



**ASSESSMENT OF VETERINARY SERVICE DELIVERY,
LIVESTOCK DISEASE REPORTING, SURVEILLANCE
SYSTEMS AND PREVENTION AND CONTROL MEASURES
ACROSS ETHIOPIA/KENYA BORDER**

**ENHANCED LIVELIHOODS IN SOUTHERN ETHIOPIA
(ELSE) PROJECT**

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ABBREVIATIONS

AFD	Action for Development
AHA	Animal Health Assistant
CAHW	Community animal health workers
CBPP	Contagious Bovine pleuro-pneumonia
CCPP	Contagious Caprine pleuro-pneumonia
CIFA	Community Initiatives Facilitation and Assistance
DVO	District veterinary office
ELSE	Enhanced Livelihoods in Southern Ethiopia
FMD	Foot-and-Mouth Disease
GTZ	German Technical Cooperation
LSD	Lumpy skin disease
LVIA	Lay Volunteers International Association
MCF	Malignant catarrhal fever
NGOs	Non-Governmental Organizations
PA	Pastoral association
PPR	Peste des petits ruminants
RP	Rinder pest
RVF	Rift Valley Fever
SWOT	Strengths, Weaknesses, Opportunities and Threats
NEU	National Epidemiological Units
YVL	Yabello Veterinary Laboratory

EXECUTIVE SUMMARY

CIFA Ethiopia and CARE Ethiopia in collaboration with border Districts offices of Borana zones of Oromia Regional State, Southern Ethiopia, and Northern Kenya and with other partners intended to execute assessment and consolidate evidence based on veterinary service delivery and livestock disease reporting, surveillance and controlling measures in cross border area. The specific objectives of assessment was to identify strength and limitation of cross-border veterinary service delivery and livestock disease surveillance and reporting system, consolidate best practices and recommend appropriate and concerted measures/ actions necessary for future improvement of livestock disease prevention and control across the border of Ethiopia/Kenya. Desk review, focus group discussions and key informant interviews were conducted to gather important data.

This assessment revealed that cross-border livestock owners have been obtaining most of the veterinary services from both countries veterinary offices. However, inadequate budget, logistic problems, poor veterinary infrastructures, shortage of trained manpower and poor management capacity of the sector were found to be the main causes for the very weakness of government veterinary services. Introduction of CAHWs program has improved the accessibility of veterinary service to cross-border area. Yet the study revealed that CAHWs' activities become weakened due to lack of sustainable drug supply source with reasonable price and limited or absence of supervisions. Black-market veterinary drugs and frequent conflicts were also raised as threats of CAHWs. The interest of many NGOs participation to strengthen the veterinary sectors in the area, and current training of many students in veterinary profession could be good opportunities for future plan to improve veterinary service delivery to such remote pastoral community.

Nevertheless, poor infrastructure and lack of veterinary facilities were confronters against the interest of professionals to work in the area. Livestock disease information was found to be the one that cross-border pastoralists need most. The study confirmed that they have access for information of disease events occurred in neighboring country terrain while DVOs didn't get such information. The DVOs were only reporting their routine activities to their respective high level veterinary offices while monthly outbreaks are reported to National/Regional Epidemiological Units. Poor recording and documentation of specific cases were observed as weaknesses of routine activities reporting. Outbreak reports were found to be based on community and CAHWs information providers. The reports were mainly focused on few diseases-blacklegs, anthrax, LSD, sheep and goat pox, pastuerollosis and PPR. The

regular allocation of budgets for sending reports via post office was obtained as the strong side of the existing outbreak reporting system but some remote districts are still failing from reporting due to transports and unfunctionality of post offices.

Disease surveillance activities were mostly undertaken when there are compulsory situations happens such as AI pandemic and RVF epizootic. Active surveillance was found to be constrained by inadequate operational budget and logistic problems. Moreover, National veterinary laboratories are so distant to timely investigate the field disease events. Thus, the study showed that the present surveillance is depending upon outbreak reports. The custom of information exchanging and detailed livestock disease knowledge of pastoralists was found as pillars of disease surveillance but it is not yet fully used. Practical government animal disease prevention and control strategy was recognized to be dominated by control type of service after the occurrence of outbreaks for few diseases but left other most disease without any strategy. Lack of harmonization of prevention and control measures across the border was the main bottleneck for success of separated efforts. Therefore, CIFA Ethiopia attempt to facilitated livestock market and disease information exchanging among local DVOs across the border was found to be the best lesson learnt from the present study. This should be scaled up to national level so as to create genuine information flow between the two neighboring countries and then to pave for implementation of harmonized livestock disease prevention and control measures across Ethiopia/Kenya border.

1. INTRODUCTION

The international border between Ethiopia/Kenya occurs in very remote rangeland locations. The climate of great part of this area is arid and semi-arid with erratic and variable nature of the rainfall (7, 8). Pastoral people often live on both sides of the border and the major ethnic groups of community are Borana, Garri and Gabra. These people's livelihood mainly depends on their livestock and livestock products for food, income, social interaction and draught power to some extent. The livestock population of northern Kenya and Southern Ethiopia is dominated by cattle, goats, camels, and sheep which are managed in an extensive migratory system.

However, scarcity of pasture and water is a prominent feature of this area rangeland due to degradation, recurrent droughts and population pressure (2, 7). Livestock keepers adopt periodical movement of their herds over long distances across Ethiopia/Kenya border in search of pasture and water. This practice of mobility enables pastoralists to escape the ecologically localized scarcity in time and space. Thus, such movement of livestock across the border is inevitable for the survival of both the herds and the people. However, the livestock production has also been constrained by highly prevalent animal diseases in the area. Foot-and-Mouth Disease (FMD), Contagious Bovine Pluero-pneumonia (CBPP), Malignant Catarrhal Fever (MCF), Contagious Caprine Pluero-pneumonia (CCPP), Lumpy Skin Disease (LSD), sheep and goat pox, Peste des Petitis Ruminants (PPR), complex camel respiratory diseases, camel pox, the emerging disease -Rift Valley Fever (RVF) and several unidentified diseases are among the well known trans-boundary animal diseases impairing the Ethiopia/Kenya border pastoral community to get optimal benefit from their livestock.

The co-existence of highly prevalent animal diseases with free livestock movement across the border has fairly a risk in spreading of diseases and entrance of new disease. For instance, occurrences of FMD outbreaks are very common following massive livestock movements during dry seasons and drought periods (10). There is also a possibility of entrance of exotic disease which might consequently cause outbreaks which result in serious losses of the livelihood assets of pastoral citizens. This scenario compels both the governments and the pastoral community to take livestock health issues as a prior agenda. The non-governmental organizations (NGOs) working on livelihood enhancement of cross-border societies has also been giving a due attention on veterinary services activities.

However, animal health service delivery system in Ethiopia/Kenya border area is dominated by governments' veterinary services through stationed clinics and health posts. Most of pastoral system authors oppose this type of veterinary service provision for being not tailor to the pastoral production system (3, 9). Moreover, the vastness and remoteness of terrain exacerbate veterinary service inaccessibility to the border inhabited pastoral societies. Community based animal health workers (CAHWs) program had been introduced to fill these gaps and improve both primary-level delivery of veterinary services and disease surveillance (6) though veterinary professionals were in doubt about the quality of CAHWs service. Allport *et al.*, 2005 explained that well-designed CAHW systems enable utilization of pastoralists' indigenous knowledge of animal health and husbandry through provision short period of training and then continuous updating. To that effect, many CAHWs were trained to provide treatment with antibiotic, deworming for internal parasites, acaricide sprays for external parasites, mass vaccination, minor surgical treatments and report disease outbreaks.

Studies indicated CAHWs improved accessibility of veterinary service marginal pastoral area of the Horn of Africa but there are still reports on the presence of different constraints/challenges for CAHW activities (4, 6). The veterinary service delivery, livestock disease reporting and surveillance and control measures taken across Ethiopia/Kenya have been complained by pastoral community for being not equivalent to their need. The presence of the gaps could have significant impacts on the livelihood of people since there are prevailing endemic diseases and uncontrolled livestock movements. To these effects, Community Initiatives Facilitation and Assistance (CIFA) and CARE Ethiopia through Enhanced Livelihood in Southern Ethiopia (ELSE) project planned to conduct an assessment on veterinary service, animal diseases reporting and surveillance systems and controlling measures taken across Ethiopia/Kenya border. This was made followed by feedback and harmonization workshop in order to consolidate best practices, agree on solutions for the gaps/challenges identified and address policy issues for future improvement of animal health service delivery with particular emphasis across borders of Ethiopia and Kenya.

2. OBJECTIVES OF THE ASSESSMENT

The specific objectives of this assessment were:

- To assess the current status of veterinary service, livestock disease surveillance and reporting system and controlling measures taken across Ethiopia/Kenya border areas;
- To draw out challenges/gaps on the existing veterinary service, livestock disease surveillance and reporting system as well as prevention and control measures taken across the border;
- To identify lessons learned from the present practices for further scaling up; and
- To put the way forwards to inform policy makers and different stakeholder so as to improve quality of livestock service across the border in the future.

3. METHODOLOGY

3.1. General Description of Study Area

The international border between Ethiopia/Kenya is over 600 km in length from East to West. This area includes the Southern part of Somali, Oromia and Southern People National and Nationalities Regional State of Ethiopia and Mandera, Wajir, Moyale, Marsabit and Turkana District of the Northern parts of Kenya. However, the study was focused on Moyale and Moyale Districts of Borana zone of Oromia Regional State and Moyale and Sololo Districts of Kenya. The northern Kenya area has relatively lower altitude than the southern Ethiopia.

The climate of cross-border area is arid and semi-arid. The rainfall has a bimodal pattern with 600mm in long rains and 250 mm in short rains. A prominent feature of the rainfall is the erratic and variable nature of the rainfall. Temperature ranges between 20 °C to 36 °C with an average of about 25 °C (7). The rangeland is dominated by savannah vegetation containing mixtures of perennial and woody bush land (10). However, scarcity of pasture and water resources become a prominent feature of both side cross the border area due to degradation of rangeland, recurrent drought and population pressure (2, 8). The effect of scarcity has been exacerbated by frequent conflicts which limit livestock movement across the border.

The area is sparsely populated with 5 persons per Km² of population density (7). Most of people are live on livestock production as a major economic activity while crop production is also practiced in small arable pockets on the landscape. Livestock are managed in extensive migratory grazing system. They serve for source of food, income generation, wealth storage, social prestige and, to some extent, draught power and provision manure to fertilize field. Livestock keepers move their livestock to the seasonally varied grazing lands for the survival of both the herds and the people. Since there is a variation of forage and water resources in time and space between northern Kenya and southern Ethiopia, pastoralists freely move their livestock across the border. This practice of mobility has positive aspects for pastoral resource use overall and able traditional exchanging of ideas, sharing of resources, and engaging in trade pastoralists from the two countries (8).

Table 1: Livestock Populations of Study Areas

Country	Districts	Species of animal					
		Cattle	Goats	Sheep	Camel	Equine	Poultry
Ethiopia	Moyale	35,000	7,820	3,232	4,805	2,005	8,167
	Miyo	108,978	26,672	7,769	11,638	10,500	14,800
Kenya	Moyale/ Sololo	98,000	75,000	25,000	30,000	45,000	11,000

Source: District socio-economic survey (2007/08)

3.2. Study Sites Selection Techniques

The study was conducted to assess veterinary practices, livestock disease surveillance and reporting system and control measures in Ethiopia/Kenya cross-border areas. Due to budget constraint, logistic problem and time shortage, the study was undertaken in only three districts, namely Miyo and Moyale districts from Ethiopia side and Moyale district from Kenya side. Two Pastoral Associations (PAs)/Divisions were purposively selected from each selected district to be included in active study. Districts and PAs/Divisions were purposively selected based on accessibility, proximity to border and being route of livestock movement.

3.3. Assessment Tools and Design

The assessment study was multi-approaches tools used to gather important information on the veterinary issues. Collection of secondary data, desk reviews of different documents and studies, focus group discussions and key informants interviews were the implemented approaches. Finally, harmonization workshop was envisaged as one of study method.

3.3.1. Desk Reviews and Secondary Data Collection

Previous studies, guidelines, manuals and literatures were reviewed to assess current veterinary service and surveillance and reporting systems across the border. The secondary data collected pertaining to the investigated issues was also collected from different concerned bodies. Routine activities and outbreak reporting formats developed at different veterinary offices were thoroughly assessed.

3.3.2. Focus group discussion

The focus group discussions were formed by selecting communities of the targeted population. One focus group discussions was conducted at each selected PA/Division. Therefore, a total of six focus group discussions were conducted during the study period. Each focus group discussion was composed of about six discussants.

3.3.3. Interview

The in-depth information was made using interviewing key informants who have deep knowledge on livestock health services in the area. Two pastoralists and available CAHW(s) from each selected PAs were interviewed using prepared probe semi-structured questionnaire. Therefore, a total of twelve pastoral key informants and eight CAHWs were included in interviews. That interview was also involved Livestock Offices, Animal Health Assistants (AHA) and veterinarians /officers who are working in government veterinary offices and NGOs participating veterinary services. However, the interview was limited only at District Veterinary Office (DVO) of Kenya side because of factors of the above mentioned limitations of the study. Officers/workers of CARE, Lay Volunteers International Association (LVIA) and CIFA from Ethiopia side and FARM Africa from Kenya side were included in the interview.

3.3.4. Validation workshop

The result of this assessment is shared with all the immediate stakeholder of veterinary services at the harmonization workshop that will be conducted in Moyale. The workshop is meant to validate and enrich the findings of the assessment.

3.4. Data Analysis

Data collected using different methods from different sources was triangulated and then analyzed strength, weaknesses, opportunities and threats of veterinary

service, disease reporting and surveillance and prevention and control measures taken using SWOT analysis.

4. FINDINGS OF THE ASSESSMENT AND DISCUSSION

4.1. Veterinary Service Delivery System

The focus group discussions and pastoral key informants revealed that cross-border area livestock owners have been providing veterinary service from both countries. Since they seasonally move their livestock across the border, they are getting the service from the country where their animals are grazing /browsing. CAHWs and government veterinary staffs were identified curative service providers in Ethiopia/Kenya cross-border area. The service was found to be limited to administration of antibiotic, antihelmitic and trypanocidal drugs; closed castrations and minor surgical treatments. In addition, the study revealed that traditional healers still have significant contribution to veterinary service through treating sick animals. They mainly provide herbal medicine administration, minor surgical operation (close and open castration, obstetrical helps) and treatment by branding. Government veterinary staffs mostly are delivering the services at veterinary clinics or posts while CAHWs at field.

Table 2: Veterinary staffs and CAHWs in the Study Areas

Country	District	Veterinary professionals/paraprofessionals						
		Veterinary	AHA	AHT	LT	MI	Total	CAHWs
Ethiopia	Moyale	0	5	5	1	1	12	7
	Miyo	0	4	2	0	0	6	13
Kenya	Moyale	2	3	-	-	-	5	120
	Sololo	1	3	-	-	-	4	

In assessed two districts of Ethiopia, these services were found to be given at four veterinary clinics and three health posts while a total of two health posts in Moyale and Sololo Districts of Kenya (Table 3). The establishment of these infrastructures has been carried out mainly by governments although some NGOs such as LVIA and AFD have involved in construction of health posts. The existing veterinary clinics and health posts were not found enough to level cover the vast area of the border.

Table 3: Veterinary infrastructure of the study areas

Country	District	Veterinary clinics	Health posts
Ethiopia	Moyale	1	3
	Miyo	2	1
Kenya	Moyale	0	1
	Sololo	0	1

A total of eighteen paraprofessionals and twenty CAHWs were found in two districts of Ethiopia to provide the veterinary service while three veterinarians and 120 CAHWs in Kenya assessed districts (Table 2). Veterinary service offices of both countries mentioned that few local private practitioners were started participating in supply of veterinary drugs. Besides, they are also distributing of antihelminthic drugs and acaricides as informed focus group discussions. However, the study could not find any written record on figures due to lack of such information at the DVO. This indicates that most of the deworming and acaricide sprays have mainly been left for livestock owners themselves. In addition, the study disclosed that most of livestock keepers treated their sick animals by themselves using antibiotics and trypanocidal drugs. Such situations are very common in remote areas where veterinary

services are inaccessible. In fact the area coverage of CAHWs was found to be by far greater than the government veterinary staffs.

The veterinary services provided by DVOs were reported to be very much limited in view of existing needed veterinary service across Ethiopia/Kenya border. Inadequate budget, logistic problems, lack of basic veterinary equipments, shortage of trained manpower and low capacity of veterinary section were found to be main causes for the weakness of conventional veterinary services. The budget allocated for veterinary section is expected to cover drug, vaccines and operational costs. However, two assessed districts of Ethiopia veterinary officers indicated that it is very common total consumption of the allocated budget before second quarter of the fiscal years. Very small operational budgets together with logistic problems limit veterinary staffs' service to livestock owners residing nearby clinics and health posts. For evidence of logistic problems, only one motorbike was found in Moyale District out of two assessed two districts of Ethiopia side. Thus, DOVs are relying on NGOs logistic supports which were observed within short period of the study. In addition, all veterinary clinics/posts are suffering with lack of basic laboratory equipments and kits to diagnose specific cases visiting clinics or health posts. This weakness leads diagnosis of specific cases to depend up on inspections of exhibited clinical signs.

In general, management capacity of animal health sections was found to be weak which was evident by absentees of AHAs from duty stations. This could be due to shortage of trained manpower in the sector. This problem was observed to be serious in Ethiopia side veterinary sector. Even though DVO officers have still blamed low attention of governments for all weaknesses of veterinary sector, the governments are training large number of students on veterinary profession and upgrading existing AHT to solve shortage of trained

manpower. This governments' effort was found to be an opportunity for increment of number of veterinary professionals in such remote areas. On the other hand, the existing poor infrastructure and lack of veterinary facilities in veterinary clinics were observed as threats through reduction of interests' veterinary professionals to work in the area.

CAHWs program implementation was improved the accessibility of veterinary service across-border area but the study indicated that CAHWs' activities become weakening. Lack of sustainable drug supply source with reasonable price and absence of supervisions were identified as causes of weakening of CAHWs services. CAHWs linkage with private practitioners, CAHW cooperatives and provision of revolving funds were found to be tried by different NGOs and government veterinary offices to solve drug sources problem. The linkage of CAHWs with private practitioners was not in such way to sustainable instead it was temporary by provision of fringes to private drug shoppers. CAHW cooperatives were functioned fully depend on few members so that they were stayed till those members were in cooperatives. Similarly, revolving funds programs were also failed due to absence of concerned and responsible bodies to run and regulate financial system. Therefore, after all those unsuccessful attempts CAHWs has been suffering with shortage of drugs. In addition to this, the assessment revealed the absence of monitoring and supervision of CAHWs activities. The main possible reason for this is lack of government full recognition for CAHWs. This problem was solved to the Ethiopia side but not still answered by the government of Kenya. Moreover, the existing lacks of operational budget and logistic problem of veterinary offices are other bottlenecks for supervision activities to be carried out. The cumulative effects of those problems consequently results in reduction of the number of CAHWs regularly report their activities to DVOs and increasing CAHWs withdrawals. For instance, most all of CAHWs of Ethiopia side didn't report

monthly basis while only 56 out of 120 of CAHWs Moyale and Sololo Districts of Kenya were found to be monthly reported.

In all districts black-market drug dealers were found to be challengers of private practitioner, CAHWs' veterinary service and even government veterinary service. For instance, plenty of 50ml bottles of 5% oxytetracycline were effortlessly seen at markets of assessed districts of Ethiopia in which it has been banned. The black-market dealers are circulating low quality drugs with low price. This was found to be cause for exacerbated administration of drugs by untrained pastoralists. This situation possibly caused lowering of the demands of CAHWs' service in the area. Therefore, availability of these contraband veterinary drugs accompanied by custom of pastoralists themselves treating their own sick animals is resulted in drug misuses, drug abuse and losses of animals. Death of four heifers after administration of high dose ivermectin intramuscularly at Lagsure PA of Ethiopia Moyale district could be evidence of the presence of these situations in the area.

Frequent conflicts and free drugs provision were mentioned to be threats for the CAHWs activities. Conflicts were found causing looting of CAHWs veterinary equipments such a bordizzo and kits. For instance, Lagsure of Ethiopia Moyale and Dukale of Miyo districts CAHWs badly complained their equipments lost during conflict while consultancy team was discussing with CAHWs. CAHWs also mentioned the influence of free drug distribution to the community on their activities. Similar to black-market drugs, free veterinary drug distributions could reduce the community's demand of CAHWs service. The assessment indicates the free drug problem is frequent since it is quite common practice to supply drugs free of charge to the community during drought.

However, numbers of NGOs were found to be main supporters of veterinary sector of Ethiopia/Kenya border area so as to improve accessibility of the services to remote areas through CAHWs program and provisions of logistic facilities and funds. Starting from introduction, all activities of CAHWs program were done by full efforts of NGOs except field monitoring and supervision which was left for government veterinary staffs. German Technical Cooperation (GTZ), CARE, AFD and LVIA from Ethiopia side and FARM Africa from Kenya side were found to be involved in training of CAHWs and equipping them with basic veterinary equipments and kits. Therefore, the presence of many NGOs interested in participating in strengthening of veterinary services was found as another opportunity for filling the gaps of governments in the sector. However, lack linkage of their works with the concerned government bodies and lack of integrations NGOs working on the same issues were found to be well known problems of NGOs. The absence of this linkage is left their works without responsible bodies after they leave the area. The problem of integration could also be one reason for negative attitudes of government bodies for them by making their contributions insignificant.

Table 4: Summary of weakness and threats of veterinary service delivery

Weaknesses	Threats
<p><i>Conventional veterinary service</i></p> <ul style="list-style-type: none"> • Inadequate budget • Logistic problems • Lack of basic veterinary equipments • Shortage of trained manpower • Low management capacity of veterinary sector <p><i>CAHW veterinary service</i></p> <ul style="list-style-type: none"> • Absence of supervision of CAHWs • Lack veterinary drug sources 	<ul style="list-style-type: none"> • Black-market drug dealers • Poor infrastructures • Conflicts • Free veterinary drug distributions • Free livestock mobility • Low government attention

4.2. Livestock Disease information flow

It is well known that information exchanging is a vital tool for pastoralists to cope with hostile environments. Focus group discussion and pastoralist’s key informants revealed that livestock disease information was found to be the one that pastoralists need most. The pastoralists have been using this information to decide where to move their animals for grazing and watering. The information has also value in their livestock market activities. Custom of exchanging information while greeting one another and at any gathering occasions was found to be a way for making the information accessible to all communities’ members. The assessment confirmed that cross-border community could get information of disease events in both sides terrain. The custom of information exchanging together with free humans’ movement across the border enables communities to access this information of both sides. Therefore, the study found information exchanging custom and good knowledge of pastoralists to be an

opportunity for disease surveillance and information dissemination. Oral tradition, shared information and the life experience of individuals enable pastoralists to acquire detained knowledge about significant health problems affecting their animals (1).

Contrarily, the assessment showed that government veterinary staffs did not have access of disease information across their border unless they fortunately asked livestock owners visiting veterinary clinics/health posts for needy of help. Lack of information exchanging between two sides veterinary offices was obtained as possible obstacle for harmonization prevention and control programs across the border. To narrow this gap, CIFA recently made an attempt to facilitate livestock market and disease information exchanging across the border local offices thought it was for too short period. Both side veterinary offices confirmed the significant importance of such information exchanges for different veterinary interventions across the border. But transparency was not found to be likely threat for disease information exchange. For example, Ethiopia side DVOs complained that FMD infection mostly came from Kenya side while Kenya side also said reversely. Therefore, this shows NGOs working on cross-border could be opportunity for facilitating establishment of information exchanging between both countries.

4.3. Livestock disease reporting and surveillance system

There were found two types of reports accomplishing by veterinary offices. Routine activities reports contain specific cases, curative service of veterinary clinics and health posts and mass vaccinations information whereas outbreak reports are only included information of outbreaks occurred.

4.3.1. Routine activities reporting system

According to the explanations of veterinary officers of both countries, veterinary offices have been reporting routine activities veterinary clinics/posts through hierarchal chains from local to district to province/region and finally to national office. The reports are submitted to their respective high level veterinary offices on monthly, quarterly and annually basis but in Ethiopia side only on quarterly and annually basis. Even though differences were observed on formats developed by both side DVOs, the formats of routine activities reports were, in general, prepared in such a way to collect type of species, age and number of animal treated; type of diseases diagnosed; and type of drug used for treating. Species and number of animals vaccinated and type vaccine used data could be included to these reports format if vaccinations were done.

Even though CAHWs routine activities have monthly been reporting to DVOs and their concerned NGOs, these reports were overlooked and didn't report at upper level. There was found an attempt to strengthen CAHWs' activities. Periodic assembles were held on to validate and harmonized based on their monthly reports. Veterinary Offices and NGOs working on CHAW programs were participated in such validation and harmonization assemblies.

Irregularity in reporting and poor recording and documentation of data collected from specific cases were also observed as weaknesses of routine activities reporting. The veterinary offices complained that reporting was not frequently done according to the schedules. This is a chronic one in remote health posts and DVOs. Lack of transport facilities, communication problems and absence AHAs on their duty stations were given as main reasons for not being reported timely. Name and PA of owners, species and age animal treated, clinical findings, laboratory diagnosis results, disease diagnosed and type and dose

administered treatment were found on format to be recorded at clinics and health posts. Since the collected data was not well recorded and documented, it was so difficult to use the data in future studies. This was mostly observed in two assessed districts of Ethiopia side. These could be a consequence of lack of trained manpower and lack at least one computer at DVO level. Moreover, some important epidemiological data such as age of sick animals, type of disease diagnosed and type of antibiotic/acaricide used for treating was not included in reporting. This shows reports are only used for management purposes.

4.3.2. Outbreak reporting system

Key informants indicated that outbreaks reports are done through mobile calls, radio calls (Kenya side) and persons who are going to town of the district at community level. The study revealed that these reports were focused on anthrax, blackleg, Lumpy skin disease (LSD), sheep and goat pox, pasteurullosis, Peste des Petits ruminants (PPR), Rift Valley Fever (RVF) (only Kenya side) and Contagious Caprine Pleuropneumonia (CCPP) outbreaks. After reported outbreaks have been recorded on prepared formats, they are monthly sent to National/Regional Epidemiological Units through mail. The epidemiological units mostly allocated enough money to cover costs of post services. The outbreak reporting formats of both sides were found be well prepared so as to collect all important epidemiological data. Sometimes, these outbreaks could be immediately reported to high veterinary office if there is no vaccine or budget available to take action and to National Veterinary Laboratories if they are unknown and serious.

Fast reporting at community level for some outbreaks, well prepared reporting format and regular allocation budget to costs of post offices were found to be

strong sides of the present outbreak reporting system. The fast report is attributed to the consideration of mass vaccination in response to reports as benefits which increases acceptability and sustainability of the reporting of those diseases at community level. In line with this, the improvement of communications such as mobile services in the area was found to be opportunity for timely reporting outbreaks.

However, transport and communication were still found the two limiting factors in reporting system. These problems were resulted in irregular/absence of outbreak reports for some remote health posts and DVOs. Even though there was no financial problem found, functionality of district post offices was obtained to be another hindrance of reporting outbreaks. Some outbreaks of important diseases, such as Foot-and-Mouth Disease (FMD) were not reported. Since veterinary offices had not taken any measure for those diseases outbreak reports of livestock owners for long time, the community didn't report to veterinary offices. Therefore, these weaknesses of the existing reporting system were attributed to lower the capacity to report all field disease events.

4.3.3. Livestock disease surveillance system

During Rinder Pest (RP) eradication campaign, there were regular coordinated surveillance activities such as field observations at market places, watering points and border areas which were routes of livestock movements. Now days, these surveillance activities were not found on the ground instead some surveillances were undertaken when there are compulsory situations happens. For instance, following Avian Influenza (AI) pandemic and RVF epizootic in Kenya, there were some surveillance activities carried out in the area. But livestock markets surveys have still been conducting in Kenya DVOs according

to Kenya Moyale DVO officer told. This shows existing diseases surveillance system is based on active outbreak reports sent DVOs.

The livestock diseases investigations at national level are done by Kebete National Veterinary Laboratory in the Kenya side while Sebeta National Animal Health Diagnosis and Investigation Center in Ethiopia side. However, previously Asella Regional Veterinary Laboratory but currently Yabello Veterinary Laboratory (YVL) has also been undertaken routine disease investigation, disease outbreak investigation and sero-surveillance to address the status of livestock diseases in cross-border areas of the Ethiopia side.

The Oromia Pastoral Commission effort made to establishment of YVL will contribute a lot in provision of quick diagnostic service and frequent disease surveillance in the area. The establishment of local veterinary laboratories could be a solution for distance problem of responsible laboratory. However, YVL was found in shortage of equipments and kits and suffering with inadequate budget and logistic problem. Such weaknesses of the laboratory were found to be causes for unimproved the lower capacity to investigate outbreaks timely and to carry out regular surveillance activities. The present surveillance approach was left important diseases such as FMD from not being reported. This was attributed to low capacity to detect all disease events on fields.

Moreover, epidemiological units were poor in coordination of surveillance activities especially on analysis of collected data and dissemination. The absence of feedback was found to be an obstacle for sustainable disease surveillance across the border since feedbacks for data providers is a key element to make the providers involvement in report sustainably. Since data providers were found to be the community, presence of feedback could lead to sustainable involvement of community in reporting system.

Table 3: Strength, weakness, opportunities and threat of the livestock disease reporting and surveillance system

Strengths	<ul style="list-style-type: none"> • Fast community disease outbreaks report • Presence good outbreak reporting formats
Weaknesses	<ul style="list-style-type: none"> • Absence of reporting some important disease outbreaks • Irregular/absence report by remote located DVOs • Dependence on community for provider of information • Poor management capacity of veterinary sector • Shortage of trained manpower • Poor recording and documentation of routine activities obtained data • Absence of feedback from NEU for sent reports
Opportunities	<ul style="list-style-type: none"> • Good community knowledge of livestock diseases • Good community information exchanging custom • Training of large students at veterinary profession • Improvement telecommunication infrastructures • Willingness of NGOs to participate in improvement of reporting and surveillance system
Threats	<ul style="list-style-type: none"> • Conflicts • Poor infrastructure (transportation of facilities)

4.4. Livestock Disease Prevention and Control Measures

Even though government strategy in animal health is provision of preventive services through mass vaccination, practical this strategy was done only for CBPP, since RP eradication campaign commenced, and CCPP through annual

mass vaccination and RVF through mass vaccination if necessary. CCPP and RVF prevention strategies were only implemented in the Kenya side. Most of CBPP vaccination campaigns undertaken in Ethiopia side were funded NGOs and NGOs also proved logistics to veterinary offices to perform vaccination campaigns. In addition, Kenyan veterinary offices are providing mass vaccination and deworming for all livestock while they are turn back from Ethiopia terrain.

However, Blackleg, anthrax, PPR, LSD, sheep and goat pox and, bovine and ovine pastuerollosis (only Ethiopia side) outbreaks were controlled by mass vaccination of the risky population following the reports their occurrences. CCPP outbreaks were attempted be controlled by mass administration of oxytetracyline injections for risky population (mostly Ethiopia side). Most all vaccinations have provided free of charge in need in Ethiopia side while the pastoral communities paid for the vaccinations in Kenya side. But the antibiotic injections were made by the interest of the owners and they also covered all costs of the injections.

Financial constraints and logistic problems were found to be main deep-rooted sources of limitation for responding fully and immediately to different outbreak reports. There is no integrated and appropriate control strategies which might cause antihelmitic drugs and acaricides resistance. Lack of passive surveillance data analysis, quarantine services and absence of harmonization for prevention and control measures taken were found to be weaknesses of the prevention and control activities across Ethiopia/Kenya border. Lack passive surveillance data analysis was attributed to absence of planed and designed prevention and control strategies based on the existing epidemiology of specific diseases. Even thought there is one quarantine station in Moyale district of Ethiopia, it has never functioned. This created a big gap on inspection of livestock moving

across the border. The present disease prevention in cross-border area could not be successful since there is harmonization of measures taken between two countries. Lack harmonization might result in double provision of vaccine for animals. This causes losses of the scarce money and complications on animals if vaccines are administered within few days' intervals. . Moreover, free vaccination might be one cause of continuous budget problem and result in seeking of funds to take any measure of prevention and control all the times.

Livestock movement across the border was a challenge for implementation of prevention and control program since each country has been performing those prevention and control activities separately without communicating each other. The assessment showed that free livestock movement across the border would be inevitable. Currently, degradation of rangeland, recurrent drought and frequent conflicts become common scenario in Ethiopia/Kenya cross-border areas. These factors evidently exacerbate livestock mobility, thereby making livestock disease status worse and taking prevention and control measures difficult.

Table 4: Summary of weaknesses and threats of livestock disease prevention and control measures across the border

Weaknesses	Threats
<ul style="list-style-type: none"> • Inadequate budgets • Logistic problems • Lack collected data to plan and design prevention and control strategies • Lack of livestock disease information exchanging across the border 	<ul style="list-style-type: none"> • Uncontrolled livestock movement • Rangeland degradation • Frequent recurrent droughts • Frequent conflicts

- Lack of harmonization of prevention and control measures taken

5. CONCLUSIONS AND RECOMMENDATIONS

After thorough assessment of the existing veterinary service delivery, livestock disease reporting and surveillance system and prevention and control measures taken across Ethiopia/Kenya border, the assessment team came up with the following conclusions.

5.1. Conclusions

- Both countries hold responsibility for provision and strengthening of veterinary service across the border. Even though the Kenya side is better in most aspects of veterinary services, the existing conventional veterinary service in both sides is very weak and constrained by shortage of trained manpower, inadequate budget, logistic problem, lack of basic veterinary equipments and poor infrastructures of the area. Private practitioners' involvement in veterinary sector is insignificant and limited only to veterinary drugs supply.
- The implemented CAHWs program has improved the accessibility of the service but it is becoming weakened as the result of lack of drug sources with reasonable price and absence of monitoring and supervisions and also challenged by black-market dealers and conflicts. More than all, the policy environment for CAHWs has been bottleneck to strengthen and scale up beyond the existing level. This problem remains unsolved in the Kenya side.

- The existing livestock disease reporting follows a bottom-up system, and routine activities are reported to higher level veterinary offices for management purposes while outbreaks to National/Regional Epidemiological units. Fast reporting of some diseases outbreaks, well prepared formats and continuous budget allocation for sending outbreak reports are strong sides of reporting system whereas lack trained manpower, irregular reporting, poor recording and documentation and poor infrastructures are causes of weaknesses of reporting system.

- The livestock disease surveillance is mainly based on pastoral livestock keepers and CAHWs. The well equipped veterinary laboratories are found to be overstretched in space and local veterinary laboratory and clinics are suffering with lack of equipments and kits, inadequate budget and logistic problem. The epidemiological units are so frail in collection and analysis of available data at lower levels and giving feedback for information providers. Therefore, the existing disease surveillance has low capacity to detect all field disease status, to provide definitive diagnosis and to investigate livestock health events timely.

- Though governments' strategy in animal health is provision of preventive service through mass vaccination, practical implementation is dominated by control type of service after the occurrence of outbreaks. In addition, absence of well planed and design prevention and control strategies and lack of harmonization measures taken across the border make all efforts ineffective. Thus, free livestock movement will remain as main challenge for alienated countries' prevention/control measures taken since such movement is a strategy to cope up with scare pasture and water resources.

- The contributions of NGOs are found vital for making the service accessible for this remote area through implementation of CAHWs program and provision of funds and logistic facilities. On the other hand, lack of integration of NGOs and poor of linkage with governments are causing their efforts invisible and unsustainable what they did. But whatever it is, the presence number of NGOs interested in working at cross-border livestock disease issues is an opportunity of the both sides' veterinary sectors.

- The role of CIFA-Ethiopia in facilitating livestock market and disease information exchange across the border DVOs is one of the key lessons learned from this assessment. The information exchange across the border enables the two side DVOs to harmonize prevention and control measures taken but not yet. However, lack transparency while exchanging livestock diseases information is a possible obstacle for contributions of such endeavor to the improvement of veterinary services in the future.

- Livestock disease information is decisive for pastoral community to determine where they move their animals for different purposes. The livestock owners usually report the occurrence of any disease events for concerned bodies as fast as possible whenever they get response. Thus, provision feedback from relevant bodies is necessary for sustainability of reporting. In general, custom information exchange and good knowledge animal health problems of pastoral communities are great opportunity to strengthen disease reporting and surveillance system.

5.2. Recommendations

Based on the above conclusions, the following future needs and opportunities were identified.

- Local government veterinary laboratories and clinics need to be equipped well with veterinary equipments and necessary operational budget and logistic facilities has to be provided so as to improve definitive diagnosis field disease events and timely veterinary services provision.
- Appropriate and mandated government bodies have to control illegal veterinary drug traders and strong activities should also be done to create community awareness on the risks of such black-marketed drugs and administration of veterinary drug by untrained persons. Simultaneously, the supply of veterinary drugs has to be increased by far to reduce people looking for black-marketed drugs as result of lack of options.
- The government must stop subsidizing the veterinary services and drugs to promote the participation of private practitioners in the sector and encourage veterinary practitioners to involve in provision of mobile services instead of retailing veterinary drug.
- The National/Regional Epidemiological Units have to be well organized to the level to access all information from different sources. These Units, in turn, have to restructure disease surveillance system in all stakeholders' inclusive way and then undertake sensitization activities to aware the stakeholders about their roles and responsibilities. In addition, they must disseminate feedback information to providers.

- Veterinarians in charge of disease surveillance in pastoral areas should be acquainted with participatory disease investigation tools so as to use pastoralists' deep knowledge on animal health problems. Thus, short term trainings should be given on participatory epidemiological survey tools.
- The Kenya government should look at the importance of CAHWs in pastoral areas in detail so as to correct policy environment of CAHWs. Both governments have to put supporting CAHWs on the ground by establishing good supervision systems of their activities and introducing strong regulations of revolving fund provided by NGOs.
- Since the mobility of livestock across the border is inevitable both governments must harmonize veterinary activities across the border by establishment of Ethiopia/Kenya cross-border livestock disease management committee. Both veterinary offices and committee members should be transparent in exchanging livestock disease information. The capital used for free drug distribution should be arranged in ways that build/strengthen the revolving capital of CAHWs. Otherwise, studies should be conducted on the existing system before implementation of all such emergency interventions.
- The NGOs need to keep up with their assistances in all aspects of governments' veterinary activities. On the other hand, they have to link their activities with the concerned government bodies so as to persist works when they leave the area and should integrate their efforts to bring tangible improvement on cross-border livestock health problems.
- The lesson learnt from CIFA-Ethiopia in facilitating livestock market and disease information exchange across the two sides' local veterinary offices should be scaled up to national level to ensure the harmonization of disease

prevention/control measures across the border and to solve the transparency problems. All NGOs working across the border should take the responsibilities to arrange forums for discussion on the importance of these issues and support the will-be established Ethiopia/Kenya cross-border livestock disease management committee in all aspects.

6. REFERENCES

1. Allport R., Mosha R., Bahari M., Swai E. and Catley A. (2005): The use of community-based animal health workers to strengthen disease surveillance systems in Tanzania. *Review Science Technical Office of International Epizootic*, **24** (3), 921-932.
2. Angassa A. (2008): Strategies for enhancing forage productivity in East Africa rangelands. In proceedings of sub-regional workshop on Managing East Africa rangelands for better response to feed crisis, 9-12 November 2008, Addis Ababa Ethiopia.
3. Catley A., Blakeway S. and Leyland T. (2002): Community-based Animal Healthcare: A practical guide to improving primary veterinary services. Wyvern 21, Ltd; Great Britain.
4. Catley A. and Mariner J. (2002): Where There is No Data: Participatory approaches to veterinary epidemiology in pastoral areas of the Horn of Africa. International Institute for environment and Development, Dryland program, Issue paper No. 110.
5. Dejenu A. (2004): A retrospective study on the impact of Community based animal health service delivery system in Shinile zone, Somali National Regional State of Ethiopia. Thesis of MSc in Tropical Veterinary Epidemiology, Debre zeit, Ethiopia.
6. EPIAT (2002): Impact assessment of community-based animal health workers in Ethiopia: Initial experiences with participatory approaches and

methods in Afar and Wollo. The CAPE Unit, AU/IBAR, Addis Ababa, Ethiopia.

7. GoK (2006): Moyale District annual report for 2005, Minister of Livestock and Fisheries Development, Government of Kenya. Moyale, Kenya.
8. Mesele S., Kagunyu A., Shibia M., Belay L., Haile G., Tilahun A., Okoti M., Coppock L., and Gebru G. (2007): Impact of cross-border livestock mobility on Conflict over natural resources and spreading of livestock diseases. In proceedings of sub-regional workshop on Managing East Africa rangelands for better response to feed crisis, 9-12 November 2008, Addis Ababa Ethiopia.
9. OPDC (2004): Assessment report on the status of existing animal health service delivery in Borena and Guji lowlands, Oromia Regional State. Adama, Ethiopia.
10. Rufael, T., Catley, A., Bogale, A., Sahle, M. and Shiferaw, Y. (2008): Foot-and-mouth disease in the Borana pastoral system, southern Ethiopia and implications for livelihoods and international trade. *Tropical Animal Health and Production*, **40**: 29–38.

7. ANNEX: Checklist used to guide focus group discussions and key informant interviews

Veterinary services

- What kind of veterinary services do get?
- Who give?
- What are the constraints of veterinary service?
- What are the possible for solutions of those constraints to improve the service in future?

Livestock disease information flow

- What is the importance of the information?
- From whom do they get information?

Livestock disease reporting system

1. Outbreak reporting s
 - To whom do they report outbreaks of disease?
 - For which diseases outbreaks do you report? Why?
 - How do you report?
2. Routine activities reporting
 - Why do you report?
 - For whom/to whom do you report?
 - How frequent?
 - What are problems that hinder your reporting?
 - What are their possible solutions?

Livestock disease surveillance

- How does surveillance carry out?
- Who are involved in disease surveillance? What are their roles?
- What are constraints/challenges for disease surveillance?
- What are possible solutions to improve the disease surveillance?

Livestock disease prevention and control measures

- How do prevent and control livestock diseases?
- For which diseases you do vaccinate your animals? When?
- What are constraints/challenges for prevention and control measures taken
- What are their possible solutions to improve prevention and control of livestock diseases?