involved in table banking. In good years we save 50 percent of the money collected to pay for community needs and lend out the remaining 50 percent among ourselves."
(Balanbaal pastoral women; mixed ages)

"Crop and animal disease control – we are able to spray crops and get support from the Ministry of Livestock and Fisheries Development. Men usually spray crops and treat animals, but when not available, women take on these tasks."
(Daryare commercial, irrigating, crop and fodder producing women; >35)

"Women among us with the means support the vulnerable people, such as the elderly and orphans."
(Waqdari smallholder fodder producers and traders; >35)

"After a shock we need credit so that we can rebuild our lives through small shops and petty trade activities."
(Turka women; mixed ages)

Men

"During drought, those with animals support those without by donating or lending stock to those whose animals die. We also share food rations given only to some community members."
(Habari Heshay; >35)

"Once we saw the locusts, we harvested our fodder and conserved it before they devastated it."
(Wadaamagoo; >35)

"When conflicts occur, internal peace-resolution committees, constituted by local authorities and elders, start negotiating. In the case of drought and animal disease outbreaks, village, district and regional committees on drought and livestock diseases start looking for solutions."
(Wadaamagoo and Habari Heshay men in Caynabo district, Kalabaydh men in Laascaanood district, Balanbaal and Tuurka men in Ceel Afweyn – mostly >35 and the occasional youth)

"We are not able to cope with shocks, but support in fodder conservation and provision of water resources would enable us to cope with drought."
(Men in Caynabo; >35)

c. Coping mechanisms by mixed-gender groups

In mixed-gender table banking groups, men and women jointly raise ad hoc funds for community support, in addition to funds for other activities. Additionally, male and female youth associations are now involved in the sensitization of local and diaspora communities to give money for buying food for the most vulnerable groups. In response to drought, farmers are expanding the area under crops and fodder and conserving fodder by heaping for the lean periods. There are mixed-gender committees with 20–30 members at village and district levels, which link the community with the government. The already established committees' mandate is to find ways of responding or seeking support when shocks occur. The committee members constitute specific subcommittees such as drought preparedness, conflict resolution and disease control as the need arises. The committee membership is constituted by leaders such as chiefs, elders and religious leaders, as well as educated and progressive people in the society. Activities include soliciting for relief food and trucked water from local authorities and government agencies.

These findings demonstrate the nuanced ways through which women and men cope with shocks and stresses as individuals and in groups of same gender and mixed genders. The coping mechanisms of each individual or group vary. The nuances in coping mechanism by gender, of individuals of single or mixed-gender groups, could also be explained in terms of gender structures reflected in gendered ideology and practice (Gustafson, 1998). Variation of coping mechanisms with gender has been demonstrated in studies in the workplace (Welbourne *et al.,* 2016). Although details such as those demonstrated in this study may be novel, nuances aligned to a person's gender and whether they are coping as an individual or a group point to the necessity for FNS-REPRO interventions to be modelled to benefit women and men as individuals as well as in single or mixed-gender groups. For example, if FNS-REPRO supported restocking interventions, men as individuals and groups would be the primary beneficiaries, because the role of restocking in the community is a men-as-groups activity and recipients of livestock stock are also men. Women and children constitute secondary beneficiaries of restocking because they are able to access milk once stocks are re-established. Rehabilitating Berkads as an intervention is likely to benefit individual women mainly because it is their responsibility to apportion fresh water to family members in the event of a shortage of water. Other family members become secondary beneficiaries because their access to sweet drinking water increases. FNS-REPRO should aim to use individual men and women as well as single and mixed-gender groups equitably as conduits of interventions and to benefit them equally as primary and secondary beneficiaries to project interventions.

4.1.3. Causes and effects of conflict-related shocks

Women in FGDs did not acknowledge conflict and even when probed, they were adamant that there was no conflict in the village, except for the occasional mugging and rape cases reported the same as everywhere else. Consultations with field study team members from Somaliland yielded two possible explanations for this behaviour:

1) The women could have understood conflict to be armed conflict as in the case of war and were correctly stating there was none at the time of the interview. This line of thought was supported by a similar observation made regarding women from fodder-producing communities of Togdheer (ILO/PENHA, 2011).

2) The women did not want to admit that there was conflict because they might have been made to believe that if they did, this could have caused the project to be withdrawn from their villages.

From their body language, it was clear that the women were not comfortable discussing conflict. Responses to most conflict-related questions were given by men, mainly from FGDs and from key informant interviews, with all but one respondent being male. Men might have talked about conflict more easily as mediation and resolution is a male-gender role.

The most common cause of conflict, as stated by the key informants, was the arrival of livestock in a new area (32 percent), followed by political interference (28 percent). Family and clan feuds and poverty tie at 16 percent and poor governance accounted for eight percent of the conflict causes (Figure 17). Arrival of livestock in a new area causes competition for scarce grazing and water resources, incitement of violence by politicians to sustain instability and maintain the relevance of

unofficial politicians, and the frustrations associated with dispossession of the poor by greedy and powerful wealthy people.

Asked who was mainly affected by conflict, the key informants stated that all community members were affected by the four categories of conflict they were asked about – economic, social, political and human security. They also indicated that women and children were affected more than other people by economic conflict and more vulnerable people by political conflict (Figure 18).

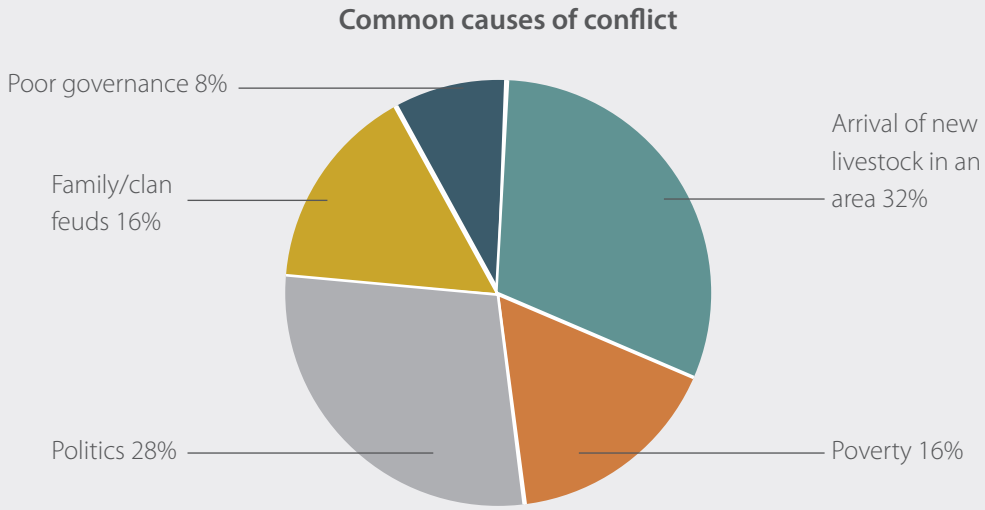


Figure 17. Common causes of conflict

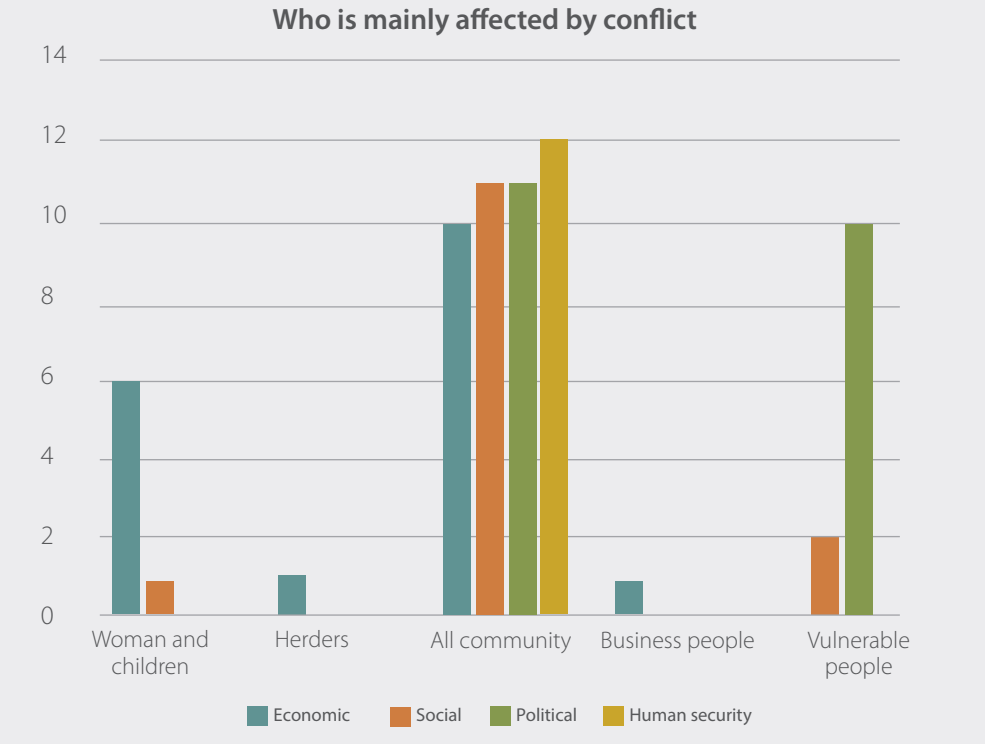


Figure 18. Who is mainly affected by conflict?

Responding to the question about the impact of conflict on gender relations, informants stated that conflict increased injustices like violence, abandonment, exploitation and poverty for mainly women and children. They did not know how this impact on gender relations could be prevented and its effects mitigated. With regards to livelihoods, conflict was said to destroy livelihood options and loss of opportunities because production and trade are destroyed. KII informants said that creating awareness of the effect of conflict on livelihoods and support of peace and stability by local and traditional leaders could prevent these impacts on livelihoods. None of the informants had an answer when asked how these effects could be mitigated. It may be that community respondents could not differentiate between prevention and mitigation of the effects of conflict. During implementation, FNS-REPRO should support the community efforts aimed at creating awareness of the effect of conflict on livelihoods and efforts to support peace and stability by local and traditional leaders.

4.1.4. External sources of support for community (women and men combined)

Responding to the question about the kind of help they ask for and receive, interviewees said that they did not ask for specific help but reported the shock or stress and its effects to their relatives in urban centres and other countries (diaspora) and to the local authorities (sometimes through the press). The relatives usually send cash and act as the first line of support. The authorities respond directly and/or seek external support on behalf of the community.

The support facilitated by the authorities includes the government's provision of clean water to households through water trucking, provision of food to the malnourished community members and veterinary support for combating livestock diseases. Part of this support is provided by NGOs and UN agencies through the government. Although most respondents did not know this, FAO provides support for treatment campaigns against endo- and ectoparasites, infectious diseases, wounds and blood parasites; vaccination against peste des petits ruminants, sheep- and goatpox and contagious caprine pleuropneumonia; and provision of livestock feed (range cubes). Other veterinary services reported by the communities were vaccinations against foot-and-mouth disease and education of farmers on diseases and their control. Livestock keepers quarantine animals during disease outbreaks without being prompted. NGOs provide food rations that are distributed to a specified number of households, for example the most vulnerable 400 households throughout a crisis period, even for a year. Some organizations mentioned included FAO – provides livestock support; CARE – provides relief food; Adventist Development Relief Agency (ADRA) – supports restocking for destitute pastoralists; and CARE Save the Children Fund, ADRA and World Concern provide cash. Oxfam/NOVIB provide animal health and fodder support. No interventions to contain the locust infestation were mentioned as this was a newly emerging problem during the study and it was too early to tell which organizations intended to intervene.

FNS-REPRO should identify which interventions are aligned with its mandate and partner with the intervening organization[s]. FNS-REPRO should also identify additional livelihood strategies or interventions that they could introduce to enhance livelihoods and overall resilience of male and female community members as individuals and as single or mixed-gender groups equitably. This should be in the form of single and/or multisector partnerships. If intervening through partnership[s], FNS-REPRO should document how and why the partnership[s] is/are formed and sustained and the conditions under which partnership[s] is/are necessary or more effective than other strategies (Woulfe *et al.,* 2010) for enhancement of beneficiary resilience.

4.1.5. Threats, risks and opportunities that affect community vulnerability and resilience

Once community members and leaders had validated the findings at the workshop, they were asked to identify threats that they constantly faced, the risks they could face if the threats were realized and the opportunities they had among themselves as individuals and groups to enable them to deal with the risks. To accomplish this exercise, the key terms in the discussions were defined during the introduction of the exercise (Box 2):

Box 2. Operational definitions of threats, risks and opportunities

Vulnerability is the state of being susceptible to being harmed (wounded or hurt) by something.

Threat is anything that can exploit a vulnerability intentionally or accidentally and damage or destroy the vulnerable person/object.

Risk is the potential of loss or damage of an asset/vulnerable entity as a result of the realization of the threat.

Opportunity is the set of circumstances that make it possible to do something to prevent, neutralize and overcome the risk, i.e. to be resilient.

Resilience is the ability to prevent disasters and crises as well as to anticipate, absorb, accommodate or recover from them in a timely, efficient and sustainable manner. This includes protecting, restoring and improving livelihood systems in the face of threats that impact agriculture, nutrition, food security and food safety (FAO, 2020). In other words, resilience is the ability of people, communities or systems that are confronted by disasters or crises to withstand damage and to recover rapidly.

The threats, risks and opportunities associated with the vulnerability of individuals are presented in the following stacked table (Table 4). They could not be matched directly because they were developed by three different groups.

Table 4. Threats, risks and opportunities that affect the vulnerability and resilience of communities

	Examples
Threats	Floods, drought, conflicts, fire breakouts, livestock disease outbreaks, human disease outbreaks, locusts, cyclones, soil erosion, charcoal burning, poverty, tribalism.
Risks	Migration, death/injury, weak economy, poor nutrition/famine, desertification/soil erosion, interruption of trade and movement, family breakdown, increase in orphans, increase in theft and highway robberies, gender inequality.
Opportunities for resilience	Drought: To conserve water through water catchments such as dams, berkads or cisterns; to plant and store fodder; to get investments for drought mitigation; raising awareness of diseases; to prepare for quarantine when contagious diseases occur; to make contact and communicate with the development agencies and government offices; to reseed the grasslands/rangelands; to restock for pastoralists who lose their livestock to drought. Conflict: Establish peace committees; in a timely manner, resolve conflicts; raise awareness; create strong security, i.e. government forces; fundraising for conflict-resolution and peacebuilding activities and processes; create employment and job opportunities. Food security: Increase food production; conserve the available food.

FNS-REPRO interventions should support existing opportunities because these are proven resilience-enhancing strategies recognized by community members.

4.1.6. Conclusions and recommendations for FNS-REPRO for implementation of interventions against shock and vulnerability

The observed gender differences in perceptions of the importance of some shocks and stresses and their effects over others, have been associated with the different gender roles and responsibilities in this community. Recognizing these differences and designing interventions to benefit both genders have been associated with the development of more effective strategies. FNS-REPRO interventions are likely to be more successful if they incorporate gender considerations in their mainstream by ensuring that engagement and benefits for men and women are equal or equitable, at the least. Like perceptions, coping strategies are also nuanced for individuals from both genders as well as single or mixed-gender groups. FNS-REPRO interventions should be modelled to benefit women and men as individuals as well as in single or mixed-gender groups.

FNS-REPRO should aim to use individual men and women as well as single and mixed-gender groups equitably as conduits of interventions and to benefit them equally as primary and secondary beneficiaries to project interventions.

By negatively affecting production and trade, conflict destroys livelihood options and causes loss of opportunities. Creating awareness of the effects of conflict while simultaneously supporting initiatives for enhancing peace and stability by local and traditional leaders should lessen these impacts of conflict on livelihoods. To ensure effective coverage over the vast area of Sool and Sanaag, FNS-REPRO should consider working in collaboration with partners such as CARE, ADDRA and Save the Children, NOVIB, Interpeace (a regional NGO on peace), while at the same time implementing interventions unique to FNS-REPRO. Lessons learned during the partnership engagement need to be documented to understand which engagements were/are most beneficial.

Because of the negative impacts of shocks and increased vulnerability of communities in the Sool and Sanaag regions, FNS-REPRO should pursue implementation through a disaster risk and conflict resolution and peacebuilding activities and processes lens by identifying key livelihood strategies. These strategies include investing in drought mitigation activities, such as soil and water conservation of catchments and better management of the rangeland grazing areas for commercialized fodder production that create employment and increased incomes, among other benefits. Finally, all FNS-REPRO interventions should support existing opportunities identified in the study, as these are proven resilience-enhancing livelihood strategies recognized by community members.

4.2 Livelihood assets

In the context of shock and stress, resilience can be perceived to be the ability to prevent disasters and crises as well as to anticipate, absorb, accommodate or recover from them in a timely, efficient and sustainable manner. This includes protecting, restoring and improving livelihoods systems in the face of threats that impact agriculture, nutrition, food security and food safety (FAO, 2020). Resilience of communities in rural contexts is often seen to be linked to the assets – natural, social, physical, human and financial – that the community can access (Fischer and McKee, 2017), as well as own and control. In this analysis, therefore, resilience-enhancing interventions will focus mainly on assets. The five livelihood assets described in this section include natural, physical, financial, human and social assets (Bebbington, 1999). The extent of access to and control over these assets enables people to combine and transform them to build their livelihoods; expand their asset bases by engaging with other actors through relationships governed by the logics of the state, market and civil society; and deploy and enhance their capabilities to make living more meaningful and to change the dominant rules and relationships governing the ways in which resources are controlled, distributed and transformed in society (ibid.). These five livelihood assets also constitute a centrepiece of the sustainable livelihood framework. The term 'liability' has been added to the asset presentations because shocks act on assets and convert them to liabilities (Figure 19). This recognition brings to the fore the concept of resilience, what it takes to return to a former or close to a former position.

In this study, an inventory of each category of assets was made by discussants from the gender-disaggregated focus groups to establish the types of assets that mattered for men and women. Asset-specific questions were then asked and the gender-disaggregated responses documented and analysed.

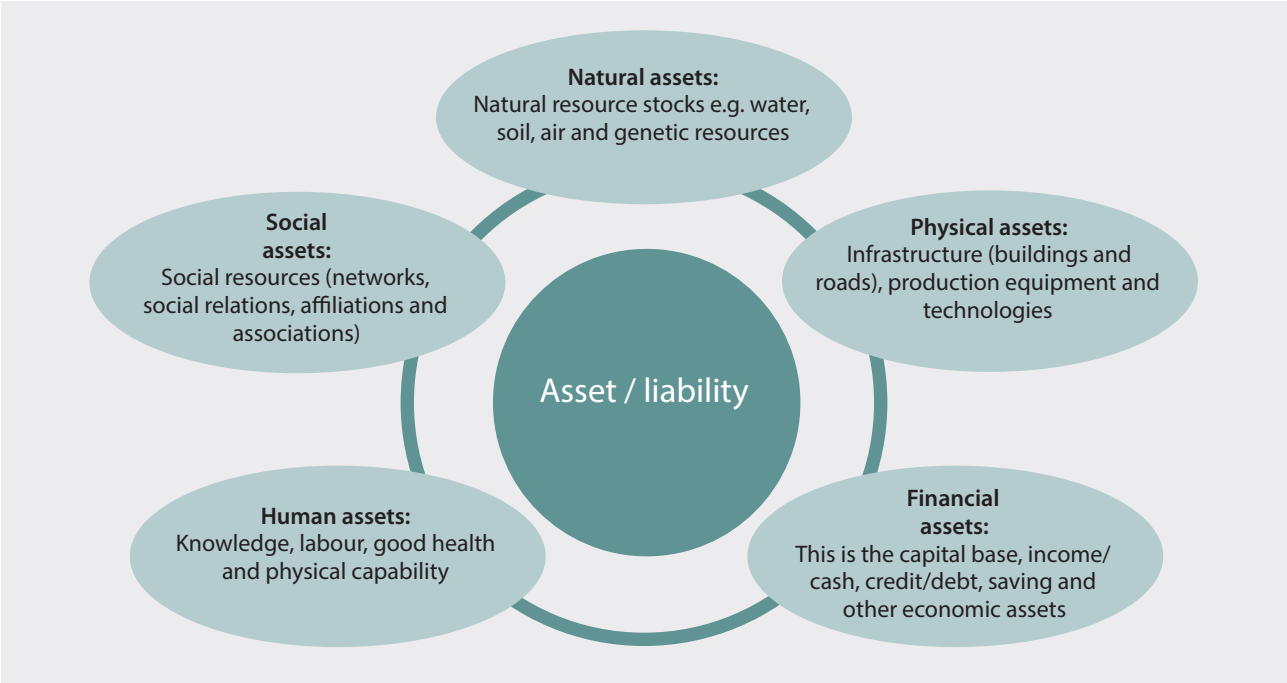


Figure 19. The five livelihood assets

4.2.1. Physical assets available in the community

Among the physical assets mentioned by discussants as the most commonly used by women, were machete and tractor (n=5), and donkey carts and hoes (n=4). Men (n=5) indicated farm tools such as axes and sickles. The lack of diversity of physical assets such as farm tools, transport and storage assets indicates low farming activity, which is corroborated by interview participant accounts of limited food crop and fodder production activities. In fact, most fodder is harvested from self-regenerating rather than actively planted pastures and some farmers used kitchen knives to harvest due to a shortage of sickles. A detailed account of the livelihood activities provided in the section of this report on livelihood zones and livestock-rearing systems indicates that most of this region is occupied mainly by transhumant pastoralists with little cropping activity. The semi-arid climatic conditions, vegetation type (grasslands mixed with shrublands) and undulating landscape indicated that the study area has great potential for large-scale fodder production.

4.2.2. Natural (e.g. land, water bodies and genetic material – livestock, trees)

Among the valuable natural assets in the community, land, livestock, water and trees were the most available assets for women and men (Figure 20). Men and women mentioned in almost equal measure the presence of land, livestock, water and trees as common natural assets they use to support their livelihoods. Three women out of nine focus group discussants mentioned minerals without stating which ones (Figure 19). Literature revealed that there is some artisanal mining in Badhan in the coastal area of the Sool Region and frankincense trees are generally to be found in the East Gollis Frankincense, Goats and Fishing zone (Gabrielle *et al.,* 2007).

Individual ownership of these assets was low across the board. Most grazing land is owned communally, except for a few areas close to the villages used for crop production. The ownership of frankincense fields is clan-based – each family has a right to work directly in the fields where the trees grow to collect the incense, to rent out the land for exploitation by someone else or to engage in sharecropping (FSNAU-FEWSNET, 2016). Livestock appeared to be a better representation of wealth among wealth categories. The poor had only sheep and goats, which seldom exceeded a count of 15. This low number could reflect the effect of the prolonged three-year drought and insufficient rains. Most of the respondents in the current study reported having lost several animals during the 2016–2017 drought and have since not recovered. The presence of shelters for internally displaced persons close to towns bore testimony to many destitute pastoralists who had succumbed to the drought.

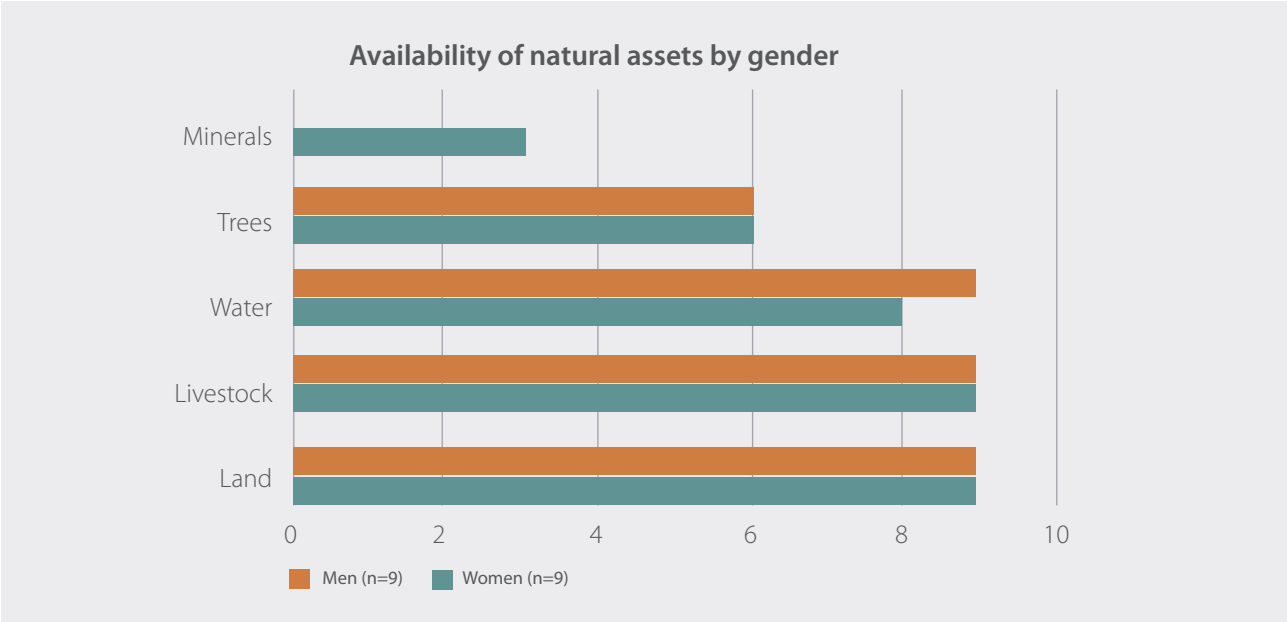


Figure 20. Availability of natural assets by gender

4.2.2.1. Land

(i) What are the land cover types in your area?

Shrubland (browse vegetation) was the land cover type most frequently mentioned by women discussants, followed by grassland. Men discussants mentioned shrubland and grassland in equal measure as the most common land cover types, but only men groups stated water bodies, built areas and bare lands as land cover types (Figure 21).

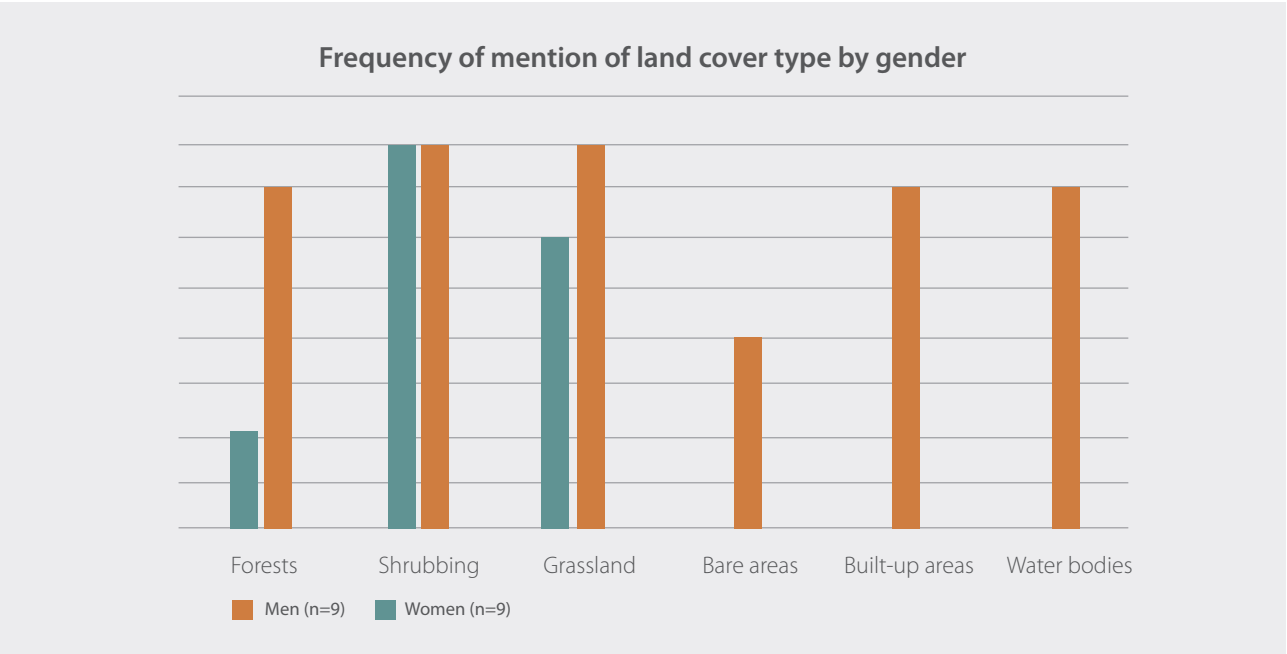


Figure 21. Frequency of mention of land cover types by gender

The rangelands of Sool and Sanaag have the potential for much greater production than is currently being realized with the exception of small areas in the ranges that are either overgrazed at present or show evidence of overgrazing in the recent past as characterized by the low successional stage of herbaceous vegetation.

(ii) Land use type

According to women group discussants, the most common type of land use was rangelands where livestock were herded and as a source of water. Men indicated rangelands and settlements to be the most common land use types (Figure 22). The presence of settlements together with rangelands is an indication of potential for transhumance pastoral livelihoods. Some agricultural activity was indicated by women and men who stated that some shrublands were used for crop cultivation, which pointed to a major shift from the traditionally perceived nomadic pastoralism as the most common type of land use in Somalia. According to the men and women, the integration of cropping activities in their livelihoods was one of their coping strategies to shocks.

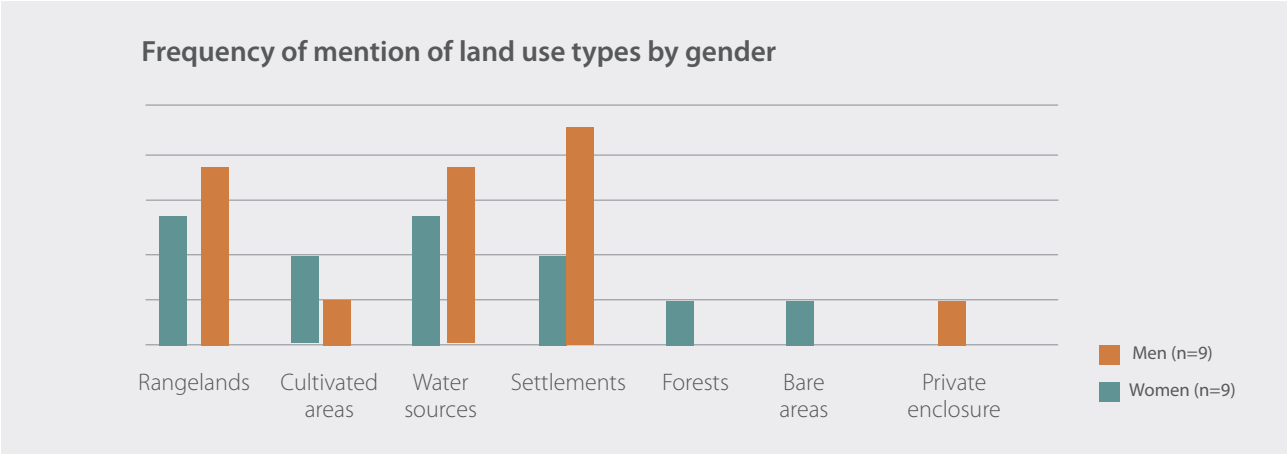


Figure 22. Frequency of mention of land use types by gender

(iii) Land-related conflicts

Men's and women's responses to whether land-related conflicts occurred, were inversely proportional. The team interviewing women noted that women were quick to deny that there was conflict in their villages (Figure 23).

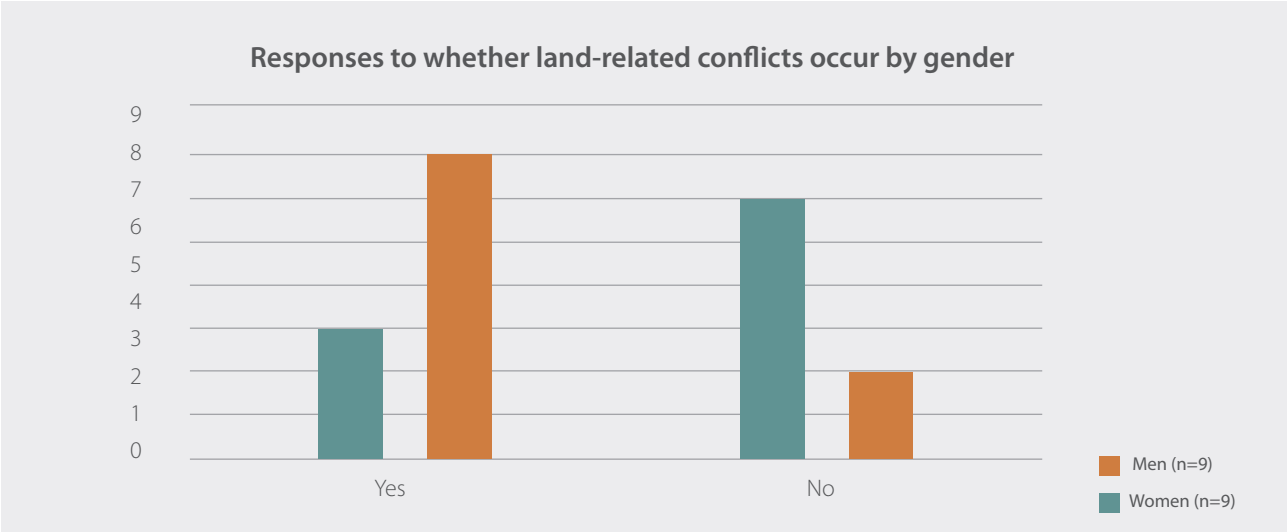


Figure 23. Occurrence of land-related conflict by gender

The women and men were then asked to describe the land-related conflicts they experienced in their community. Women stated that conflicts were over land boundaries, herding animals in enclosed "private" land and overuse of the common water resource for irrigation. Men described similar conflicts as women but added conflict between pastoralists and agropastoralists and between clans (Table 6).

Table 6. Types of land-related conflict

Women (n=3)	Men (n=7)
1. Boundaries associated with settlements and farms are unclear due to inaccurate demarcation.	1. Between plot owners in settlements.
2. Associated with herding animals in enclosed land. "Owners of enclosed land can kill you for herding in their land." (Habari Heshay women <35 years old).	2. Between pastoralists and owners of enclosed land.
3. A few conflicts over water for irrigation.	3. Land boundary areas between clans and pastoralists.
	4. Land border conflict between clans and/or pastoralists, establishment of new settlements causes conflict.
	5. Between pastoralists and agropastoralists over grazing and cropland boundaries.

According to women, male owners of enclosed fodder farms and neighbours were the main actors in the conflict. Men indicated that pastoralists were the main actors (n-7), followed by agropastoralists (n=4), farm owners (n=2), plot owners (n=2) and enclosure owners.

In response to the question "Who is most affected by conflict?", women stated that men were mainly affected by conflict (n=3) and then some women (n=1). According to men, pastoralists (n=4) and agropastoralists (n=3) were most affected, and among them, women and children (n=3) were affected the most.

Land-related conflict is associated with border disputes due to unclear demarcation boundaries owing to customary land allocation systems as well as enclosure of land for private pasture or fodder production. The issue of land enclosure seems to be contentious and appears to be done by the wealthy and powerful as demonstrated in the following statement: "Instead of benefiting from farming output, money is being used to pay hired guards and buy khat for them in order to prevent a perceived encroachment on one's land." The increased tendency for commercial uses of farming, and particularly fodder output, acts as a conflict escalator (ILO/PENHA, 2011). Younger (<35 years) women focus group discussant from Habari Heshay highlighted the same point about those enclosing land ("Owners of enclosed land can kill you for herding in their land"). In most cases, owners of enclosed land, pastoralists and agropastoralists are the main actors in these land conflicts and women and children from their families are affected the most by this conflict.

The FNS-REPRO project can identify ways of supporting fodder production without escalating this power imbalance. FNS-REPRO should not support individual private fodder producers. Rather, the programme needs to target low-income community producer groups using public land legitimately allocated to them by authorities. To make sure that FNS-REPRO is not caught up in land enclosure disputes, fencing off land belonging to supported communities should be regarded as the contribution and responsibility of producer groups. Local by-laws that govern use and management of shared resources should be explored to establish if a ban on grazing at the areas set aside for fodder production is feasible. If so, fodder can be grown in unfenced lots, saving the communities the huge cost of fencing.

(iv) Land degradation types and conservation interventions

Five out of nine women discussants and all nine men discussants stated that there was land degradation, with women mentioning soil erosion, gulley erosion and deforestation and men stating rill, gully and sheet erosion as well as deforestation as the most common types of land degradation. Both men and women stated that there were land degradation control mechanisms in place. Among the interventions cited by women to prevent land degradation and mitigate its effects, were

construction of water catchments, building structures to direct water movement, paying catchment workers and digging berkads[6] for households. The construction of all these interventions was facilitated by CARE Somalia. For example, CARE paid 150 labourers over a period of three months to put in place conservation structures – soil erosion control and water pans. Men stated that soil and water conservation by construction of gabions and covering of gullies with sand using tractors was supported by CARE Somalia. Soil bunds, diversion ditches and gully control measures were facilitated by the Horn of Africa Youth Committee (HAVAYOCO), a local NGO. Other organizations involved in soil and water conservation, including awareness raising to reduce deforestation, construct gabions, divert water run-off and build contour bunds, include Steadfast Voluntary Organization (SVO); Adventist Development and Relief Agency (ADRA); Norwegian Refugee Council (NRC), an international NGO; Nederlandse Organisatie Voor Internationale Bijstand – Oxfam Netherlands (NOVIB); and FAO. The FNS-REPRO should aim to build partnerships with this wide range of partners for effective implementation of project activities as some will be complementary.

(v) Common land tenure systems

Communal grazing lands are the most common land tenure system according to all men and women focus group discussants, but this happens concurrently with privately owned (titled, certified or traditionally recognized) private land ownership for settlement. FNS-REPRO should concentrate on communal land but build capacity for governance to sustain project activities.

(vi) Average land size per wealth group

Wealth is grouped into three categories – better off, middle income and poor – and defined according to natural asset ownership (Figure 24).

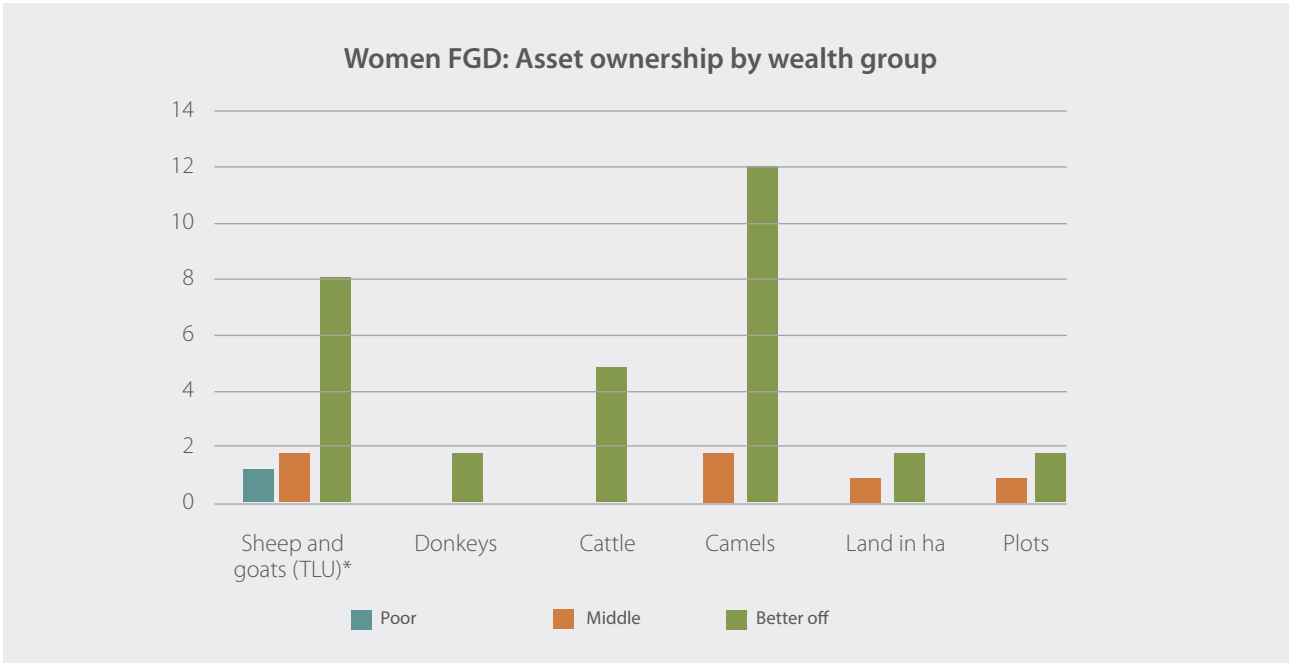


Figure 24. Asset ownership by wealth group
Note: *10 sheep or goats make one TLU – Tropical Livestock Unit

[6] A berkad is a concrete lined and covered water reservoir used in arid areas to collect water during the wet season for use in the dry season. They are found mainly in Somalia and parts of Ethiopia.

"The poor have nothing and can only sell their labour, the better-off have a farm, livestock and a functional water pump." – Daryare women FGD >35 yrs. According to men focus group discussants, the poor had 1.5 TLU of sheep and goats on average, the middle-wealth group seven and the better- off group 30. The poor own between zero and 1.5 ha of land, middle-wealth people five to 10 ha and the better-off people up to 20 ha, although some can own up to 200 ha. Middle-wealth and better-off persons can also own a plot or more of land. Mechanisms for negotiations to see if those who do not own land could access communal land and be supported by the project to engage in productive activities should be explored, while also assessing the option of aggregating the small land parcels owned by the poor for the same purpose.

4.2.2.2. Water

(i) Water sources

Berkads, followed by shallow wells, are the most common sources of water according to women and men. Thereafter, sources cited by men and women differed, with men stating boreholes third and women stating rivers (mostly seasonal dry beds) and dams/reservoirs in catchments third (Figure 25).

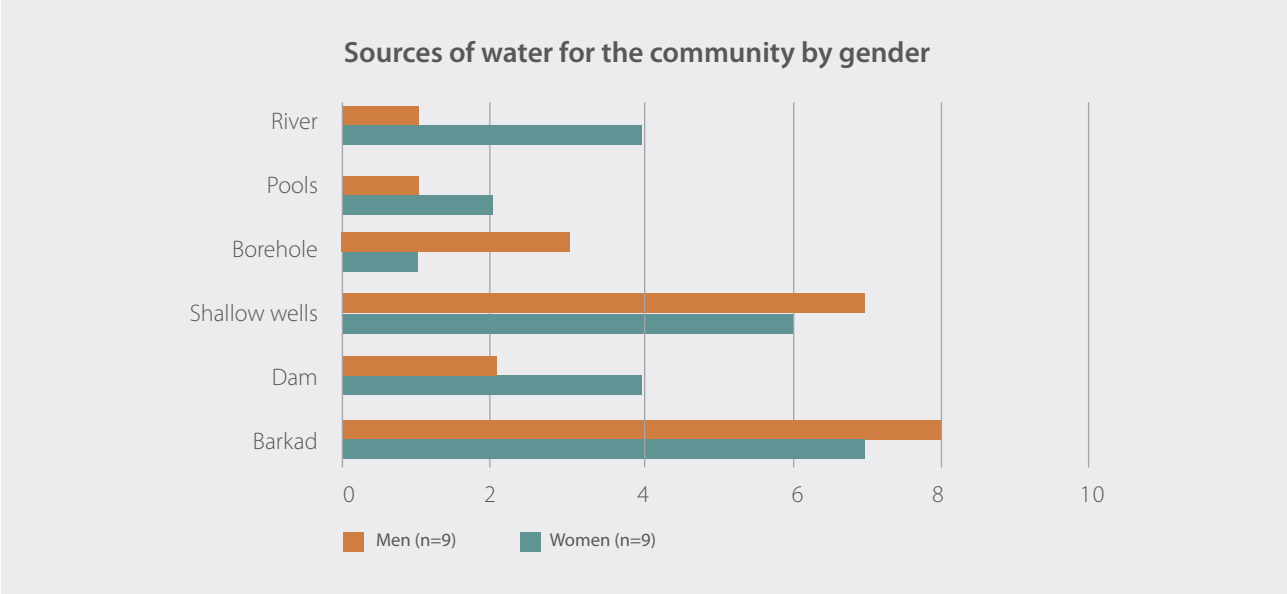


Figure 25. Sources of water for the community by gender

(ii) Common uses of water

According to women, berkad water, which is fresh and sweet, is used for drinking, cooking, washing and irrigation. Dams/reservoirs and pools from rain are also fresh and sweet but are mainly used for watering animals and washing human bodies and clothes. Shallow well water is hard (saline/brackish) and is used to water animals, wash dishes as well as for household cleaning and irrigation. Water from seasonal rivers is used for watering livestock. Men did not specify water sources, but just stated that water is used for drinking by humans and livestock and for irrigation.

Water-use associations were considered non-existent by most communities, except for two women and two men groups. According to these latter groups, the association members ensured cleanliness and good sanitation at the water sources.

(iii) Water-associated conflicts

Only one women group and two men groups stated that there was water-associated conflict in the dry season. The women said that conflicts were mainly associated with watering livestock if a herder skipped the watering line. Men also associated conflict with watering animals as well as fighting for access to water from private berkads and shallow wells. Asked who the main actors in the conflict were, women stated the male youth, while men indicated that it was livestock owners and berkad owners without

stating their gender and age. According to women, when a conflict occurs, traditional mediation takes place. Men stated that elders and community-based committees negotiate in the event of conflict.

The change in livelihood strategy from subsistence pastoral production to commercial livestock production for export has the potential to cause conflict because livestock exporters are building berkads in the rangelands and staying in areas near them for excessively long periods. This is depleting pastures and degrading soils around the berkads (FSNAU-FEWS NET, 2016). Some of these berkads have been built by development organizations in support of commercial livestock production. This finding demonstrates an unintended outcome from a well-intentioned intervention. To avoid similar unintended outcomes, FNS-REPRO should be careful not to build or rehabilitate water bodies that are likely to be associated with environmental degradation and conflict.

4.3 Financial (income and credit) assets

4.3.1 Credit

(i) Availability of credit services

Men and women indicated that both formal (four groups of each gender) and informal (all groups) credit services were available in their communities. Informal credit was therefore more accessible than formal credit. According to women, formal credit is provided by commercial banks like Dhahabshil and Darasalam; partnerships between commercial banks and NGOs, such as Dhahabshil Bank and CARE; private companies such as Telesom, Somtel, Golis (the latter now defunct); and NGOs such as Save the Children, which provide credit to women. Informal credit is provided by relatives and friends as individuals or through group schemes like table banking (for women or mixed gender and age associations). Men indicated that formal credit services were provided by commercial banks and private companies like Dahabshiil, Telesom, Salama and Amal; and informal credit by livestock traders, shop owners and other commodity traders without stating an order of preference as this was not asked.

(ii) Accessibility of credit

According to women, the banks were inaccessible in the past, but they are currently accessible through a credit-facilitation service provided by the bank partnering with CARE Somalia, an NGO. CARE acts as a guarantor for women borrowers and provides training for groups. Through CARE, women have access to credit from Dahabshiil Bank. Save the Children, an international NGO, is easily accessible as it provides informal credit directly to women. Men stated that formal credit can be inaccessible because it is usually only available in large towns (for example one needs to travel from Habari Heshay to Caynabo) and financing requires guarantors. Informal credit is accessible depending on how trusted the borrower is and seasonality. Credit limits are low during the dry season due to the high number of borrowers in the community. Credit is more accessible for the wealthy than for the poor and for men rather than women (Table 7).

Table 7. Financial assets: Credit services availability and access

Women	Men
Availability	**Availability**
• Formal - Dahabshiil, Darasalam through the NGO CARE and disbursed through Somtel and Telesom money transfer systems respectively; Save the Children provides direct credit to women.[7] • Informal - Relatives and friends, table banking (for women or mixed gender and age associations).	• Formal: Dahabshiil, Darasalam, Salama, Amal. • Informal: Livestock traders, shop owners and traders.
Accessibility?	**Accessibility?**
• Previously, the banks were inaccessible but with CARE acting as a guarantor for women borrowers and training these groups, women now access credit from Dahabshiil and Darasalam. • Save the Children is easily accessible as it provides informal credit directly to women.	• Depending on locality, formal credit, which is usually accessible in large towns, e.g. one needs to travel from Habari Heshay to Caynabo. Financing requires guarantors. • Informal credit is accessible depending on trust and seasonality. • Credit limits are low during the dry season due to high number of borrowers and potential defaulters in the community. • More accessible for the wealthy than for the poor.

Informal credit is available and accessible, but formal credit is less available and less accessible, more so for women than for men. Stimulating poor households to shift to market-oriented farm activities by improving access to rural credit can be key to the adoption of "higher-return" livelihood strategies, which can have a significant impact on reducing poverty in the rural areas of Sool and Sanaag. FNS-REPRO may explore the possibility of working with commercial banks like Dahabshiil to act as guarantors (like CARE does in places where they are currently not providing this service), or request CARE to extend coverage to FNS-REPRO beneficiaries in areas where they do have a presence. FNS-REPRO should also partner with CARE to provide the service to beneficiaries and document the various strategies they adopt and learn which strategies are most effective.

[7] Banks and telecommunication companies in Somaliland are owned by the same people. They have different functions, with the banks lending money and the telecommunication companies transferring the money. Thus, Dahabshiil is affiliated with Somtel and Darasalam Bank with Telesom. A few years ago in Sanaag region, CARE, in close collaboration with these two banks and affiliated telecommunication companies, facilitated the opening of bank accounts and mobile money transfer services (Zaad and Edahab) for women beneficiaries under the Somali Girls' Education Promotion Project – Transition (SOMGEP-T), funded by UK Aid through the Girls' Education Challenge Fund (GEC). CARE, through a programme called Village Savings and Loan Association (VSLA), provided financial and business training for women and supported women to set up their own VSLA groups. Save the Children, through a programme named Empowering Somali Women Entrepreneurs (ESWE), provided small cash grants to help women start small businesses and support themselves through income-generating activities.

4.3.2 Cash income

(i) Sources of cash income

The main sources of cash income for men were livestock sales and casual labour, which were stated equally and most frequently. The main source of income for women was casual labour first, followed by sale of livestock. Women indicated that they sold one or two goats – enough to get money to finance the food and clothes required for the family. To demonstrate the firm grip men had on money from livestock sales, some young women said, "Only widows could have cash to spare from livestock sales." (Women < 35 years, Habari Heshay).

Income from petty trade – for example selling tea and sweets – constituted the third source of income for both men and women. Other sources of income for men only included the sale of fodder and frankincense. More men than women groups reported remittance money as an income source (Figure 26).

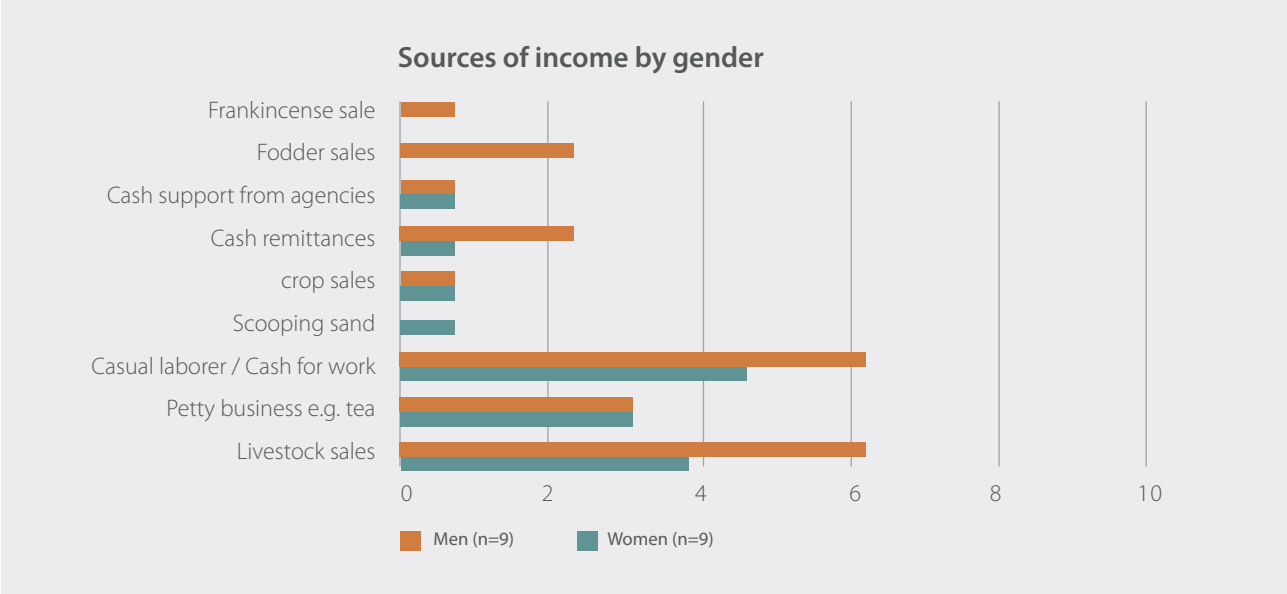


Figure 26. Sources of income by gender

A lesson from women's access to income from livestock sales was that it is not enough to merely identify the sources of income for men and women, but knowing how much income men and women get per income source may reveal gendered nuances in access to and control of income. These women also indicated that although fodder production was a promising livelihood alternative, they did not like to sell fodder. Although they did not state it specifically, the women may have felt devalued as wives in family farm businesses that tend to use them as free/unpaid labour (Gasson, 1992). These nuances were further investigated during the validation workshop and women revealed that most women can only make money through women groups in ventures run by these women groups. The women stated that they would like to participate as autonomous groups, but for the autonomous groups to be allowed to join fodder marketing collectives constituted of men and women. The women would also like to be allowed to belong to collectives as individual members as well as in joint membership with a spouse to diversify the options for benefit.

The East Africa Dairy Development (EADD) Programme modelled a process of including women in the early stages of dairy commercialization in Kenya, Rwanda and Uganda, with some positive results for women (EADD, 2009). The EADD model for gender inclusive [dairy] value chain development could be adapted and adopted for the fodder value chain model, which is in the early stages of development too. Briefly, women who milked and delivered the family milk to the plant, had a small portion of the family milk paid to the women's group account as a contribution to the woman from the producer family. The

women's group members then invested the money and shared the dividends.

FNS-REPRO should work towards enabling women to access and control more income as groups than as individuals from participating in these value chains. A draft proposal on possible interventions by FNS-REPRO that should benefit women in the fodder value chain, was developed at the workshop and is discussed in detail in the validation workshop report. FNS-REPRO should document the process outcomes in terms of financial benefits (access and control of income) for women and lessons learned throughout the implementation of the intervention.

4.4 Social assets

4.4.1 Social capital networks

Women mainly draw their social capital from networks with friends and relatives equally, followed by single or mixed gender groups. Men, on the other hand, mainly draw their social capital from relatives, followed to a much lesser extent by single or mixed gender groups (Figure 27).

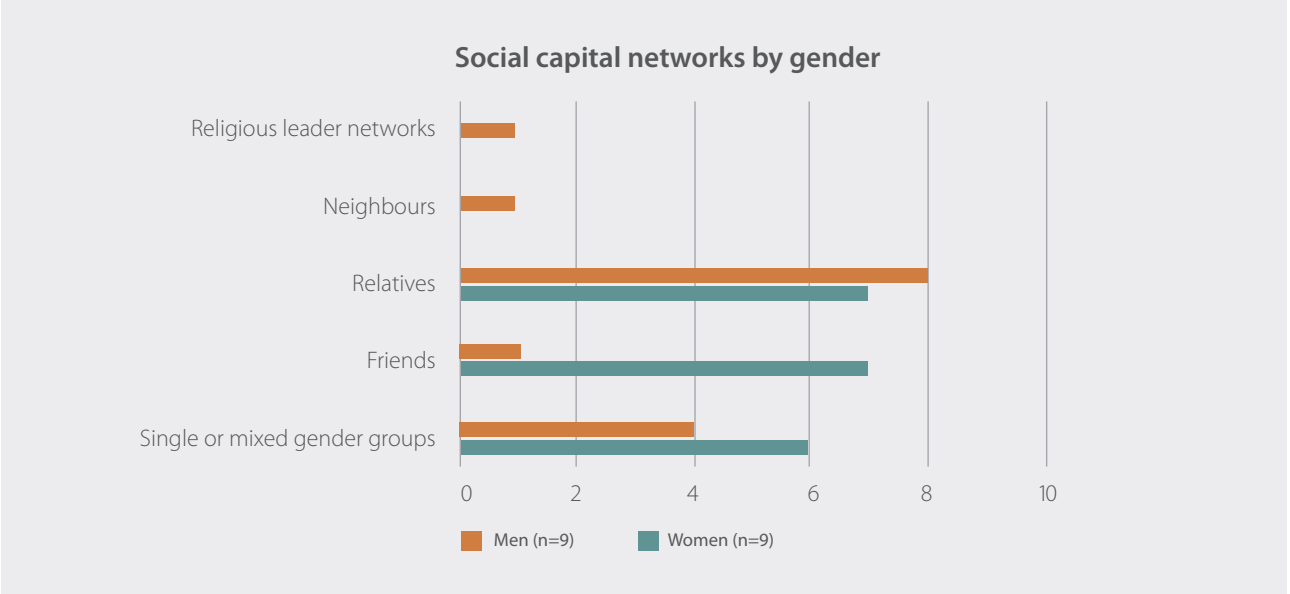


Figure 27. Social capital networks by gender

Social networks are mainly informal among family and friends and from these networks single and mixed gender groups are formed. The ties of clanships and mutual exchange within their community will usually ensure that they are able to overcome episodes of vulnerability, such as severe droughts, through financial and food support without reliance on help from "outside". The presence of single or mixed gender groups provides an opportunity for FNS-REPRO to engage community members collectively when conducting interventions.

4.4.2 Community-level conflicts that strain social relations

All women groups stated that there were no conflicts causing strain on social relations in the community, but on being probed, they admitted to various forms of sporadic conflict such as the occasional rape reported in Wadaamagoo and frequent bandit attacks reported in Waqdari. Among the men, three groups stated that there were community-based conflicts without stating what they were. Groups tended to disintegrate in times of hardship like the recently ended drought, during which members depleted the group resources when they defaulted from paying debt.

The presence of established social networks and low levels of conflict in a community provide a suitable environment for the development of just labour relationships (Van Daele, 2005) that are key to successful collective business. There is, therefore, great potential for FNS-REPRO interventions to succeed through single and mixed gender groups if the strong networks are used and relative peace is maintained. To avoid the depletion of group resources in times of hardship, FNS-REPRO will have to engage groups in hands-on training in group risk management strategies, for example by simulating scenarios of the management of groups by managers of different personalities and agendas (Sircova *et al.,* 2015).

4.5 Human assets

Proxy indicators for human assets used in this study were mainstream and religious education for skills, as well as the presence and utilization of health services for good health.

4.5.1 Schools

According to women, all villages had at least one primary and one Quranic school. Other than Turka and Waqdari, all villages had an adult education service. Most primary and secondary schools were public schools and in some villages adult education classes were conducted in the primary or Quranic schools. Men's responses on schools were sketchy and few, but the men were mostly from the same villages as the women. For this section, data obtained from women have been used.

4.5.2 Health services

Six women groups reported that there were no health services in their villages. Two groups reported that their villages each has a maternal and child health (MCH) centre. The third group, from Kalabaydh, reported that they have 11 health facilities, five MCHs and six pharmacies. Five men groups gave similar responses but indicated that Kalabaydh had four MCHs. One group (from Kalabaydh) reported 11 health facilities, two MCHs and one health centre with four patient wards and six pharmacies. Kalabaydh is an administrative centre for 14 villages, hence the large number of schools and health services.

In-depth interviews were conducted with three men and three women as individuals, but one man dropped out of the interview before completion. The remaining two men were asked how frequently they had used the health services in the last six months and how frequently they self-medicated to establish if there were barriers to accessing health services even if they are available (Table 8).

Table 8. Access to and use of health services

Women	Men
Use of health service in the last six months: • One woman visited a health facility in the last six months. Self-medication in the last three months: • All three women: twice, thrice and twenty times, respectively. Conditions self-medicated: • Typhoid and throat infection (one woman); headache (two women); back pain (two women); allergies (one woman).	Use of health service in the last six months: • Both men visited a facility. Self-medication in the last three months: • One man self-medicated once for malaria, which is common in the area.

It appears as if women are facing barriers preventing them from accessing health services. The presence of community schools and health centres provides opportunities for men and women to learn in adult literacy schools and to have good health through access to the health facilities. The community members have basic skills and are generally healthy, both necessary human capital components for functional humans, which is vital for the project. The structures – school and health facility buildings – provide meeting venues for FNS-REPRO and beneficiaries.

Gender differences in the utilization of health facilities (albeit from a small sample size) were investigated by women community participants at the validation workshop. These women revealed that women fail to seek medical services for two main reasons: First, women, especially young mothers, can be too busy (time poor). Second, some older women, as a cultural norm from the past, find it shameful to disclose or discuss their illness and therefore self-medicate. This norm is fading, but there are still some women who do not disclose ill health. Because of this, several women die from conditions that could have been treated if reported early. There does not appear to be stigmatization of the ill in this area because many men and women seek medical treatment. This is self-stigmatization. Factors that have been associated with self-medication include social stigma, for example for HIV patients (Rintamaki *et al.,* 2006), situations of low-income making healthcare unaffordable (Chang and Trivedi, 2003) and time poverty for women. Women at the workshop recommended that rural women should be sensitized about self-love and self-care.

This new knowledge predicates upon FNS-REPRO to address the issue of women's time burden by, for example, providing energy-saving cooking and water technologies such as solar and/or energy-saving stoves and water tanks. Affirmative action is the compensatory discrimination in favour of disadvantaged groups (Maphai, 1989). FNS-REPRO is not in a position to support campaigns advocating the importance of own health and general well-being among women but can share this information with an incumbent women empowerment advocacy organization.

4.5.3 Impact, prevention and mitigation of conflict on access to and use of assets

Discussions with participants at the validation workshop revealed that conflict results in reduced access to natural resources due to displacement/migration of the weak and violence by the youth and other disgruntled persons, for example due to land grabbing by the powerful. Such conflict can be prevented through the improvement of governance by traditional leaders and local authorities to governance that is characterized by justice and leads to stability. Reduction in access due to conflict can be mitigated by implementing conflict-resolution systems spearheaded by traditional leaders who promote just and equitable resource distribution and political stability.

FNS-REPRO should support communities experiencing overt and covert conflict by supporting joint ventures between traditional and local leaders, such as building their institutional capacity to prevent conflict and mitigate its effects.

4.5.4 Threats, risks and opportunities for livelihood assets according to validation workshop participants

At a facilitated session during the validation workshop, participants identified threats, risks and opportunities for the five asset categories as presented in Table 9.

Table 9. Threats, risks and opportunities for livelihood assets presented by community participants at the workshop.

Livelihood assets	Threats	Risks	Opportunities
Natural	Recurrent droughts Climate change Locusts Soil erosion Cyclones Charcoal burning Floods	Water shortages Farms dry up Deforestation Lack of meat and milk Lack of household income Livestock malnutrition	Environmental protection Reseeding Soil and water conservation
Financial	Human and livestock diseases Conflicts Cyclones Climate change Locusts	Economic slowdown Family breakdown Increase in poverty	Financial associations Job creation Human resource management Livestock restocking Skills
Social	Tribalism Conflicts Poverty	Increase in crime rate Reduced community connections Poor governance Loss of security	Conflict-resolution committees Saving and lending associations Community committees Village development committees
Physical	Conflicts Soil erosion Droughts Cyclones Floods	Damaged roads Collapse of buildings Telecommunication breakdown Hospital closures Destruction of water facilities	Construction of health centres Rehabilitation of roads
Human	Human diseases Climate change Urbanization Villagization Health Tribalism Conflicts	Loss of property Lack of schooling Outbreak of diseases Loss of jobs Increased gender-based violence	Cooperation Coordination Livestock restocking Knowledge/skills Health

FNS-REPRO should support beneficiaries to safeguard their assets by providing interventions that support the opportunities identified by participants. FNS-REPRO can identify opportunities associated with their mandate and seek partnership with organizations mandated to address other opportunities.

4.5.5 Recommendations for FNS-REPRO interventions to safeguard assets

1. *Support for natural resources*

   There are opportunities for the development of water infrastructure (water that causes flooding at lowlands), establishment of fodder harvesting and storage infrastructure, use of grazing systems that accommodate fodder harvesting and storage, proper stocking and application of range management principles.

   The potential of tall grasses such as *Andropogon, Cenchrus ciliaris* and *Aristida kelleri,* grasses characteristic of higher rainfall areas found in the Sanaag valleys (Balanbaal and Turka), needs to be investigated and exploited, where feasible.

   Land for fodder production: The FNS-REPRO project can identify ways of supporting fodder production by beneficiaries without escalating the power imbalance associated with private ownership of land. FNS-REPRO can achieve this by supporting low-income community producer groups using public land that has been legitimately allocated to them by authorities. To make sure that FNS-REPRO is not caught up in land enclosure disputes, fencing of land belonging to supported communities should constitute the contribution and responsibility of producer groups.

   Water: To avoid unintended outcomes associated with the provision of water in one form or another, FNS-REPRO should only support land and water conservation initiatives that do not involve building or rehabilitation of water bodies as these have been associated with overgrazing, environmental degradation and conflict.

2. *Credit intervention*

   In places where CARE is not providing this service, FNS-REPRO may explore the possibility of working with commercial banks like Dahabshiil by being guarantors like CARE, or request CARE to extend coverage to FNS-REPRO beneficiaries in areas where CARE has a presence. FNS-REPRO should also partner with CARE to provide the service to beneficiaries. FNS-REPRO should document the various strategies they adopt and learn which financing strategies are the most effective.

3. *Affirmative action for women*

   Inclusion in fodder value chain interventions: FNS-REPRO should work towards enabling women to access and control income from fodder value chain activities as groups. A draft proposal on possible interventions by FNS-REPRO in the fodder value chain that should benefit women, was developed at the workshop and is discussed in detail in the validation workshop report. FNS-REPRO should document the process and outcomes in terms of financial benefits (access and control of income) for women and lessons learned throughout the implementation of the intervention.

   Relieving women's time burden: FNS-REPRO should address the issue of women's time burden by, for example, providing energy-saving cooking and water technologies such as solar and/or energy-saving stoves and water tanks for distribution to women involved in the project.

4. *Intervention through single and mixed gender groups*

   There is great potential for FNS-REPRO interventions through single and mixed gender groups to succeed if the strong networks are used and relative peace is maintained. To avoid the depletion of group resources in times of hardship, FNS-REPRO can engage groups in hands-on training in group risk-management strategies, for example by simulating scenarios of the management of groups by managers with different personalities and agendas.

5. *FNS-REPRO intervention in conflict prevention and mitigation of its effect*

   FNS-REPRO should support communities experiencing overt and covert conflict by supporting joint ventures between traditional and local leaders such as building their institutional capacity to prevent conflict and mitigate its effects.

6. FNS-REPRO interventions to build overall resilience of households and communities to shocks and stresses should support organized marketing of fodder to obtain better prices through investments on fodder marketing infrastructure such as fodder sheds.

7. FNS-REPRO should facilitate the building of human capital through skill-based training that can motivate the diversification of traditional livelihood activities to alternative profitable business-oriented livelihood strategies such as beekeeping and frankincense.

8. FNS-REPRO should support beneficiaries to safeguard their assets by providing interventions that support the opportunities identified by participants. FNS-REPRO can identify opportunities associated with their mandate and seek partnership with organizations mandated to address other opportunities.

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CHAPTER 5

Structures and processes

In the Sustainable Livelihoods Framework (DfID, 2000), structures are defined as levels of government and the private sector and processes as laws, policies and institutions. Structures determine access to assets, livelihood strategies, decision-making bodies, sources of influence, terms of exchange between different assets and returns to every livelihood strategy.

In the study area, the dichotomy of structure as government and the private sector is conflated by the presence of multiple political interests that also have and control various economic interests. In a similar manner, culture (tradition and religion) has conflated the laws, policies and institutions. For these reasons, these conceptual categories were difficult to use/measure. Markets and market interactions were therefore used as a proxy indicator for structures and processes because marketplaces, processes and commodities traded therein are visible and known to most community members. In the context of this study, a market is a place or location where commercial dealings are conducted. Thus, responses to questions on markets portrayed structures and processes. For example, specialized markets such as livestock markets and major investments such as banks and telephone companies are found in large urban centres.

5.1 Markets as proxy for structures and processes

5.1.1 Presence of markets

In most of the study villages visited, markets are small and few. Out of nine women groups interviewed, seven reported having a small market in their village. One group reported a roadside shop and the other no market at all. Men, too, reported that their villages had small markets except Balanbaal, which had no market. The presence of small markets and absence of markets in some areas indicate limited commercial activities in these communities and suggest that the economy in the study area is predominantly subsistence.

Livestock and fodder are exported from these communities and sugar, tea and grains, flours and khat are imported and sold in these village shops. FNS-REPRO support for commercial fodder production will be predominantly for larger and distant regional markets such as Burco, Barbera and Bosasso rather than local markets. Locally, only small quantities of fodder are sold in a day.

5.1.2 Commodities traded in these markets

Commodities traded in markets are gendered, with some overlaps. For example, livestock are traded mainly by men, whereas women trade in clothes, tea, khat, shoes, oil, fruits, soap and cheese. Both men and women sell milk, meat, fodder and dry food rations (cereals, flour and sugar) (Figure 28).

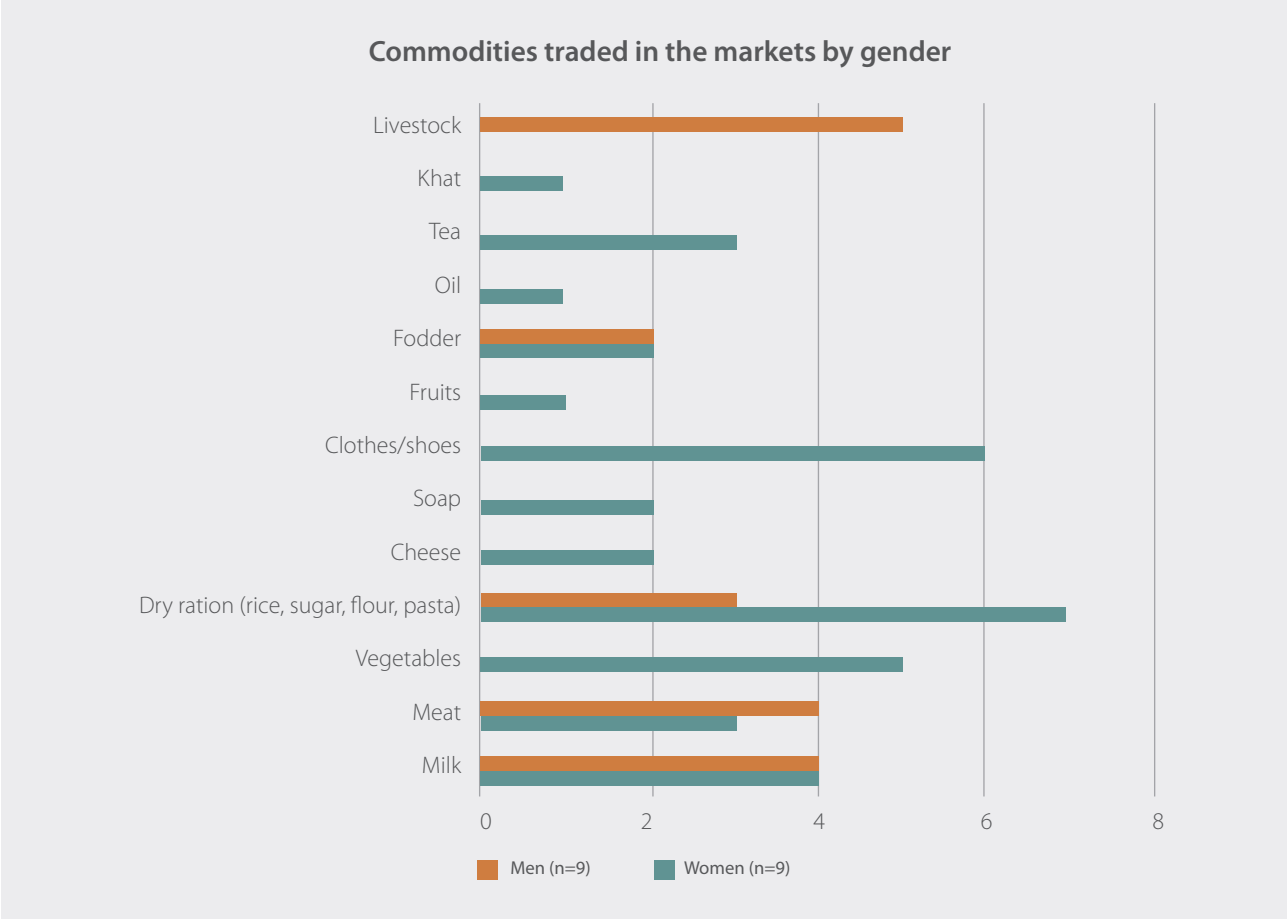


Figure 28. Commodities traded in the markets by gender

5.1.3 Extent of market engagement by gender

According to women and men focus group discussants, 70 percent and above of market actors – buyers and sellers – are women (Figure 29). This scenario is reversed in larger regional markets such as the Al Jabiri quarantine facility in Barbera, which is dominated by men traders (buyers and sellers).

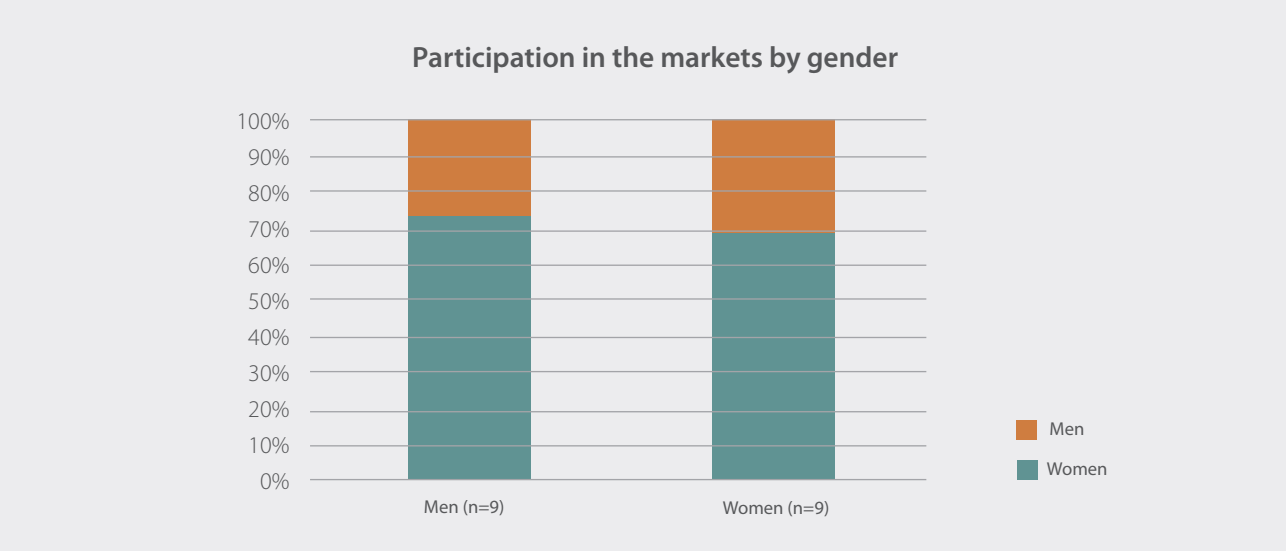


Figure 29. Market participation by gender

5.1.4 Availability of financial services in the markets

Seven women groups said there were no financial services in the markets. Two groups said there were some financial services in the markets and indicated that these services were provided by Telesom and Dahabshiil and were easily accessible. Six men groups said that there were no financial services available; the three that said there were financial services available stated that they were provided by Telesom and Dahabshiil and were easily accessible.

5.1.5 Availability of collective market actors

Seven of the nine women focus group discussants indicated that there were marketing collectives/groups. The groups sold food, clothes, horticultural and other farm products, but none collectively marketed fodder. Some of these groups practiced table banking, whereas others were just table banking groups. One group of women was a fodder harvester group. These women harvest grass fodder in large groups to deter male youths who beat them and rob them of the fodder (case study presented in Box 3).

According to the seven women focus groups, the mean gender ratio of women to men in these groups was 66:34, with membership in the case of women ranging from 13 to 100 percent and in the case of men between 0–87 percent. Only four out of nine groups of men interviewed indicated that they belonged to loosely structured informal associations or to producer marketing groups. The gender ratio of women to men in producer marketing groups given by men focus group discussants was 30:70, with women membership ranging between 20–40 percent and men membership between 60–80 percent. Men talked about male-dominated collectives and women about female-dominated collectives.

Box 3. Case study: Gender-based fodder conflict

Interview by Nimco Hersi, Waqdari

Laila, Yusuf Abdallah (fictitious name), aged 65 years, is a small-scale fodder dealer residing at Waqdari village, Laascaanood District. Her livelihood depends on fodder sales. This extremely busy woman (very time poor) does not cultivate fodder, but she harvests grass fodder at the hills and sells it in bundles of $4 (the cost of transporting each bundle to the market is $1) or bags (each bag can cost $13–26) to the Laascaanood town residents at the Laascaanood market (the fare to the market using public transport is $5 one way).

Laila owns eight sheep and goats, which she considers inadequate to sustain her household. "A family must have at least 50 heads (of goats and sheep) to be dependent on livestock for survival," she says. Sometimes she cultivates cash crops – fruits like lime, guava and watermelon – mainly rainfed, but she irrigates them at times when it becomes too dry. She stated that she lacks the skill to plan, care for and produce crops. She also lacks farming tools and other inputs.

Laila says, "I harvest wild-growing fodder that does not require seeds to plant, nor any watering. It depends on rain performance." The main challenge to her business is security. "Some young men live in the hills and harass us (female grass-fodder pickers and traders) by beating and robbing us of our fodder harvest. These young boys cover their faces with cloth so that we cannot identify them." To deal with this threat, Laila and her fellow fodder retailers now go out to harvest fodder together to deter these young men.

Laila's account was corroborated by women and men participants in the validation workshop. The wild fodder at the hills is their only livelihood option. Women at the workshop supported the proposal by Laila and other women from Laascaanood that these wild-fodder harvesters need to be allocated some communal land by the authorities close to the villages where they can grow their fodder as a group with the technical and material support of FNS-REPRO. With this support, these women may be able to grow fodder in commercial quantities for sale in local and distant markets.

5.1.6 Who regulates these markets?

Women reported market regulation by village committees or local government administration, but men did not report it (Figure 30). At the validation workshop, the participants stated that women's and men's understanding of the term "regulation of markets" could have been different, but market regulation was minimal.

For the purpose of FNS-REPRO, viable fodder markets exist, locally and regionally, and there is room for growth. There is local and regional demand for fodder for the livestock traded extensively in the Sool and Sanaag regions. The main south/central Somalia to Berbera and Bossaso livestock trade route passes through part of the two regions, where availability of fodder is a key constraint to the livestock trade, more so than water availability (FAO, 2017a).

Recommendations to FNS-REPRO for structures and processes:

1. Owing to the poorly developed markets in the villages, FNS-REPRO should aim to support communities with gender-inclusive activities to produce fodder commercially for larger and distant regional markets such as Burao town and Barbera and Bosasso ports.

2. The support should include the establishment of formal marketing infrastructure such as fodder sheds.

3. FNS-REPRO should support women from Waqdari to grow fodder in commercial quantities for sale in local and distant markets once the women receive some communal land from the local leadership.

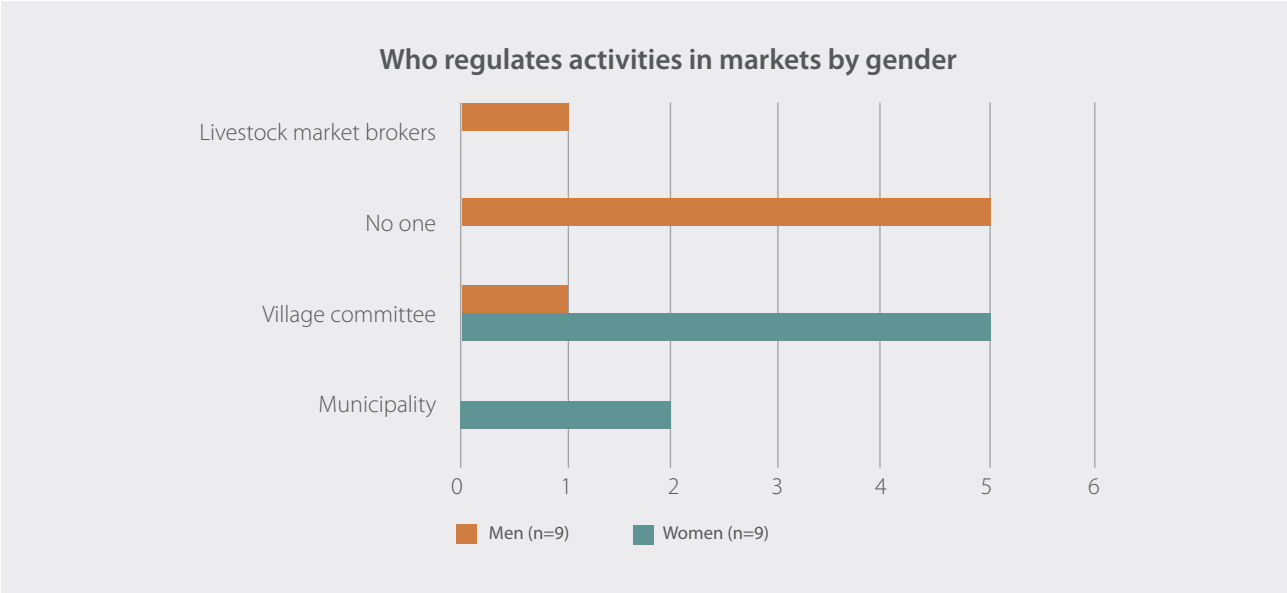


Figure 30. Market regulation by gender

5.2 Livelihood strategies

5.2.1 Common livelihood strategies

For both women and men, common livelihood strategies include pastoralism and agricultural/horticultural production (Figure 31). Men also trade (in various commodities) as a livelihood strategy, more so than women. Only women reported trading in honey, gum resins and dairy products and only men reported working as casual labourers. At the validation workshop, however, participants stated that men traded in honey and gum resins too, but that the market was underdeveloped, whereas women reported that they worked as casual labourers too. From discussions at the workshop, it can be concluded that men dealt with commodities that yielded higher income (and required higher investment) than women. This finding is also supported by the finding that men earned a higher income than women (section 4.3.2).

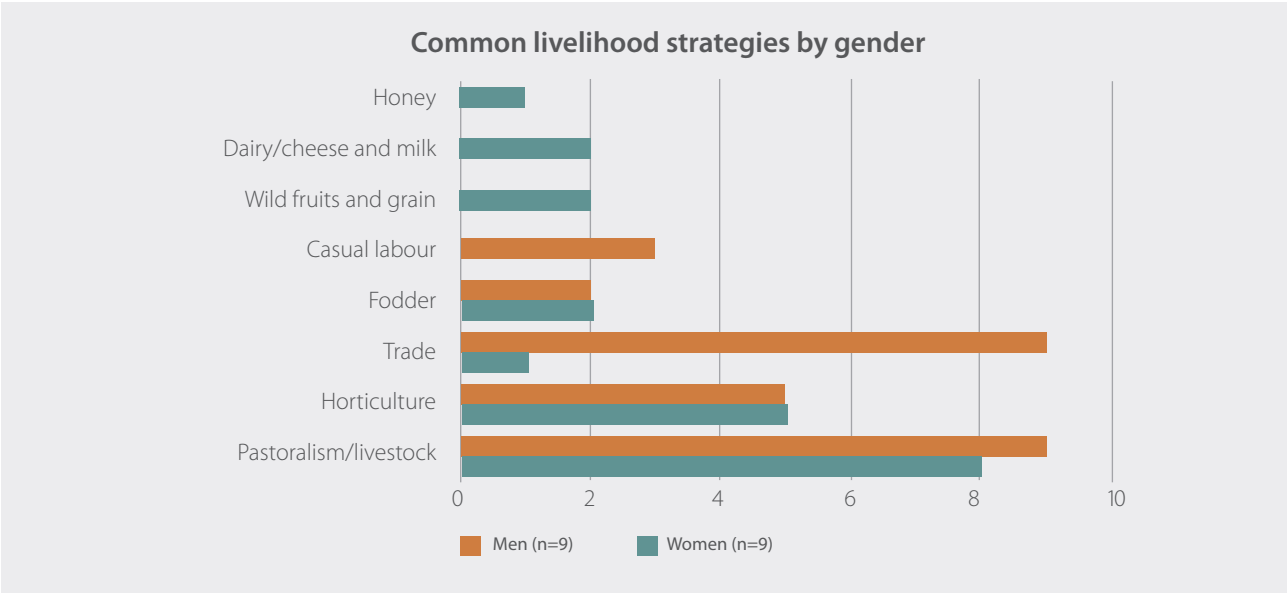


Figure 31. Common livelihood strategies by gender

5.2.2 How these livelihood strategies can be enhanced

To enhance their livelihood strategies, some men requested to be enabled to diversify their livelihoods through capacity development in farming technologies to enhance livestock and fodder production and productivity (n=4), including tillage practices, seed identification and selection, pasture improvement, improvement of livestock feeding practices and animal health. Other men (n=4) preferred support in terms of infrastructure, including mechanization and fencing of farms, provision of fodder storage facilities, earthen water reservoirs and support for the establishment of a revolving fund for a marketing collective (cooperative). Women requested support for improving fodder production by irrigation (n=4), planting more fodder and building storage for harvested fodder (n=2 each). However, a few women were reluctant to be involved in fodder production: "We do not want to grow fodder because we do not benefit from growing it." (Habari Heshay women, under 35 years). "We do not want to engage in activities that will cause a backlash on us from the community and the administration because we are pure pastoralists and all pastures are communal." (Balanbaal women, mixed ages). These statements could have been prompted by poor understanding of existing opportunities for exploiting fodder that could alter their livelihoods. Men indicated that improvement of veterinary services and fodder storage infrastructure (n=3 each) could enhance their livelihood strategies.

FNS-REPRO should intervene by supporting women and men to grow and market fodder collectively. To address the concerns of women over exploitation by men as family labourers without pay, the proposal by women at the validation workshop – that they be supported as women groups to produce fodder and market it as women groups in farmer collectives with men, while still marketing as individuals and jointly with their spouses – will provide them the financial autonomy they require while maintaining their presence in the marketing collectives as individuals and partners with their spouses (see recommendation in section 4.3.2).

5.2.3 Other suitable livelihood options that can be harnessed

The main alternative livelihood option identified by women was planting fodder (n=5) and producing other food crops with residues that could be used as fodder if seeds are made available (n=2). Most men groups (n=7) identified beekeeping as an alternative livelihood option. A few others (n=3) identified producing other food crops

with residues that could be used as fodder if seeds are made available, as well as dairy and poultry production. Asked if they had exploited these alternatives, both men and women stated that they had not exploited these alternative livelihood options because they lacked the resources – knowledge, skill, seeds and finance – required to test the options.

The proposed alternatives are feasible for FNS-REPRO as they are a diversification from grass-only fodder that is likely to add to the food and nutrition security of the fodder-producing communities. They should be provided the requisite skills and seeds by FNS-REPRO on request.

5.2.4 How community members obtain their food

Most community members (nine women and five men groups) buy food with money obtained through the sale of livestock. Men (n=3) and women (n=1) reported that they sometimes bought food with money given as aid as well as receiving food aid. Food aid is given because food and income shortages regularly occur in March and April, the driest months of the year according to women (n=6) and men (n=8). Drought, the main cause of food shortage, can extend from December to April.

With FNS-REPRO support, beneficiaries will be able to raise additional income from the sale of food crop residues (as fodder) in addition to income generated from commercial fodder production. With these resources, it is expected that communities can improve their nutrition security by purchasing what they do not produce themselves.

Recommendations to FNS-REPRO for livelihood strategies:

1. FNS-REPRO intervention to grow and market fodder in mixed-gender cooperatives with support for women to earn revenue independently as members of a women group and to enhance the diversity of options available to women to earn income by allowing them to be members of the cooperatives as individuals and as spouses from male-headed households (see recommendation in section 4.3.2).

2. The proposed alternatives – beekeeping, poultry, food crop residues and seed identification – are feasible for FNS-REPRO as they offer a diversification from grass-only fodder that is likely to add to the food and nutrition security of the fodder-producing communities. FNS-REPRO should provide fodder producers the requisite skills and seeds for these alternatives on request.

3. FNS-REPRO should provide training for cereal producers (that produce fodder residue crops) to stimulate expansion of the area under cereal crops for enhanced supply of crop residues to complement natural grazing.

5.3 Conflict

Conflict is a recurring theme in this study and its effects on the various components of the study are presented in sections 2.2 and 5.3. This chapter reports the findings of the exploration of conflict as a stand-alone component mainly through key informant interviews (KII).

5.3.1 Institutional capacity for peace in the study area

Four institutions that intervene in conflict to bring about peace were mentioned. These are, in descending order of effectiveness: the traditional elder system, government security forces and the courts, committee of conflict resolution and the Islamic Sharia (Figure 32).

These findings are supported by the fodder and livelihood KIIs, which indicated that traditional elders are best equipped to resolve conflicts associated with natural resources. The elders are effective and if they work together with the government officials, the conflict could be resolved in the long run. Example: Some traditional and political leaders incite youth to fuel confrontation and injustices, such as rape, to discredit the local government. These acts by elders make it difficult for the government leaders to trust and work with them. This, coupled with the undermining of authority by elders, hampers the institutional capacity of the leadership to address conflict.

FNS-REPRO can support reconciliation of elders and local leaders by supporting joint ventures between them, such as building their institutional capacity to prevent conflict and mitigate its effects.

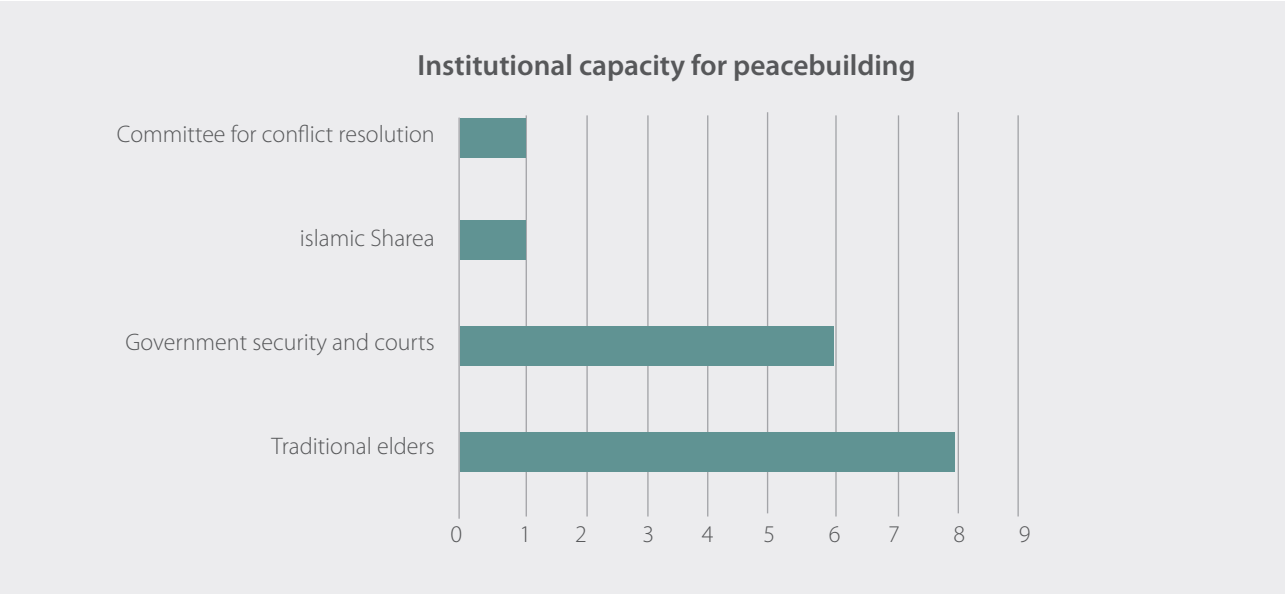


Figure 32. Institutional capacity for peacebuilding

5.3.2 What drives conflict?

Conceptual categories of conflict – economic, social, political and human security – were difficult to distinguish because the various causes were mentioned across the categories (Table 10). For example, social exclusion, injustice, impunity such as land grabbing, political instigation and family/clan feuds can cause conflicts in all the categories used in the analysis (Table10).

Table 10. Drivers of conflict

Economic	Social
• Clan feuds fuelled by elders and political leaders wanting compensation for blood money. • Recurrent drought – caused by climate change but exploited by opportunistic politicians. • Youth unemployment – selfish politicians instigate youth rebellion against leadership. • Competition for scarce resources and opportunities. • Politically contested areas between Puntland and Somaliland keep the area unstable and stateless for exploitation by politicians. • Instigation by traditional and political leaders, who fuel confrontation and injustices such as rape by the youth. • Some politicians damage relations between clans and sideline traditional structures such as clan elders. • Fuelled by leaders and elders, youth perpetuate injustice.	• Instigation by traditional and political leaders, who fuel confrontation and injustices such as rape by the youth. • Some politicians damage relations between clans and sideline traditional structures such as clan elders. • Fuelled by leaders and elders, youth perpetuate injustice. **Governance** • Weak capacity of national and local authorities, hence impunity. • Impunity of leaders excluding citizens from decision-making.
Political	**Human security**
• Multi-party system – competition between leading and opposition parties; leaders who find government too weak; those who blame ruling party for injustice. • Armed unemployed youth and other people – purporting political instability and injustice. • Administrators in contested areas of Somaliland and Puntland seeing political instability and injustices.	• Insecurity caused by disgruntled youth associated with clan confrontation, political instability and poverty. • Instigated by politicians – who see weak government and injustices such as land grabbing, poverty and security instability. • Instigated by traditional elders. • Leaders in contested areas of Somaliland and Puntland maintain insecurity to stay in power.

5.3.3 Proposed interventions to address conflict and its drivers

The three most frequent responses on how to address conflict and its drivers were to improve investment (n=6), stability (n=5) and governance [characterized by justice/equity and social inclusion (n=5)]. Other possible solutions mentioned less frequently included Allah's divine intervention (n=1), employment/increasing livelihood options (n=1) and campaigns to promote peace (n=1).

When asked who would enable these interventions, the main responses were central and local government officials (n=9) and Allah (n=2). These responses show the need for support to local leaders and traditional elders to work together as recommended in section 5.3.1.

5.3.4 Factors that unite people in a conflict

Having demonstrated that most of the four conceptual categories of conflict experience similar causes and

effects, communities can be united by addressing these causes. Three main interventions are proposed in this section. These interventions work towards the provision of justice and increasing social and economic equity by including the marginalized community segments in access to (mainly natural) resources. First, support the local government and traditional elders to work together – this could be done with support from InterPeace. Second, support the new synergies arising from this collaboration and enable the consortium of leaders and elders to address impunity by putting a stop to land grabbing and instigation of the youth by elders. Once these measures are put in place, the covert conflict will reduce remarkably and may even end in some places once the local and traditional leadership start working together.

It would be valuable for FNS-REPRO to facilitate periodic (quarterly, biannual and later annual) regional peacebuilding workshops for traditional and local government leaders to address the other two problems and find a lasting solution.

Recommendations to FNS-REPRO for conflict resolution:

1. FNS-REPRO should encourage the reconciliation of elders and local leaders by supporting joint ventures between them, such as building their institutional capacity to prevent conflict and mitigate its effects proposed in section 5.3. Once reconciled, the elders and leaders will be able to address impunity by putting a stop to land grabbing and instigation of the youth by elders.

2. FNS-REPRO should identify a suitable partner, such as InterPeace, to facilitate the peacebuilding process among the traditional elders and community leaders.

3. FNS-REPRO should avoid getting involved in fencing of fodder fields and provision of large water storage facilities and should leave the responsibility to the beneficiary farmer groups, the community and community leaders.

5.4. Gender issues

Like in the case of conflict, gender has been a part of all segments in the results section. Gender differences arose and issues of concern for this project have been highlighted in all respective areas.

5.4.1. Women's disadvantaged position

Compared with men, women's access to resources was much more limited. More specifically, women had access to fewer credit sources than men (Table 7). They also had access to fewer sources of income (did not report access to income from fodder and frankincense sale) than men and for the sources they had access to, they reported less access than men (livestock sale, casual labour and cash remittance) (Figure 26). Women reported limited use of health services and high frequency of self-medication, which suggests that there is/are a barrier/s to women's access to health services (Table 8). Women also reported gender-based violence they were subject to during a livelihood activity that threatened their access to fodder, a natural resource (Box 3). In contrast to nine out of nine men focus group discussants, only one out of nine women focus group discussants perceived trade as a livelihood strategy (Figure 31).

These issues were presented at the validation workshop and workshop participants agreed that these were issues women faced. Only one man attempted to explain that the women were being beaten for harvesting grass because the young men wanted to preserve the fodder for camels to graze on during the dry season. This view was not widely held, particularly as camels are predominantly browsers.

Two meetings were held with women participants on the third and fourth days of the workshop to discuss the barriers identified in the study and what the FNS-REPRO project needs to do to make sure that women are included in the project activities and share the benefits equitably with men. On the first day, the issues were identified and on the second day, suggestions for affirmative action were made by and with the women (Table 11).

Table 11. How women can benefit more from the fodder value chain

Issue	Suggestion for the FNS-REPRO intervention facilitators
Participation by women very marginal and mainly in production and local sale of small quantities of grass/fodder. [Limited access to natural resources, income, credit, markets.]	Women to be allowed to participate as groups, as individuals and as household members in mixed-gender fodder cooperatives. Women group cooperative members to get special support as women groups to produce fodder and participate in the fodder value chain in age-appropriate ways, e.g. demonstration plots for fodder farmer field schools to be made accessible to young mothers with low mobility as key actors. These young mothers to be trained and assigned roles of fodder field school trainers. Older women, who have greater mobility, to be supported to deliver fodder in trucks to large markets such as Berbera.
Gender-based violence for Waqdari women fodder harvesters (women prefer to stop harvesting this fodder if given other options). [Limited access to land, financial assets and skills.]	Support women fodder traders in Waqdari – by asking the leadership to set aside communal land along the river for these women (as a women's group) to grow fodder. Other women who can identify own fodder plots will be allowed to participate in the women groups. Project to capacitate the women – skills, tools, initial inputs, drying and storage facility.
How can women's access to credit be enhanced (financial assets)? [Limited access to finance; low mobility; reproductive chore.]	Women to initiate or continue table banking and start saving money. Table banking women to be linked with credit service providers for training and provision of credit (FNS-REPRO can either work with CARE or Save the Children or learn from them and do what they do). Women need credit support for initial input (seed and tools), some cash to purchase fodder from themselves and other producers and for transport to markets. Older women, who have higher mobility, can transport fodder to markets. Younger women are less mobile but will be included in the project by enabling them to host demonstration plots for and train in farmer field schools.
What to do about women's time poverty (one barrier in access to health services). [Drudgery.]	Provide time-saving support, e.g. energy-saving stoves/training in building; water storage tanks to save time spent searching for firewood (by reducing consumption) and water (by providing storage) by linking them with organizations that provide energy-saving stoves and technology on alternative fuels.
Many women are ashamed of being unwell, so they suffer alone until it is too late… or self-medicate. [Devalued status.]	Advocacy of not being ashamed of illness to normalize illness and the need for treatment, rest and recuperation. Sensitization on self-care as a necessary norm. The need to seek professional health services. [This intervention is beyond the scope of FNS-REPRO, but any women empowerment advocacy agency in the area can be informed. This recommendation will therefore not be listed among the recommendations.]

These recommendations need to be integrated into the community action plan.

Recommendations to FNS-REPRO for narrowing the gender gap:

1. FNS-REPRO facilitators to require project beneficiaries to allow the following:

    a. Women to participate as groups, as individuals and as household members in mixed-gender fodder cooperatives.

    b. Women group cooperative members to get special support as women groups to produce fodder and participate in the fodder value chain in age-appropriate ways; for example, demonstration plots for fodder farmer field schools to be made accessible to young mothers with limited mobility as key actors.

    c. Young mothers to be trained and assigned roles of fodder field school trainers. Older women, who have greater mobility, to be supported to deliver fodder in trucks to large markets such as Berbera.

2. FNS-REPRO to support women fodder traders in Waqdari by asking traditional elders and local leadership to set aside communal land along the river for these women (as a women's group) to grow fodder. Other women landowners can participate in the women groups too.

3. FNS-REPRO to capacitate men and women (skills, tools, initial inputs, drying and storage facility).

4. Women to initiate or continue table banking and start saving money and FNS-REPRO to link these women with credit service providers for training and provision of credit (FNS-REPRO can work with CARE or Save the Children or learn from them and do what they do).

5. FNS-REPRO to facilitate credit for the women (or a grant) to purchase the first inputs (seed and tools) and the first fodder crop from themselves and other producers, as well as cover the cost of the first trip to the distant fodder market.

6. FNS-REPRO to facilitate women's access to time-saving support such as energy-saving stoves/training in building; water storage tanks to save time spent searching for firewood (by reducing consumption) and water (by providing storage).

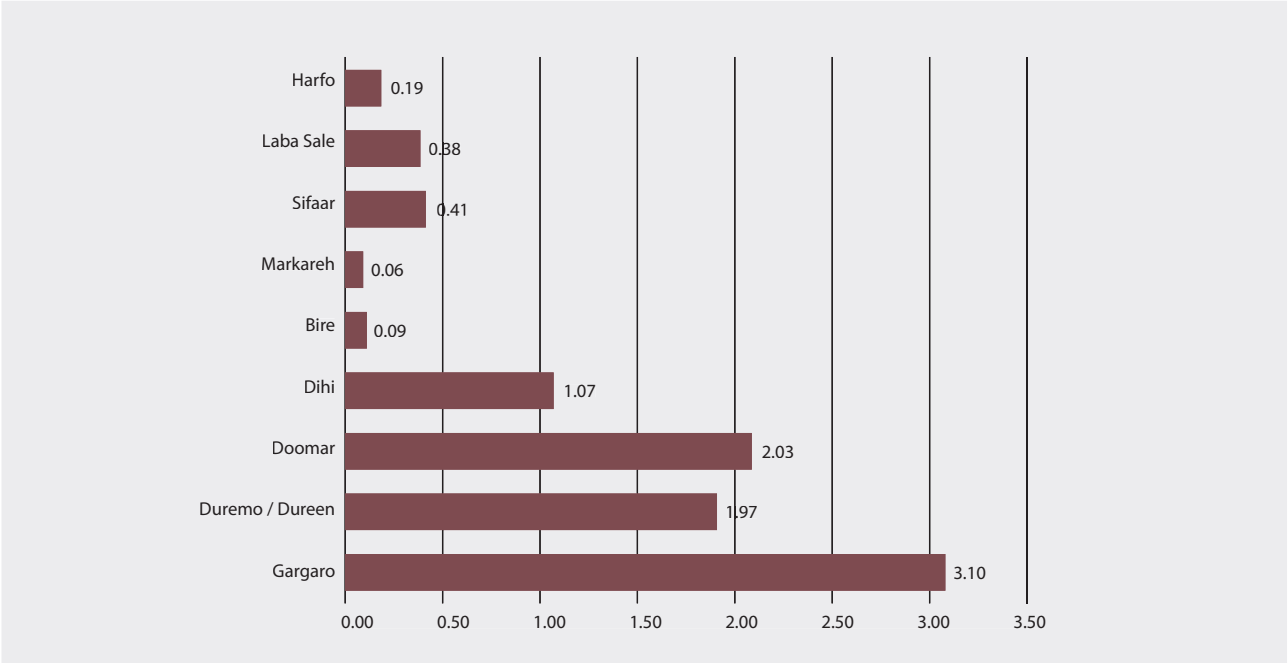
7. Engagement of women during the validation workshop enabled the project team to devise guidelines for processes and interventions likely to yield similar benefits for women as for men. A similar activity is recommended for the young men during the inception phase of the project. The outputs of these two activities should be a strategy for mainstreaming gender and age inclusion, with a clear theory of change and results framework with activities and indicators for integration in the logical framework. For this strategy to be effective, the activities and milestones for gender and age inclusion in the log frame should constitute deliverables against which staff will be evaluated. The project should have a qualified and full-time gender and youth inclusion officer, who should guide the gender and youth inclusion processes while supporting the staff lacking or having inadequate capacity to implement the component.

5.5 Fodder value chain

5.5.1 Common types of fodder growing ranked according to specified attributes

Men and women were asked to name and rank fodder according to the following attributes – biomass productivity, palatability, milk yield and effect on body condition. Women were not able to classify fodder in this manner, but the men's responses were used to aggregate the preference ranks to one. In terms of all stated attributes combined, Garogaro appears to be the most suitable grass, followed by Doomaar, then Duremo, Gudoomaad and Dihi (Figure 33).

Figure 33. Most preferred fodder species by men – in terms of a combination of biomass productivity, palatability, milk yield and effect on body condition



Notes: The names on the y-axis represent the grass species. The values on the x-axis represent the weighted average of preference values given by men at a ranking exercise.

Common and scientific names of grasses mentioned are presented in Table 12.

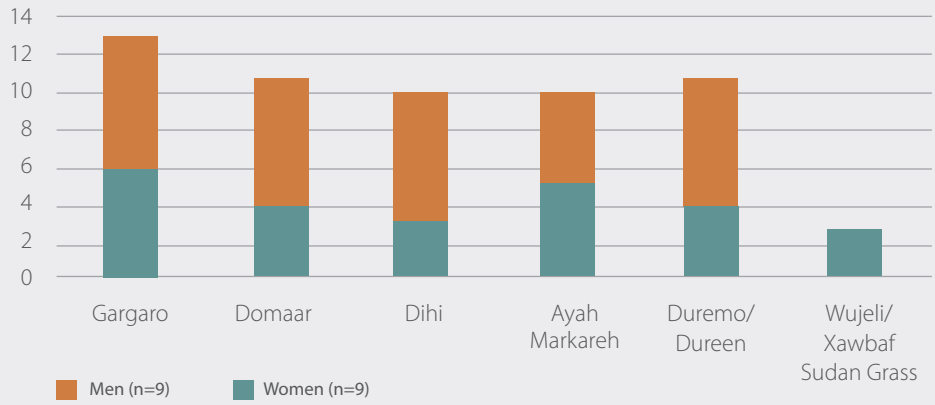
Table 12. Common and scientific names of mentioned/reported grasses

Somali name	Botanical name	Common names
Garogaro	*Paspalidium desertorum*	Water crown grass
Duremo/Dureen	*Digitaria abyssinica*	African couch grass
Doomaar (Madow)	*Cynodon dactylon*	Bermuda grass
Dihi/Dixi	*Sporobolus variegatus*	Smutgrass or golden foxtail grass
Birreh	*Aristida kelleri*	Needle grass (or sixweeks threeawn grass – American)
Markareh/AyaxMarkare	*Heteropogon contortus*	Black speargrass
Sifaar	*Sporobolus arabicus*	Smutgrass
Laba Sale	*Hyparrhenia hirta*	Thatching grass; Coolatai grass; Tambookie grass
Harfo (Xarfo)	*Chloris virgata*	Finger grass, Feather windmill grass, Feathery Rhodes-grass
Wujeli/Xawbaf	*Sorghum vulgare*	Sudan grass

5.5.2 Most frequently stated fodder species

Most fodder species in Sool and Sanaag are not planted but sprout from remnants of the previous season. Most communities interviewed have not had fodder seeds to plant since the onset of the civil war in 1991. Grass fodder therefore just grows naturally. The most frequently stated, and hence best known, fodder species according to men and women are shown in Figure 34.

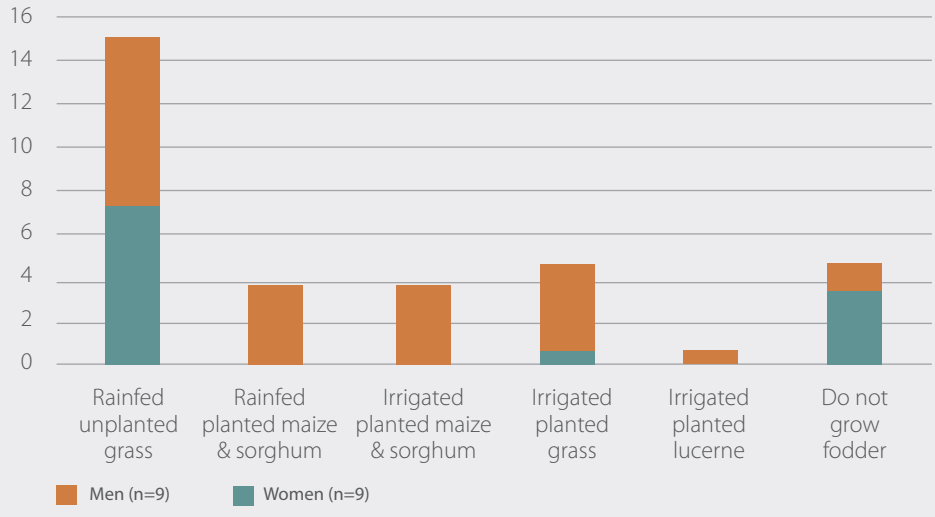
Figure 34. Most frequently stated fodder species by gender



5.5.3 Most suitable periods and modes for production of different fodder types

Rainfed unplanted grass was the form of fodder most frequently used by women and men. Men, more than women, reported planting and irrigating grass. Rainfed planted maize and sorghum were reported by men only. Irrigated planted lucerne (alfalfa) was reported by one male focus group. One group of men and three groups of women stated that they did not grow fodder (Figure 35).

Figure 35. Stated modes of fodder production by gender

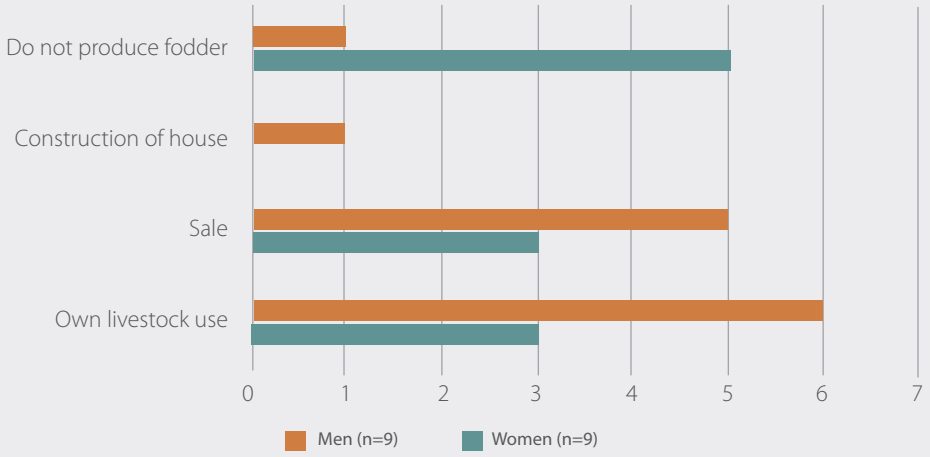


Fodder production was not associated with conflict. Fodder grew or regenerated best in the rainy season. Other than one group of women that planted Sudan grass, the rest of the groups of women interviewed did not plant grass but harvested whatever grass sprouted. This finding was revised at the validation workshop where some women stated that they planted grass fodder. Men indicated that the Gu rains (late March to June) were the most suitable and that rainfall availability was the greatest determinant of fodder suitability.

5.5.4 Purpose for which fodder is produced

Fodder mostly grew as wild grasses that people harvested, except in rare cases when people planted fodder crops and grasses. The grasses are mainly used as fodder for own livestock or sold (Figure 36).

Figure 36. Purpose for which naturally growing grass is used by gender



5.5.5 Fodder species needing to be improved

Because only a few women produce fodder, women did not know which fodder species needed to be improved. Four groups of men stated that all fodder species needed to be improved. One men's group was pure pastoralist and their community did not preserve fodder. Dureemo (African couch grass) was mentioned by all four groups and Doomar (Bermuda grass), Garogaro (Water crown grass) and Dihi twice. So Dureemo might benefit the most from improvement, but it might be advisable for FNS-REPRO to get improved seeds, or initiate improvement of seeds, for all or most of the grasses mentioned.

In response to the question on the presence of *Prosopis* spp., only one group of women (Daryare, >35) stated that *Prosopis* spp. grew along the river. They said that people in Laascaanood use the pods as fodder in the dry season. FNS-REPRO should conduct some action research on the preparation and marketing of *Prosopis* fodder blocks with women from Daryare.

5.5.6 Use of crop residues as fodder

Five out of nine groups of women indicated that they use sorghum and maize crop residues for fodder (stalks and leaves). Older women from Wadaamagoo said that they use their own fodder during the rainy season but bought fodder from Burao in the dry season. Six out of nine groups of men stated that they used sorghum and maize stover as fodder. One group (Wadaamagoo) stated that they used sorghum, maize and cowpea residues as fodder.

Food crop residues have the potential to feed the livestock of communities that grow food crops, like in Wadaamagoo. FNS-REPRO should investigate the benefits of these residues as fodder in addition to the human nutritional benefit they bring to determine the value of food crop residues and ways of enhancing their nutritional value.

5.5.7 Inputs used for fodder production

Seven groups of women stated that they do not have or use any inputs. One group from Habari Heshay (>35) stated that they had *faregeeto* (machete) for cutting fodder. The other group from Daryare (>35) stated that they used water from wells to irrigate, sickles when available (currently unavailable), machete and seeds from the market. They do not have extension services.

Three groups of men did not use any inputs. Men from Habari Heshay said that they purchased maize and sorghum seeds from Burco. Those from Caynabo relied on natural regeneration for grasses and selected seeds from harvested maize and sorghum. Other inputs used by men included water, fencing, cultivation labour, carrying labour, maize, sorghum and alfalfa seeds (and extension services occasionally hired by the NGOs, not farmers) (Wadaamagoo). They also stated that they rented tractors, bought seeds from shops, diverted rainwater and hired labour. Men from Habari Heshay said that they used sickles to harvest fodder. Rainwater is the main source of water throughout the villages in Erigabo, but some villages such as Dayaha, Kulmiye, Laanqiciye and Hamaas have streams and boreholes for irrigation.

There appears to be a dearth of tools and limited extension services. FNS-REPRO should provide or support the provision of extension services through the formation of pastoral and agropastoral field schools that benefit men and women equally/equitably and facilitate the establishment of agrodealer supply shops for the sustainable provision of inputs as well as extension and advisory services.

5.5.8 Cost of fodder production

It was extremely difficult to obtain the cost of production probably because fodder producers and traders do not really cost production or value addition. The following table constructed during the validation workshop demonstrates the incoherence with which data on activities and their costs were presented. In sum, nobody knew the actual costs and benefits of the fodder value chain.

Table 13. Cost of fodder production

Input required	Kg required per hectare of land	Cost in USD per kg of fodder	Total cost (USD)
Sudan grass seeds	1	20 (special price during 2016 drought)	20
Sorghum	8	0.5	4
Maize	9	0.8	7.2
Lucerne/alfalfa	2	30	60

It appears that fodder producers do not cost their production and therefore did not know the cost of planting a unit area (in acres or hectares). Similarly, they did not know how much is produced per unit area other than how many bundles fill up a truck, which forms the basis for costing the produce (fodder forage). Production was done by men and women. Eight and nine kilogram of sorghum and maize seed per hectare suggests that the seeds were broadcast, but the woman who mentioned planting eight kilogram of sorghum in a hectare stated that she planted in rows and put the seeds inside shallow furrows. These findings suggest that fodder producers need to be trained in good agronomic, management and record-keeping practices.

5.5.9 Cost of processing fodder (value addition)

Like in the case of production costs, the costs of value addition stated during data collection were too varied and either too high or too low.

Table 14. Cost of processing fodder (value addition)

Process	Cost (USD) per unit (tonne/kg/bale)
Cutting and baling	(About 15–20 kg bale or bundle) – grass is cut when completely dry. USD 150 per 6-tonne truck (takes 135 bales at about USD 1.1 per bale)
Loading	Loading is done at the same time as cutting/baling. Labour cost for loading: • USD 40 for 6-tonne truck (135 bales); • USD 60 for 8-tonne truck (203 bales); and • USD 80 for 24-tonne truck (270 bales).
Transportation	The data collected from the Wadaamagoo participants: 6-tonne truck (takes 135 bales at about USD 1.1 per bale transported at USD 150 over 280 km – Wadaamagoo to Berbera Port). 8-tonne truck (takes 203 bales at about USD 1.08 per bale transported at USD 220 over 280 km). 24-tonne truck (takes 270 bales at about USD 1.1 per bale transported at USD 300 over 280 km).
Sale price	About 10 kg bag – USD 15 per bag. 6-tonne truck (takes 135 bales – sold for about USD 400 at Livestock Ground holding market at Berbera Port @ USD 2.96) 8-tonne truck (takes 203 bales – sold for USD 600 at Berbera port market @ USD 2.96) 24-tonne truck (takes 270 bales – sold for USD 800 at Berbera port market @ USD 2.96) Tax 6T @ USD 20$=@ USD 0.145 per bale); 8T @ USD 40=@ USD 0.295 per bale; 24T @ USD 60 = @ USD 0.296 per bale)

5.5.10 Benefit of trading in fodder

The cost of value addition was subtracted from the sale price to establish the financial benefit from trading in fodder. A wrong assumption that the cost of production is zero has been made as none of the workshop participants could cost it. The calculations show that the traders are making USD 0.247–0.316 per bale of hay sold at Berbera, which translates to USD 40, 57 and 63 per 6-, 8- and 24-ton truck, which is a loss (Table 15). The results suggest that the traders had not documented their costs and were overestimating them or operating at a loss. It is also possible that those who traded as a business did not want to disclose the values. These findings call for training in business planning and financial record keeping.

Table 15. Benefit of trading in fodder

Truck size	6 tonne (cost per bale)	8 tonne (cost per bale)	24 tonne (cost per bale)
Number of bales/truck (15–20 kg bales)	135	203	270
Cost of cutting and baling (USD)	150 (1.1)	Not given (guesstimate) 223 (1.1)	Not given (guesstimate) 297 (1.1)
Cost of loading (USD)	40 (0.296)	60 (0.296)	80 (0.296)
Cost of transportation from Wadaamagoo to Berbera Port – 280 km	150 (1.1)	220 (1.08)	300 (1.1)
Tax	20 (0.15)	40 (0.198)	60 (0.22)
Total cost less unknown production cost	360 (2.646)	543 (2.674)	737 (2.716)
Sale price	400 (2.962)	600 (2.955)	800 (2.963)
Profit (excluding cost price)	40 (0.316)	57 (0.281)	63 (0.247)

Systematic collection of value chain data early during FNS-REPRO implementation and through multiple production cycles will enable the true picture of the fodder value chain to emerge. Once the data have been established, changes in profit can be used to measure outcomes and the impact of FNS-REPRO intervention.

5.5.11 Threats, risks and opportunities for the fodder value chain

Operational definitions of terminologies to be used were given to the workshop participants to aid them in identifying threats, risks and opportunities in the fodder value chain.

1. Fodder is any agricultural feed used specifically to feed domesticated livestock. It is normally given to the animals, rather than that which they forage for themselves. In the context of Somaliland, like many other Horn of Africa countries, the terminology encompasses all forms of feed offered to livestock, from grazed forage and crop residues to concentrate supplements. A fodder value chain is the whole range of goods and services necessary for fodder to move from the farm to the end customer.

2. A threat is anything that can intentionally or accidentally affect all or a part of the value chain by damaging or destroying it.

3. A risk is the potential of loss or damage of the entire value chain or a part of it as a result of the realization of the threat.

4. An opportunity is the time, or set of circumstances, that makes it possible to undo the damage to the whole value chain or the part of it that is destroyed so that it bounces back/becomes resilient.

Participants in the validation workshop were guided through an activity of identifying threats, risks and opportunities for the fodder value chain. The output of the exercise is presented in Table 16.

Table 16. Threats, risks and opportunities for the fodder value chain

Fodder value chain component	Threats	Risks	Existing opportunities in the communities
Production	• Locusts • Floods • Conflicts • Cyclones • Fire outbreaks • Diseases • Droughts • Bad seeds • Pests and insects	• Loss of soil nutrients • Lack of water • Disagreements between employees and employers • Injury related to conflict, fire, cyclone, etc.	• Appropriate land • Equipment • Investment • Knowledge • Conflict resolution committees • Trainings • Manpower • Construction of schools • Rehabilitation of roads • Seeds • Rain/water
Processing	• Soil erosion • Conflicts • Floods and cyclones • Human health • Droughts	• Floods wash away fodder • Lack of knowledge/skills • Unsuitable land for processing • Lack of financing for harvesting • Injury sustained by people during harvesting • Lack of storage facilities	• Equipment • Storage facilities/ warehouses • Transport • Labour • Economic support
Storage	• Droughts • Floods and cyclones • Human health • Conflicts • Fire outbreaks	• Damage and loss	• Storage facilities/ warehouses
Transportation	• Human health • Floods • Inaccessibility (poor infrastructure) • Conflicts	• Damage and loss • Transport accidents	• Equipment • Financial support • Labour
Marketing	• Market conflicts • Human diseases • Floods and cyclones • Livestock diseases • Fire outbreaks	• Market downturn • Mismatch between production and selling costs	• Reduced import of fodder • Livestock export during the Hajj pilgrimage • Reliable markets • Muslim festivals • Application of modern livestock herding practices

For all steps of the value chain, workshop participants identified opportunities that they had exploited or could exploit to reduce their vulnerability to shocks. FNS-REPRO can identify and prioritize the support they can give to the communities according to their mandate, such as supporting conflict resolution committees; training fodder producers in production and processing techniques; providing good quality fodder seeds, equipment and other inputs; designing and constructing storage facilities/warehouses; and support for rainwater harvesting.

To appreciate what happens at the consumer end of the fodder value chain, the research team visited the Al Jabiri Berbera quarantine/holding ground and interviewed the personnel in charge (Box 4).

Box 4. Fodder consumer case study

Case study: Fodder use at Al Jabiri Berbera quarantine/holding ground

The research team visited the Al Jabiri holding ground for livestock (sheep, goats, cattle and camels from Somalia and parts of Ethiopia) prior to export. The facility has the capacity to hold an average of 340 000 heads of sheep and goats (or 34 000 heads of cattle and camels). The ground is divided into three main sections: Section A, the receiving section, has the capacity to hold 40 000 animals. The animals are assessed for wellness and blood samples are taken for laboratory screening for diseases. Once cleared/passed as free of diseases, the animals are sprayed, dewormed and treated for minor ailments when they occur. They are then moved to Section B, the quarantine section – which has a capacity of 150 000 head – where they are held for 14 to 21 days. Once the quarantine is over, they are moved to Section C – with a capacity of 150 000 heads – where they await loading onto various ships to specific destinations.

Rejected/failed animals do not go past Section A. Owners of rejected animals are not refunded their money but receive a waiver of payment for accommodation for their next consignment and a discount of up to 50 percent of the shipping cost. The ministry officials also support the traders whose animals are rejected with the required treatment/vaccinations for rejected animals.

At the holding ground, the animals are weighed and provided with shelter, water and identifying ear tags. The animals' health care includes deworming/vaccination (if needed), whereas the traders provide fodder and concentrates for their animals. Each trader pays a fee for their animals to stay at the holding ground. The fee is pegged to the country of destination. Animals destined for countries that require rigorous testing are charged more than those destined for countries requiring less rigorous testing. On average, traders are charged $ 4-8 for small ruminants and $15 for cattle and camels but are sometimes charged $ 25 per head for camels. Livestock traders are responsible for feeding and for providing livestock fodder. They deliver the fodder in trucks containing 150 bales of up to 15 kg each. The quantity of fodder delivered by each trader varies with the size of his consignment. An employee at the holding ground (currently Dr Mohamed) is charged with the responsibility of ensuring that adequate good quality feed is delivered with each livestock consignment as well as supervising daily feeding in all sections of the ground. On average, a 15-kg bundle of hay is allocated to 50 sheep and goats and 10 cattle or camels twice a day. In the dry season only dry fodder is provided, but in the wet season, green fodder may also be provided.

The export destinations are mainly Egypt, Oman, Saudi Arabia and the United Arab Emirates. Required standards for export vary among countries, with some countries having more stringent export standards than others. All livestock are kept in the grounds for 21 to 28 days depending on the requirements of the export destination. Diseases screened for (mainly using antibody ELISA and Rose Bengal for Brucellosis only) include foot-and-mouth disease, Rift Valley fever and bluetongue. The reagents used in screening for diseases are similar (from the same manufacturer) to those used to screen at the importing ports. Inspection is conducted

by officials from the Somaliland Ministry of Livestock, Fishery and Development. The Veterinary Port Official (currently Dr Ahmed) is responsible for endorsing livestock export health certificates and all results for each livestock consignment. Documentation for each consignment is handed to the shipping company for delivery at the port of destination.

Once the animals are cleared for shipping, the Somali agents invite the ships to dock in the port. Ships are loaded during the day and leave in the evening – they are charged $2 000 per day while (docked) in the port and cannot afford to wait beyond the first day.

The main actors at the holding grounds are men, but the facility and counterpart ministry employ female technicians.

From the interviews, the FNS-REPRO team realized that fodder is required in large quantities during quarantine and each trader is required to deliver fodder for the animals they are planning to export. Although the managers at the quarantine facility stated that they ensure good quality fodder is delivered, this might be difficult to enforce. FNS-REPRO may support the programme's fodder producer beneficiaries to produce and process good quality fodder and obtain supply contracts from the quarantine facilities. Such contract arrangements can include pre-financing of suppliers to help them offset some of the production, processing and transportation costs. The management at the quarantine facilities may specify the fodder standards that they consider best for their livestock.

Recommendations for FNS-REPRO for the fodder value chain:

1. FNS-REPRO should identify and prioritize the support the programme can give to the communities according to their mandate, such as support for training fodder producers in production and processing techniques; provision of good quality fodder seeds, equipment and other inputs; and designing and constructing storage facilities/ warehouses and support for rainwater harvesting (Table 17 provides a breakdown and identifies development and action research interventions).

2. FNS-REPRO, through consultations with government, local authorities and communities, should explore the possibility for the sustainable commercialization of fodder from the extensive natural rangeland grazing areas such as the Sanaag valleys near Garadag, where there are opportunities to develop water infrastructure (water that causes flooding at lowlands); to establish fodder harvesting and storage infrastructure; and to use grazing systems that accommodate fodder harvesting and storage, proper stocking and application of rangeland management principles.

3. All fodder producers need to be trained in good agronomic practices for planting fodder as well as business management, business planning, production and financial record keeping – including the cost of their own labour – so that they can conduct a cost-benefit analysis of the fodder value chain.

4. Systematic collection of value chain data from early in the FNS-REPRO implementation stage and through multiple production cycles will enable the actual picture of the fodder value chain to emerge. Once the data are established, changes in profit can be used to measure outcomes and the impact of the FNS-REPRO fodder intervention.

5. FNS-REPRO should either provide or support the provision of extension services through the formation of pastoral and agropastoral field schools that benefit men and women equally/equitably and facilitate the establishment of existing and new agrodealer supply shops for the sustainable provision of inputs as well as extension and advisory services.

6. FNS-REPRO should investigate the benefits of food crop residues (starting with Wadamagoo) in addition to the nutritional benefit of the crops to humans.

FNS-REPRO should also determine the value of food crop residues and ways of enhancing the nutritional value of these residues.

7. Partnering with the FAO cash-for-work activities in project target areas for the provision of water for livestock, FNS-REPRO should support rainwater harvesting through the rehabilitation of water catchments.

8. FNS-REPRO should support their fodder producer beneficiaries to produce and process good quality fodder and obtain supply contracts from the quarantine facilities. Such contract arrangements can include pre-financing of suppliers to help them offset some of the production, processing and transportation costs. The management at the quarantine facilities may specify the fodder standards that they consider best for their livestock. This can start as an action research component.

9. A long-term action research project on seed identification, breeding, testing, multiplication and dissemination as a collaboration between WUR and national research organizations (NAROs) can help identify fodder seed and food seed (to produce residues for use as fodder) varieties that work best for Sool and Sanaag. For example, this study revealed that Garagaro (*Paspalidium desertorum* aka water crown-grass) might benefit the most from improvement, but it might be reasonable for FNS-REPRO to source seeds for all or most of the local grasses.

10. FNS-REPRO should conduct some action research on the preparation and marketing of *Prosopis* spp. fodder blocks with women from Daryare.

5.6 Community action plan

After engaging in the activity of identifying threats, risks and opportunities in the fodder value chain, workshop participants were asked to identify interventions in the value chain that will enable them to prevent the threats and deal with the risks. Interventions should also be directed to enhancing opportunities to enable and fast-track resilience. The participants were requested to identify resources needed for the interventions as external or internal, whereby resources labelled 'internal' were going to be provided by communities or local or national government. Those labelled 'external' were to be sourced through the project or identified partners among stakeholders identified in the study.


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Table 17. Community action plan

Fodder value chain	Threat	Risk	Opportunity	Intervention/ action required	Stakeholder to provide	Stakeholder to act	Proposed act by date
Production	Locusts Floods Conflicts Cyclones Fire outbreaks Diseases Droughts Bad seeds Pests and insects	Loss of soil nutrients Lack of water Disagreements between employees and employers Injuries sustained by employees	Appropriate land Equipment Investment Knowledge Conflict resolution committees Trainings Labour Presence of schools that could be used as farmer field schools Rehabilitation of roads Seeds Rain/water	Increased knowledge (trainings) Water (water catchments, boreholes) Quality seed Production equipment Employees/ human resources Health care Seed storage Nursery Associations Pesticides/ insecticide	External and internal		
Processing	Soil erosion Conflicts Floods and cyclones Human health Droughts	Floods wash away fodder Lack of knowledge/skills Land unsuitable for processing Lack of harvesting financing Injury sustained by harvesters Lack of storage facilities	Equipment Storage facilities/ warehouses Transport Labour Economic support	Harvesting equipment Loading equipment Harvesting techniques Harvesting labour Ropes Loading knowledge Loading labour			

Fodder value chain	Threat	Risk	Opportunity	Intervention/ action required	Stakeholder to provide	Stakeholder to act	Proposed act by date
Storage	Droughts Floods and cyclones Human health Conflicts Fire outbreaks	Damage and/or loss	Storage facilities/ warehouses	Shelter Fodder densification machine Shelter hygiene Trainings Electricity Personal protective equipment			
Transportation	Human health Floods Transport accidents Conflicts	Damage and/or loss	Equipment Financial support Labour	Donkey cart Personal protective equipment			

The column labelled "Intervention required" provides the wish list of interventions by FNS-REPRO beneficiaries. From this list, FNS-REPRO can identify and prioritize interventions to commence with. As one of the external intervening actors, FNS-REPRO can identify potential intervention partners to provide the required support presented in the list that falls outside FNS-REPRO's mandate (Table 18).

Table 18. FNS-REPRO guideline for allocation of interventions to stakeholders

Intervention/action required	Stakeholder to provide	FNS-REPRO and other stakeholder actions
Production		
Increased knowledge (trainings)	External and internal	FNS-REPRO – capacity development as proposed in the various recommendations
Water (water catchments, boreholes)	Internal	Community members and leadership
Quality seed	External and internal	FNS-REPRO (WUR) with national agricultural research and development partners (government, universities or private laboratories)
Production equipment	External	FNS-REPRO as part of input support
Employees/human resources	Internal	Beneficiaries
Seed storage (seed testing, multiplication and dissemination)	External	FNS-REPRO (WUR) with national agricultural research and development partners (government, universities or private laboratories)
Nursery	Internal and external	Field multiplication sites and farmer field schools
Associations	Internal	Beneficiaries – FNS-REPRO may support by facilitating for meetings and capacity support
Pesticides/insecticides	External	FNS-REPRO to provide technical support
Processing		
Harvesting equipment	External	FNS-REPRO as part of input support
Loading equipment	External	FNS-REPRO as part of input support
Harvesting techniques	External	FNS-REPRO as part of capacity development
Harvesting labour	Internal	Beneficiaries
Ropes	Internal	Beneficiaries
Loading knowledge	External	FNS-REPRO as part of capacity development
Loading labour	Internal	Beneficiaries
Shelter	Internal and external	FNS-REPRO as part of input support
Fodder densification machine	External	FNS-REPRO as part of input support (beneficiaries to provide locally available materials and labour)
Shelter hygiene	External	FNS-REPRO as part of capacity development

Intervention/action required	Stakeholder to provide	FNS-REPRO and other stakeholder actions
Trainings	External	FNS-REPRO as part of capacity development
Electricity	Internal	Local government
Personal protective equipment	External	FNS-REPRO as part of input support
Storage		
Donkey cart	Internal	Beneficiaries
Personal protective equipment	External	FNS-REPRO as part of input support

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CHAPTER 6

Recommendations and way forward for FNS-REPRO implementation

6.1. Key issues from the analysis and recommendations

I: Vulnerability assessment

1. FNS-REPRO interventions are likely to be more successful if they incorporate gender considerations in their mainstream by ensuring that engagement and benefits for men and women are equal, or at the least, equitable.

2. FNS-REPRO interventions should be modelled to benefit women and men as individuals as well as in single or mixed gender groups by aiming, as much as possible, to use individual men and women as well as single and mixed gender groups equitably as conduits of interventions and benefiting them equally as primary and secondary beneficiaries to project interventions.

3. Creating awareness about the effects of conflict, while simultaneously supporting initiatives for enhancing peace and stability by local and traditional leaders, should lessen the impacts of conflict on livelihoods.

4. To ensure effective coverage over the vast area of Sool and Sanaag, FNS-REPRO should consider

working in collaboration with partners such as CARE, ADRA and Save the Children, while at the same time implementing its own interventions unique to FNS-REPRO. Lessons learned during the partnership engagement need to be documented to understand which engagements were most beneficial.

5. All FNS-REPRO interventions should support existing opportunities identified in the study, because these are proven resilience-enhancing strategies recognized by community members.

II: Livelihood assets

1. Support for natural resources: There are opportunities for the development of water infrastructure (water that causes flooding at lowlands), establishment of fodder harvesting and storage infrastructure, use of grazing systems that accommodate fodder harvesting and storage, proper stocking and application of rangeland management principles.

   The potential for tall grasses such as *Andropogon, Cenchrus ciliaris* and *Aristida kelleri*, grasses characteristic of higher rainfall areas found to occur in the Sanaag valleys (Balanbaal and Turka), needs to be investigated and exploited, where feasible.

   a. Land for fodder production: The FNS-REPRO project can identify ways of supporting fodder production by beneficiaries without escalating the power imbalance associated with private ownership of land. FNS-REPRO can achieve this by supporting low-income community producer groups using public land that has been legitimately allocated to them by authorities. To make sure that FNS-REPRO is not caught up in land enclosure disputes, fencing of land belonging to supported communities should constitute the contribution and responsibility of producer groups.

   b. Water: To avoid unintended outcomes associated with the provision of water in one form or another, FNS-REPRO should only support land and water conservation initiatives that do not involve building or rehabilitation of water bodies as these have been associated with overgrazing, environmental degradation and conflict.

2. Credit intervention: FNS-REPRO may explore possibilities of working with commercial banks like Dahabshiil by being guarantors like CARE does in places where it is not providing this service, or request CARE to extend coverage to FNS-REPRO beneficiaries in areas where CARE has a presence. FNS-REPRO should also partner with CARE to provide the service to beneficiaries. FNS-REPRO should document the various strategies they adopt and learn which financing strategies are the most effective.

3. Affirmative action for women:

   a. Inclusion in fodder value chain interventions: FNS-REPRO should work towards enabling women to access and control income from fodder value chain activities as groups. A draft proposal on possible interventions by FNS-REPRO in the fodder value chain that should benefit women just like they benefit men, was developed at the workshop and is discussed in detail in the validation workshop report. FNS-REPRO should document the process and outcomes in terms of financial benefits (access and control of income) for women and men, and lessons learned throughout the implementation of the intervention.

   b. Relieving women's time burden: FNS-REPRO should address the issue of women's time burden, for example by providing energy-saving cooking and water technologies such as solar and/or energy-saving stoves and water tanks for distribution to women involved in the project.

4. Intervention through single and mixed gender groups: There is great potential for FNS-REPRO interventions through single and mixed gender groups to succeed if the strong networks are used and relative peace is maintained. To avoid group resource depletion in times of hardship, FNS-REPRO can engage groups in hands-on training in group risk management strategies, for example by simulating scenarios of the management of groups by managers

with different personalities and agendas.

5. In addition to providing interventions mandated to them, FNS-REPRO should seek partnerships with stakeholders to address other opportunities outside the scope of the programme, but beneficial to the outcomes of FNS-REPRO interventions.

III: Structures and processes – markets

1. Owing to the poorly developed markets in the villages, FNS-REPRO should aim to support communities with gender-inclusive activities to produce fodder commercially for larger and distant regional markets such as Burao town and Berbera and Bossasso ports.

2. The support should include the establishment of fodder storage and marketing infrastructure.

3. FNS-REPRO should support beneficiaries to grow fodder in commercial quantities for sale in local and distant markets. Landless women groups are expected to participate when they receive some communal land from the local leadership.

IV: Livelihood strategies

1. FNS-REPRO's primary intervention shall be to support beneficiaries to grow and market fodder as mixed-gender cooperatives with considerations for supporting the autonomy of women to earn revenue independently as members of a women group. The intervention will also aim to enhance women's diversity of options to earn income by allowing them to be members of the cooperatives as individuals and as spouses of male-headed household members (see recommendation in section 4.3.2).

2. The proposed alternatives by beneficiaries – beekeeping, poultry, food crop residues and seed identification – are feasible for FNS-REPRO because they are a diversification from grass-only fodder and are likely to add to the food and nutrition security of the fodder-producing communities. Fodder producers should be provided the requisite skills and seeds by FNS-REPRO on request.

3. FNS-REPRO should provide training to cereal producers (that produce food crops with residues used as fodder) to stimulate expansion of the area under cereal crops for enhanced supply of crop residues to complement natural grazing.

V: Conflict

1. FNS-REPRO can encourage reconciliation of elders and local leaders by supporting joint ventures between them such as building their institutional capacity to prevent conflict and mitigate its effects as proposed in section 5.3. Once reconciled, the elders and leaders will jointly be able to:

    a. address impunity by putting a stop to land grabbing and instigation of the youth by elders;

    b. identify and implement ventures to prevent conflict and mitigate its effects; and

    c. create awareness among beneficiary communities about the effects of conflict, while simultaneously supporting initiatives for enhancing peace and stability that should reduce the likelihood of the occurrence and impacts of conflict on livelihoods.

2. FNS-REPRO should avoid getting involved in fencing of fodder fields and provision of large water storage facilities but should leave the responsibility to the beneficiary farmer groups, the community and community leaders.

VI: Gender inclusion

1. FNS-REPRO interventions should be modelled to benefit women and men as individuals as well as in single or mixed gender groups by aiming to use individual men and women as well as single and mixed gender groups equitably as conduits of interventions and benefiting them equally as primary and secondary beneficiaries in project interventions.

2. FNS-REPRO facilitators should require project beneficiaries to allow:

a. women to participate as groups, as individuals and as household members in mixed-gender fodder cooperatives.

b. women group cooperative members to get special support as women groups to produce fodder and participate in the fodder value chain in age-appropriate ways, such as demonstration plots for fodder farmer field schools to be made accessible to young mothers with low mobility as key actors.

c. young mothers to be trained and assigned roles of fodder field school trainers. Older women, who have greater mobility, should be supported to deliver fodder by trucks to large markets such as Berbera.

3. FNS-REPRO to support women fodder traders in Waqdari by asking traditional elders and local leadership to set aside communal land along the river for these women (as a women's group) to grow fodder. Other women landowners can participate in the women's groups as well.

4. FNS-REPRO to capacitate the women (skills, tools, initial inputs, drying and storage facility).

5. Women to initiate or continue table banking and start saving money; FNS-REPRO to link these women to credit service providers for training and credit provision (FNS-REPRO can work with CARE or Save the Children or learn from them and follow their example).

6. FNS-REPRO to facilitate credit (or a grant) for the women to purchase the first inputs (seed and tools) and the first fodder crop from themselves and other producers and cover the cost of the first trip to the distant fodder market.

7. FNS-REPRO to facilitate women's access to time-saving support such as energy-saving stoves/ training in building and water storage tanks to save time spent searching for firewood (by reducing consumption) and water (by providing storage).

8. Engagement of women during the validation workshop enabled the project team to devise guidelines for processes and interventions likely to yield benefits for women and men. A similar activity is recommended for young men during the inception phase of the project. FNS-REPRO's outputs from these two activities should be "A Strategy for Mainstreaming Gender and Youth Inclusion" in the project, with a clear theory of change and results framework with activities and indicators for integration in the logical framework. For this strategy to be effective, the activities and milestones for gender and youth inclusion in the logframe should constitute deliverables against which staff will be evaluated. For this to be achieved, the project should have a qualified and full-time gender and youth inclusion officer to guide the gender and youth inclusion processes to support the staff lacking or without adequate capacity to implement the component.

VII: Fodder value chain

1. FNS-REPRO should identify and prioritize the support they can give to the communities according to their mandate, such as supporting conflict resolution committees; training fodder producers in production and processing techniques; providing good quality fodder seeds, equipment and other inputs; designing and constructing storage facilities/warehouses; and support for rainwater harvesting (Table 18 provides a breakdown and identifies development and action research interventions).

2. FNS-REPRO interventions to strengthen the overall resilience of households and communities to shocks and stresses should support organized marketing of fodder to obtain better prices through investments in fodder marketing infrastructure such as fodder sheds.

3. FNS-REPRO should facilitate the building of human capital through skill-based training that can lead to the diversification of traditional livelihood activities to alternative profitable business-oriented livelihoods strategies, such as beekeeping and frankincense tapping and sales.

4. Through consultations with government, local authorities and communities, FNS-REPRO should explore the possibility of sustainable

commercialization of fodder from the extensive natural rangeland grazing areas.

   a. At the Sanaag valleys near Garadag, FNS-REPRO has opportunities to develop water infrastructure (water that causes flooding at lowlands); establish fodder harvesting and storage infrastructure; and use grazing systems that accommodate fodder harvesting and storage, proper stocking and application of rangeland management principles.

   b. Potential for tall grasses such as *Andropogon, Cenchrus ciliaris* and *Aristida kelleri*, which are characteristic of higher rainfall areas and have been found to occur in these valleys (Balanbaal and Turka), needs to be investigated and exploited, where feasible.

5. All fodder producers need to be trained in good agronomic practices for planting fodder as well as in business management, business planning, production and financial record keeping, including the cost of their own labour, so that they can conduct a cost benefit analysis of the fodder value chain.

6. FNS-REPRO should provide or support the provision of extension services through the formation of pastoral and agropastoral field schools that benefit men and women equally/equitably and facilitate the establishment of existing and new agrodealer supply shops for the sustainable provision of inputs as well as extension and advisory services.

7. FNS-REPRO should investigate the benefits of food crop residues (starting with Wadamagoo) in addition to the nutritional benefit of the crops to humans. FNS-REPRO should also determine the value of food crop residues and ways of enhancing the nutritional value of these residues.

8. Partnering with the FAO cash-for-work activities in project target areas for the provision of water for livestock, FNS-REPRO should support rainwater harvesting through the rehabilitation of water catchments.

9. FNS-REPRO should support their fodder producer beneficiaries to produce and process good quality fodder and obtain supply contracts from the quarantine facilities. Such contract arrangements can include pre-financing of suppliers to help them offset some of the production, processing and transportation costs. The management at the quarantine facilities may specify the fodder standards they consider best for their livestock. This can start as an action research component.

10. A long-term action research project on seed identification, selection, testing, multiplication and dissemination as a collaboration between WUR and national research organizations (NAROs) shall help identify fodder seed and food seed (to produce residues for use as fodder) varieties that work best for Sool and Sanaag. For example, this study revealed that Garagaro (*Paspalidium desertorum* aka water crown-grass) might benefit the most from improvement, but it might be advisable for FNS-REPRO to get improved seeds for all or most of the grasses mentioned.

11. FNS-REPRO should conduct some action research on the preparation and marketing of *Prosopis* spp. fodder blocks with women from Daryare.

6.2. Recommended criteria for targeting villages

1. The project requires that traditional elders and leaders representing the government from all project villages work together to prevent conflict. Through a consultative process, the elders and leaders will allocate the required resources to project beneficiaries (for example the allocation of community land to landless women fodder producer groups such as Waqdari) and provide direction on what a fodder intervention through FNS-REPRO will look like in Balanbaal, which is a strictly pastoral community that does not cultivate or grow fodder with demarcated grazing lands and schedules.

2. Three villages were omitted during the context analysis data-collection exercise but were covered during the RIMA baseline data collection. So as

not to exclude these three villages – Ceelcade and Sincaro (Sanaag) and Lafweyn in Xudun (Sool) – RIMA baseline results will provide the missing information. The details of the grass species preferred per location will be worked out with beneficiaries, but pending that, FNS-REPRO will obtain seeds from within Somaliland/Somalia of as many of the preferred species as possible.

3. Specific areas should be targeted for action research on food crop residues (Wadamagoo) and *Prosopis* feed blocks with Daryare women.

4. It is recommended that FNS-REPRO (WUR) and NAROs in Somaliland conduct a research for development project on grass fodder identification, selection/breeding, multiplication and dissemination (see Table 19).

6.3. Proposed target districts and villages

The intention of FNS-REPRO is to intervene in all accessible villages in equal measure in both Sool and Sanaag. Initially eight villages were identified – two in Ceel Afweyn in Sanaag and six in Sool, three in Caynabo, one (Lafweyn) in Xudun and two in Laascaanood. Owing to the heavy rains experienced in the area and poor roads, the team was able to access only two villages at Ceel Afweyn district near Garadag close to the border with Caynabo. This makes an additional two villages in Ceel Afweyn. During the two field missions that were undertaken between August and September 2020, 19 villages were visited.


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Table 19. Target districts and villages for FNS-REPRO

Region/ district	District	Village	Number of households				
			Year 1 (Oct 2019-Sep 2020)	Year 2 (Oct 2020-Sep 2021)	Year 3 (Oct 2021-Sep 2022)	Year 4 (Oct 2022-Sep 2023)	Total
Sanaag	Ceel Afweyn	Turka	100	150	100	100	450
		Balanbal	150	200	100	100	550
	Subtotal						1 000
	Lasqooray/ Badhan	Yubbe	120	150	200	150	620
		Hadaftimo	150	200	200	150	700
	Subtotal						1 320
	Erigavbo	Dagaar	300	200	200	200	900
		Marawade	300	500	250	150	1200
		JiidAli	420	300	250	200	1170
		Dibqarax	200	200	100	150	650
		Laasqacable	150	200	100	100	550
		Booca	250	350	100	150	850
		Dhuurmadare	200	250	100	50	600
		Kulmiye	250	300	200	150	900
		Laanqiciya	180	200	250	200	830
		Dhaxamo	200	200	200	150	750
	Subtotal						8 400
Sool	Xudun	Lafweyn	400	600	300	200	1500
		Orgiyo	50	100	100	150	400
	Subtotal					300	1 900
	Caynaabo	Wadamagoo	300	400	100	100	900
		Habari-Heshey	250	350	100	150	850
		Jaleelo	60	100	20	30	210
		Farmaraa	100	100	50	50	300
	Subtotal						2 260
	Lascaanood	Waqdari	200	250	170	150	770
		Daryare	300	400	100	200	1000
		Kalabaydh	600	1400	250	200	2450
		Oodagoye	200	300	200	200	900
	Subtotal						5 120
Total							**20 000**

In all locations there will be affirmative action interventions and in all or some places there will be action research to understand and document the processes, outcomes and lessons learned in the engagement of women in their various identities (autonomous women groups, individuals and as wives) in fodder collective marketing groups/cooperatives.

6.4. Partnerships and overall sustainability of the project

The FNS-REPRO programme in Sool and Sanaag will be complemented by other FAO interventions including the Rome-based Agency (RBA) project, the Somalia Information and Resilience Building Action (SIRA) project as well as the FAO Somalia emergency programme.

The SIRA project is a USD 6.3 million initiative funded by the Government of the Swiss Confederation for three years, from 1 December 2019 to 30 December 2022. The project aims to improve the market system for the steady supply of quality fodder and increase knowledge to develop fodder-production practices in the Awdal region of Somaliland. In enhancing the fodder value chain, the project aims to develop agropastoral livelihoods.

RBA is a joint FAO and World Food Programme (WFP) project in Somaliland funded by Canada, with USD 5.7 million allocated to activities implemented by FAO. The five-year project is currently being implemented in the Burao and Odweyne districts of Togdheer region, where FAO and WFP are working with agropastoral and pastoral communities to close the seasonal hunger gap through the production of fodder; improvement of food production, storage and processing; as well as the provision of safety nets. The project is aimed at increasing and stabilizing the availability of and access to nutritious food as well as increasing income throughout the year, with a special focus on women, children/infants and those with illnesses.

Animal health interventions under FAO's emergency programme will run concurrently with FNS-REPRO programme implementation, providing critical supportive treatments and vaccinations to safeguard the same livestock populations in Sool and Sanaag, Somaliland. This will ensure that animals fed with nutritious and adequate feed developed by this project are healthy. The combined efforts will ensure that more milk is available to households as well as animals in better condition that fetch higher market prices.

The FAO Somalia emergency programme through Cash-for-Work activities will contribute to community asset rehabilitation (water catchments, canals and soil bunds) in Sool and Sanaag regions to further complement the natural resource management interventions by FNS-REPRO.

It is important that the FNS-REPRO programme aims to develop fodder as a business in Sool and Sanaag regions. To this end, it would be good to establish strong cooperation with other long-term fodder projects currently ongoing in Somaliland such as RBA and SIRA. This should include exchange/learning visits with other beneficiaries of fodder interventions such as those in Togdheer where the fodder business is fairly developed. There is also a call to have representatives from donors of the three projects (FNS-REPRO, RBA and SIRA) under the leadership of FAO and the Somaliland Government establish a mechanism/structure on how to track achievements from the three interventions, with the aim of further strengthening the fodder value chain in Somaliland.

Owing to the diverse facets of interventions required for building resilience of beneficiary communities, FNS-REPRO must work in partnership with the following actors: community leadership, development organizations working in the area and international and national agricultural research organizations. FNS-REPRO will also make contributions attributable to them in the areas of capacity development and input support for commercial fodder production and marketing by smallholder farmer cooperatives/collectives. In the partnerships, FNS-REPRO and partners will exploit synergies to protect and/or strengthen the resilience of beneficiary communities. Potential partners and specific interventions have been identified throughout the report

and the names and functions of possible partners are provided in Table 20. Where information on potential partners is not available, but the potential partners are known, lists with names of organizations working in fodder and livestock interventions have been presented at the end of this section (Lists 1 and 2). Table 20 presents the proposed partnerships for FNS-REPRO interventions in Sool and Sanaag.

Table 20. Proposed partnerships for FNS-REPRO interventions

Stakeholder	Role	Relationship with FNS-REPRO
Traditional elders and village community leaders appointed by government	Community governance/conflict prevention, conflict resolution and mitigation of its effect.	National counterpart facilitating FNS-REPRO interventions by ensuring that interventions are appropriate, inclusive, feasible and conducive and conducted in a conflict-free/ low conflict business-enabling environment.
Interpeace	Peacebuilding.	Interpeace could partner with FNS-REPRO as the facilitator of the peacebuilding initiatives of elders and leaders.
FAO Somalia emergency and development projects	SIRA – improve market systems for steady supply of fodder. RBA – fodder and food production for resilience. FAO animal health – animal vaccination and treatment to enhance milk and meat production. Cash for work – community asset rehabilitation and natural resource management interventions.	FNS-REPRO will leverage FAO Somalia's infrastructure, strategies and partners even as it seeks its own autonomy. Lessons learned from the activities of the listed projects will enable FNS-REPRO to develop pragmatic interventions alone and with partners.
CARE Somalia	Enabling credit for women by partnering with Dahabshiil Bank.	FNS-REPRO to work with women beneficiaries of CARE intervention in villages where CARE has a presence. CARE to provide support through an official agreement, e.g. training of FNS-REPRO beneficiaries on request by FNS-REPRO in non-CARE areas. FNS-REPRO to develop a joint proposal with CARE to support interventions.

Save the Children	Availing direct credit to women.	FNS-REPRO to work with women beneficiaries of Save the Children interventions in villages where the latter has a presence. Save the Children to provide support for women beneficiaries through an official agreement, e.g. training of FNS-REPRO beneficiaries on request by FNS-REPRO in areas where Save the Children do not have a presence. FNS-REPRO to develop a joint proposal with Save the Children to support interventions.
Environmental conservation (Not identified)	Conservation interventions involving communities.	Organization to provide support for beneficiaries through an official agreement, e.g. training of FNS-REPRO beneficiaries. FNS-REPRO to develop a joint proposal with organization to support interventions.
Agro-input service providers (Not identified)	Selling inputs and providing agricultural extension services.	FNS-REPRO to develop the capacity of these service providers regarding the inputs and services required by the fodder producer beneficiaries of the project.
Pastoral and agropastoral field school facilitators	Hands-on training in fodder production.	FNS-REPRO to develop the capacity of incumbent and new pastoralist and agropastoral fodder producers to serve beneficiaries as field school facilitators.
Al Jabiri, Berbera and other quarantine/ holding grounds in Berbera and Bosasso and other livestock aggregators on the mainland, e.g. in Burco	Potentially year-round bulk purchasers of fodder and facilitators of credit.	Establish supply contracts, with or without financing, for FNS-REPRO beneficiary fodder producers. Develop standards for ideal fodder characteristics for end users.
Local NGOs	Local NGOS implementing livelihoods and income activities along fodder value chain.	FNS-REPRO to develop partnerships with local NGOs to implement activities in improved livelihood and income opportunities along the fodder value chain and enhanced knowledge, skills and capacity of local communities around nutrition.

Local knowledge institutions	Institutions of higher learning that will participate in building the capacity of community members in good agricultural practices, natural resource management and sustainable management of rangelands.	Partner with FNS-REPRO to implement activities on improved inclusive access and management of local natural grazing rangeland resources, i. e. Nugaal University will implement in Sool while Sanaag University will implement in Sanaag.
National Agricultural Research Organizations (NAROs), e.g. ISTVS	Host and participate in laboratory research as part of the seed identification, selection and multiplication programme.	Research partners.
	Participate in action research.	Research partners.

List 1. Potential partners known to work with fodder in Somaliland

1. Horn of Africa Youth Committee
2. Unique Vision Research and Development Organization
3. Africa Aid Initiative
4. Steadfast Voluntary Organization
5. Somaliland Veterinarian Association
6. Solidarity Community Development Organization
7. Norwegian Refugee Council
8. Candlelight
9. Some NGOs under SomReP consortium
10. Shuraako (works with beekeepers)

List 2. Potential partners known to work with livestock in Somaliland

1. ActionAid International Somaliland
2. American Refugee Council
3. CARE International
4. Concern Worldwide
5. Danish Refugee Council
6. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
7. Growth, Enterprise, Employment and Livelihoods (GEEL) Project
8. Islamic Relief
9. Norwegian Refugee Council
10. Oxfam
11. Pastoral and environmental network in the Horn of Africa (PENHA)
12. Pharo Foundation
13. Save the Children
14. Vétérinaires Sans Frontières – Germany
15. Vétérinaires Sans Frontières Suisse through the International Fund for Agricultural Development (IFAD)
16. Welthungerlife (German Agro Action)
17. World Concern
18. World Relief Germany
19. World Vision International – Somalia Programme (WVS) including Somaliland

List 3. Potential partners known to work on peacebuilding

1. Damal Women Organization – partners with Interpeace in peacebuilding awareness

6.5 Other recommendations/feedback on implementation

1. FNS-REPRO in Somaliland should focus on the fodder value chain.

2. FNS-REPRO should collaborate with local universities/ local knowledge institutions to implement output 1 to build the capacity of the institutions for sustainability of information and practices learned during the implementation process.

3. FNS-REPRO should work with local NGOs as implementing partners for outputs 2 and 3 as a way of building local capacity and for longer-term sustainability after the programme has ended.

4. FNS-REPRO should work with lead farmers as its key partners, ensuring that they are able to implement and showcase best practices successfully to other farmers, thereby providing highly relevant, essential and often non-existent extension services at the community level.

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Annex

Questions asked for each component

Topic	Questions asked
Shocks and stresses on vulnerability	Common shocks that this community normally faces; who are affected most; when (season, months, events) mostly affected; how affected; how men/women cope with the shocks/stresses as individuals and as a community (what structures are in place to enable them to cope); if men/women seek support; from where; if support is received; from where; for how long; if no support, how men/women and whole communities cope; if overwhelmed, what do they need to cope.
Shocks and stresses on livelihood assets (physical, natural, social, financial and human)	**Physical assets** (e.g. tractors, ploughs, ox-ploughs, vehicles, bicycles, hoes, machetes, animal-drawn carts): which ones available in community. **Natural assets** (e.g. land, livestock, waterbodies, trees, minerals): which ones available in your community; what are the land cover and land use types; are there land-related conflicts here? if yes, which ones, who are the main actors, who is affected the most; is land degradation a problem here? if yes, name degradation types, are there degradation control mechanisms in place, which ones, which organizations support the implementation of the control mechanisms; what are common land tenure systems here; how are wealth groups classified – what is the average land size per wealth group; what are the sources of water here – how accessible are they, when, what are the common uses of water; are there water-user associations here – do they help in the governance/management of water use by individuals and the community; what conflicts are associated with water access and use; who are the main actors in these conflicts; are there conflict-resolution mechanisms in use here – which ones, how effective are they, are the solutions obtained short- or long-term? **Social assets** (e.g. groups, relatives, friends, networks): Common social networks in community; are there community-level conflicts that strain social relations? **Human assets** (e.g. skills, knowledge, health, labour): How many formal and Quranic schools are there in this community; are there formal and informal adult education services; how many health services do you have in the community?

Structures and processes	In this study, the focus was on markets to represent structures and processes. Questions included whether there are markets in the community; commodities traded in these markets; extent of market engagement by gender; financial services available in the markets – their accessibility; if there are farmer/group collective market actors (groups, cooperatives, market associations, etc.) in the community, gender ratio of membership in groups; who regulates markets; and types of conflict in these markets.
Livelihood strategies	Common livelihood strategies here (e.g. crop production, pastoralism, trade); how each strategy can be enhanced; other suitable livelihood options that can be harnessed; why these options have not been harnessed before; how the majority of community members obtain their food (e.g. purchase (cash/credit), own production, gifts from kin, food aid); who mainly, between you and your spouse, is responsible for obtaining household food; is there a period in the year when members of the community experience shortage of food and income – why, which months?
Fodder value chain analysis – production	What are the common types of fodder growing here; rank in terms of productivity (potential to produce forage biomass), nutritional value (palatability and body conditioning of the animal), milk yield and other local attributes; how are the different fodder types produced; what seasons; among the fodder production practices, which ones are prone to conflict? Which types of fodder need to be improved; any *Prosopis* spp. in this area? If yes, do you use it as fodder – how; do you use crop residues as fodder – from which crops? What inputs (including water and extension services) do you use for fodder production and what does it cost to produce an acre/hectare? Are fodder extension services available – provided by whom, how frequently, how are they delivered; are there organizations supporting fodder value chain activities?
Fodder value chain analysis – processing	Fodder harvesting practices (e.g. grazing, cutting, fallow); tools used to harvest; stage of fodder growth at harvest; cost of harvesting fodder; types of processing (e.g. baling, bulking, heaping); post-harvest fodder losses); are you aware of organizations implementing any interventions in fodder or range management in your area?
Fodder value chain analysis – marketing	If fodder is sold, to whom, quantity sold and price per unit; availability of fodder marketing facilities, distances from farms and preferred markets with reasons; cost of transport, if taxes paid, to whom and how much; fodder income expenditure by gender? Who are the actors (by gender) of the fodder value chain activities including selling?

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