



STUDY REPORT

The Relevance and Sustainability of Community Animal Health Workers (CAHWs) in Somaliland



November, 2022

Submitted to

Ministry of Livestock and Fisheries Development (MoLFD) and
Somaliland Development Fund (SDF)

By:

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List of Abbreviations

ADO	Agricultural Development Organization
ADRA	Adventist Development & Relief Agency
AHSPs	Animal Health Service Providers
CAHWs	Community Animal Health Workers
DVO	District Veterinary Officer
EMDU	Epidemiology and Data Management Unit
FGDs	Focus Group Discussions
FAO	Food and Agriculture Organization
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
KIIs	Key Informant Interviews
MoLFD	Ministry of Livestock and Fisheries Development
SOVA	Somaliland Veterinary Association
RVO	Regional Veterinary Officer
ULPA	United Livestock Professional Association
WOAH	World Organisation for Animal Health

Executive Summary

The Somaliland's Ministry of Livestock and Fishery Development (MoLFD) with funding support from the Somaliland Development Fund-II (SDF2) is implementing the project '*Strengthening Animal Production and Health Services*'. The project has 5 output areas that include but are not limited to enhancing the capacity of ministry staff to conduct livestock disease control and surveillance. As part of the efforts to enhance animal health service in the county, MoLFD requested SDF2 programme to fund a participatory study that will evaluate the relevance and sustainability of Community Animal Health Worker (CAHWs) in Somaliland. The Ministry and SDF-II programme team identified Primmo consulting firm to conduct the study. The participatory study was conducted together with MoLFD staff with the main objectives of determining the efficacy and appropriateness of the existing CAHWs model in Somaliland and make recommendations for its continuation, revision, or discontinuation. A participatory mixed method approach was used to collect qualitative data. Data was collected from 28th September to 5th October 2022. Three data collection tools were used and included Key Informant Interviews (KIIs), Focus Group Discussions (FGDs) and a one-day consultative meeting. The study targeted stakeholders drawn from the government and private animal health service sector, livestock keepers, Non-Governmental Organizations (NGOs), as well as CAHWs. Data was collected from 4 of the 6 administrative regions in the country.

A total of 21 interviews were conducted. Most of the KII respondents indicated that CAHWs played an important role of offering basic animal health services. The KII respondents were satisfied with CAHWs role of identifying livestock diseases, conducting surveillance and outbreak disease reporting, mobilising livestock keepers for mass vaccination and treatment and conducting minor surgeries like closed castration and hoof trimming in a humane way. However, respondents were not satisfied with CAHWs ability to provide extension messages on good husbandry practices and convening community dialogues to convey public health awareness messages. Most respondents indicated that CAHWs selection criteria was not ideal and they proposed criteria that would ensure community participation and reduce rates of drop outs if followed. Almost all of the 21 KII respondents indicated that CAHWs had not received sufficient training as most training was of short duration. The respondents recommended an initial CAHWs training of 3 months and a refresher training of every 8 months that runs for 10 days.

When asked who should train CAHWs more than half of KII respondents indicated that MoLFD staff should be the ones to train them and the District Veterinary Officers (DVOs) should be immediate supervisor who they will report to. KII respondents indicated that CAHWs should be integrated as part of the private veterinary service sector and should therefore be trained on entrepreneurship skills. A total of 6 FGDs were conducted with a total of 57 participants, of these 38% were women and 62% were men. Government Veterinary officers (mainly DVOs), CAHWs, Agrovets dealers and Traditional healers were the main Animal Health Service Providers (AHSPs). FGD participants identified availability and accessibility as the two most important indicators of a good animal health service provider. As mentioned by KIIs respondents, all 6 FGDs indicated that CAHWs were relevant to the community. CAHWs service was accessed on average 3 times more when compared to 1-time access to government vet, private agrovets and traditional healers. Five out of six groups indicated that all AHSPs did not conduct physical examination of animals before treatment and only CAHWs and sometimes the traditional healers followed up cases after treatment. The FGDs also indicated that no AHSP conducted Community Dialogue sessions to convey extension messages on good husbandry practices or public health awareness messages.

All six FGD participants indicated they were willing to pay for quality CAHWs service. They defined a quality service as one where the CAHWs received more and better training on livestock disease management and equipped with drugs and equipment. Four out of the six FGDs indicated they were currently paying for CAHWs service. The amount paid did not exceed 10 USD. The one-day stakeholder meeting was attended 34 participants. The meeting largely concurred with KIIs and FGDs participants' views. Meeting participants agreed that CAHWs role needed to be expanded so that they can remain relevant. The expanded role will require inclusion of various modules into the CAHWs training curriculum. Some of these modules can be included as refresher training modules. However, the participants pegged the CAHWs role expansion on a number of preconditions that should be met by MoLFD. The main precondition is that the ministry's department of animal health need to establish a national database of properly trained and active CAHWs. The department should be given authority to regulate CAHWs training but should work with other private and NGO stakeholders to ensure cohesion and harmony in their capacity-building initiatives. There is need to revise CAHWs curriculum and training manuals.

The CAHWs curriculum should be revised to include refresher training modules. Suggested refresher training modules should include; good husbandry practices, drought mitigation strategies based on LEGS principles of drought management and one health approach that should include training on zoonotic diseases and awareness creation on antimicrobial resistance. To ensure CAHWs sustainability. The meeting participants advised MoLFD to develop clear and defined roles for all cadres of staff in the department of animal health including CAHWs. MoLFD should ensure they outline a fair and transparent selection criteria to reduce the risk of malpractices that might affect the role of CAHWs as a service provider. The participants urged MoLFD to improve the coordination mechanisms in service delivery and incorporate CAHWs in its activities of mass vaccination and treatment. In addition, so as not to disrupt the private sector that includes CAHWs. MoLFD should refrain from giving free drug donations to livestock keepers but instead give CAHWs the remaining vet drugs after the campaigns. The government was also asked to ensure they protect the private sector agrovet business by ensuring they only set up animal health posts where there are no licensed private agrovet stores. In conclusion, the study demonstrated that CAHWs are a relevant and an important part of veterinary service delivery system in Somaliland. The CAHWs model needs revision and to assist in this revision the following recommendation are forwarded to MoLFD and SDF2 programme;

1. There is need to fast track Veterinary policy and codes revisions as it recognises CAHWs as important players in supporting the delivery of quality veterinary services in Somaliland.
2. MoLFD in consultation with stakeholders should fast track revision of the CAHWs curriculum and training manual and have it approved by the board. MoLFD should be given the mandate to regulate and co-ordinate CAHWS trainings,
3. The trained CAHWs need to be linked by MoLFD to the community and private agrovet supply stores or government animal health drug posts in their area of operation.
4. MoLFD should mandate DVOs to register and monitor CAHWs in their area of operation.
5. The participatory study exposed a gap in monitoring veterinary service delivery. MoLFD should conduct regular assessment of CAHWs and other AHSPs.

Acknowledgements

The consultant Dr. Pauline Gitonga of Primmo Consulting would like to sincerely appreciate Dr. Farhan Ahmed the technical focal person of the Strengthening Animal Production and Health Services Project and Dr. Tesfaye Haile Dargie from the SDF Programme for their support in developing the data collection frame work and convening the stakeholders who participated in the study. I recognise the Director General of the Ministry of Livestock Dr Ali Ahmed Maah who opened the stakeholders meeting in Hargeisa. I am indebted to the MoLFD data collection team composed of Drs. Sundus Siyaad Geedi, Osman Abdilahi Farah and Muhyadiin Yusuf Adan. Your immense sacrifice in ensuring the data collection process was completed is commendable. I am grateful to the stakeholders and communities who agreed to share their knowledge and experiences. Finally, I want to thank Mr. Abdi Aziz Ismail for supporting the data collection and analysis process and Mr. Jama Noor for ensuring the team logistics were delivered in a timely manner. Dr. Oscar Koech, the team lead from Primmo for technical support, review of documents and coordination of the activity with the technical team. Last, we thank the Government of Somaliland for providing all the necessary support, including security and experts mission logistics during the study.

Disclaimer

The author takes sole responsibility for the views expressed in this report. Various maps have been reproduced in the report and no endorsement of boundaries or place names is intended. The views expressed are solely the documented information from the respondents, and Primmo does not take any responsibility or liability whatsoever.

1.0 Background

A community animal health worker (CAHW) is a specially trained locally based member of the society who helps livestock keepers raise healthy animals to maximise their benefits. CAHWs have a wide range of tasks to perform but their primary purpose is to help prevent animal mortality and disease outbreaks through early reporting of disease events in their communities. CAHWs are a critical link between livestock keepers, local and state government veterinarians. However, in most countries CAHWs are not legally recognised as part of the veterinary services workforce¹. The lack of policies and governance structure to guide CAHWs contribution in the livestock sector in Africa is highlighted in a recent 2019 survey of veterinary paraprofessionals governance and role in improving animal health and welfare in Africa conducted by the World Animal Health Organisation (formerly OIE).

The survey found that of the 44 African member states that responded to the survey, 68% indicated that CAHWs played a key role in supporting delivery of Veterinary services in remote and often underserved areas. Majority of the countries also indicated they were unsure of the CAHWs precise number but countries, that reported a figure gave a range of 100 to more than 1,000. The survey also highlighted a lack of standardisation in CAHWs training with training periods ranging from short informal instructions of 1 to 3 months to more advanced trainings of 6 to 12 months. The survey concluded that in the absence of veterinarians, VPPs, and functional Veterinary Services. CAHWs played a substantial role in providing a service and helping to ensure a healthy livestock population². This finding is similar to that of a study conducted by Andy Catley and commissioned by AUIBAR over two decades ago in 1999. Catley's study focused on the review of Community-based Animal Health Care Systems in Somali Areas of Africa³. The findings of the aforementioned studies indicate that CAHWs are still a relevant workforce in Africa.

¹ Vétérinaires Sans Frontières International and the World Organisation for Animal Health (June 2022). “Strengthening the enabling environment for community animal health workers (CAHWs) through development of competency and curricula guidelines”. (USAID- BHA. <https://vsf-international.org/woah-vsf-project-cahws/>

² Johan Oosthuizen (2019). Veterinary paraprofessionals: their governance and role in improving animal health and welfare in Africa. <https://rr-africa.oie.int/wp-content/uploads/2019/03/oosthuizen.pdf>

³ Andy Catley (1999). Community-based Animal Health Care in Somali Areas of Africa: A Review. <https://www.alnap.org/system/files/content/resource/files/main/somalicahw.pdf>

1.1 Justification for the study

The Ministry of Livestock and Fishery Development (MoLFD) with funding support from the Somaliland Development Fund-II (SDF2) project- ‘Strengthening Animal Production and Health Services, commissioned this Participatory Study on the Relevance and Sustainability of Community Animal Health Workers (CAHWs) in Somaliland. The Ministry and SDF-II programme team identified Primmo consulting firm to conduct the study. Primmo consulting developed a data collection framework that was approved by MoLFD and SDF2 team. The participatory study was conducted together with MoLFD staff with the main objectives of determining the efficacy and appropriateness of the existing community animal health workers model in Somaliland and make recommendations for its continuation, revision, or discontinuation.

2.0 Study Methodology

The data collection team was composed of 5 team members. Three were from MoLFD specifically department of Animal health and 2 from Primmo consulting. FGD data collection sites and persons to be interviewed were identified by MoLFD during an inception meeting (Figure 1) that also served as a harmonisation of data collection tools.



Figure 1: MoLFD staff from the department of Animal Health discussing how to conduct the FGD tool

A participatory mixed method approach was used to collect qualitative data. Data was collected from 28th September to 5th October 2022. Three data collection tools were used and included Key Informant Interviews (KIIs), Focus Group Discussions (FGDs) and a one-day consultative meeting. The study targeted stakeholders drawn from the government and private animal health service sector, livestock keepers, Non-Governmental Organizations (NGOs), as well as CAHWs. The data collection schedule and tools used are attached in the annex section of this report. KIIs after consenting to participate in the study were administered a questionnaire with 18 questions that evaluated CAHWs in three broad thematic areas of interest (i) Technical ability to perform 6 key roles; (ii) Recruitment and Training and (iii) Sustainability and Recognition. The FGDs guiding questions focused on evaluating veterinary service delivery using a globally recognised indicator as listed below;

1. Available- presence of AHSPs in the area
2. Accessible - physical distance between livestock keeper and AHSP/ Actual farm visit by AHSP to diagnose and treat animals
3. Affordable - ability of livestock keeper to pay for services
4. Acceptable – Ability of community to trust AHSP based on their character for example respond in a timely way and communicate politely.
5. Quality- AHSP competence, has knowledge and basic diagnostic equipment, quality drugs and always have a favourable outcome of treated animals.

The one-day consultative meeting was used as a platform to disseminate FGD and KIIs findings. The meeting was also used as a forum to deliberate on critical aspects of the CAHWs programs. The group deliberation centred around five questions outlined below;

1. Are CAHWs relevant in Somaliland?
2. What are their current roles in supporting vet service delivery in Somaliland?
3. Do we need to expand CAHWs role in the community? If Yes, How?
4. What issues need to be addressed in the current CAHWs service delivery model?
5. Where should CAHWs be integrated, Private or Public, and which model of integration should be used?

2.1 Data Analysis

The quantitative FGD data composed of scores were entered into a database designed using MS Excel (Microsoft® Excel, Washington, 2016) and exported into R software version 3.6.1 (Core-

Team. R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria, 2019). The score data analysis involved computing medians and ranges of the scores. Kendall's coefficient of concordance (W) was used to assess the level of agreement between the FGDs. The Kendall's W ranges from 0 (no agreement) to 1 (complete agreement)⁴. KIIs data was coded, entered into excel where descriptive analysis consisting of averages for continuous data and proportion or percentage analysis for categorical data.

2.2 Study Limitation

The study was conducted during the drought period, the FGDs participants were mainly recruited from agro pastoralist zones as the pure pastoralists households had relocated to far away grazing areas including those in neighbouring countries.

⁴ LEGENDRE, P. (2010). Coefficient of Concordance'. In: Salkind, J. (Ed.), Encyclopaedia of Research Design, vol. 1.N. SAGE Publications, Inc., Los Angeles, pp. 53–55

3.0 Results

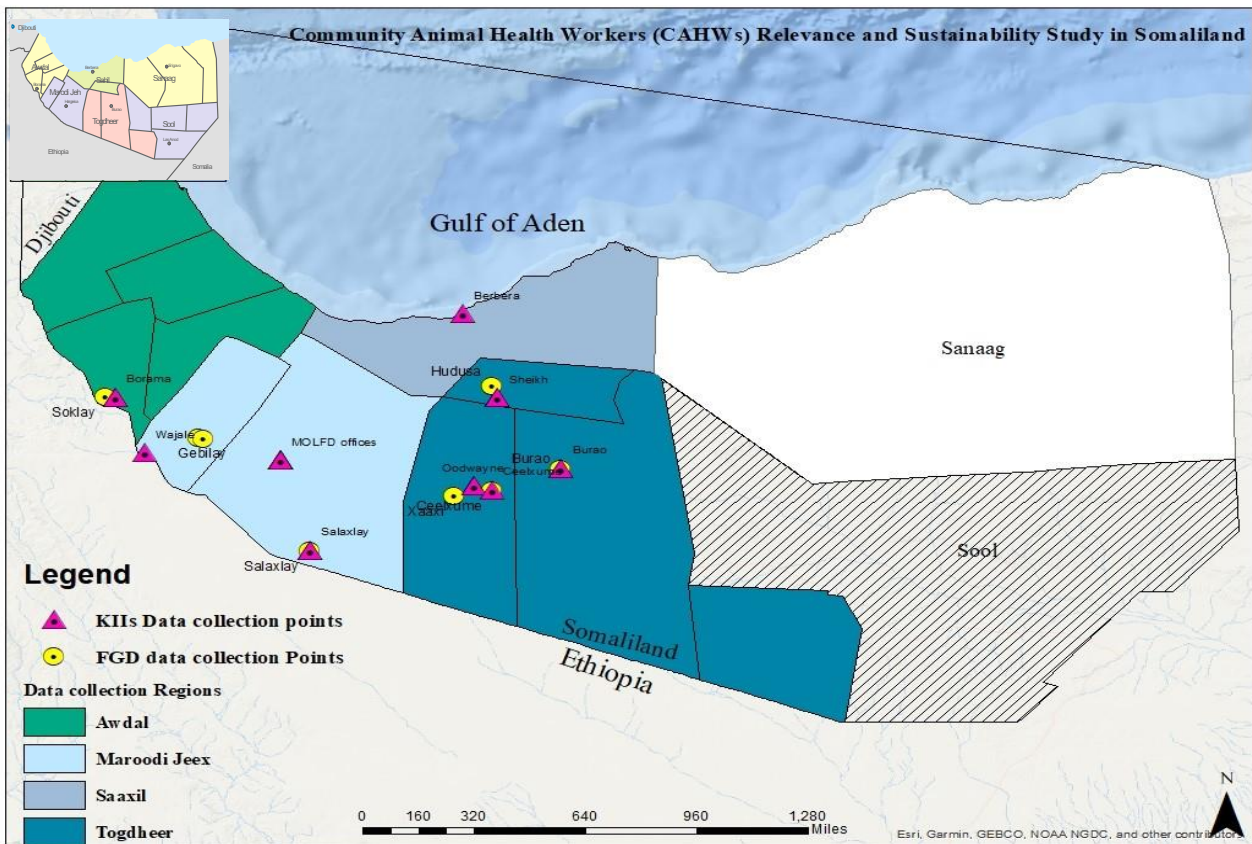


Figure 2: FGDs and KIIs data collection sites for the CAHWs study in Somaliland

Data was collected from 4 of the 6 administrative regions in the country as shown in the map above (Figure 2). In addition, the 4 regions are the main livestock rearing areas in the country.

3.1 Key Informant Interview Findings

A total of 21 interviews were conducted. The type of stakeholders that participated in the KIIs are shown in figure 3 below.

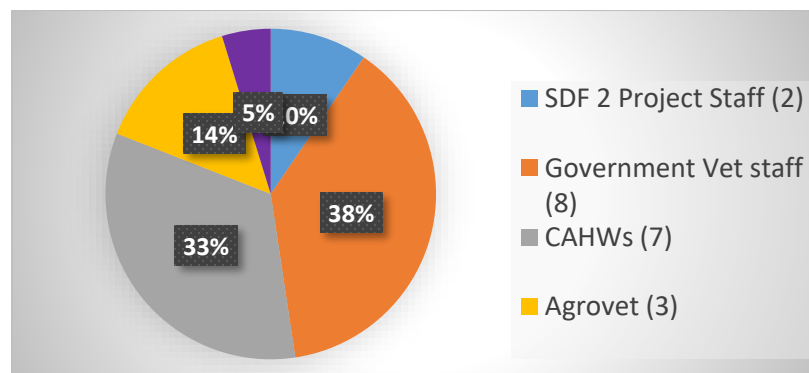


Figure 3: Type of stakeholders interviewed for the CAHWs study in Somaliland

Most (18/21) of the respondents indicated that CAHWs played an important role of offering basic animal health services (Figure 4).

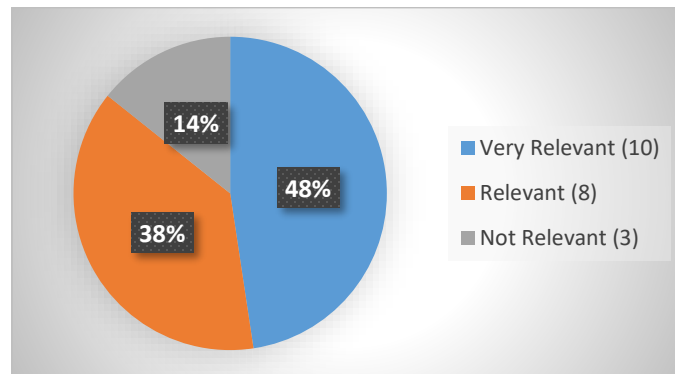


Figure 4: Current CAHWs Relevance based on KIIs rating

The respondents were asked to rate CAHWs ability to conduct 6 key functions identified through literature review as the most common roles conducted by CAHWs after training. Most KII respondents were very to somehow satisfied with 4 of the 6 key roles (Figures 5 to 8). The two roles that more than half of the respondents rated as not satisfied were providing extension messages on good husbandry practices and convening community dialogues to convey public health awareness messages (Figures 9 and 10).

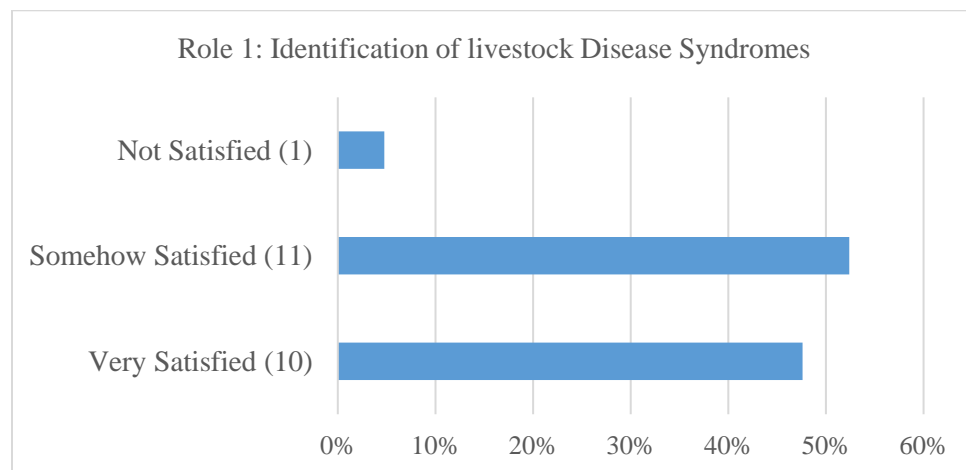


Figure 5: Rating of CAHWs ability to identify syndromes for common and notifiable livestock diseases

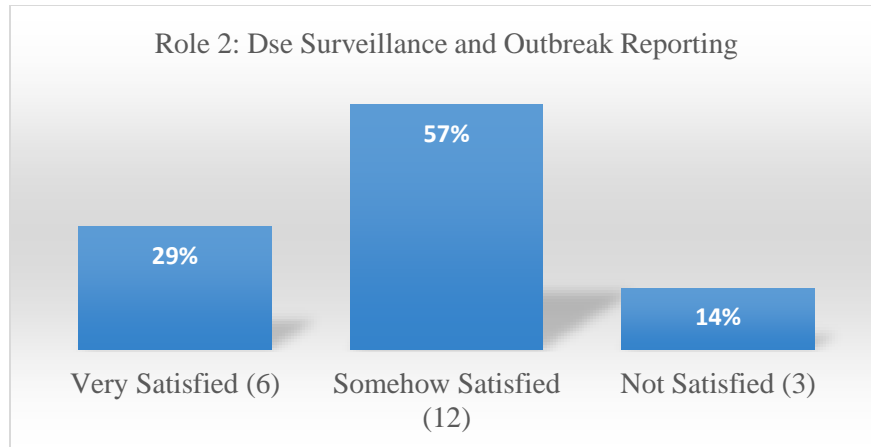


Figure 6: Rating of CAHWs in supporting MoLFD conduct disease surveillance and early reporting of disease outbreaks

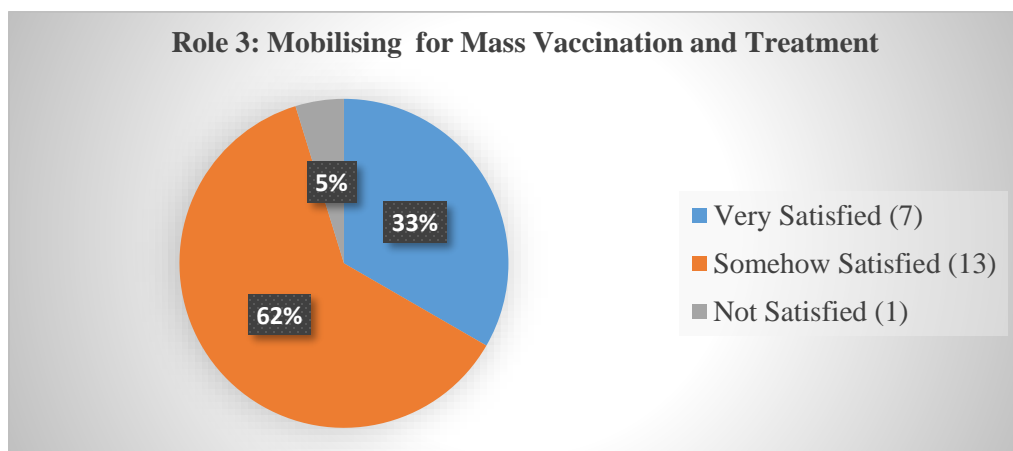


Figure 7: Rating of CAHWs ability to mobilise livestock keepers to present their animals for mass vaccination and treatment campaigns organised by MoLFD

Most respondents when rating role six (Figure 8), indicated that traditionally, most livestock keepers castrate and hoof trim their animals using crude tools that bring pain and suffering to the animals. CAHWs have been equipped with a burdizzo that ensures humane castration of animals. However, uptake of this service was indicated as low as most livestock keepers tend to prefer open castration methods. In addition, respondents noted that dehorning of cattle and goats was rarely done. Docking of sheep tails was also not routinely done.

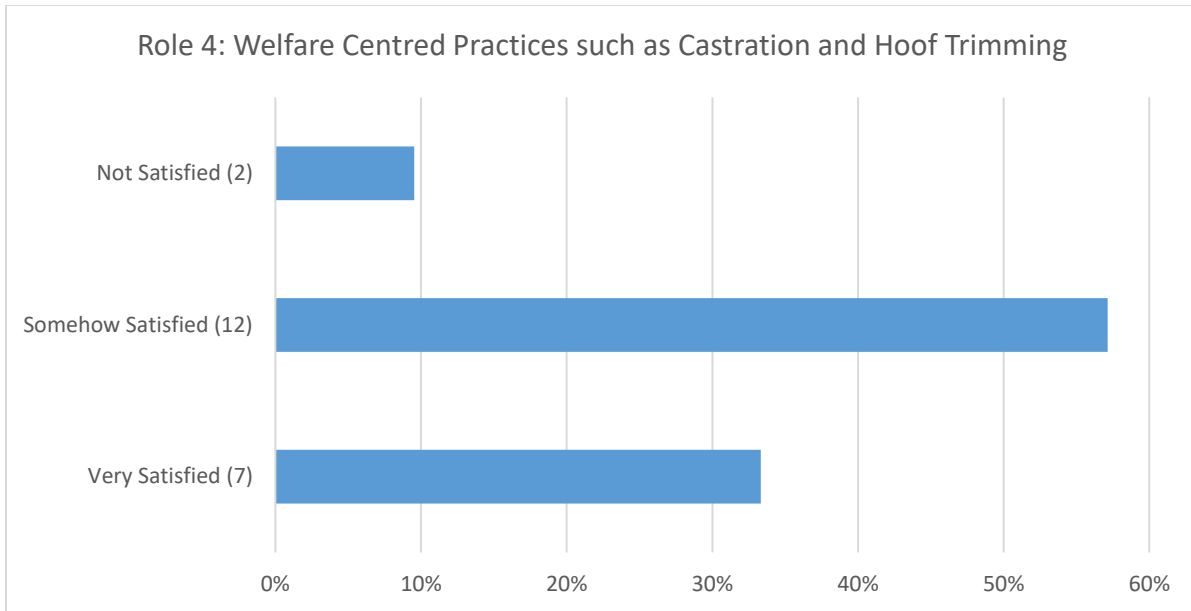


Figure 8: Rating of CAHWs skill in conducting management practices in a manner that minimize pain and suffering of the animals.

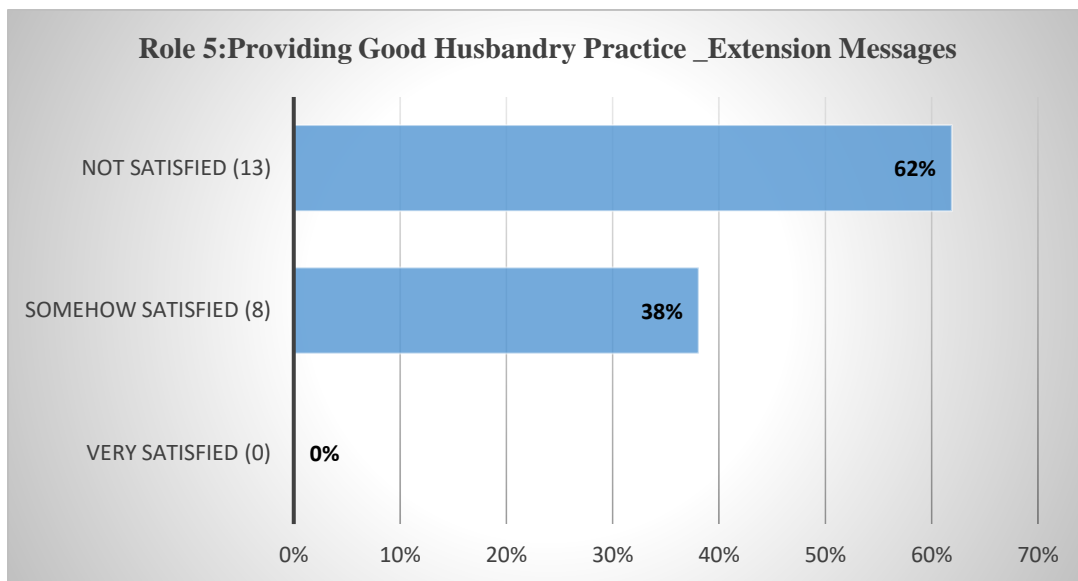


Figure 9: Poor rating of CAHWs ability to offer livestock production extension messages to livestock keepers

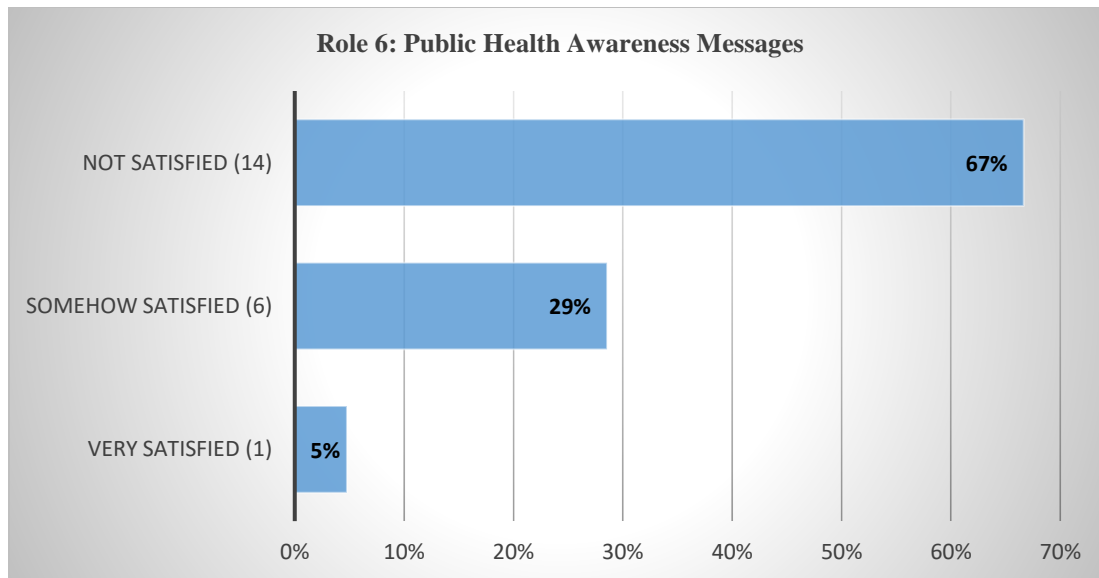


Figure 10: Poor rating of CAHWs ability to convene community meeting to convey public health awareness messages

All government KII respondents had participated in training CAHWs and justified that the low rating shown in figure 9 and 10 was based on the fact that CAHWs current training does not impart them with the skills to offer husbandry extension and public health awareness messaging. When respondents were asked if the current CAHWs selection process was ideal, most respondents (62%) indicated that it was not as shown in figure 11 below.

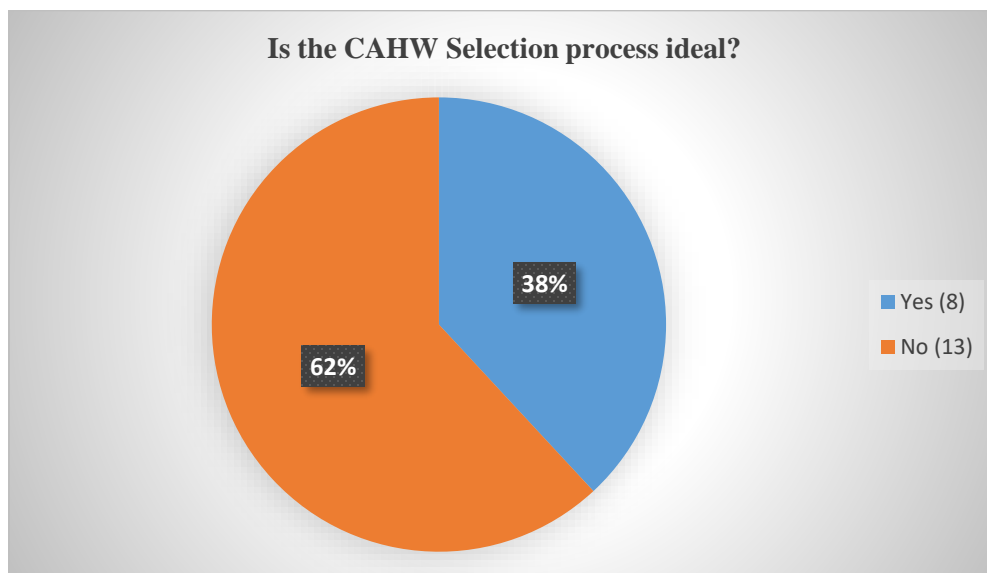


Figure 11: Rating by KII respondents on the current CAHWs selection process

The KII respondents indicated that the selection for CAHWs should ensure active community participation as the current model of selection is done by the village committees with little or if any consultation with the community. The CAHWs selected should be permanent residents in the community preferably married with kids, they should own livestock and have demonstrated good husbandry practices of their herds. The CAHWs should be fit and not be too old but experienced in livestock keeping they should also be able to read and write and have a good character which was described as being reliable, committed to their work and trustworthy. Most (86%) of the 21 KII respondents indicated that CAHWs had not received sufficient training given that some NGOs despite knowing they should cooperate with MoLFD staff to train using the veterinary board certified CAHWs curriculum, did not do so. Instead these NGOs develop their own modules and offer short trainings for 3 or 5 days. The recommended CAHWs training based on the board certified curriculum is 10 days. However, respondents noted that the curriculum lacked guidance on how often CAHWs need to have refresher trainings and what modules the refresher trainings should cover. The respondents on average recommended an initial CAHWs training of 3 months (range of response was 1 to 6 months). Refresher training suggested to be done on average every 8 months with a responses range of 3 to 12 months. The refresher training period was suggested to be on average 10 days, with a range response of 7 to 14 days.

When asked who should train CAHWs more than half (57%; 12/21) of respondents indicated that MoLFD staff should be the ones to train them. The other 43% (9/21) respondents suggested a joint training by MoLFD, NGO and private sector. Almost all (86%;18/21) of KII respondents were in agreement that CAHWs should be linked to the District Veterinary Officers (DVOs) who should be the main person they report to and should be the one who monitors them. The DVOs and Regional Veterinary Officers (RVOs) interviewed indicated that training of CAHWs was done sometimes without their knowledge and hence they could not monitor them. In addition, some CAHWs were reporting directly to the staff based at the Epidemiology and Data Management Unit (EDMU) which should not be the case as there is a clear reporting structure in place as shown in figure 12 below.

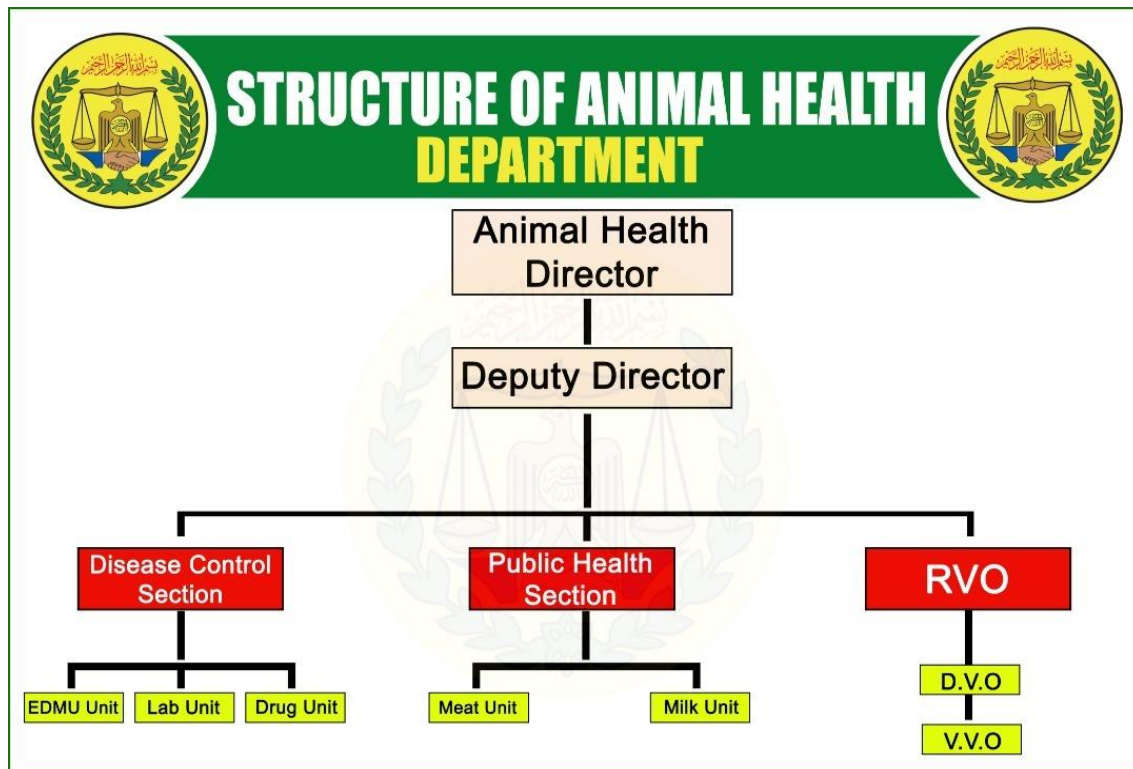


Figure 12: Organisation and reporting structure of the Department of Animal Health under the Ministry of Livestock Fisheries and Development (MoLFD) in Somaliland

Majority (95%; 20/21) of the KII respondents indicated that CAHWs should be integrated as part of the private veterinary service sector. Their training should therefore include entrepreneurship skills development. KII respondents suggested the following ways to ensure CAHWs are incentivised to remain operational as well as relevant in the community.

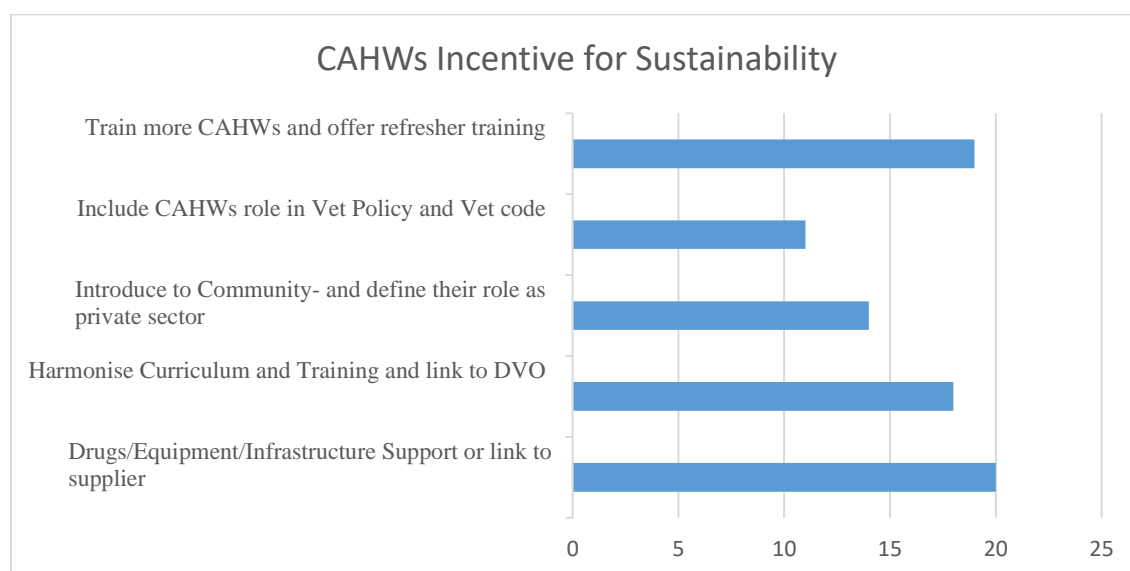


Figure 13: CAHWs incentive recommendations by KII respondents

The deputy director from the department of animal health indicated that the department with the support of NGO partners were in the process of identifying and registering active CAHWs across the county (Figure 14). The active CAHWs will be provided with smart phones that will be used for syndromic surveillance and reporting. The CAHWs will report using a real time disease surveillance platform developed by Adventist Development and Relief Agency (ADRA). Furthermore, he indicated that the ministry had funded the construction and stocking of several animal health posts across the country that are being used to provide a regular supply of free quality veterinary medicinal products to CAHWs (Figures 15 and 16). The animal health posts also serve as clinics where the government staff offer services to the public.

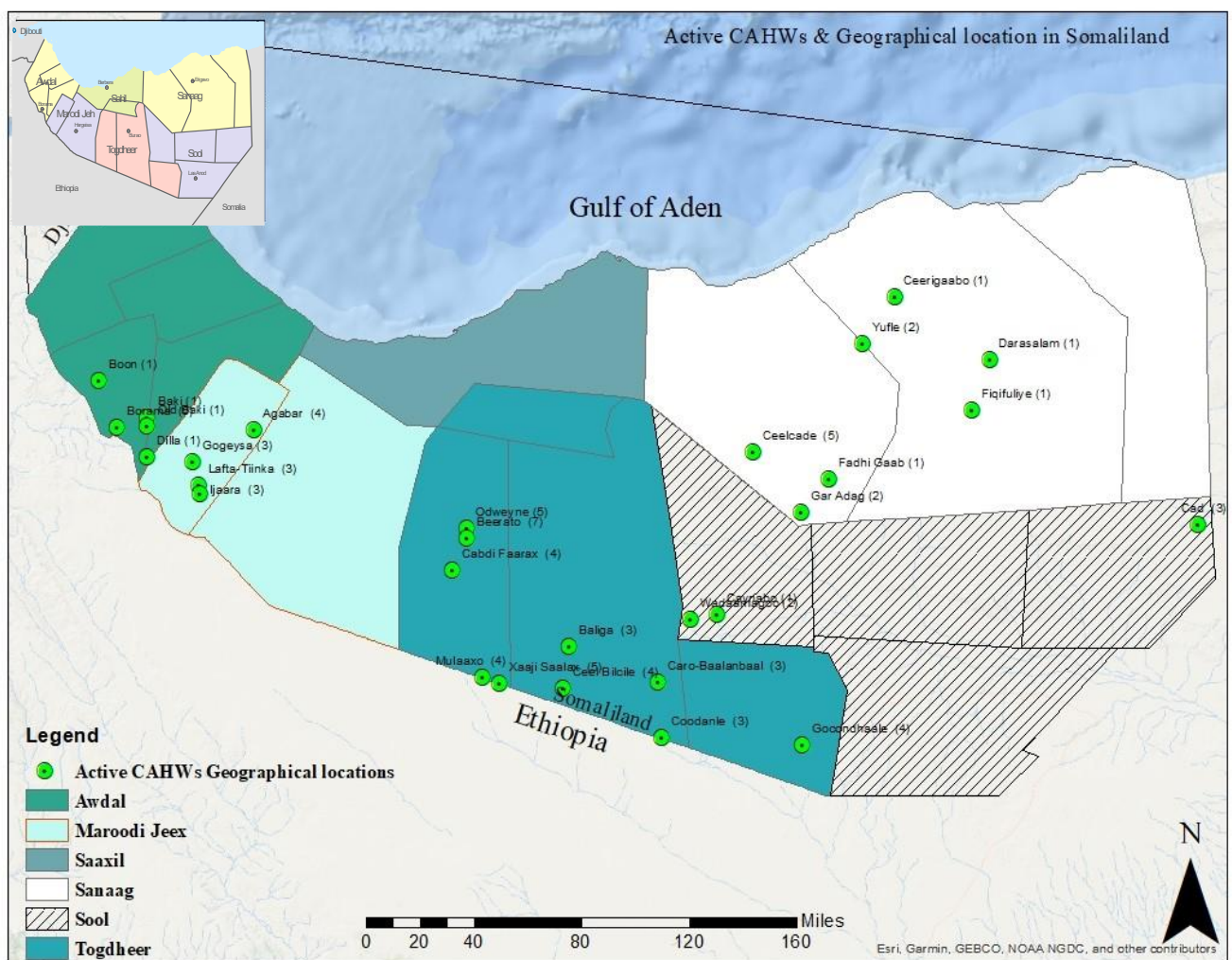


Figure 14: Map showing the 39 geographical location sites for the 122 active CAHWs in Somaliland

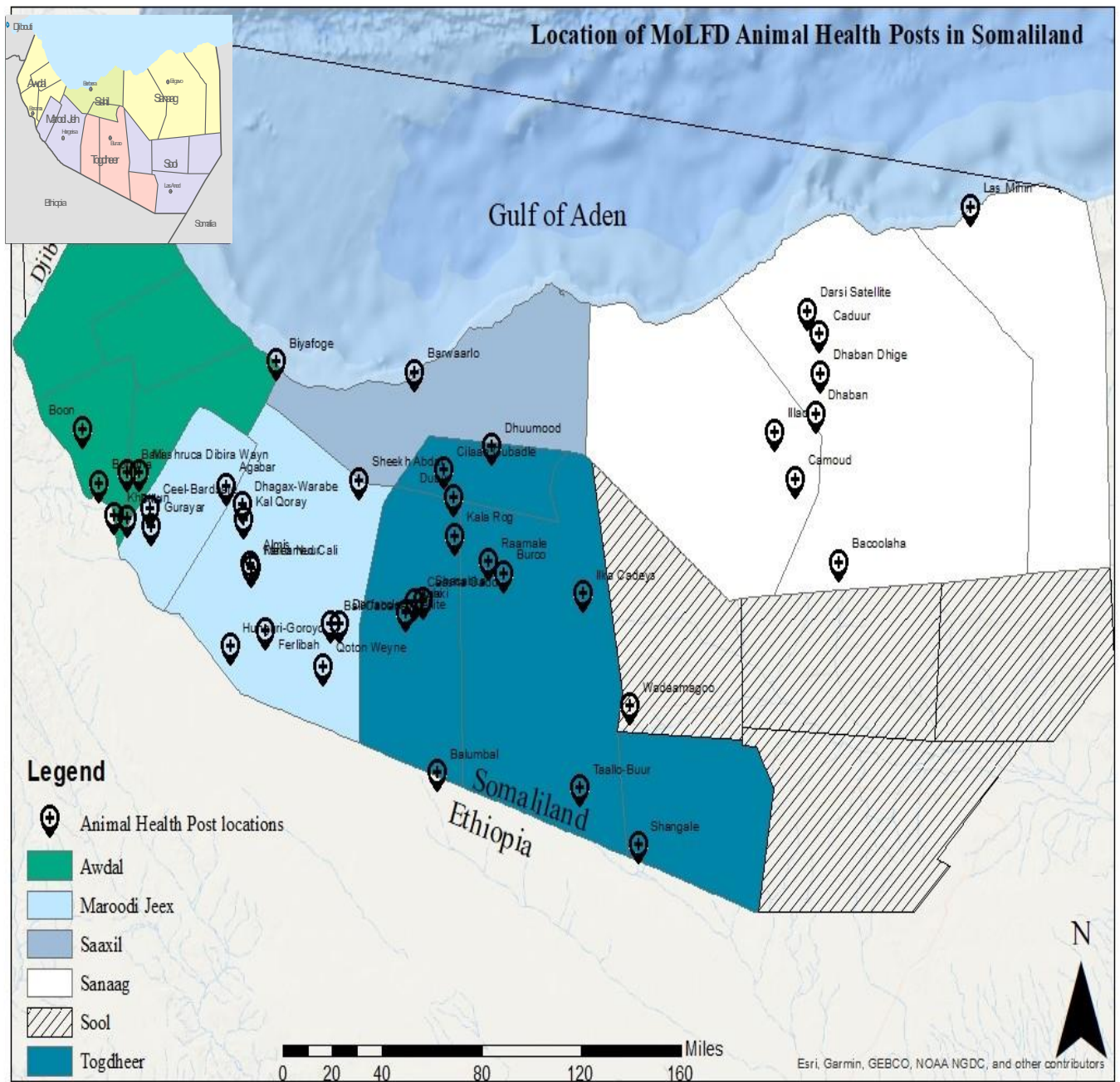




Figure 16: Animal health post at Burao livestock market, Somaliland

Photo Gallery



3.2 Focus Group Discussions (FGDs) Findings

A total of 6 FGDs were conducted with a total of 57 participants, of these 38% (17/57) were women and 62% (40/57) were men. The 6 FGDs mentioned the following Animal Health Service Providers (AHSPs) as present in their communities to offer clinical and preventive veterinary services. They included the Government Veterinary officers (mainly DVOs), CAHWs, Agrovets dealers and Traditional healers. The ideal traits or indicators of a good service provider (AHSP) was evaluated using a weighted scoring tool and the results of the 6 FGDs are shown in figure 17 and 18 below.

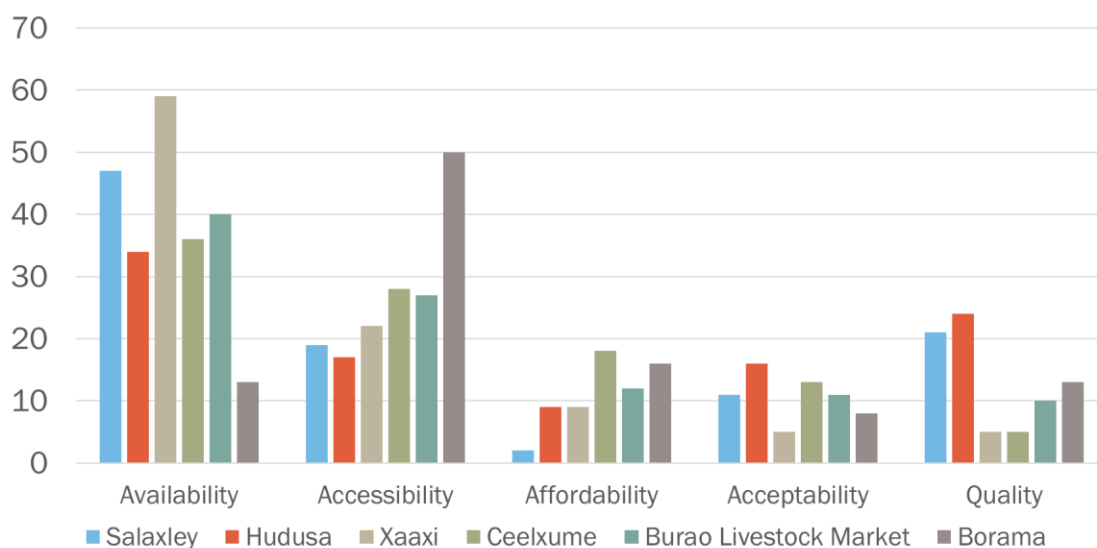


Figure 17: FGDS identified that availability and accessibility were the two most important indicators of a good animal health service provider

Non-parametric analysis using Kendall co-efficient of concordance (W) on the weighted scores found that the 6 FGDs had a high level of agreement ($W > 0.6$) as shown in figure 18 below.

AHSP Indicator of Good Service	Traditional healer	CAHWs	Govt. Vet	Private Agrovets	Weight of criteria	Kendall's W
Availability	7.5	18.7	10.0	2.0	38.2	0.686
Accessibility	5.7	10.5	4.8	6.2	27.2	0.674
Affordability	2.0	4.2	4.2	0.7	11.0	0.631
Acceptability	2.3	4.5	3.5	0.3	10.7	0.615
Quality	0.0	6.8	6.2	0.0	13.0	0.779
AHSP Score	17.5	44.7	28.7	9.2	100	

Figure 18: The 6 FGD participants had a high level of agreement when scoring the AHSP indicators of good service

A summary of FGD discussions are shown below;

- All 6 groups indicated that CAHWs were relevant to the community.
- CAHWs service was accessed on average 3 times more when compared to 1-time access to government vet, private agrovet and traditional healers.
- 5 out of the 6 groups indicated that all AHSP did not conduct physical examination of animals before treatment.
- Only CAHWs and sometimes the traditional healers followed up cases after treatment.
- Government Vets mainly provided mass vaccination and treatment services that were conducted at least once a year especially after an outbreak of a disease.
- No AHSP conducted Community Dialogue sessions to convey extension messages on good husbandry practices or public awareness messages on zoonotic diseases or proper use of vet drugs to prevent emergence of antimicrobial resistance.
- 4 out of 6 FGDs paid the Service Providers (CAHWs and Traditional Healers) the amount paid did not exceed 10 USD.
- All six FGD participants indicated they were willing to pay for CAHWs service if the CAHWs were better trained on livestock disease management. Participants noted that CAHWs were not trained on all endemic diseases that affect livestock and hence had limited knowledge on how to treat and prevent the diseases affecting their herds. The FGD participants also want CAHWs to be equipped with drugs and equipment so that they can offer quality service which they are willing to pay for.

3.3 Consultative Meeting Resolution

The one day stakeholders meeting was held on 5th October 2022 at Ali Jirde Hotel in Hargeisa. The meeting was attended by 34 participants. Most of the participants were government staff from the department of Animal Health. The meeting was attended by the Somaliland Veterinary Association (SOVA) and United Livestock Professional Association (ULPA). Development and NGOs stakeholders in attendance included FAO, GIZ, ADO, Pharo and Candlelight. The meeting proceedings are attached as an addendum document to this report. The consultative group discussions were asked to deliberate on 5 questions that were generalised into 2 broad themes; Theme 1: Relevance and Role of CAHWs in Veterinary Service Delivery and Theme 2: How to ensure CAHWs Sustainability. The group resolutions are summarised below;

Theme 1: Relevance and Role of CAHWs

The meeting stakeholders addressed this theme by answering three questions:

1. Are CAHWs relevant in Somaliland?
2. What are their current roles in supporting vet service delivery in Somaliland?
3. Do we need to expand CAHWs role? If Yes, How

The participants unanimously agreed that CAHWs are relevant and play an important role in ensuring delivery of veterinary services to rural and often remotely located communities. This was in agreement with KIIs and FGDs responses. The meeting participants cited the following reasons to support their response;

- a. Professionally trained animal health service providers with degrees or diplomas are not willing to practice privately or be posted by the government to remote locations.
- b. The number of trained professionals are few given the large number of livestock in the country, due to the acute shortage of trained workforce CAHWs are best placed to fill this gap.
- c. CAHWs are always with the animals in this remote locations and are therefore best placed to conduct surveillance and early reporting of diseases.
- d. CAHWs are good at mobilise communities to be involved in government sponsored activities and are thus best placed to deliver on the government mandate that is advocating for community involvement in public affairs. This is consistent with the national service delivery decentralization policy.

In terms of their role, the meeting participants of were also consistent with the KIIs views that CAHWs scope of duties should be confined to the provision of basic animal health service such as surveillance and reporting of common diseases, early reporting of diseases syndromes and outbreaks, minor surgical practices like close castration, de-horning and hoof trimming and mobilising for mass vaccination and treatment. Participants agreed that CAHWs role needed to be expanded so that they can remain relevant. The expanded role will require inclusion of various modules into the CAHWs training curriculum. Some of these modules can be included as refresher training modules. However, the participants pegged the CAHWs role expansion on a number of preconditions outlined for the MoLFD.

- a) MoLFD needs to establish a national database of properly trained and active CAHWs.
- b) MoLFD should be mandated to regulate CAHWs training but should work with other private and NGO stakeholders to ensure cohesion and harmony in their capacity-building initiatives.
- c) The CAHWs curriculum and training manual needs to be revised to have a trainers manual and a participant's manual or handbook. Currently CAHWs are provided with a manual that is full of technical details. MoLFD should consider adopting a ToT model for trainers so as to ensure quality of trainers as is done by the Livestock Emergency and Guidelines (LEGS) programme.
- d) CAHWs curriculum should specify the duration of the initial basic training that should include entrepreneurship skill development and should run for a minimum of three months. The curriculum should also outline training modules for refresher trainings. Refresher training should include good husbandry practice modules, drought mitigation modules based on LEGS principles of drought management and one health approach modules as a strategy to train on zoonotic diseases and create awareness on antimicrobial resistance.
- e) MoLFD should identify a CAHWs training center the participants proposed Sheikh Veterinary School. The training centre should work together with other stakeholders including NGOs and private sector to deliver the trainings.

Theme 2: How to ensure CAHWs Sustainability

To ensure CAHWs model sustainability there needs to be a revision in its implementation. However, MoLFD should first develop clear and defined roles for all cadres of staff in the department of animal health including CAHWs. MoLFD should ensure the defined role of CAHWs is incorporated in the Veterinary Policy and Code that are currently being revised. The MoLFD should also ensure they outline a fair and transparent selection criteria as this directly impacts on CAHWs service delivery. The meeting participants urged MoLFD to improve the coordination mechanisms of CAHWs training as this also impacts their service delivery. MoLFD were urged to incorporate CAHWs in mass vaccination and treatment campaigns. In addition, so as not to disrupt the private sector that includes CAHWs. The government should refrain from giving free drug donations to livestock keepers especially in areas where CAHWs and private agrovet stores are operating.

The government was also asked to ensure they protect the private sector agrovets business by ensuring they only set up drug stores where there are no licensed private agrovets stores. In addition, the government should ensure they link the trained CAHWs to the DVO and private agrovets stores. To ensure their sustainability, the CAHWs once trained should be introduced back by the government (DVO) to the community. During this community meeting the government will outline the role of CAHWs and introduce them as private practitioners working with the government to deliver on its mandate. In conclusion, the group discussion urged MoLFD to set aside resources for early response when CAHWs report outbreaks as this will contribute towards securing the community trust in the CAHWs capability. The ministry should also conduct regular monitoring of CAHWs and other AHSPs using the approach and tool used in this study so as to determine if the AHSPs are delivering to the public quality services.

4.0 Discussion

Relevance and Role of CAHWs in veterinary service delivery in Somaliland

This study demonstrated that CAHWs are relevant and play an important role in veterinary service delivery in Somaliland. Study participants raised concerns on CAHWs training quality and duration, lack of supervision and regulation and lack of motivation that resulted in high dropout rates. These challenges are similar to previously documented CAHWs studies across Africa^{5, 6}. The stakeholders in the study emphasized the importance of setting clear training guidelines for initial and refresher trainings. Previous studies have suggested the importance of supportive supervision for CAHWs by trained animal health service providers, including accompaniment and shadowing. This mentorship when combined with proper trainings gives CAHWs important feedback that builds their confidence to perform their roles and improve their acceptability and trust in the community⁷. Although not fully explored in Somaliland, use of technology is a proven avenue to facilitate CAHWs tasks of surveillance, outbreak reporting and improving response

⁵ Johan Oosthuizen (2019). Veterinary paraprofessionals: their governance and role in improving animal health and welfare in Africa. <https://rr-africa.oie.int/wp-content/uploads/2019/03/oosthuizen.pdf>

⁶ Andy Catley (1999). Community-based Animal Health Care in Somali Areas of Africa: A Review. <https://www.alnap.org/system/files/content/resource/files/main/somalicahw.pdf>

⁷ Alders, R.G., Ali, S.N., Ameri, A.A., Bagnol, B., Cooper, T.L., Gozali, A., Hidayat, M.M., Rukambile, E., Wong, J.T. and Catley, A. 2020. Participatory epidemiology: Principles, practice, utility, and lessons learnt. *Frontiers in Veterinary Science* 7: 532763. <https://hdl.handle.net/10568/110145>

times by government veterinary service providers. In addition, mobile technologies allow CAHWs to receive alerts and reminders, facilitate continuous education sessions, and conduct person-to-person communication⁸.

Sustainability of CAHWs model

The current CAHW model in Somaliland needs revision in its approach and implementation as aforementioned above. The role of motivation from both financial and nonfinancial incentives in CAHWs programmes cannot be overemphasized. Due to lack of resources, CAHWs may not be integrated or recognized as part of the public sector workforce. Previous studies have shown that if governments streamline national policies and laws to incorporate and recognise the role of CAHWs as private animal health service providers who support their mandate to deliver quality veterinary services. Then the larger community will gain a better appreciation of CAHWs role and start viewing them as competent service providers who should be paid for their service⁹.

4.1 Conclusion and Recommendations

In conclusion, the study demonstrated that CAHWs are a relevant and an important part of veterinary service delivery system in Somaliland. The CAHWs model needs revision and to assist in this revision the following recommendation are forwarded to MoLFD and SDF2 programme;

1. There is need to fast track Veterinary policy and codes revisions as it recognises CAHWs as important players in supporting the delivery of quality veterinary services in Somaliland.
2. MoLFD in consultation with stakeholders should fast track revision of the CAHWs curriculum and training manual and have it approved by the board. MoLFD should be given the mandate to regulate and co-ordinate CAHWS trainings,
3. The trained CAHWs need to be linked by MoLFD to the community and private agrovet supply stores or government animal health drug posts in their area of operation.
4. MoLFD should mandate DVOs to register and monitor CAHWs in their area of operation, with a reporting structure that will be officially documented at district office.

⁸ Mwabukusi, Mpoki & Karimuribo, Esron & Rweyemamu, Mark & Beda, Eric. (2014). Mobile technologies for disease surveillance in humans and animals. The Onderstepoort journal of veterinary research. 81. E1-5. 10.4102/ojvr.v81i2.737. <http://dx.doi.org/10.4102/ojvr.v81i2.737>

5. The participatory study exposed a gap in monitoring veterinary service delivery. MoLFD should conduct regular assessment of CAHWs and other AHSPs service delivery, community feedback and impact documentation periodically, preferably quarterly.

5.0 ANNEXES

Annex 1: Field data collection Schedule

SN	Data	Travel	Activity		Remarks
			KIIs	FGDs	
1.	Monday, 26th Sept.	NO	With Ministry key personnel + Enumerators training and tool test.		Ministry of Livestock and Fishers Development office
2.	Tuesday, 27 th Sept.	9:00 am : Departure 10:00; arrival at Salahlay 2:00 PM return	- 10:00 am; KII with the local government; - 11:00 am; KII with the CAHWs	10:30: FGD with the local community	The team was split up into two groups to conduct KIIs and FGDs simultaneously.
3.	Wednesday, 28 th Sept.	6:00 am Departure to Berbera 8:30; arrival	- 9:00; KII meeting with the local government - 10:00; Regional Gov't - 11:00-14:00; Agro-vet Stores - 16:00-18:00 CAHWs - Night in Berbera	NO FGDs	

4.	Thursday, 29 th Sept.	<p>6:00 departure from Berbera</p> <p>13:00 Departure from Sheikh</p> <p>Night in Burao</p>	<ul style="list-style-type: none"> - 8:00 KII with Sheik Local Gov't - 9:00 KII with School - 10:00 CAHWS 	<p>8:00 FGD with Hudusa Community</p> <p>10:00 FGD with Sheikh Farmers</p>	<p>Team A will proceed to complete the KII in Shaikh, while Team B will conduct both FGDs in Hudusa and Sheikh.</p>
5.	Friday, 30 th Sept.	<p>7:00 Departure from Burao to Odweine</p> <p>13:00 Return from Odweine to Burao</p>	-	<p>10:00 FGD with Farmers Odweine</p> <p>10:30 FGD with Farmers in Xaaxi</p>	<p>Again, the team will carry out activities simultaneously by reorganising into two teams, one for Odweine and the other to travel to xaaxi and conduct FGDs with xaaxi farmers.</p> <p>Note that Friday is a weekend in Somaliland, so</p>

		Night in Burao			the team won't be able to meet with government officials in Odweine nor the CAHWs.
6.	Saturday 1 st OCT	No Travel	<ul style="list-style-type: none"> - 9:00; KII meeting with the local government - 10:00; Regional Gov't - 11:00-14:00; Agro-vet Stores - 16:00-18:00 CAHWs - Night in Burao 	FGD with Local farmers	Team A will complete the KII in Burao, while Team B will conduct the FGDs with local farmers
7.	Sunday 2 nd Oct	Return to Hargeisa	<ul style="list-style-type: none"> - Night in Hargeisa 		
8.	Monday 3 rd Oct	No Travel	<ul style="list-style-type: none"> - KIIs in Hargeisa 		
9.	Tuesday 4 th Oct		<ul style="list-style-type: none"> - Validation and consultation meeting with key stakeholders. 		

Annex 2: Key Informant Interview Tool

NB: The tool should be targeted to respondents who are knowledgeable about the CAHWs system

Date of interview: _____

GPS Coordinates: Latitude: _____ Longitude: _____

KII #: _____

Name of Data collector: _____ Mobile Contact: _____

Region: _____

District: _____

Village: _____

Role: (MoLFD/SDF/district local authority/ DVO/CAHW/Board/ Association/Vet agrovet): _____

Years in service/trade: _____

Section A: Technical ability

1. At this point in time what is your opinion on the relevance of CAHWs offering basic animal health services?

- a) Very Relevant
- b) Relevant
- c) Not relevant

Explain your answer above: _____

What is your level of satisfaction regarding CAHWs role in the following categories of services the offer?

2. Diagnosis and treatment of livestock diseases

- a) Very satisfied
- b) Satisfied
- c) Somehow satisfied
- d) Not satisfied

Not satisfied

Explain your answer above: _____

3. Disease surveillance and outbreak reporting

- a) Very satisfied
- b) Satisfied
- c) Somehow satisfied
- d) Not satisfied

Explain your answer above: _____

4. Mobilising livestock keepers for mass vaccination and treatments

- a) Very satisfied
- b) Satisfied
- c) Somehow satisfied
- d) Not satisfied

Explain your answer above: _____

5. Providing extension messages on good animal husbandry practices

- a) Very satisfied
- b) Satisfied
- c) Somehow satisfied
- d) Not satisfied

Explain your answer above: _____

6. Providing public health and animal welfare messages e.g. Rabies/Brucella prevention, not to eat animals found dead

- a) Very satisfied
- b) Satisfied
- c) Somehow satisfied
- d) Not satisfied

Explain your answer above: _____

7. Providing surgical techniques like de-horning, closed castration and hoof trimming

- a) Very satisfied
- b) Satisfied
- c) Somehow satisfied
- d) Not satisfied

Explain your answer above: _____

Section B: Recruitment and Training

1. Do you think CAHWs selection criteria is ideal?

- a) Yes
- b) No

Explain your answer above: _____

2. Briefly detail at least 5 selection criteria areas that should be adopted when selecting CAHWs.

- a) _____
- b) _____
- c) _____
- d) _____
- e) _____

3. Do you think CAHWs are sufficiently trained to conduct their mandate as outlined in section A above?

- a) Yes
- b) No

Explain your answer above: _____

4. How long do you think CAHWs should be trained for?

5. What training modules should be included in the training curriculum?

6. Who should develop the training curriculum and conduct the trainings?

7. Are refresher trainings for CAHWs important?

Section C: Sustainability and Recognition

1. CAHWs are currently not recognised as part of the animal health service providers in the country. What process would you recommend to ensure their integration into the public service or private sector?

2. Currently CAHWs trained have a high dropout rate. What strategies would you recommend to ensure their sustainability and motivation?

-
3. Briefly give general comments or recommendation you feel have not been captured in this questionnaire.
-
-
-
-
-
-

-----The End-----

Thank you for your participation

Annex 3: Focus Group Discussions (FGDs) data collection tool

NB: Ensure target participants are livestock keepers and there is gender and age consideration and inclusion. Focus group discussions (FGDs) will be conducted in the local languages. The discussion will be recorded in English with the assistance of an interpreter.

Number of participants should be maximum of 7 and a minimum of 5.

Name of data collector:
Number of participants:

Contact:
Males:

Females:

Date:

Start time:

End time:

Region:

District:

Village:

GPS Coordinates: Latitude:

Longitude:

SECTION A: Rating of AHSP providers in the community

1. Rating of Animal Health Service Providers (AHSP) using impact matrix scoring technique.

Step 1: Ask FGD participants to list the AHSP providers available in the community

NB: Start by saying that you are aware most livestock keepers treat their own animals and mention you want to know if the community has people to rely on when they are unable to treat their animals. These people are what we call Animal Health Service Provider (AHSP). *if the group mentions they call a fellow livestock keeper probe is the person a traditional healer, a more experienced livestock owner or a CAHW- a CAHW must be a person who was trained by the government or NGO to offer basic animal health care service.

Step 2: Ask FGD participants to mention traits of a good AHSP

Guide the group to put their responses according to the provided rating criteria: Available¹⁰, Accessible¹¹, Affordable¹², Acceptable¹³, Quality¹⁴ (utilizable/equipped). Start by defining each term¹⁵ then work through the list of responses to see which response fits into which criteria.

Step 3: Write down the desired AHSP quality criteria on a flip chart: Use picture/objects for each indicator quality so as to ensure inclusion of participants lacking formal education. Request one participant to lead the scoring/exercise. Give the lead participant 100 counters. Ask the lead participant to seek consensus from the group and pile the counters on the indicators according to how the group perceives which desired characteristic is more important than the other. The piling exercise will give weight to the AHSP service delivery indicators.

Step 4: Record the results in the table below;

Weighting of AHSP quality indicators

¹⁰ Available- presence of AHSPs in the area (how many AHSPs operate in the livestock keeper's locality)

¹¹ Accessible - physical distance between livestock keeper and AHSP/ Actual farm visit by AHSP to diagnose and treat animal

¹² Affordable - ability of livestock keeper to pay for services;

¹³ Acceptable – Ability of community to trust AHSP based on ability to respond in a timely way and communicate politely

¹⁴ Quality- AHSP competence, has basic diagnostic equipment, quality drugs in his kit & animals managed by said AHSP recover after treatment

¹⁵ Definitions sourced from:

-P.K. Turkson (2011). <https://www.hindawi.com/journals/vmi/2011/321369/>

- T Leyland (2014). http://fic.tufts.edu/assets/TUFTS_1423_animal_health_workers_V3online.pdf

- Bugeza J. et al (2017). <https://doi.org/10.1371/journal.pone.0179110>

Quality indicator	Score (/100)
1. Availability	
2. Accessibility	
3. Affordability	
4. Acceptable	
5. Quality	

Step 5: Remind FGD participants of the list of AHSP providers available in the community (as mentioned by them in Step 1) list them down in a flip chart for all to see as you give each AHSP an object representation. Develop the impact matrix by using picture/objects or name cards to represent the AHSP categories (Vet, agrovet, government vet, CAHWs) and place these across (x-axis) on the top of the matrix.

Place the service delivery indicators name cards/picture/object to one side (y-axis) of the first column of the matrix. Keep the corresponding number of counters (weight) with each indicator. Ask different participants to lead the discussion to develop the matrix. The chosen participants will guide other participants to use the counters to score the quality indicator for each AHSP category. The scoring is done one by one allowing a gradual building of the matrix. The matrix should be left in place so that everyone can view the results and discuss as a group. After the matrix is complete one should summarize the results and give the FGD participants the opportunity to make changes if they wish. The final agreed results should then be recorded in the matrix table below: Also remember to record participant's comments on why they have given the score recorded.

	AHSP 1	AHSP 2	AHSP 3	AHSP 4
Availability ()				
Accessibility ()				
Affordability ()				
Acceptability ()				
Quality ()				
Totals				

Summary of FGD discussions during the impact matrix scoring activity

SECTION B: Determining type of service offered by AHSPs

1. Ask participants how often in a year they call the AHSP to assist them in livestock treatment (reference the previous year and seek consensus from the group FGD participants)

AHSP category	AHSP 1	AHSP 2	AHSP 3-	AHSP 4
Frequency e.g Once a year Twice a year Seasonal				

2. Ask participants to list diseases or conditions they seek assistance from based on the AHSP category

AHSP 1:

AHSP 2:

AHSP 3:

AHSP 4:

3. Ask participants for each AHSP category if the AHSP conducts a physical examination before treatment (Yes or No) and do they have equipment like thermometer or stethoscope. (Yes / No then indicate number of participants that said Yes or No)

AHSP 1:

AHSP 2:

AHSP 3:

AHSP 4:

4. Ask participants for each AHSP category to 1. Mention if the AHSP tells them the condition they are treating 2. They come with a drug kit and 3. Do they follow up at a later date by either physical visit or via the phone if the animal recovered. (probe if livestock keepers inform the AHSP the status of animal after treatment) 4. Do they advise you on how to prevent the disease- (Yes / No then indicate number of participants that said Yes or No)?

AHSP 1:

AHSP 2:

AHSP 3:

AHSP 4:

5. Does the AHSP visit you herd every time you call (Yes / No then indicate number of participants that said Yes or No) – indicate if visit after call is all the time, sometimes, rarely or never. Probe for How long does it take for the AHSP to visit your herd when you call? (indicate less than 12 hours, after a day- 24 hrs, 2 to 3 days, 1 week over 1 week). Do you pay for the service if yes with what (money or goods)?

AHSP 1:

AHSP 2:

AHSP 3:

AHSP 4:

6. For each AHSP category mention if they hold community dialogue meeting to inform you on good husbandry practices, how to control diseases and alerts on disease outbreaks in the area (Yes / No then indicate number of participants that said Yes or No)

AHSP 1:

AHSP 2:

AHSP 3:

AHSP 4:

7. Do you think are relevant and important in your community? (Yes / No then indicate number of participants that said Yes or No). Ask each participants to give reasons why they said Yes or No

8. What recommendation/advice would you give the government on how to improve CAHWs service delivery in your community?

9. Would you be willing to pay CAHWs if they are sufficiently trained and equipped?

----- Thank You Very Much for your time-----

Annex 4: General Consent Form

The consent form will be translated to the local language and administered by the MoLFD staff to KIIs and FGD participants who will indicate they understand it and have given permission to be interviewed by signing it or putting a thumb print.

----- Consent Form-----

The Ministry of Livestock and Fisheries Development are conducting a study to evaluate the relevance of CAHWs in providing services. The staff will ask you several questions pertaining to this issue. Your participation is important as it will help guide the ministry plan how to support the CAHWs and improve delivery of veterinary services to your community. Participation in this study is solely voluntary and you can withdraw your participation at any time during the interview.

Do you agree to participate in this study? Yes_____ No_____

(If Yes proceed with signing the consent form below, if no allow the participant to leave)

I agree to participate in the study

Name: _____

Signature or thumb print: _____

Date: _____

Official section:

Name of person administering the consent form: _____

Signature: _____

Date: _____

=====Thank you for your participation=====