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MILLENNIUM WATER
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BASELINE EVALUATION

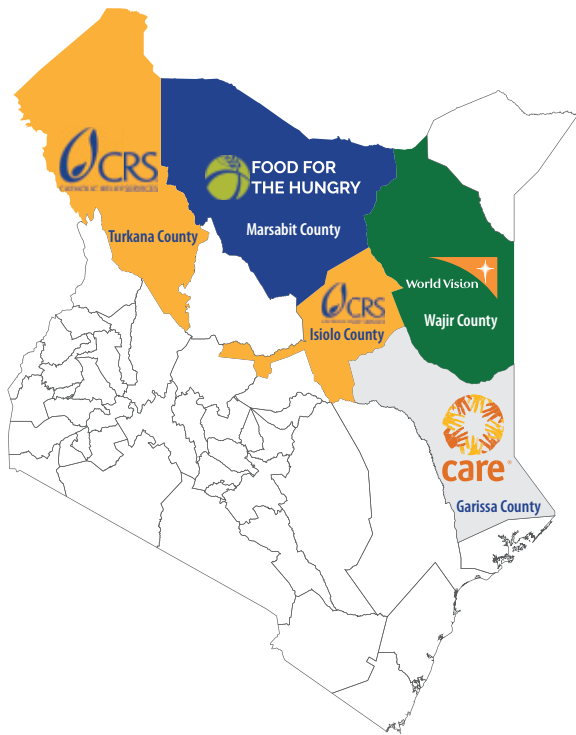
FOR THE

KENYA RESILIENT ARID LANDS PARTNERSHIP FOR INTEGRATED DEVELOPMENT PLUS (RAPID+) PROGRAM

BASELINE EVALUATION REPORT
APRIL 2022

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Background

Millennium Water Alliance (MWA), in collaboration with CARE Kenya, Catholic Relief Services (CRS), Food for the Hungry and World Vision are implementing the 'Resilient Arid Lands Partnership for Integrated Development Plus (RAPID+) program in the Counties of Garissa, Isiolo, Marsabit, Turkana, and Wajir'. The Kenya RAPID+ program is convened and led by the MWA, with primary funding from the Swiss Agency for Development and Cooperation (SDC), alongside matching grants from private sector actors, implementing partners and participating County governments. The goal and outcomes of the program and the objectives of the baseline evaluation are presented in Figure 1.1 below.

Goal: To ensure improved access to safe and sustainably managed water and rangelands that contribute to resilient peaceful livelihoods and environments for communities in the five targeted Counties.

Outcome 1:

Pastoralist communities have increased their access to sustainable and safe water for multiple uses benefiting men, women, and youth.

Outcome 2:

Pastoralist communities have improved their access to safe and ecologically healthy rangeland resources that promote greater integrity, social cohesion and gender equity.

Objectives of the baseline evaluation:

To serve as a foundation for setting annual and five-year program targets; provide a benchmark for measuring progress on outcomes and outputs during mid-term and end-line evaluations.

To facilitate measurement and understanding of changes in these five Counties, in community and across water and rangelands systems and actors.

To validate assumptions made in the program proposal and program design documents.

To generate recommendations for improvement of program design and planned interventions.

Figure 1: Goal and objectives of the program and evaluation objectives

Baseline Evaluation Methodology

The baseline evaluation was conducted in the five Counties of Isiolo, Turkana (Turkana West Sub-County only), Wajir, Garissa and Marsabit, in the month of April 2022. A mixed-method study approach was used entailing: a desk review of secondary literature; quantitative household interviews of 1970 household heads; Key Informant Interviews (KIIs) of 40 County Governments staff and private sector stakeholders from the water, livestock and rangelands resources development sectors; and Focus Group Discussions (FGDs) with community members and leaders as managers and users of water and rangelands resources.

Baseline Evaluation Findings

Summary of the Baseline Evaluation Findings

Overall, the survey identified low institutional and execution capacities and low access to both water and rangelands resources among target beneficiaries across all five programme Counties.

While there is evidence of effort towards formulating policies and strategic plans, and enacting relevant laws to facilitate effective development and management of water and rangeland resources, we conclude that the framework conditions of policies, laws, institutions and programmes needed for these purposes are largely not in place, weak, incomplete and not sufficiently gender sensitive.

As a result i) there was low public awareness and knowledge of water and rangelands resources development across all 5 Counties (ii) water and rangeland resources development initiatives remained largely unfunded or underfunded across all five Counties, and lacked the necessary visibility, iv) the institutions operationalizing these conditions (County departments, County sector and thematic working groups, County water companies, WRUAs and WUAs, RMCs, LMCs, and other community groups and associations) were weak (in planning, execution, M & E and gender mainstreaming), understaffed, under-funded, and without capacities to mobilize additional resources for development, (iii) there were no costed implementation and M & E plans for the policies, laws and plans already developed, and iv) overall impact of water and rangeland development interventions remained low.

Evaluation Findings on Program Outcome One - Sustainable Access to Safe Water

Findings on Livelihoods and Incomes

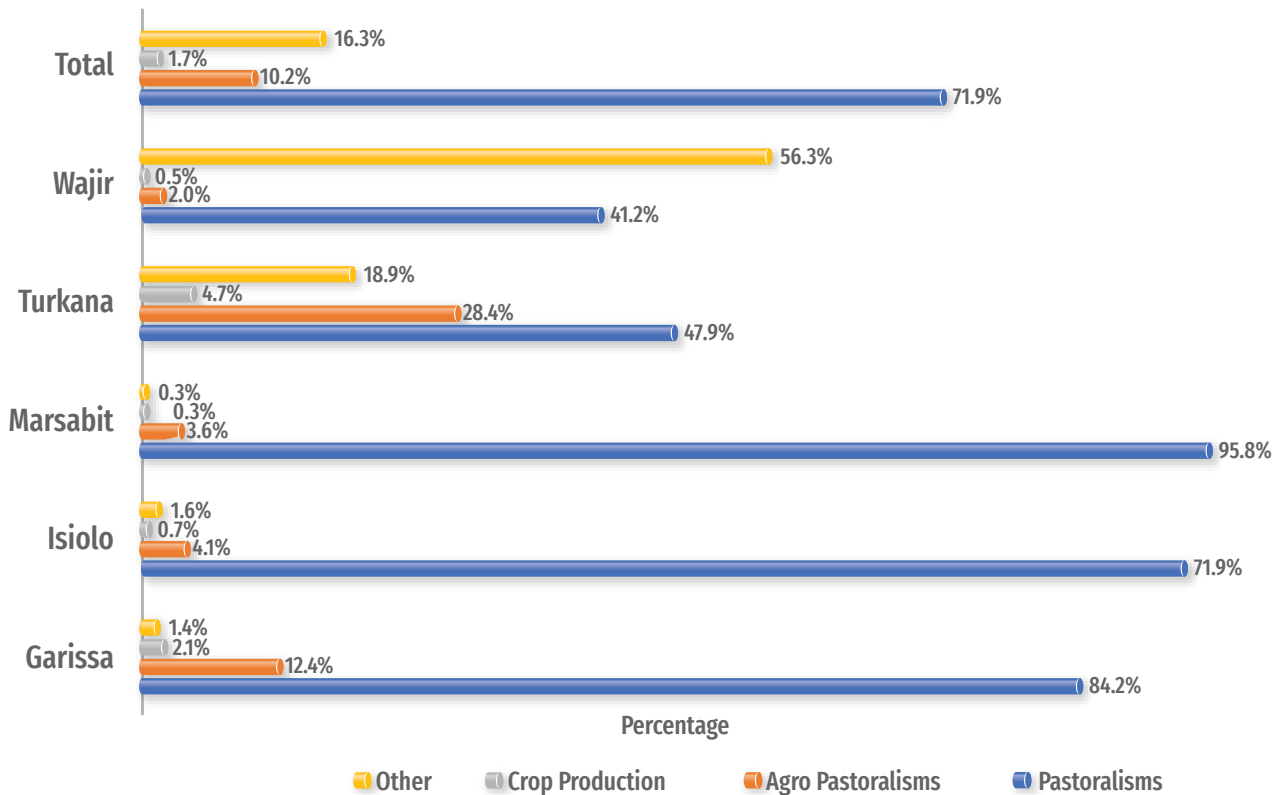


Figure 2 - Livelihoods

The dominant livelihood mode across all five counties was nomadic pastoralism (71.9%), followed by agro-pastoralism (10.2%) and pure crop production (1.7%). The rest of the respondents identified as peri-urban, urban, and IDPs engaged in sales of livestock and livestock-allied products. Overall 85.0% of the respondents identified as rural, the rest as peri-urban, urban and IDP. The high number of respondents identifying as either peri-urban or urban, as high as 42% in Wajir county, points both to growing opportunities in these areas as devolution deepens, but also to worsening climatic conditions in much of the ASAL, forcing people away from rural areas.

The main sources of income across the Counties were sale of livestock (63.4%), sale of livestock products (24.1%), sale of crop products (8.9%), and sale of fodder and other rangeland products (3.7%). In Turkana and Wajir Counties a growing body of community members are beginning to pursue alternative livelihoods through production and sale of pastures, bee keeping, resins production, Aloe Vera juice extraction, and poultry keeping, as well establishment of rental properties in urban centers, from sales of livestock assets.

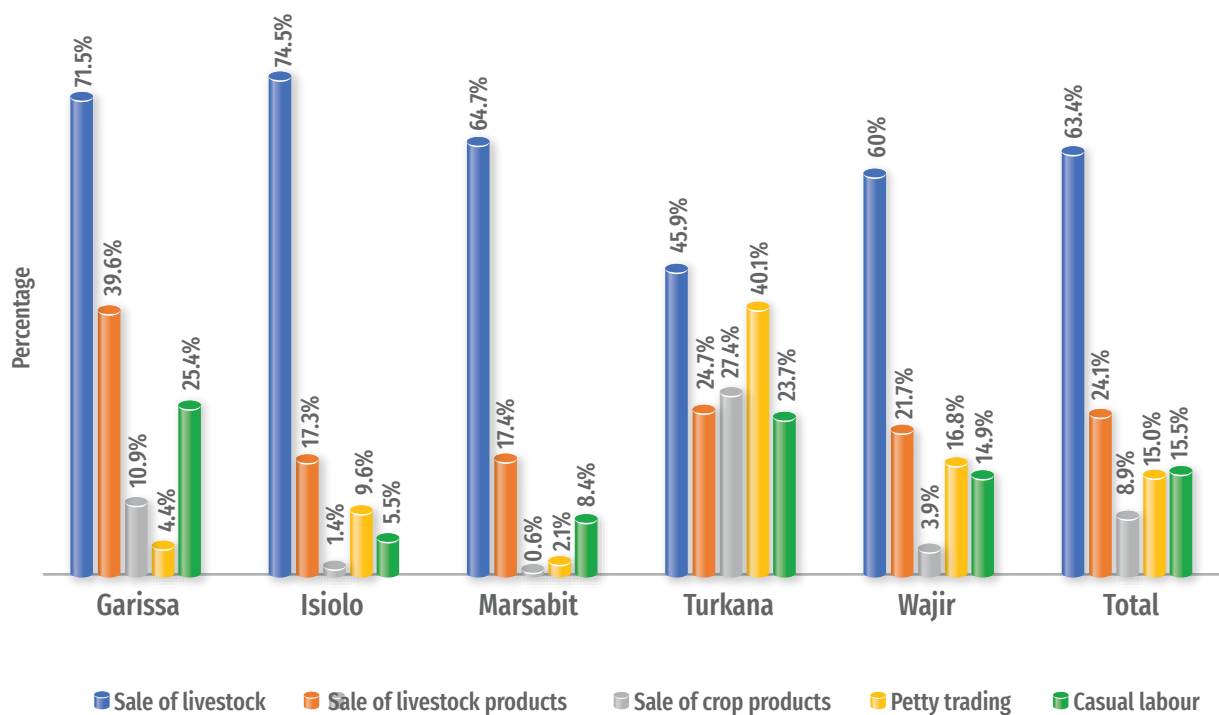


Figure 3 - Sources of income in the households

However overall and per capita incomes were low. 53.0% of the visited households reported an annual income of between 0 and 50,000 Kenya Shillings (0-500 USD). This translates to 1.19 USD1 per household per day, comparable to WB 1.90 USD per day poverty line and confirms the conditions of extreme poverty lived by ASAL households.²

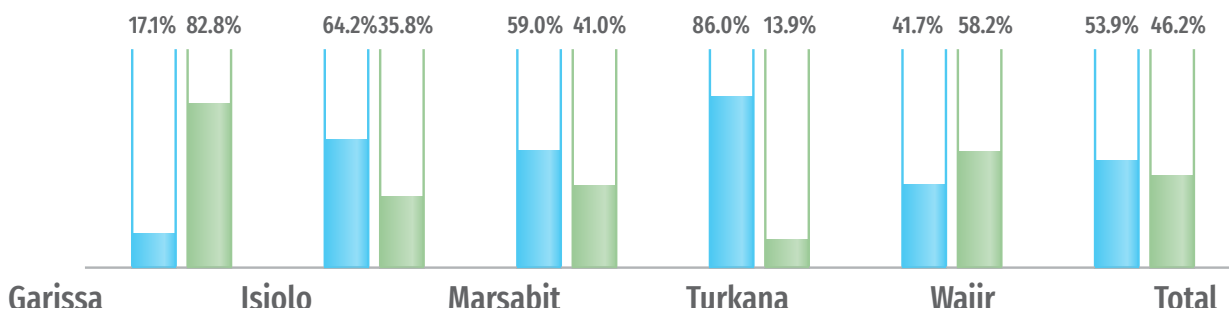


Figure 4 - Average annual income in the households

Findings on Water Policies, Legal Framework and Programmes

Only the county governments of Turkana and Isiolo had water policies in place (dated 2018 and 2020 respectively). In addition, Garissa, Turkana and Isiolo Counties had Water Acts promulgated in 2018, 2019 and 2020 respectively. The County Government of Marsabit had a water Services Act (2018), without a current water Policy, while Garissa County had a draft water policy and a County water Act. Wajir County had neither a water policy nor a water Act, although a draft County water bill was in the County assembly for discussion. It is noted however, that in all cases, available policies and laws lacked clear

¹ Conversion rate of 1 USD = 115 Kenya Shillings as at May 2022.

² Extreme poverty, deep poverty, abject poverty, absolute poverty, destitution, or penury, is the most severe type of poverty, defined by the United Nations (UN) as "a condition characterized by severe deprivation of basic human needs, including food, safe drinking water, sanitation facilities, health, shelter, education and information. It depends not only on income but also on access to services" (UN 1995 report of the World Summit for Social Development). In October 2017, the World Bank updated the international poverty line, a global absolute minimum, to \$1.90 a day.

costed implementation and M&E master plans and were not sufficiently gendered, hence their sub-optimal effectiveness and impact on target beneficiaries.

Table 1: Status of legal and policy frameworks within the water sector in the five Counties

County	Policies & Strategies	Draft Bills	Acts
Wajir	-	Draft Bill is in the County Assembly	-
Turkana	Water and Sewerage Services Sector Policy (2018) Water policy (2019) Water Strategic plan (2015-2020) available and 2022-2027 being developed	-	County Water Act (2019)
Garissa	Draft water policy available (2018) Water strategy (2018-2023) available	-	Water Act (2018) available
Marsabit	Water policy (2014)	-	Marsabit County Water Services Act (2018)
Isiolo	Water policy (2020)	-	Water Act (2020) available

Findings on Access to Improved Sources of Safe Water for Drinking and Domestic Use

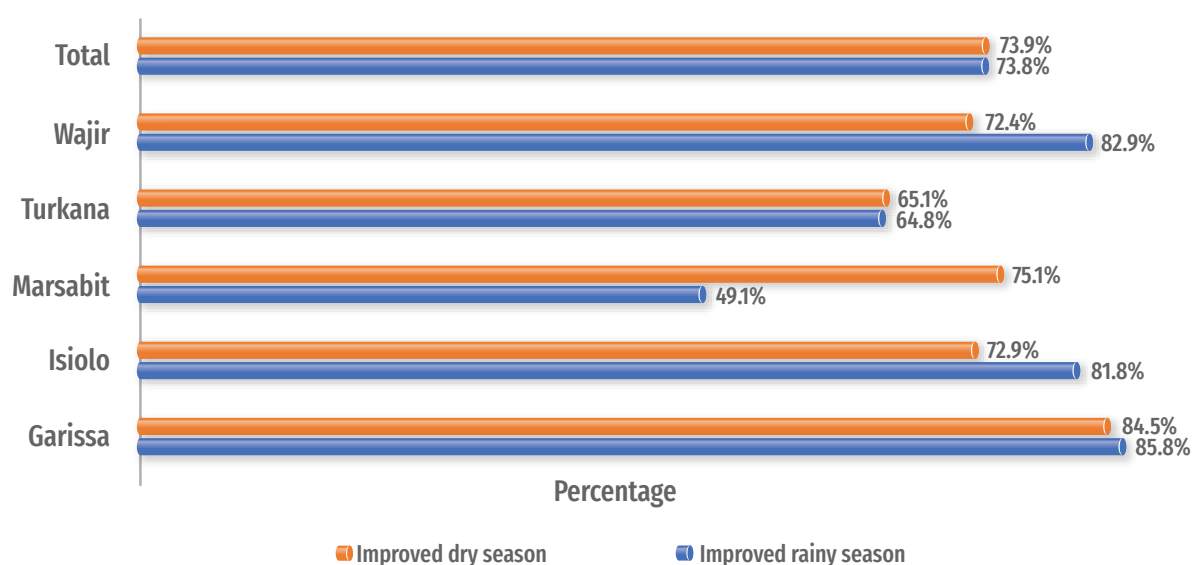


Figure 5 - Access to improved sources of safe water for drinking and domestic use

Access to improved sources of safe water for drinking and domestic use was reported by 73.6% and 73.9% of the respondents during the rainy season and dry season respectively. There was little difference in access across the seasons due to the presence of unsafe ground water in the rainy season and the unavailability of water in the dry season.

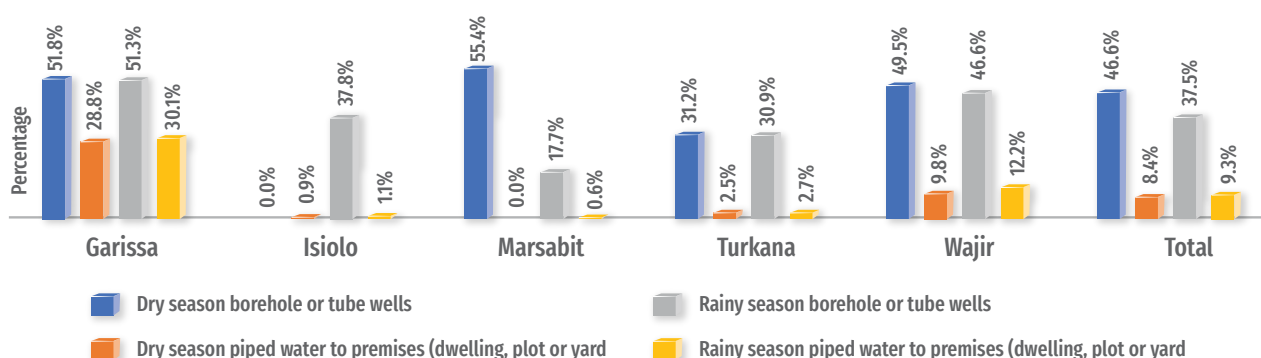


Figure 6 - Top two sources of safe water for drinking and domestic use

Across both (rainy and dry) seasons, the main sources of safe water for drinking and human consumption were boreholes or tube wells (identified by 37.5% and 46.6% of the respondents), followed by piped water into premises (dwellings, plots or yards) (identified by 9.3% and 8.4% of the respondents, the differences arising largely from low ground water potential and quality during the dry season.

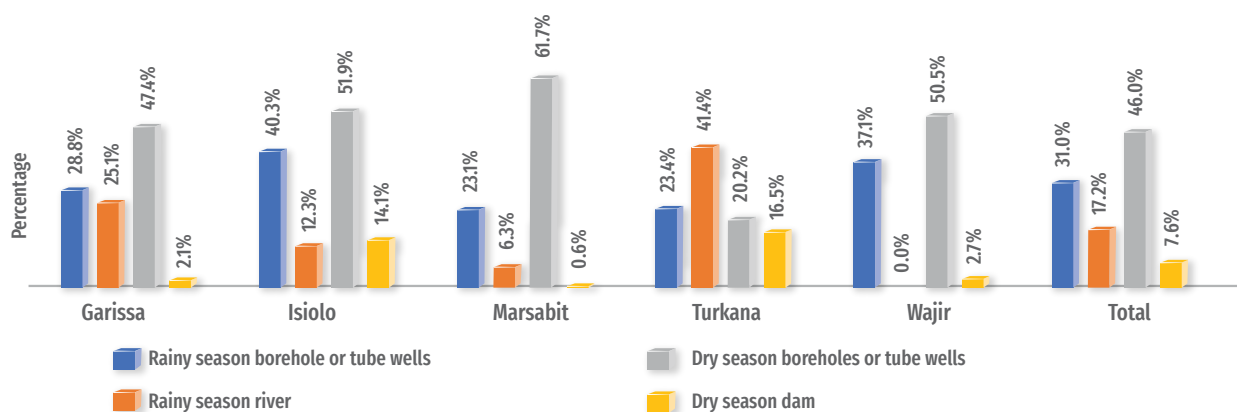


Figure 7 - Top two sources of water for livestock consumption by season

Access to improved sources of safe water for livestock consumption was reported by 45.2% and 60.1% of respondents during wet and dry season respectively. The main sources of such water during the wet season were boreholes or tube wells, followed by rivers ((reported by 31.0% and 17.2% of the respondents). During the dry season, the main sources of safe water for livestock were boreholes and tube wells, followed by dams reported by 46.0% and 7.6% of the respondents respectively. Usage of borehole or tube well water increased over the dry season, as surface and river waters diminished across all Counties.

Functionality of Main Sources of Safe Water for Drinking and Domestic Use and for Livestock

90.4% and 68.8% of the respondents described their main sources of safe water for drinking and domestic use as functional while 0.2% and 2.9% of the respondents reported abandoning their sources during the wet and dry seasons respectively. The main reasons for abandonment during both seasons were salinity, insecurity, and low volumes (drying up of sources).

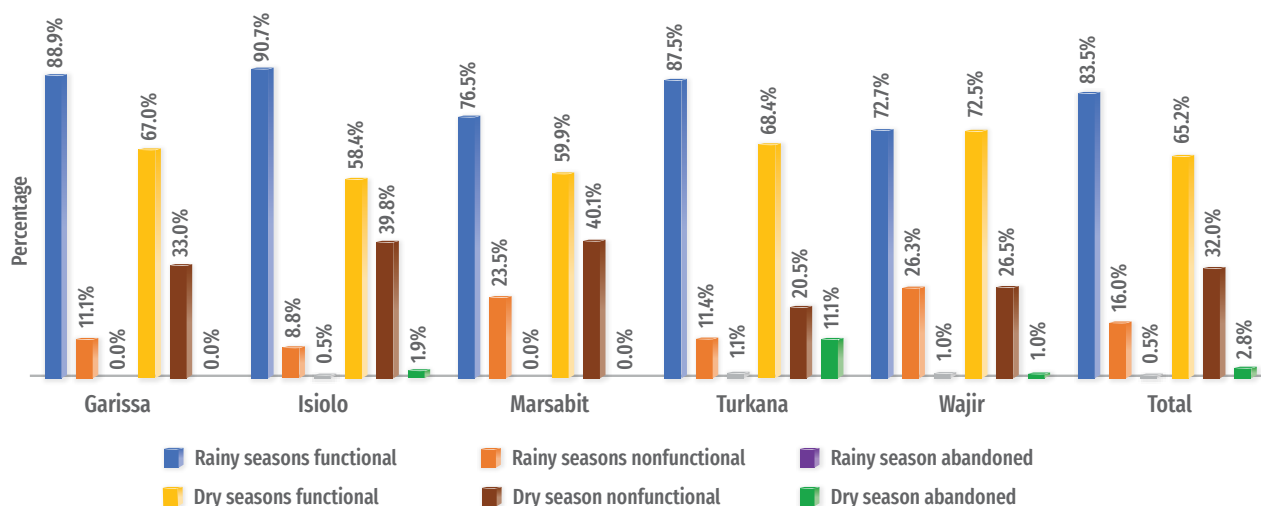


Figure 8 - Functionality of main sources of safe water for drinking and domestic use

For Livestock, the main sources of safe water were functional for 83.5% and 65.2% of the respondents in wet and dry seasons respectively. 0.5% and 2.8% of the respondents reported abandoning their main sources of safe water for livestock consumption during the rainy season. The reasons cited for abandonment were similar to those of the sources for human consumption, namely, salinity, insecurity and drying up of water sources. In some instances, government capping was also identified as a reason.

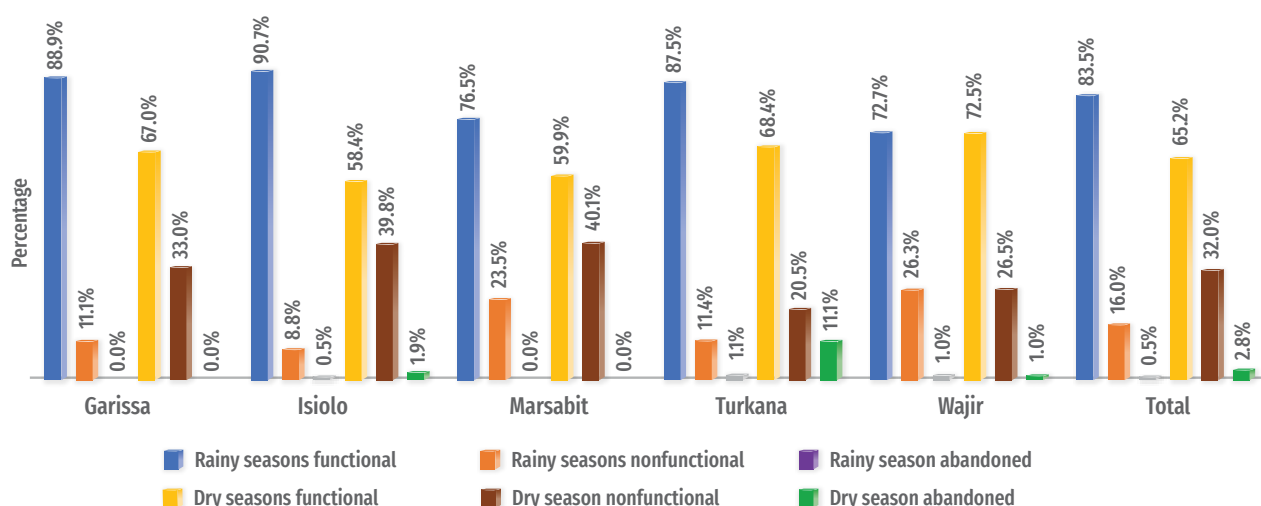


Figure 9 - Functionality of main sources of safe water for livestock consumption

FGDs and KIIs identified water points and systems breakdowns as other causes of poor functioning in water sources, attributing the causes to poor operational skills, natural wear and tear of systems components, inadequate ventilation, pump overheating due to long hours of pumping, blockages of suction tips and salinity, damage by livestock and wildlife, sucking of gravel by the pumps and the on-going road construction works across these Counties. Pipe bursts due to exposure to heat and airlocks, damage of pipes and tanks by wildlife and livestock, flooding in the rainy seasons and vandalism were other causes.

Table 2: Reasons for abandonment of main sources of safe water for drinking and domestic use

Rainy seasons	Reason	Garissa	Isiolo	Marsabit	Turkana	Wajir	Total
Rainy seasons	Salinity	0.0% (0)	100.0% (1)	0.0% (0)	66.7% (2)	0.0% (0)	75.0% (3)
	Insecurity	0.0% (0)	0.0% (0)	0.0% (0)	33.3% (1)	0.0% (0)	25.0% (1)
	Low volume	0.0% (0)	0.0% (0)	0.0% (0)	33.3% (1)	0.0% (0)	25.0% (1)
	Total	0	1	0	3	0	4
Dry seasons	Reason	Garissa	Isiolo	Marsabit	Turkana	Wajir	Total
	Salinity	0% (0)	22.2% (2)	0.0% (0)	100.0% (40)	50.0% (4)	80.7% (46)
	Insecurity	0% (0)	11.1% (1)	0.0% (0)	27.5% (11)	50.0% (4)	28.1% (16)
	Drying up of the source	0% (0)	0% (0)	0.0% (0)	2.5% (1)	0% (0)	1.8% (1)
	Total	0	9	0	40	8	57

Table 3: Reasons for abandonment of main water sources of safe water for livestock

Rainy seasons	Garissa	Isiolo	Marsabit	Turkana	Wajir	Total
Salinity	0% (0)	100% (2)	0% (0)	75% (3)	50% (2)	50.0% (5)
Insecurity	0% (0)	0% (0)	0% (0)	75% (3)	25% (1)	50.0% (5)
Government capping	0% (0)	0% (0)	0% (0)	0% (0)	25% (1)	10.0% (1)
Migration	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	10.0% (1)
Total	0	2	0	3	4	10
Dry seasons	Garissa	Isiolo	Marsabit	Turkana	Wajir	Total
Salinity	0% (0)	0% (0)	0.0% (0)	92.5% (37)	50.0% (2)	75.0% (39)
Insecurity	0% (0)	50.0% (4)	0.0% (0)	62.5% (12)	25.0% (1)	57.7% (30)
Drying up	0% (0)	25.0% (2)	0.0% (0)	2.5% (1)	0.0% (0)	5.8% (3)
Total	0	8	0	40	4	52

Findings on Distance to Main Source of Safe Water for Drinking, Domestic Use and Livestock

From the household interviews, 48.8% of the respondents reported covering less than a kilometre to access their main source of water for drinking and domestic use in the rainy season. In the dry season 37.8% of the respondents identified traveling less than a kilometre to access their main source of safe water for drinking and domestic use.

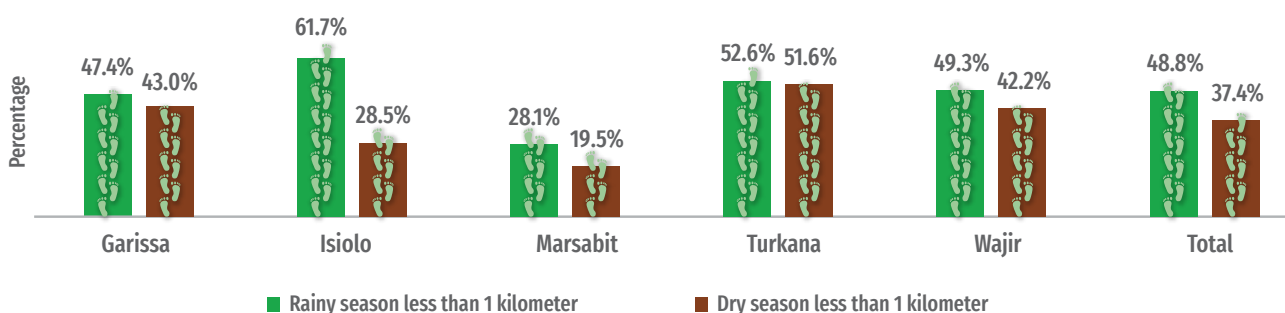


Figure 10 - Distance to main source of safe water for drinking and domestic use

Households travelled longer distances to access safe water for their livestock during the wet and dry seasons. Only 26.4% and 19.1% of the respondents reported travelling less than a kilometer to access safe water for livestock use in wet and dry seasons respectively.

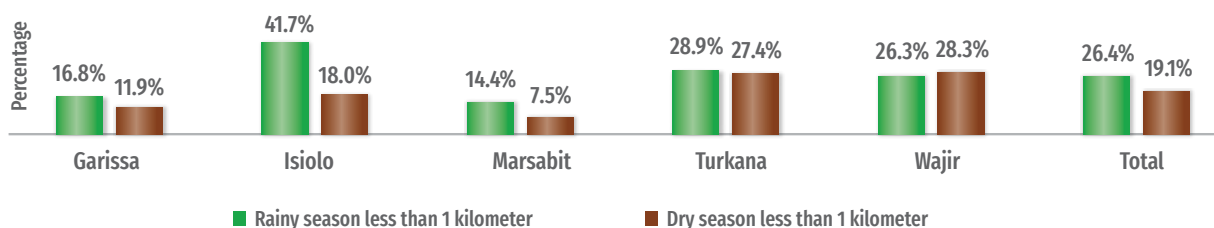


Figure 11 - Distance to main sources of safe water for livestock consumption

Time variability in accessing safe water for domestic and livestock use across seasons was attributed to longer distances to alternative sources during the dry season.

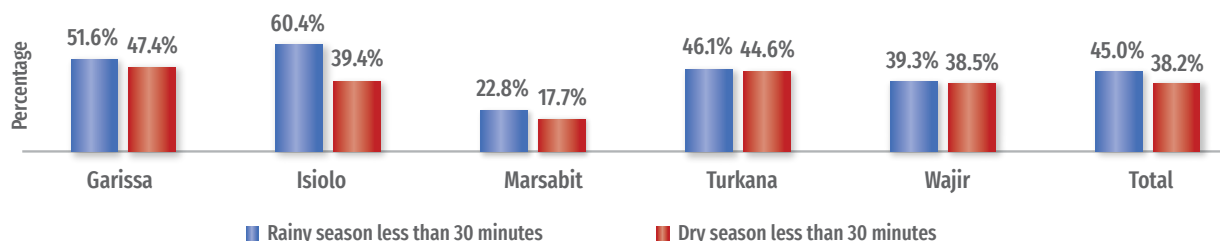


Figure 12 - Time taken at the main sources of safe of water for drinking and domestic use

From the FGDs across all sites, even the main water sources (boreholes) in the villages and other strategic points within the communities experienced declined volumes during dry seasons. In a number of instances, water from these sources changed color, taste and smell, forcing communities to walk longer distances to access cleaner alternative sources, for which they had to pay, many of them being outside their communities.

Findings on Time Taken to Access the Main Sources of Safe of Water for Drinking and Domestic Use and For Livestock

On average, 45.0% of the households took less than 30 minutes to access their main sources of safe water for drinking and domestic use. During the dry season, 38% of the households took the same time. In the dry seasons, households spent between one hour and six hours to access alternative (or secondary) water sources.

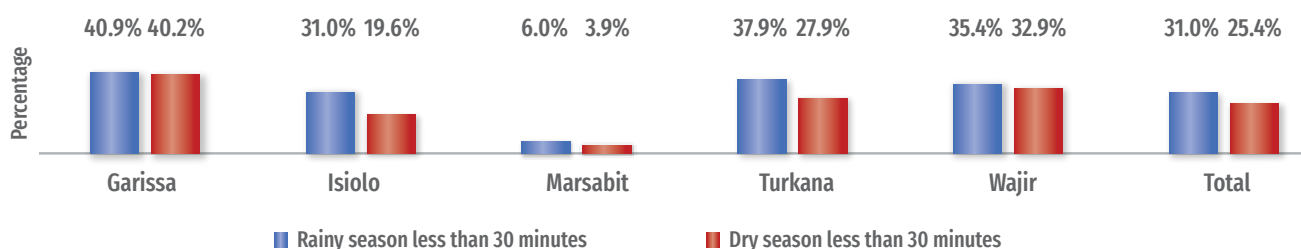


Figure 13 - Time taken at the main sources of safe of water for drinking and domestic use

In the rainy seasons, 31.0% of the households reported spending less than 30 minutes at their main source of safe water,

while in the dry season, fewer people, 25.4%, spent less than 30 minutes waiting at their main source of safe water for household use. FGDs across all five Counties reveal that during drought, water points were shared among many households and livestock herds, leading to longer waiting times. In some of the Counties, for example, Marsabit, Wajir and Garissa, households reported declined volumes as a result of the increased sharing.

Similar time variations were experienced with respect to accessing safe water for livestock use. 21.6% and 15.4% of the households reported spending less than 30 minutes in the rainy season and dry season respectively to bring their livestock to the outside main source of safe drinking water.

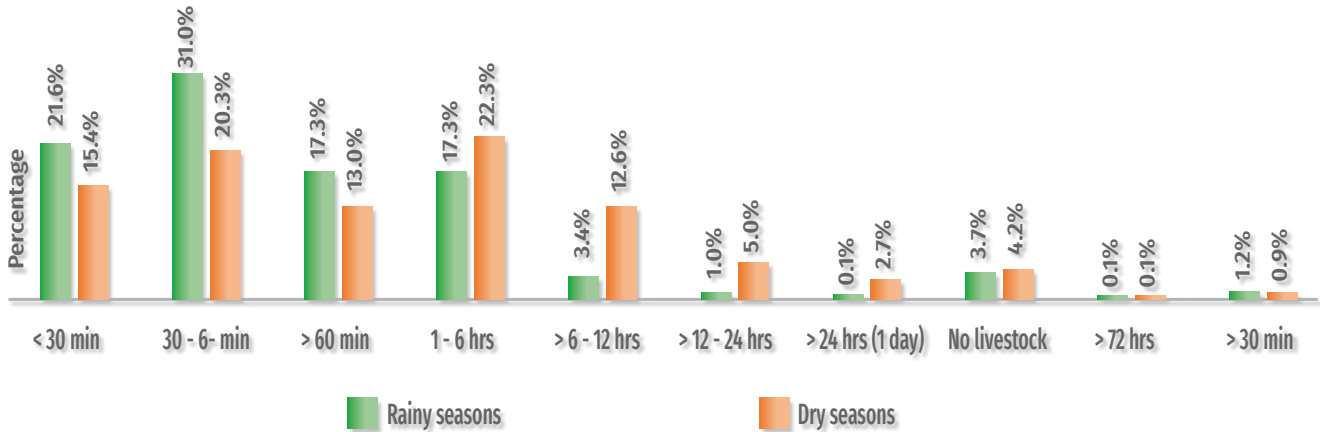


Figure 14 - Time taken to bring livestock to the main sources of water for livestock consumption

FGDs revealed that during periods of intense drought, livestock moved across sub-Counties and Counties and even across national borders in search of water and pasture (for example Kenya/Uganda, Kenya/Ethiopia, Kenya/South Sudan, Kenya/Somalia). As such, long distances were traversed and pastoralists could be away from home for months.

To peacefully access water and pasture in these 'external' territories, prior agreement, through negotiation among community elders and governments had to be reached. Among governments elaborate transboundary resource sharing plans and investments have been agreed.

Findings on Household Water Security Per County

Only 4.9% of the households were able to access a minimum of 350 liters of water per day in the wet season, this proportion declining to 3.1% in the dry seasons.

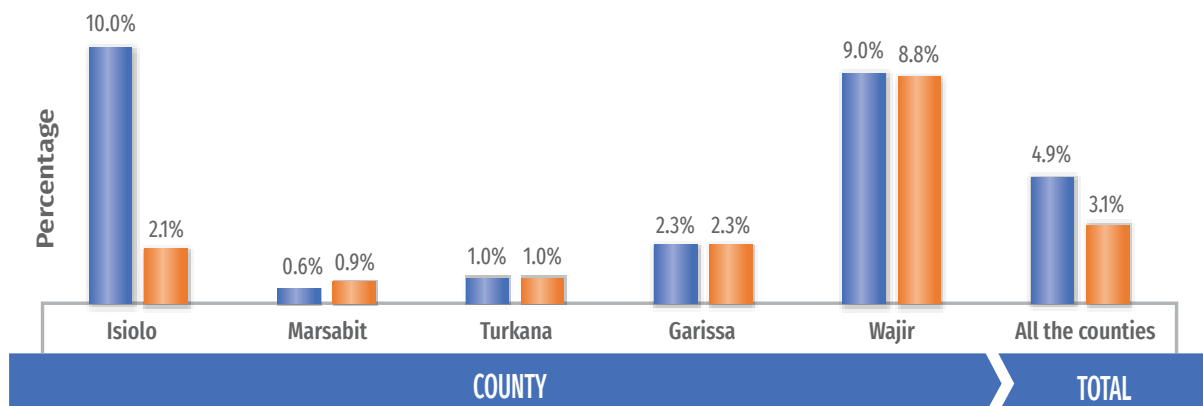


Figure 15 - Access to 350 or more liters of water per day per household

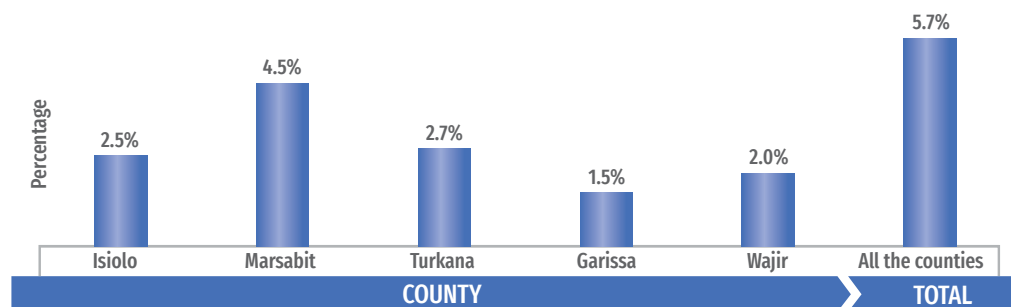


Figure 16 - Availability and reliability of water for multiple use across seasons

On average households accessed 170 liters of safe water for drinking and domestic use per day in the rainy season and 105 liters in the dry seasons. This translates to 28.73 liters per person per day in the rainy season (based on the survey's derived household size of 7 members) and 17.17 liters per person per day in the dry season, way below the recommended minimum rates. According to the World Health Organization (WHO), between 50 and 100 liters of water per person per day is required to meet the most basic human needs.³

Table 4: Average volume of water accessed from the main sources of safe water for drinking and domestic use per day

Season	Variable	County					All the 5 Counties		
		Garissa	Isiolo	Marsabit	Turkana	Wajir	Female	Male	Total
Rainy seasons	Safe water amount accessible for domestic use daily in each HH in liters	130 L	323 L	108 L	103 L	161 L	177 L	155 L	170 L
	Safe water amount per person per day in liters	20.97 L	54.22 L	22.08 L	19.39 L	23.28 L	29.79 L	26.39 L	28.73 L
Dry seasons	Safe water amount accessible for domestic use daily in dry season in each HH in liters	151 L	56 L	70 L	79 L	166 L	97 L	120 L	105 L
	Safe water amount per person per day in liters	25.40 L	9.28 L	14.55 L	13.78 L	23.34 L	16.59 L	18.46 L	17.17 L

Respondents rated water availability (quantity) and reliability on a scale of 1-5, 5 being the highest score and 1, the lowest. Across both seasons, only 5.5% of them rated availability and reliability as 5/5, a further indication of water insecurity across all five counties.

The quantity of water accessible to each household for drinking and domestic use during the rainy season in all five Counties was scored at 3.39/5 on the 0-5 Likert scale, highest for Isiolo County (4/5) and lowest for Turkana County (2.8/5). In the dry season, the average score was 2.75/5, highest in Marsabit County (3.26/5) and lowest in Isiolo County (2.43/5). The same scale was used to score the volume of water available for livestock consumption in the rainy and dry seasons. The average score in the rainy season was 3.32/5, highest in Marsabit County (4.05/5) and lowest in Turkana County (2.39/5). During the dry season, the average rating was 2.18/5, highest for Wajir County (2.75/5) and lowest in Garissa County (1.9/5).

65.9% of the community members identified that safe water for drinking and domestic use at the main sources was inaccessible from time to time during the dry season, compared to 28.3% during the rainy season.

63.9% of the households identified that safe water for livestock consumption was inaccessible from time to time during the dry season, compared to 19.1% during the wet season. Across the five Counties, the top three barriers to accessing water for household purposes in the rainy season were long queues at source (40.3%), contamination of sources largely through floods, human and livestock waste (24.7%), and breakdown of water points (26.5%). In the dry seasons, the top three barriers to access were long queues (67.4%), low water levels/volumes (53.5%) and long distances to and from the water point (45.6%). The top barriers of access to safe water for livestock consumption during the rainy season were long queues (51.6%), insecurity (29.8%) and contamination of water sources (22.9%). The same reasons contributed to inaccessibility during the dry season—long queues (65.6%), long distance to water points (56.0%) and low water levels or volumes (55.3%).

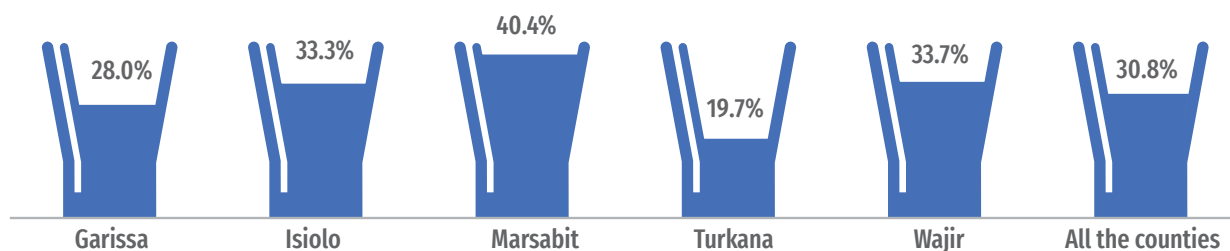
³ United Nations.2015. The Human Right to Water and Sanitation, media brief. < https://www.un.org/waterforlifedecade/pdf/human_right_to_water_and_sanitation_media_brief.pdf>

Table 5: Reasons for inaccessibility of water for livestock consumption from the main sources

County	Rainy seasons	Percentage	Dry seasons	Percentage
Marsabit	Long queues	55.9% (33)	Long queues	84.2% (250)
	Insecurity/conflict	49.2% (29)	Long distance to the water point	59.3% (176)
	Reduced water levels	23.7% (14)	Low water levels	54.5% (162)
Garissa	Long queues	49.2% (30)	Long distance to the water point	65.6% (120)
	Long distance to the water point	37.7% (23)	Long queues	66.7% (122)
	Unaffordability	21.3% (13)	Unaffordability	36.6% (67)
Isiolo	Long queues	74.8% (80)	Long distance to the water point	63.4% (218)
	Insecurity/conflict	41.1% (44)	Low water levels	59.9% (206)
	Long distance to the water point	37.4% (40)	Long queues	59.6% (205)
Turkana	Contamination of water	55.7% (34)	Low water levels	71.9% (161)
	Insecurity/conflict	45.9% (28)	Long queues	70.1% (157)
	Long queues	45.9% (28)	Long distance to the water point	58.5% (131)
Wajir	Long queues	26.1% (23)	Long queues	43.3% (91)
	Contamination of water	35.2% (31)	Low water levels	58.1% (122)
	Impassable roads/mud	19.3% (17)	Long distance to the water point	28.1% (59)
All Counties	Long queues	51.6 % (194)	Long queues	65.6% (825)
	Insecurity/conflict	29.8% (112)	Long distance to the water point	56.0% (704)
	Contamination of water	22.9% (86)	Low water levels	55.3% (696)

Findings on Treatment of Water Before Drinking

Treatment of water before drinking was reported by only 30.8% of interviewed households with the lowest responses coming from Turkana.

**Figure 17 - Treatment of Water Before Drinking**

From the KIIs with the water suppliers, a significant number of them identified that they treated water before distribution. They however admitted that treatment was basic and entailed mostly chlorination of the water. FGDs with water users and user committees across the five Counties identified cost considerations, physical inaccessibility of water treating agents, low knowledge levels and ignorance among community members, and the belief that water from protected springs and wells was safe for drinking as barriers to water treatment.

Findings on Water User Committees / Associations (WUCs/WUAs)

62.3% of the households surveyed had their water sources managed by a WUC or a WUA

WUAs and WUCs in the five Counties faced a wide range of Operation and Management (O & M) challenges including: limited management skills, poor governance, poor capacities for mobilizing resources and forging effective partnerships, poor or no records keeping of their operations, use of obsolete technologies and frequent water system breakdowns due to mis/over-usage, and destruction by livestock and wildlife, as well as on-going road construction works in the Counties among other causes. Other limitations included their low engagement in water catchment protection, restoration, and management. The committees were however largely accepted by the communities as they were inclusive, drawing their membership from all segments of the communities (men, women, youth clans, and PWD as appropriate).

Charges levied for water access, were mainly in the form of flat monthly fees, metered bills, per liter accessed or livestock herd watered, or per household accessing water. Some committees allowed free access to water during the wet season, only charging during the dry seasons, when demand was high and the supply low.

Turnaround time for the repair of broken water systems ranged from between a day and 90 days among visited WUCs and WUAs, averaging overall at around 21 days.



Figure 18 - Turnaround time for repairing water systems

Findings on Water Technologies Used

In terms of technologies in use for pumping and delivering water, the evaluation established the use of hand pumps, boreholes running on solar, generators, grid power and Hybrid running on all three, borehole pumps with remote sensors, water Kiosks fitted with ATMs, prepaid meters, desalination plants (operating on the principles of reverse osmosis), and database systems (MIS) for tracking borehole location, depth, yield and functionality.

Most water systems were designed and developed with basic multipurpose use in mind, and as such had provisions such as water troughs for livestock drinking. Most public systems however did not allow sale of water for purposes of re-sale for example, although persons intent on using water for purposes such as construction, or basic localized irrigation (kitchen gardening, tree planting) were made to pay for it. The possibility of using installed water facilities such as the boreholes for small-medium scale irrigation was largely not provided for. For example, existing yields did not sufficiently cater for both domestic and small-medium scale irrigation. A few systems however were built with this purpose in mind and were being used this way.

A number of private water providers were found in the focus Counties, with the exception of Isiolo County. Where present, they were largely involved in installation of water systems (solar pumps and diesel generators), sale of spare parts, servicing of water systems, and water desalination for commercial and non-commercial sale. They were however not involved in water catchment protection or regeneration activities, or in water infrastructure development dialogues at the communities or County levels.

Findings on Conflicts Over Water and Pastures

Conflicts over water and pasture resources occurred across all five Counties. Some 42.7% and 43.3% of the households interviewed reported that they had heard of or experienced conflict over access to either pasture (grazing) or water respectively, in the year preceding the survey. The highest incidences were in Isiolo and Marsabit reported by 68.3% and 64.7% of the respondents respectively. From the FGDs negotiations among clans and communities enabled access to water and pastures by communities in need. Perennial clan rivalries over boundaries, cultural and traditional raids especially among the youth (as a rite of passage), and political instigations were identified as amplifiers of conflict.

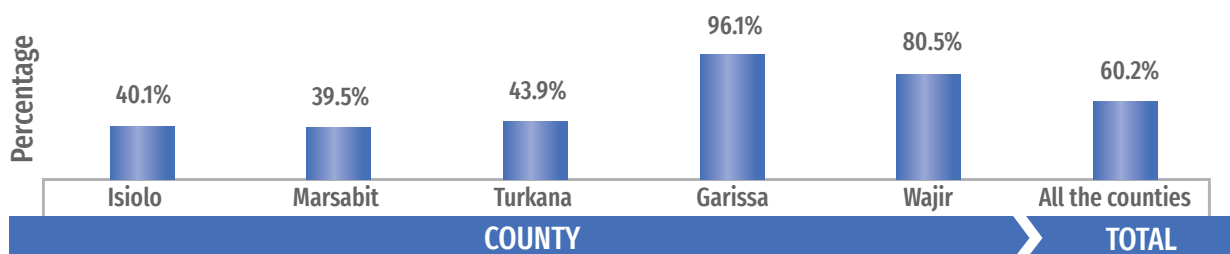


Figure 19 - Percentage of people in the target areas who say they feel welcome by neighboring communities to access water and grazing areas in times of need

The survey reports significant loss of trust among communities that have experienced conflict over water and pasture resources. Trust of communities that households had had conflict with was reported by only 2.8% of the respondents, and was lowest in Isiolo and Marsabit Counties (0.3% and 2.2% respectively).

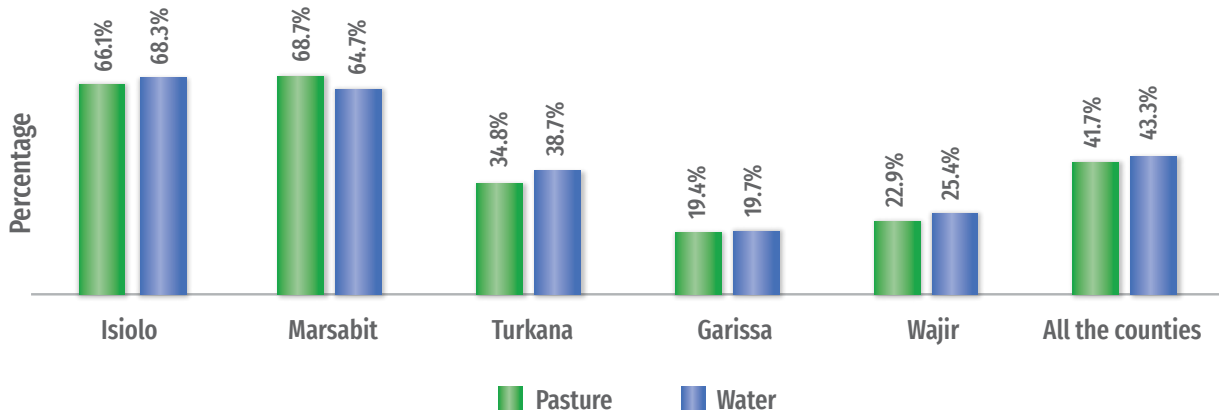


Figure 20 - Awareness of conflict over water and pastures in the year preceding the survey

Related to this, 39.8% of the community members did not feel welcome to share water and grazing resources by other communities in times of need. This sense was strongest in Isiolo and Marsabit Counties (59.9% and 60.5%). From qualitative interviews, conflicts in the Counties were characterized by raids and counter raids among clans and communities and by small quarrels and disagreements at collection points. In the Counties of Marsabit and Isiolo, clannism and political incitements over traditional land boundaries were cited as historical triggers of conflicts.

Cases of SGBV linked to access to water and rangeland resources were reported by 11.0% of the respondents interviewed. Majority (90%) of the victims who had experienced SGBV were women. From the FGDs, SGBV occurred when women and girls went to fetch water and other rangeland resources in places far away from their villages, including in the forests. In Wajir County, FGDs revealed that pastoralists with livestock at the water points hardly gave priority to women and girls to fetch water, and often abused them, especially in cases where the females were not known to the herders.

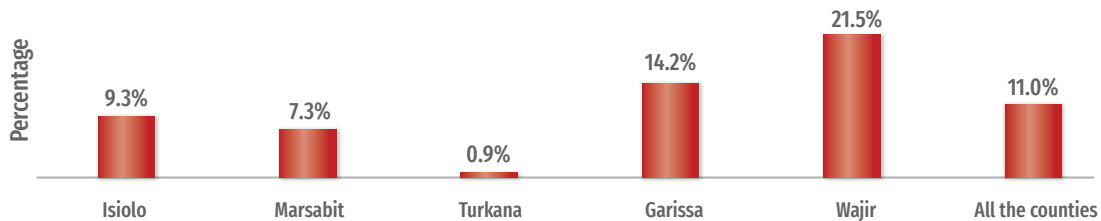


Figure 21 - GBV cases related to access to water and rangeland resources

Evaluation Findings on Program Outcome Two -Access to Sustainable Rangelands Resources

Findings on Policies and Laws on Rangelands Resources Management

Across all five Counties, the practice of improved rangelands management was fraught with challenges of poor (near absent) policy, strategic, legal and institutional framework, poor capacities of implementing departments, poor funding of rangeland interventions, and low knowledge levels and capacities of communities and community institutions. Apart from Isiolo County with a meaningful draft Rangeland Policy (2021), a draft Rangeland Bill (2021) and a draft Conservancy Bill (2021), none of the other Counties had a rangeland policy or bill in any form.

This is despite all the CIDPs explicitly identifying rangelands development as a key plank in the advancement of ASAL livelihoods and economies and allocating resources to it. Given the important role played by women in these efforts, it is noted that gender equality mainstreaming and social inclusion (including efforts to deal effectively with SGBV) have lagged across all five Counties, with the relevant policies only being published recently (Garissa, Marsabit and Isiolo) or in draft forms (Turkana and Wajir) and as yet largely uncostered and unfunded.

With the exception of Turkana County, none of the Counties had a department, or directorate, or a division dedicated to rangelands Affairs. In Turkana County Rangelands management was domiciled under the directorate of Livestock services and assigned to the Directorate's deputy director. In the other Counties, rangelands resources development and related activities were lumped with agriculture, livestock production, and natural resources management departments and directorates, hence

their lack of visibility. In the absence of an explicit policy, strategic and legal framework, and a dedicated Unit, actual financing and prioritization of rangelands resources management remained low. The development of this key sub-sector in the Counties has thus remained largely in the hands of development partners and research organizations, a number of whom were present and active in the program Counties.

Findings on Decision Making on Livestock and Agricultural Production

From both the household surveys and the KIIs and FGDs, communities in the 5 Counties were predominantly patriarchal and women played very marginal roles in decision-making regarding the management of rangeland resources. Decisions relating to livestock management, including grazing, migration, purchase and sales, and treatment were made largely by men. While decisions on agricultural production and sales of crop products were shared (given their implications for access to grazing lands), women retained the responsibility crop production. Women were also allowed to decide on sale of livestock products such as meat, milk, hides and skins.

Table 6: Status of policy and legal frameworks on rangelands resources management

County	Policy & Strategy	Draft Bills	Bills	Act
Wajir		Draft agricultural Bill developed with gender considered	-	-
Marsabit	Zero draft rangelands resources management policy	-	Range management Bill Market and trade Bill	Livestock Act
Turkana		-	Turkana County Livestock Sale Yard Bill	-
Garissa	Draft policy Gender policy available Disaster Risk Management policy (2022)	Draft Bill	-	Garissa County Climate Change Fund Act (2018) Garissa County Environmental Management and Co-ordination Act (2018)
Isiolo	Rangeland Management Policy (2021) Livestock Strategy (2021) Agriculture Sector plans (2018-2021)	-	Rangeland Resources Management Bill Livestock Bill available	-

Findings on Participation in Decision Making on Communal Land Use for Grazing

43.5% of the respondents identified that they had decision making rights on timing and frequency of grazing on the community land. Indigenous and other and other marginal groups were, however, facing stiff challenges in the exercise of their right to land. Participation in decision making on frequency and timing of grazing of communal lands was reported by 47.8% of the households surveyed. This indicates and perhaps explains the evident low levels of community awareness and knowledge of rangelands matters.

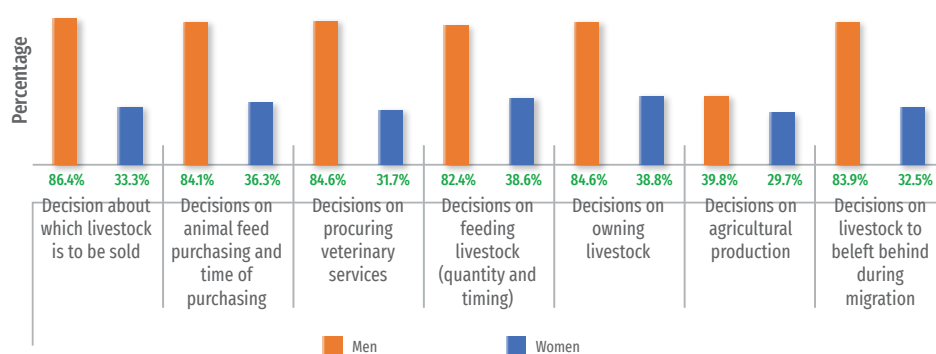


Figure 22 - Decision making on livestock and agricultural production in the households

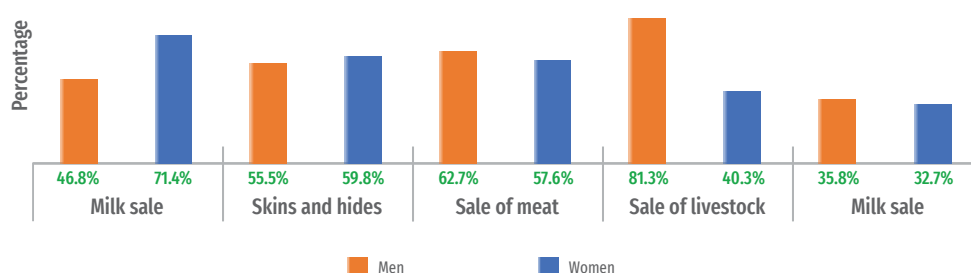


Figure 23 - Decision making on sale of livestock, livestock products and crop products

Findings on Knowledge and Practice of Rangeland Management Practices

Asked to name any three rangeland management activities or practices known to them, only 35.7% of the respondents were able to only do. The three main practices identified by the respondents were water harvesting, destocking, fodder production and conservation and grazing management. Knowledge of rangeland resources management practices was however significant in Turkana County, a fact attributed to a number of viable and sustained rangeland development partnerships between local communities and a number of development partners, including key national and international research institutions.

Only 23.0% and 14.6% of women and youth respectively indicated participating in rangelands resources planning and management. The main rangeland management practices in which they participated included production, conservation and sales of fodder and pastures, rangeland seeding and reseeding, breed improvement (based on the Galla Goat), alternative livelihoods adoption (resin production, Aloe Vera production and juice extraction, apiculture), irrigation along shallow wells and rivers, and grazing management.

Table 7: Status of policy and legal frameworks on rangelands resources management

County	Status
Wajir	No rangelands management policy
	No livestock development policy
	Draft agricultural Bill developed with gender considered
Marsabit	Livestock Act available
	Zero draft rangelands resources management policy available but it lacks a costed implementation framework and a M and E plan
	Range management Bill available
	Market and trade Bill available
Turkana	The Turkana County Livestock Sale Yard Bill is awaiting adoption
	No rangelands management policy or law
Garissa	Draft policy and Bill available
	Gender policy available
	Disaster Risk Management policy 2022 available
	Garissa County Climate Change Fund Act (2018) available
	Garissa County Environmental Management and Co-ordination Act (2018) available
Isiolo	Disaster Risk Management policy (2022) available
	Rangeland Management Policy (2021) available but lacks a costed implementation framework and a M and E plan
	Livestock Strategy (2021) available but lacks a costed implementation framework and a M and E plan
	Agriculture Sector plans (2018-2021) available but lack a costed implementation framework and a M and E plan
	Rangeland Resources Management Bill available
Livestock Bill available	

Findings on Time Spent Grazing in Communal Lands Over the Dry Seasons

The survey reveals that 52.2% (100-47.8%) of the households spent more than three quarter of the dry seasons herding and grazing livestock away from communal lands, while another 47.2% split their time between grazing on communal land and grazing away from communal land during the dry season. Only 5.1% of the respondents identified that they spent more than 50% of the dry seasons herding on the communal lands. This points to a very high degree of migration of pastoral communities during the dry season in search of both water and pasture. FGDs across all Counties indicated that where such migration occurred, access to water and pastures in the new lands had to be negotiated in advance with the elders of the host communities and clans, otherwise there would be conflict between the migrating and the host communities.

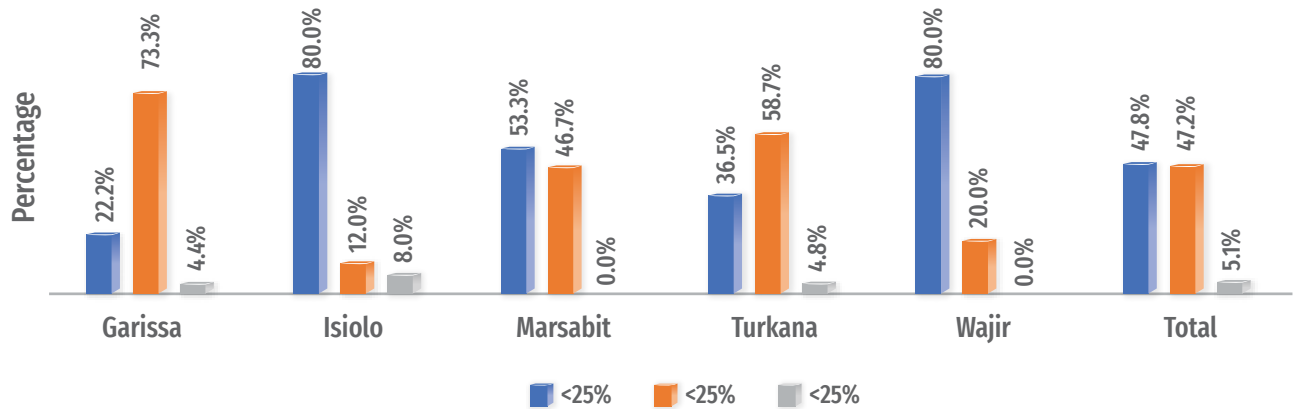


Figure 24 - Time spent grazing in communal lands over the dry seasons

Findings on Land and Title Deeds Ownership

Less than half (42.8%) of the responding households reported owning land. However only 16.8% of these actually had the documents conferring ownership of the said land (title deeds, allotment letters, lease documents, land purchase agreements, among other ownership records). FGDs revealed that most of the land claimed by households was actually communally owned and used largely for livestock production purposes without ownership documents.

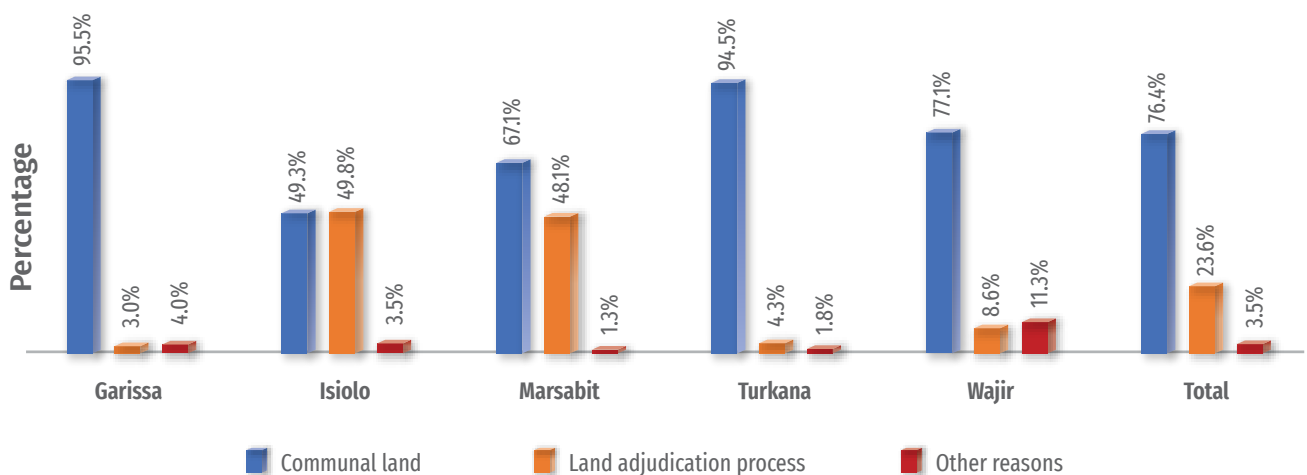


Figure 25 - Land and title deeds ownership

Findings on Land Use

Land in the Counties was used for agricultural crop production (14.0%), livestock production (55.7%), settlement/residential purposes (26.5%), commercial purposes (17.3%), leasing out (5.8%) and for alternative livelihood activities, such as resin and gum production, apiculture and production of other rangeland products (4.3%).

The high proportion of respondents using land for residential and commercial purposes (44.8%) is notable, and points to changing settlement patterns in the ASAL regions, as devolution deepens, accompanied by growing urbanization as more people relocate into the Counties and into urban centers in the belief of growing livelihood options in both places.

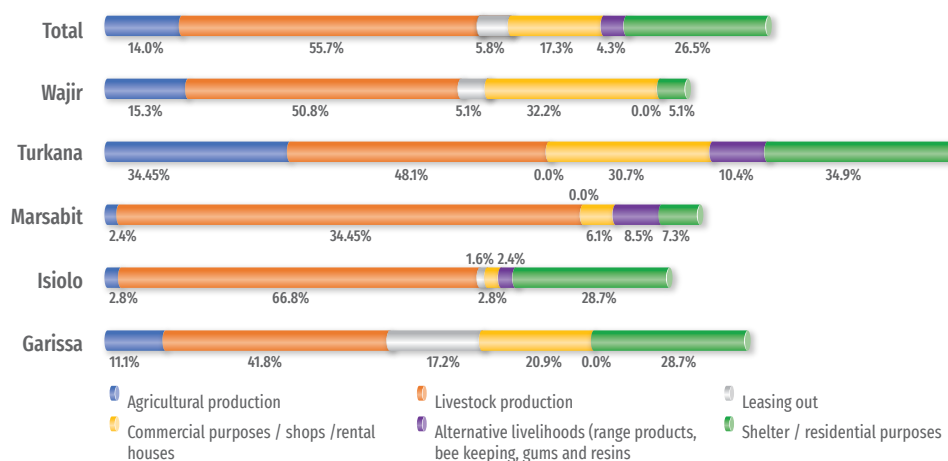


Figure 26 - Land use

Findings on Land Irrigation

Irrigation of owned or accessed land for crop production was practiced by only 3.3% of surveyed households, largely in Turkana County (9.5%), with zero irrigation activity reported for Marsabit County (0.0%). From the KIIs and FGDs in Turkana west sub-County, several humanitarian agencies working with refugees and host communities were supporting irrigation-based agriculture along with the County and the national governments.

The main irrigation technologies in use were drip, localized, manual, surface/furrow, sprinkler, flood and rainfed irrigation practiced by 49.3%, 47.7%, 43.1%, 38.5%, 12.3%, 12.3% and 10.8% respectively.

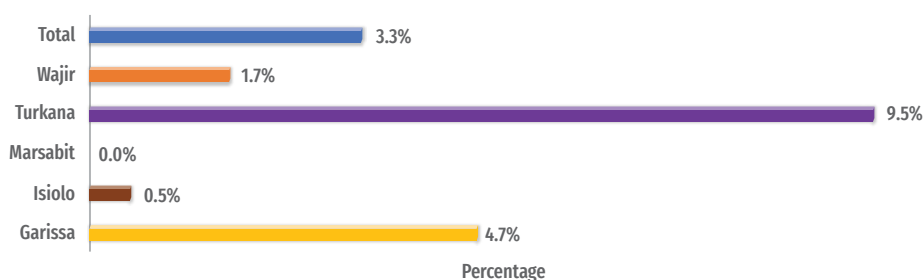


Figure 27 - Land Irrigation

In Garissa County, a number of (mostly international) organizations were supporting irrigation activities. In Wajir County, women groups supported by the County government were largely practicing furrow irrigation, producing and selling pastures. In Isiolo County the national government was reviving stalled government irrigation schemes (Rapsu, Kilimani Game Galana, Burat and Gubadida) while individual households in areas such as Attir were using water from the rivers and other existing sources to produce crops. In Marsabit County, minimal irrigation was practiced due to water shortage, although organizations such as Epicenter Africa and the Kenya Red Cross were partnered to rehabilitate existing boreholes, and to design and install solar powered borehole systems for irrigation in areas such as Waldaa.

In the most recent season, household incomes across all five Counties from the sale of crops averaged about 16,358.66 Kenya Shillings. This was mainly from the sale of grass/hay, husks, Acacia pods and Prosopis juliflora seedpods with only a few households in Turkana County producing sorghum and vegetables. In Marsabit County where production and supply were low, the demand for the products was high and hence the high income from the sold crops. In Wajir County, demand for pasture for livestock produced and/or traded mostly by women groups, was high.

Findings on Livestock Production

On average, every household had 22 cows, 41 goats, 21 sheep and 12 camels. Households in Marsabit County had the largest herd of goats (62), while those in Wajir County had the largest herd of cows (32). Households in Garissa County had largest herd of sheep (30), while those in Wajir County had largest herd of camels, at 15 per household.

There were three main sources of livestock across the five Counties namely (1) local breeding, (2) purchase, and (3) social donations given as wedding gifts and donations by wealthy families to vulnerable families. Other minor sources include

donations from humanitarian agencies, inheritance from parents and bounties obtained from raiding activities.

In terms of herd composition, communities in the five Counties traditionally keep livestock for subsistence and prestige purposes, and as a form of insurance against drought. Thus, 86.4% of the households had any form of livestock, with 50.5% of them having cows, 79.8% having goats, 68.7% having sheep, and 24.0% having camels. Goats were the predominant type of livestock kept by the households, and made up 53.8% of the livestock herd in each household, followed by sheep (23.8%), cows (17.6%) and lastly camels (4.6%).

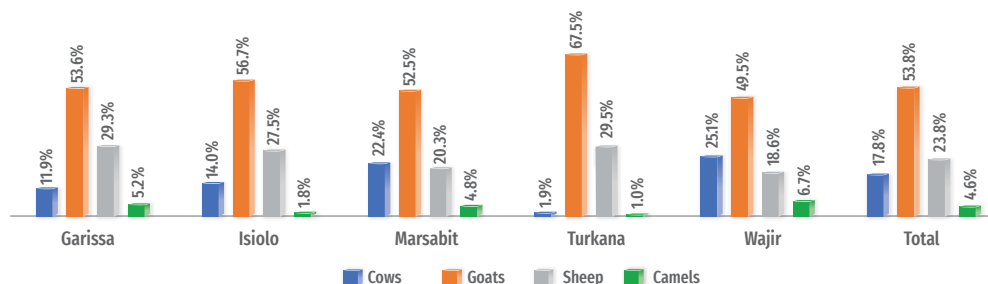


Figure 28 - Herd composition

From the FGDs, the livestock structure in all Counties was dominated by female livestock kept purely for milk. Camels were mostly kept for transport, cows for milk production, goats for both meat and milk purposes, and sheep for meat. Local breeds were preferred to exotic breeds on account of their tolerance of the local climatic, water and pasture dynamics.

Across the five Counties, pasture was reported to be available by 20.1% of the respondents, with Marsabit and Turkana Counties identified as having the lowest levels respectively. The unavailability of adequate pasture in these two Counties was attributed to degraded rangelands, erratic rains, harsh climatic conditions and human activities such as deforestation for firewood and charcoal.

Across the five Counties, the proportion of households meeting the threshold for sustainably managed rangelands resources was 15.9%, with the highest proportion being in Turkana west Sub-County. The over reliance on livestock production as the sole mode of livelihood in the ASAL region was slowly being replaced by a quest for alternative livelihood activities including irrigation, pasture production and conservation, apiculture, poultry and extraction and processing of other rangeland products such as Aloe Vera juice.

Findings on Households Climate Change adaptation and Mitigation Measures

From the household survey, 23.7% of the respondents identified that they were benefitting from a range of concrete climate change adaptation and mitigation measures. Solarization of boreholes, furrow irrigation and destocking were identified as the main climate change adaptation and mitigation measures adopted by communities.

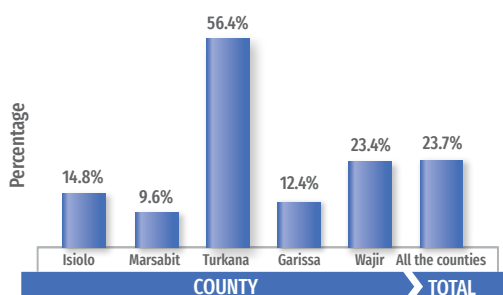


Figure 29 - Households benefiting from concrete climate change measures

County government departments and private sector players were promoting a range of other climate change mitigation and adaptation measures, including alternative livelihoods, improved goat breeding (Galla goats), and use of solar power in water abstraction, minimum tillage to increase soil moisture retention, voluntary off-taking as a destocking measure, green houses/shades, solar lighting (streets), early planting and adoption of drought tolerant crops.

In Turkana County the continued practice of the traditional system of EKWAR was viewed both by communities and the County government as a key rangeland conservation and climate change mitigation measure.

The main challenge identified by most respondents, including some of the government staff interviewed for this study, was the sustainability of most of these initiatives. The survey notes further that drought does not appear to trigger the voluntary

sale of livestock, even when they are faced with imminent death due to lack of pasture and water. This is on account of the prestige value attached to ownership of livestock by communities in these ASAL Counties. This trend is however changing, as pastoralist livelihood comes under increasing threat from increasingly harsh climatic conditions, and as communities seek alternative livelihoods as an adaptation measure.

Findings on Rangelands Resources Management Committees (RMCs)

Existence of RMCs was reported by 37.3% of the respondents, 15.1% of them identifying that their households were registered with the committees. Across the Counties, there was an interest in the RMC among community members because of the role they played in water and pasture management within the communities. This interest together with their strong rooting in the communities, drawing their membership from there, made them widely known and accepted in their respective communities. Further, 19.0% and 19.2% of the respondents reported the existence of inter-communal water and pasture sharing plans respectively.

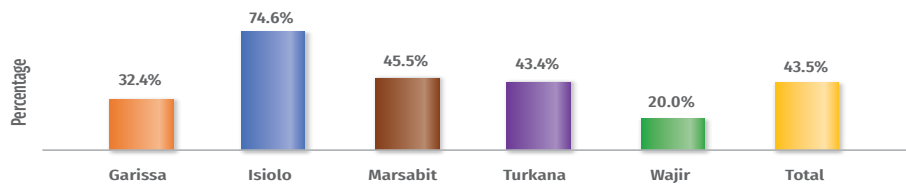


Figure 30 - Participation in decision making on communal land use for grazing

The RMCs however, faced and exhibited a number of weaknesses and challenges that severely constrained their abilities to plan and implement their core duties as well as receive needed support from interested development partners. Among these included weak management skills, poor governance, low financial resource mobilization and management capabilities, interference by politicians, clan interests, weak capacities to forge effective partnerships for self-development, and bylaws that largely remained un-anchored and unenforceable in the absence of a clear policy and legal and programmatic framework from the County governments.

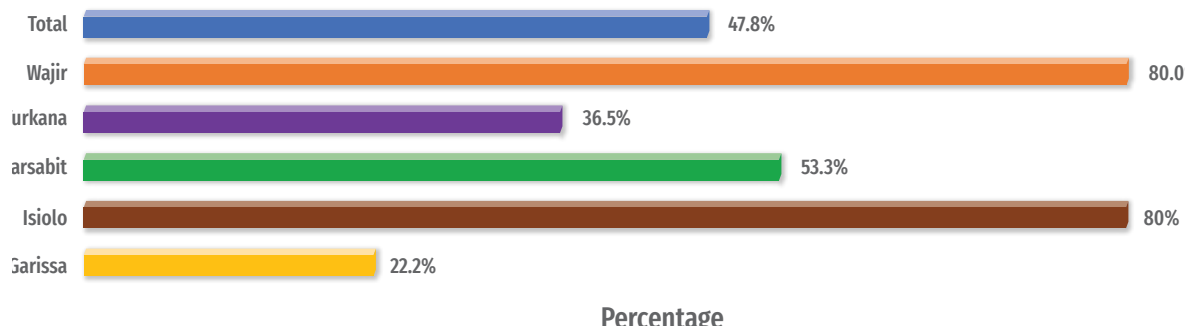


Figure 31 - Participation in meetings on communal rangelands resources management

Another key actor in the management of rangelands resources were the Peace committees, whose existence and role in averting and managing resources-based conflicts were noted across all five Counties. Together with the RMCs, the Peace committees were involved in building the relationships necessary for the peaceful and equitable sharing of water and grazing resources within and across rangelands communities. They were the custodians of community grazing plans, grazing corridors/routes and watering points, as well as transboundary resource sharing plans, where these existed. Across the Counties, it was common for advance teams of elders (many of them in these committees) to seek access rights for water and pasture from other communities, and to issue notifications of intended migrations in search of water and pasture.

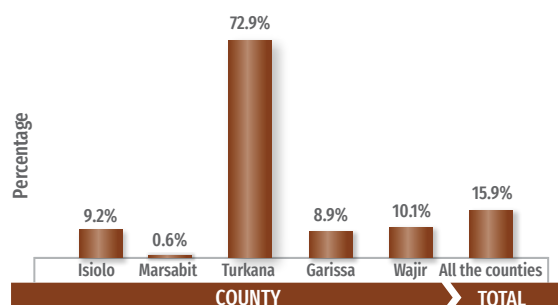


Figure 32 - Percent of pastoral communities with sustainably managed rangelands

Private sector entities, largely in the form of local and international humanitarian and research organizations were also a big part of the rangelands development landscape, sometimes the only actors promoting the various rangelands resources management and improvement practices identified in this survey. They did this in consultation with the relevant County government departments, although the latter were usually not engaged in tangible, strategic and deliberate ways, such as through co-financing, follow-up extension visits or scaling up of what had been shown to work. In a number of Counties however, the departments had established livestock holding grounds and livestock sales yards which were thriving.

Farmers associations and cooperatives were also active in the rangeland resources management, especially in three of the five Counties (Wajir, Turkana and Garissa). However, they were constrained organizationally, technically and financially.

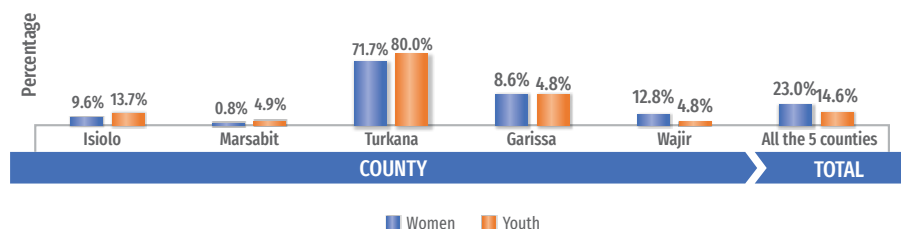


Figure 33 - Participation of women and youth in rangeland resource planning and management activities

Recommendations

Water and Rangelands Resources Governance, Legislation and Financing

- ⇒ During this inception and early implementation stage of the programme, review and align RAPID PLUS programmatic activities with clear policy, institutional and programmatic priorities of the five focus County Government departments captured in the CIDPs, and the findings of this baseline evaluation, establishing clear connectors and gaps and capturing these clearly in improved overall, annual, and quarterly implementation plans.
- ⇒ Engage in strategic advocacy and lobby campaigns aimed at placing water and rangelands development at the heart of policy development and implementation in the five focus Counties. Such engagement must be multi-faceted, focused on lobbying County government executives and assembly members to prioritize investment in water and rangelands resources development through i) enhanced policy stewardship and funding, ii) support for in-depth participatory analysis and petitioning of the next generation CIDP to ensure capture of strategic water and rangelands resources development priority interventions, iii) support to enable full participation of program beneficiaries in key public policy platforms established at County level.
- ⇒ Develop and share high impact IEC materials that create compelling stories and evidence in support of the two programme priority areas, such as targeted researches, social audit toolkits and reports, policy and learning briefs, program information packages, and public media material, including video documentaries.
- ⇒ Institute support forums and digital platforms for their reposition and wide dissemination.
- ⇒ Ensure all future policies, sectoral plans and laws developed have costed implementation and Monitoring and Evaluation (M and E) plans, and clearly articulate the gender and climate change implications for their implementation.

Water Interventions

- ⇒ Promote the adoption of Ward Development Plans (WDPs) by the County governments and the recognition of the WDPs as the foundation for water interventions at the ward level which has been shown to be effective in Marsabit County.
- ⇒ Deliberate and support innovative and cost-effective approaches and models towards the capacity development of WMCs, WUAs and WRUAs (including a strengthened role for women in these committees) and the Water Companies, along the areas of need (weaknesses and challenges) identified in this report..
- ⇒ Promote multi-use water resource development activities that underline the water-food-energy nexus, with a greater focus on the end use of water.
- ⇒ Train youths as village boreholes and solar installation attendants through apprenticeships with available private water sector players and supplying them with complete Operations and Maintenance (O & M) service tool kits as a way of reducing water points downtimes and providing viable employment.

- ⇒ Support Water Resource Users Associations (WRUAs), Water User Associations (WUAs) and Water User Committees (WUCs) in their efforts to identify and grow partnerships for technical and financial resource mobilization.
- ⇒ Promote preventive and pre-emptive approaches to O & M and sustainable management of water sources based on known protection, conservation and recharge principles, best practices and financing models (for example the successful borehole insurance scheme implemented by the catholic diocese of Lodwar, and the system of retainer contracts with private operators for specified O&M tasks practiced under USAID supported water infrastructure systems in South Sudan, among others).
- ⇒ Promote and support inter-community and inter-associational (WRUA, WUAs, and WUCs) platforms and exchanges to enable cross-fertilization and benchmarking of knowledge, experiences and best practices in water resources management
- ⇒ Identify and popularize existing inter-ethnic and transboundary resources sharing plans.
- ⇒ Identify, map and assist communities to develop mechanisms for protecting livestock corridors and pastures across villages.
- ⇒ Identify, map and support community peace committees towards an integrated approach to conflict resolution and peaceful sharing of common pastoralism resources
- ⇒ Encourage and facilitate the registration of farmers groups with the relevant Social Services or Agricultural Departments and help them establish relationships of mutual support and assistance.
- ⇒ Institutionalize Self-Learning Groups (SLGs) or Farmer Field Schools (FFSs) in the targeted villages to capitalize their positive impacts on community livelihood improvement, income intensification and diversification, and market mechanisms for home-grown agricultural products.
- ⇒ Retrain all the Rangelands Management Committees (RMCs) with a focus on organizational development, record keeping, technical themes, gender equity, youth inclusion and alternative livelihoods.

Efficient Water, Irrigation and Solarization Technologies

- ⇒ Ensure robust (digital) versatile (readable on the go) databases and management information systems for water services monitoring and improvement to address current dearth of data in this area-populations reached, facility yields, volumes abstracted, pump functionality, delivery costs, revenue streams.
- ⇒ Incorporate sensors in community boreholes to create alerts signalling imminent water systems breakages to facilitate pre-emptive and timely repairs and servicing to avert water shortages and reduce downtimes.
- ⇒ Consider installation of water kiosks with prepaid meters as a mechanism of promoting payment for use of water, as documented in Marsabit and Turkana Counties. Institutionalize catchment protection and 3R (recharge, Retain, re-use) approaches as the key bases for sustainable water resource conservation and management.
- ⇒ Support RMC to anchor their constitutions and bylaws in relevant County governments Departmental Policies, plans or Acts to promote compliance by community members.
- ⇒ Train the County Departments of Livestock, Agriculture, environment, Natural and Rangeland Resources Management on the Community-Managed Disaster Risk Reduction (CMDRR) and Community-based Risk Screening Tool-Adaptation and Livelihoods (CRiSTAL) approaches to effectively integrate risk reduction and climate change adaptation measures into their community level work
- ⇒ Support initiatives to promote alternative livelihoods for communities and community groups to diversify their income sources, increase their resiliency and reduce the pressure on dwindling rangeland resources.
- ⇒ Support livestock farmers and pasture groups to set up sustainable livestock pastures, fodder banks, rangeland and water harvesting systems.

Rangelands Resources Management Interventions

- ⇒ Facilitate community and village sessions to come up with integrated Participatory Community Land Use Plans (PLUPs) to promote focused and effective community common natural resources use.
- ⇒ Facilitate community and village Sessions to come up with grazing and rangelands resource management plans.
- ⇒ Promote fodder and pasture production and conservation, contour ridging and vertiva grass promotion, rangeland seeding and reseeding, catchment protection and other improved rangeland resources management practices through community groups (to mitigate potential community land use conflicts).
- ⇒ Enhance and promote sustainable management of the livestock sector through improved livestock management practices, such as cross-breeding and Index Based

Livestock Insurance (IBLI) to cushion communities from recurrent droughts.

Gender Mainstreaming

- ⇒ Support County Departments of Gender to finalize their gender policies, SGBV laws, and to develop costed and monitorable implementation plans.
- ⇒ Adopt a multisectoral/multidepartment approach to the promotion of gender equity in water and rangelands resources management as opposed to the silo-based approaches currently practiced.
- ⇒ In addition to increasing water access points to lessen the work burden on women and girls, promote the use of women and girls' freed time to pursue alternative productive livelihoods activities, including income generating activities, literacy and education.
- ⇒ Mitigate resource-based gender inequalities through Village Savings and Loans (VSLA) schemes linked to microfinance institutions within the Counties, in order to help change the narrative and redefine women's position in the families and their communities.
- ⇒ identify, support model women (HH Heads) champions in efforts to promote effective management of water and rangelands resources for shared benefits across both genders (in model farms, farmer field schools).
- ⇒ Create more awareness at the community level on ramifications of SGBV and the medical, legal, psychosocial and protection remedies and referral pathways available for survivors.
- ⇒ Explore jointly with County governments and development partners, ways to strengthen existing SGBV referral pathways.
- ⇒ Further engage men through elders and religious leaders to re-imagine and reconstruct gender roles and stereotypes thus ensuring that they are accountable for their actions and are participating in SGBV prevention and response.
- ⇒ Promote gender mainstreaming through strategic support to County Gender Departments and relevant Gender Thematic Working Groups with foundations anchored on water and rangelands resources access and use in the communities.

Private Sector Engagement

- ⇒ For any Public Private Partnerships (PPPs) under the Kenya RAPID+ program, consider Semi-Autonomous Government Agencies (SAGAs) due to ease of engagement and the sustainability benefits thereof.
- ⇒ Encourage water stewardship approaches and models

that aim to bring in the contribution of the private sector to enhance sustainable market-based approaches, as identified already in the previous section.

- ⇒ Engage the private sector to hasten the adoption of more efficient water delivery technologies, including borehole sensors, automated dispensing and billing technologies, repairs and maintenance and more wholesome water treatment beyond basic chlorine treatment and desalination.
- ⇒ Engage the private sector to support value addition (processing of rangelands products in particular) and to increase their participation in marketing and sales of livestock, agricultural and other rangeland products in the five Counties.
- ⇒ Link local women groups involved in productive activities (pasture, vegetables, fruits, and poultry) with existing market agents and chains, and other institutions and structures focused on women's economic empowerment.

Climate Change Mitigation

- ⇒ Promote development and dissemination of knowledge products on climate change adaptation and resilience by the relevant Departments in the County governments (toolkits, vulnerability maps, spatial models and hydrological models).
- ⇒ Promote and provide seedlings with multiple rangelands benefits to communities for tree planting especially in the rainy seasons.
- ⇒ Introduce/support demonstration or model farms and farmer field schools for climate resilient and adaptive crop cultivation and animal husbandry to showcase best practices to local farmers in the Counties.
- ⇒ Advocate for the establishment of climate funds in the Counties of Turkana, Wajir and Marsabit based on the lessons from Isiolo and Garissa Counties which have already rolled out these funds.

Conflict Mitigation

- ⇒ Use known or user-friendly Participatory Rural Appraisal (PRA) techniques to raise awareness among men and women about gendered topics with potential to amplify conflict.
- ⇒ Adopt and strengthen cross-border and conflict-sensitive approaches or practices to conflict resolution and management, building on existing traditional systems and institutions and statutory regulations across the five Counties.



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