



Participatory Impact Assessment of the Save the Children USA Community-based Animal Health Project

Dollo Ado and Dollo Bay
Somali National Regional State
Ethiopia



National PMIA Core Team
(PACE Ethiopia, CAPE Unit of AU/IBAR, NAHRC and ACF)
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The discussions we had with several pastoral groups in both Dollo Ado and Dollo Bay of the project area were indeed informative. Therefore our thanks go to the community members for their kindness, assistance and willingness to be interviewed. The Save the Children USA staff saw our task with an open mind and provided all necessary information and assistance.

It is the hope of the assessment team that the recommendations of this assessment will contribute to address the future STI objectives, thereby improving the livelihood of the communities in Dollo Ado and Dollo Bay.

List of abbreviations

ACF	Action Contra La Famine
AHT	Animal Health Technician
AU	African Union
CAHW	Community-based Animal Health Worker
CAPE	Community-based Animal Health and Participatory Epidemiology Unit
CCPP	Contagious caprine pleuropneumonia
DDO	District Development Office
DPPB	Disaster Prevention and Preparedness Bureau
FMD	Foot and mouth disease
IBAR	Interafrican Bureau for Animal Resources
LECDB	Livestock, Environment and Crop Development Bureau
NAHRC	National Animal Health Research Centre
PIACT	Participatory Impact Assessment Core Team
RDC	Respiratory disease complex
SC/US	Save the Children of United States
SPSS	Statistical Package for Social Scientists
SSI	Semi-structured interview
STI	Southern Tier Initiative
SWOT	Strengths Weaknesses Opportunities Threats
TOT	Training of Trainers
USA	United States of America
USAID	United State Agency for International Development

Summary

This report describes a participatory impact assessment of a community-based animal health project run by Save the Children US in Dollo Bay woreda (Afdher Zone) and Dollo Ado woreda (Liben Zone) of the Somali National Regional State of Ethiopia. This project was a pilot project designed to improve primary veterinary services. The impact assessment focussed on the affect of community-based animal health workers (CAHWs) on the incidence of livestock diseases and the activities of CAHWs relative other animal health service providers. The assessment also explored links between improved animal health and human livelihoods. The impact assessment is one of a series of assessments conducted by a team of Ethiopian professionals aiming to use field-level experiences to inform policy on veterinary service delivery in Ethiopia.

The Save the Children US project deployed CAHWs in 35 locations in Dollo Ado and Dollo Bay. The impact assessment sampled 10 of these locations and used participatory methods such as semi structured interviews, timelines, 'Before and after' proportional piling, disease ranking and matrix scoring. An important aspect of the methodology was to compare changing disease patterns for diseases treated or prevented by CAHWs with diseases not treated or prevented by CAHWs. Secondary data was collected from the project proposal and reports, and interviews with project staff and local government officials.

Impact of livestock diseases

The assessment showed significant reductions in livestock diseases treated or prevented by CAHWs in camels, cattle, sheep, goats and donkeys relative to diseases not treated or prevented by CAHWs.

Camels - the incidence of mange (*caadho*), anthrax (*kud*), pneumonia (*dugato*), helminthiasis (*goriyan*) and trypanosomiasis (*dhukan*) was substantially reduced due to CAHW activities.

Cattle – the incidence of anthrax (*kud*), blackleg (*garabgoye*) and helminthiasis (*goriyan*) was reduced by CAH activities. Foot and mouth disease also reduced in incidence and this was associated with increased settlement of communities.

Sheep and goats – the activities of CAHWs were associated with reduced incidence of CCPP (*riinweyne*), diarrhoea (*har*), helminthiasis (*caal*), mange (*cadho*) and pasteurellosis (*hargeb*).

In all these livestock species, the problem of tick infestation increased during the project period. This was linked to limited availability and high cost of acaricide, and reduced movement of herds.

Community perceptions of CAHWs as service providers

When comparing CAHWs with other animal health service providers, communities valued the easy accessibility of CAHWs and the affordable supply of quality medicines that they supplied. Due to the close proximity of CAHWs, livestock keepers were able to get a rapid response to disease problems and recovery rates were perceived to be high.

CAHWs advised herders on vaccination, disease prevention and the correct purchase and handling of drugs.

Impact on livelihoods

With regard to changes or benefits derived from healthy animals before and after the CAH project, communities associated the following benefits with the project:

- Cash income from livestock sales increased approximately two-fold
- The quantity of meat obtained from individual animals increased
- Milk production and cash from milk sales increased

The impact of the CAHWs services have been visibly perceived by the beneficiaries in the improvement in the health of shoats and cattle and this has resulted in increased income opportunities.

In conclusion, the CAH project registered an appreciable result in the reduction of disease incidence and mortality. Irrespective of the sites visited communities were happy with the project. Despite shortcomings the project impact was encouraging and commendable.

As a general recommendation the assessment team agreed that the project together with the communities critically evaluate the existing CAHWs and correct any problems before the launching of any other training.

1. INTRODUCTION

1.1 *Background to the Save the Children USA community-based animal health project*

The Save the Children USA (SC/US) community-based animal health project was initiated in October 1999 as a pilot project to develop a model of animal health services. The project was located in Dollo Ado woreda, Liben Zone and Dollo Bay woreda, Afder Zone of the Somali National Regional State (Region 5) of Ethiopia. The project built on previously trained Community-based Animal Health Workers (CAHWs) who were already scattered throughout the project area.

The *goal* of the project was to develop an effective and sustainable model of self-supporting veterinary service delivery for pastoralists in the project area. The *objectives* of the pilot project were the establishment of a CAHW association, provision of immunization and treatment services, and provision of educational services for improved animal health.

The *core activities* of the project were to initiate the establishment of a CAHW Association for Dollo Ado and Dollo Bay woredas, conduct refresher courses for 23 existing ‘vetscouts’¹, provide training for 15 CAHWs, create awareness of 15,000 pastoralists on improved animal husbandry, and vaccinate 700,000 livestock (350,000 animals each year).

The original project period was from October 1999 to September 2001. The project was later extended for fifteen months, from September 2001 to December 2002.

The project was funded by the United States Agency for International Development (USAID) and the budget was USD 449,462.74. The number of beneficiaries was predicted at 4000 households per year.

1.2 *Description of the project area*

Dollo Bay and Dollo Ado woredas are located in the remote south of Ethiopia and border Kenya and Somalia. The triangular border formed by Juba River between Ethiopia, Kenya and Somalia is of particular geo-political significance. The people in the area are Somali pastoralists and agro-pastoralists who make their livelihood either exclusively or primarily from livestock. They manage their livestock through a combination of seasonal movements and female-dominated, mixed herds. While some people have become semi-settled and many are engaged in agricultural activities (irrigated and rainfed systems), livestock remains the mainstay of their household economy. The major Somali clans in the project woredas are the Digodia, Garemare, Hawadle in Dollo Ado and the Fak-Muhumed, Bedisle, Garemare and Ogaden in Dollo Bay.

The livestock population of the two woredas is estimated to be 2,135,195 (1,177,395 head for Dollo Ado and 957,800 head for Dollo Bay woreda). Cattle, camel, sheep, goats and donkeys are the major livestock species kept in the area. Poultry keeping is becoming increasingly important in small towns and settlement sites. The Borana cattle, Blackheaded Ogaden sheep and the Long-eared Somali goat are the predominant breeds.

¹ The vetscouts were trained by the Third Livestock Development Project (TLDP) but when the project phased out they worked independently, getting drugs from wherever they could.

Rearing of dairy cattle using backyard systems is common in small towns and settled sites. Milk is the major livestock product both for home consumption and sale. Regardless of season and amount, collection, transportation and sales of milk to Mandera, Kenya is a routine practice throughout the year. Markets at Dollo Ado town and Mandera are the only two markets for sale of live animals.

The project area is classified as semi-arid and the Genalle, Dawa and Weyib are the main rivers that are used as sources of water for irrigation, human and livestock. The three rivers join and form the Juba River. There are a number of seasonal streams in the area and one natural pond in Biyole (Dollo Ado woreda). Woody and herbaceous plants are the major sources of natural feed for livestock. Trees, shrubs and bushes are the dominant woody population both along the rivers and in open rangeland. Grasses, legumes and herbs are the major sources of grazing. Collection and marketing of incense of different types is practiced during dry seasons.

1.3 *Background to the impact assessment*

In 2002, the CAPE Unit of the African Union/Interafrican Bureau for Animal Resources (AU/IBAR) worked with different agencies in Ethiopia to establish a national impact assessment team for community-based animal health projects. The aim was to use information derived from field-level assessment to inform policy makers. The impact assessment team comprised representatives from the Ministry of Agriculture, academic and research institutes, the Ethiopian Veterinary Association and non governmental organisations². Initial impact assessments were conducted of the FARM Africa project in Afar region and the Save the Children UK project in North Wollo³.

This report describes the third impact assessment conducted in Ethiopia. The assessment was based on a request from USAID and SC/US to the CAPE Unit to assess the CAHW projects in Dollo Ado and Dollo Bay, and was linked to USAID's emerging Southern Tier Initiative (STI) in the region.

The objectives of the assessment were to determine the impact of Dollo Ado-Dollo Bay Community-based Animal Health Service Pilot Project and present relevant information to the decision makers in SC/US and policy makers in Ethiopia at regional and federal levels.

² For more information about the establishment of the impact assessment team see the paper by Charles Hopkins and Alistair Short (2002) *Participatory Impact Assessment in Ethiopia: Linking Policy Reform to Field Experiences*, PLA Notes 45, 23-28 (International Institute for Environment and Development, UK).

³ See *Impact Assessment of Community-based Animal Health Workers in Ethiopia: Initial experiences with participatory approaches and methods in Afar and North Wollo* by the Ethiopia Participatory Impact Assessment Team, June 2002. Available from <http://www.cape-ibar.org>

2. METHODOLOGY

2.1 The impact assessment team

From the agencies involved in the first impact assessments in Afar and North Wollo (see Introduction), representatives from the following agencies were available for the assessment in Dollo Ado and Dollo Bay:

- Pan African Programme for the Control of Epizootics–Ethiopia, Ministry of Agriculture
- National Animal Health Research Centre (NAHRC)
- Action Contra La Faim (ACF)
- CAPE Unit, African Union/Interafrican Bureau for Animal Resources

This group of agencies was denoted the Participatory Impact Assessment Core Team (PIACT). In addition, staff from USAID and SC/US plus two staff members from the Somali Region Livestock, Environment and Crop Development Bureau (LECDB) and Disaster Prevention and Preparedness Bureau (DPPB) joined the team. There were nine professional in total in the team.

The assessment period was from December 16th to 30th, 2002.

2.2 Assessment sites

The two woredas of the project were taken as one project area for the purpose of the assessment. Out of the 35 sites having CAHWs, six sites from Dollo Ado and four sites from Dollo Bay (total 10 sites) were selected using purposive sampling. Of these 10 sites, five were predominantly pastoral communities whereas the other five sites were agro-pastoral communities (Annex 1). The sample sites are illustrated in Figure 2.1.

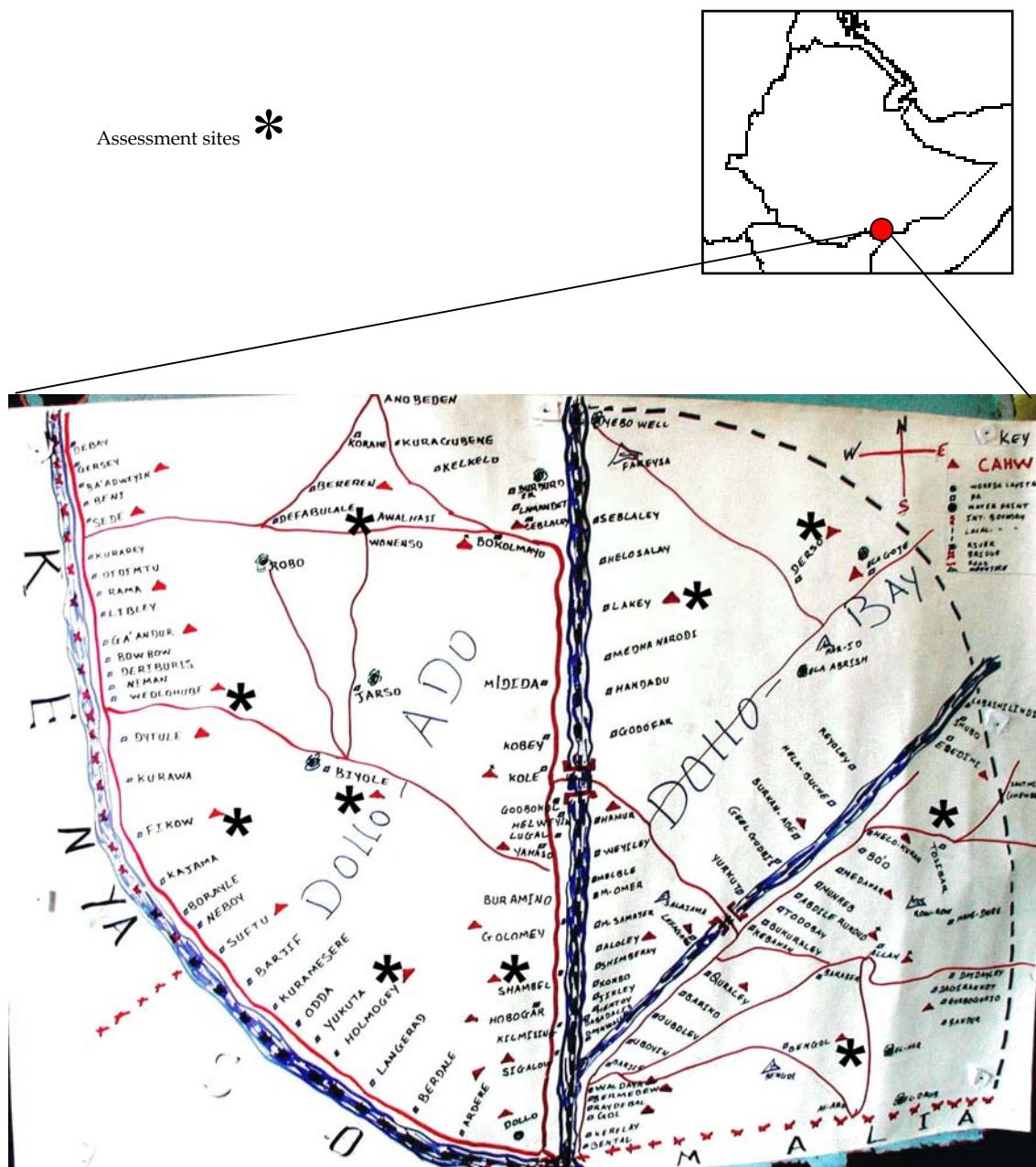
The impact assessment team was grouped into two sub-teams and each sub-team visited five sites. Courtesy visits were made to the two woreda administrations, District Development Offices (DDO) and *Gurtis* (woreda-level appointed elders) to explain the objectives of the assessment, to understand their impression of the project and confirm the appropriateness of the 10 selected sample sites. Prior to field visit to the respective sites, an appointment was fixed at least three days in advance.

2.3 Participatory methods

Participatory methods were used to collect all the required data and information. These methods were semi-structured interviews (SSI), timelines, 'Before and After' proportional piling, disease ranking and matrix scoring as detailed in Table 2.1. The team members from PACE Ethiopia, NAHRC, ACF and CAPE had previously been trained in participatory approaches and methods, and had experience of using the methods in the field.

A total of 248 community informants participated in the assessment, comprising 47 women and 201 men (see Annex 2). The Dollo Ado District Development Office (DDO) Animal Health Section and the Community Animal Health Workers Saving and Credit Association executive committee members were interviewed on different issues. Limited elders were selected among the informants to be interviewed for major events in the respective sites.

Figure 2.1
Dollo Bay and Dollo Ado woredas and the distribution of CAHWs



Management staff of the project were requested to fill out an evaluation format that included the whole process of project needs assessment, planning, implementation and monitoring.

Secondary data were collected from the project proposal, reports and different project documents.

Table 2.1
Summary of methods⁴

Information required	Methods	Type of informant	Number of repetitions
Defining the project in terms of its geographical coverage and period of operation	Available map at the project level	Project staff	1
Information on major historical events of the project area	Timeline	Individual, old person in community	10
Compare livestock incidence 'before' the project with incidence 'after' the project for different livestock species; general livestock diseases incidence and mortality; specific diseases incidence and mortality	Before and after' proportional piling	Average of 25 people Per site of 2 groups	10
Factors influencing livestock health during the project	Disease ranking	Average of 25 people per site of 2 groups	10
Change in animal health service provision	Matrix scoring of service providers	Average of 25 people per site of 2 groups	10
Major sources of livelihood Benefits derived from livestock and overall change before and after the project	Before and after proportional piling	Average of 25 people per site of 2 groups	10
Overall change in livelihood before and after the project (How have peoples' livelihoods changed during the project)	Before and after livelihood scoring and ranking of key factors	Average of 25 people per site of 2 groups	10
General information and as part of other methods	SSI to probe for more information	Ad hoc	N/a

The general methodological details were that locally available materials (stones) were used as counters. After mentioning and translating the idea of each exercise to the informants, indicators were suggested by informants and listed. Each indicator was represented pictorially. Repeated explanations were made to the informants until all of them clearly understood the task, identified and familiarized with any pictures or objects used. In group methods, different individuals were selected to place stones during ranking and scoring methods. After placing the counters, each informant who placed the counters was requested to explain why they distributed the counters among the different

⁴ The 'Before and after' proportional piling method is described in detail in Catley, A. (2001), *The use of participatory appraisal to assess the impact of community-based animal health services: experiences from southern Sudan*. IXth Symposium of the International Society for Veterinary Epidemiology and Economics, Breckenridge, Colorado, 7th-11th August, 2000. The matrix scoring method for service providers was adapted from the method described by Catley et al., (2001). *Participatory diagnosis of a chronic wasting disease in cattle in southern Sudan*. Preventive Veterinary Medicine, 51/3-4, 161-181.

indicators. Upon reasoning out the distribution of the counters other informants were asked if they agreed or not. Any informant who did not agree on the distribution of counters was given a chance to redistribute the counters and reason out. The same exercise was repeated until consensus was arrived.

In addition to these participatory methods, a Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis was conducted in Dollo Ado and Dollo Bay with project management staff and woreda officials.

2.4 *Data analysis*

Data derived from proportional piling of disease incidence and mortality, and from matrix scoring of service providers (Table 2.1) into SPSS Version 11.0. For matrix scoring data, the median and range were calculated and agreement between informant groups was assessed using the Kendall coefficient of concordance (W) (SPSS Version 11.0). Proportional piling data was summarised using the median and 95% confidence interval⁵. Changes in disease incidence were compared for diseases that were treated or prevented by CAHWs versus diseases that were not treated or prevented by CAHWs, using the Wilcoxon Signed Ranks test (SPSS Version 11.0).

⁵ Gardner, S.B., Winter, P.D. and Gardner, M.J. (1992) Confidence Interval Analysis, version 1.2. British Medical Journal.

3. RESULTS

3.1 Summary of major historical events in the project area

A summarised timeline of events in the assessment area is presented below:

1942-1950	People were forced to crush and eat animal bones and even consume raw skins and hides of dead animals from drought. That drought was called by a local name <i>Dhoh tire</i> ('consuming bone marrow').
1963-65	There was high cattle mortality due to rinderpest after seven years (before 30 years) and high goat mortality due to pasteurellosis occurred. During <i>Urgufo</i> drought (before ten years) camels died of browsing poisonous plants.
1972	Prolonged drought identified by the name <i>Dabedheer</i> ('long tailed') occurred in the area. During this time many people and animals died.
Before 1977	The different Somali clans were fighting each other during the King Hailesilase regime. When the Derg came into power the clan fighting reduced significantly.
Around 1977	The Somalia aggressors invaded the area, robbed animals and killed people that didn't support their idea. As a result some clans were forced to move to Filtu area for the time being while the others fled to Somalia and Kenya. When the war ended, the Derg has started to betray those people who came back to their sites by treating them as if they collaborated with Somalia. This made some people re-escape and stay in Somalia. Nevertheless, their clans and family members were given very hard time by the Derg soldiers.
1982	Ten years after the long tailed drought recalled by the name <i>Hufa</i> ('devastating') drought has stroke the area and taxes the lives of many people and animals.
1992-93	An extensive drought katern by the name <i>Urgufo</i> ('shattering') occurred. It has been recalled to date by its seriousness and the extent of damage it left behind. The death of human and animals is not comparable to any other drought. This drought was aggravated by high human influxes from Somalia and civil unrest. Many of them were back to their sites as returnees when the Derg was overthrown. Returnee's influxes and civil unrest were the two major events all over the two woredas.
1993	Returnees went back to their original home places that demanded extra resources to rehabilitate them. The forest resources near by small towns and sites were over cut for shelter construction and for fuel wood. Many returnees have involved in sales of wood for construction and fuel wood. The destruction of forest resulted in evacuation of many wild animals. However, currently an increase in number of different wild animals population is reported from different sites.
1999/2000	Drought is identified by a local name called <i>Labalaab</i> ('two-fold') and it has harvested many animals particularly cattle.

Over the years according to the elders perception the human population has increased and created competition over the limited resources. In some areas irrigated crop farming was expanded and intensified just after the drought of Urgufo on Genalle, Dawa and Weyib rivers to the extent that animals water routes are fenced and resulted in conflict with the livestock keepers. Those who are away from the rivers and mainly who lost

most of their animals by drought have involved in opportunistic rain fed crop production. Both the irrigated and rain fed crop production gradually brought into practices the uses of cattle as draught power source. Today most of the crop growers are using oxen. However, good harvest was obtained during 1997 and this year.

3.2 SWOT analysis

The results of the two SWOT analyses from Dollo Ado and Dollo Bay woredas are summarised below.

<u>Strengths</u>	<u>Weaknesses</u>
<ul style="list-style-type: none">• Establishment of CAHWS services delivery system in the remote area of the country.• Training and refreshment of 39 CAHWS• Establishment and legalization of CAHWS associations• Vaccination and treatment of 1182030 animals in 3 years• Introduction of new idea (cost recovery)• High acceptance of the service developed• Involvement of concerned government institutions in the process• Provision of alternative income source for CAHWS (donkey cart)• Strategic distribution of CAHWS in the project area• Training of CAHWS cooperative members on business management and cooperative concept.• The service is demand oriented• Disease status reporting to the federal MOA	<ul style="list-style-type: none">• Community participation in the selection of CAHWS was low• Community participation on planning was insignificant• No base line data collected• Trainers lack TOT• The training curriculum was conventional type• The training was not supported by relevant teaching aids.• Refresher training was not properly scheduled and implemented• No record keeping of CAHWS and report is unreliable• No reliable and sustainable drug supply and revolving credit fund management• Weak institutional linkages• There is no properly planned supervision and monitoring and no any government line bureau and community participation• No sense of owner ship developed by the community
<u>Opportunities</u>	<u>Threats</u>
<ul style="list-style-type: none">• The region is supporting privatization of the service• Cost recovery in the public vet service accepted as a policy.• CAHWS striving to establish their own Saving and Credit Associations• The legal acceptance of the CAHWS Saving and Credit Associations• Community acceptance of cost recovery for services rendered	<ul style="list-style-type: none">• Free drug distribution by the region in the name of emergency situation• Absence of unwavering near by drug supply source• Abundant circulation of unknown source and quality drugs• Inflation of the Ethiopian currency compared to the Kenyan currency

Table 3.1 below shows the response of the project manager for the indicators considered appropriate to show the level of participation of beneficiaries and stakeholders, as full, partial and no participation.

Table 3.1
Level of participation of different stockholders of the project as perceived by the project manager

Stages	Community	District	Zone	Region	SC (US)
Planning and selection	Full	Full	No	No	Full
Training of supervisors and leaders	No	No	No	Partial	Full
Design of the project	Partial	Partial	No	No	Full
Data collection /analysis and validation	No	Partial	No	No	Full
Monitoring and supervision	Full	Partial	Partial	No	Full
Project review	Full	Partial	Partial	No	Full

Table 3.2
Evaluation of the project by the project management

Indicators	Achievement (%)
Training:	
- Locally appropriate to the most common diseases	55
- Practical skills	60
- Good quality technical trainers with practical experience	60
- Training materials comprehensive	60
- Participatory/informal	70
- Refresher training	40
Other indicators:	
- Activity demand oriented	70
- Effectiveness of cost recovery	
Vaccines	40
Drugs	80
- Record keeping and reporting	
CAHWs	10
Project	70
- Enabling capacity building of the government body	70
Achievement of over all stated objectives	80
Achievement of the goal of the project	45

Source: Project Manager, Assistant Project Manager, Veterinary Service Coordinator and Field Office Veterinarian.

3.3 *Impact on livestock health*

'Before and after' proportional piling was used to identify the most important livestock diseases that affected animals before the CAH project three years ago, and changes in the incidence of these diseases to the present time. It should be noted that the CAHWs were not trained to treat or prevent all of these diseases. This approach enabled a comparison of changes in disease incidence for diseases treated or prevented by CAHWs (the 'treated

diseases') and diseases not treated or prevented by CAHWs (the 'non-treated' diseases') as presented in Table 3.3.

Table 3.3

Comparison of disease incidence reductions by species for diseases 'treated' and 'non-treated' by CAHWs in Dollo Ado and Dollo Bay

Species	Treated by CAHWs	Non-treated by CAHWs
Camels	Number of diseases = 5 $Z^1 = -3.95$; $p < 0.001$	Number of diseases = 5 $Z = -.45$; $p = 0.65$
Cattle	Number of diseases = 3 $Z = -3.62$; $p < 0.001$	Number of diseases = 4 $Z = -1.33$; $p = 0.18$
Sheep and goats	Number of diseases = 5 $Z = -4.31$; $p < 0.001$	Number of diseases = 4 $Z = -0.49$; $p = 0.69$
Donkeys	Number of diseases = 2 $Z = -2.38$; $p = 0.02$	Number of diseases = 2 $Z = -0.54$; $p = 0.59$
Poultry	Not applicable	Number of diseases = 4 $Z = -1.35$; $p = 0.18$

Notes

¹. Wilcoxon Signed Ranks test

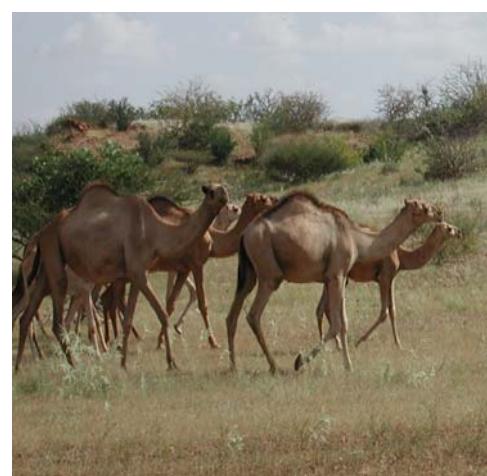
Data derived from 'before and after' proportional piling with 10 informants groups.

The results in Table 3.3 show significant reductions in disease incidence for those diseases handled by CAHWs, but not significant change in disease incidence for those disease not handled by CAHWs. More detailed information on a species by species basis is provided in the following sections.

3.3.1 Camels

The main camel diseases mentioned by informants three years ago and now were *kud* (anthrax), *dhukan* (trypanosomiasis), *furuq* (camel pox), *dugato* or *guux* (pneumonia), *gorriyan* (internal parasitism), *caadho* (skin diseases, including mange), *shillin* (tick infestation), *shimbir* (tick-borne disease), *hergeb* (respiratory disease complex) and *gudan* (twisted neck syndrome).

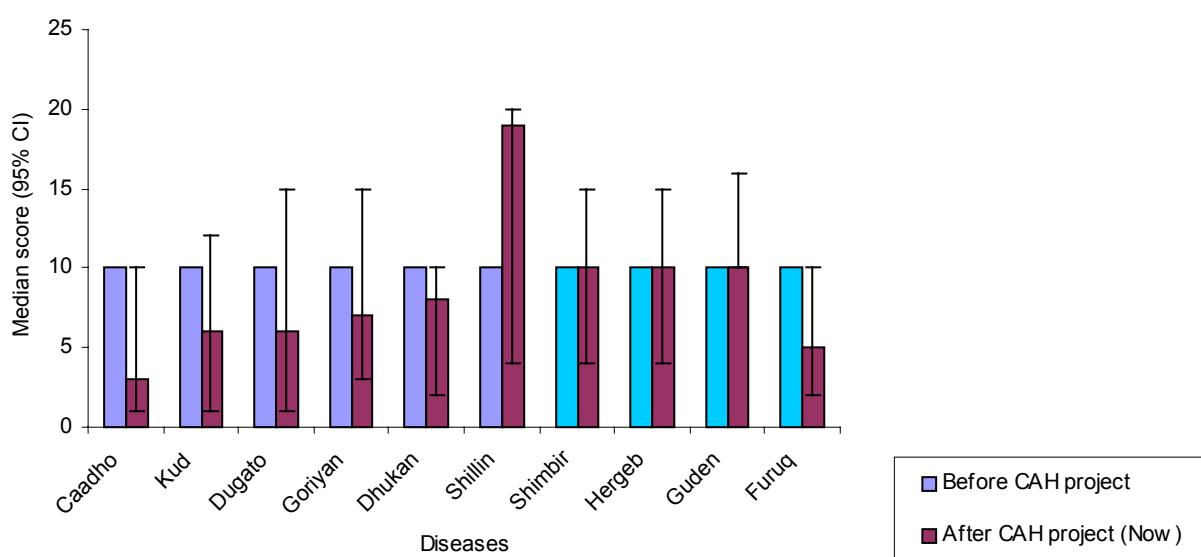
Changes in disease incidence over three years are illustrated in Figure 3.1. The incidence of *caadho*, *furuq*, *kud*, *dugato*, *gorriyan* and *dhukan* was reduced. The reasons identified for these reductions included the treatable nature of the diseases by CAHWs, regular vaccinations carried out by the CAHWs in collaboration with the woreda government veterinary clinics and the reduced contact rate of different herds due to restricted movement in search of water and pasture. The ample availability



of independent water points and good pasture may have contributed to increased condition of livestock and reduced risk of disease transmission.

The occurrence of disease due to *shimbir*, *hergeb* and *gudan* was unchanged. Although CAHWs were trained how to use acaricides, *shillin* and *shimbir* were still important diseases. This was because most CAHWs did not stock acaricide because of the high price of Steladone supplied by Save the Children US, and the delayed supply of this product to the project area. Also, environmental conditions were favourable the favourable conditions for the multiplication of ticks during the preceding three years.

Figure 3.1
Local perceptions of incidence changes of camel diseases before the CAH project and now



Notes

Number of informant groups = 10; $W = 0.25$ ($p=0.008$). CAHWs treated or prevented *caadho*, *kud*, *dugato*, *goriyan* and *dhukan*. The CAHWs were not trained to handle *furuq*, *shimbir*, *hergeb* or *guden*. CAHWs were trained to treat/prevent *shillin* (tick infestation) but were constrained by delayed supply of acaricide and the high cost of the acaricide when it arrived in the project area.

3.3.2 Cattle

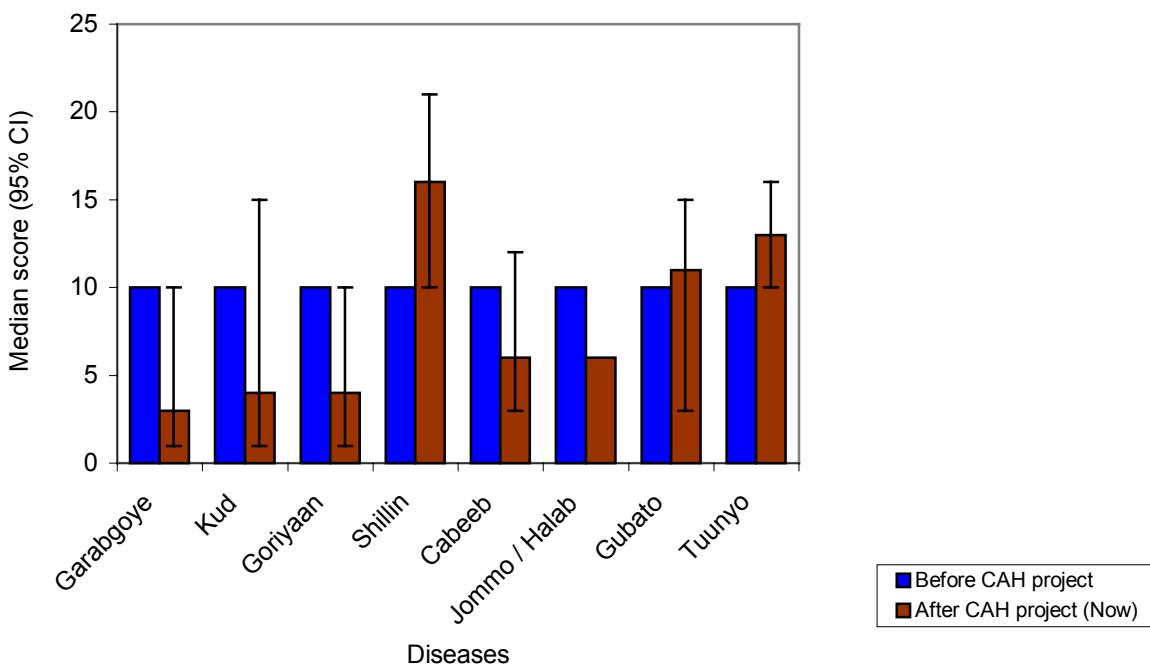
The main disease constraints mentioned three years ago and now were *garabgoye* (blackquarter), *kud* or *habad* (anthrax), *goriyaan* (internal parasitism), *shillin* (tick infestation), *cabeeb* (FMD), *jommo* or *halab* (heat intolerance syndrome), *gubato* (skin disease) and *tuunyo* (ephemeral fever).

Changes in disease incidence are illustrated in Figure 3.2 and the general trend for diseases handled by CAHWs was a reduced occurrence. Although not prevented or treated by CAHWs, the diseases called *cabeeb* (FMD) and *halab/jommo*



(chronic manifestations of FMD) also decreased. According to informants, the incidence of *cabeeb* decreased owing to increased settlement and less cattle movement. Like in camels, tick infestation increased and this change was associated with limited use of acaricide by CAHWs and the favourable conditions for the multiplication of ticks.

Figure 3.2
Local perceptions of incidence changes in cattle diseases before the CAH project and now



Notes

Number of informant groups = 10; $W = 0.40$ ($p < 0.001$). The CAHWs treated or prevented *garabgoye*, *kud* and *goriyan*. The CAHWs were not trained to handle *cabeeb*, *jommo/halah*, *gubato* or *tuunyo*. CAHWs were trained to treat/prevent *shillin* (tick infestation) but were constrained by delayed supply of acaricide and the high cost of the acaricide when it arrived in the project area.

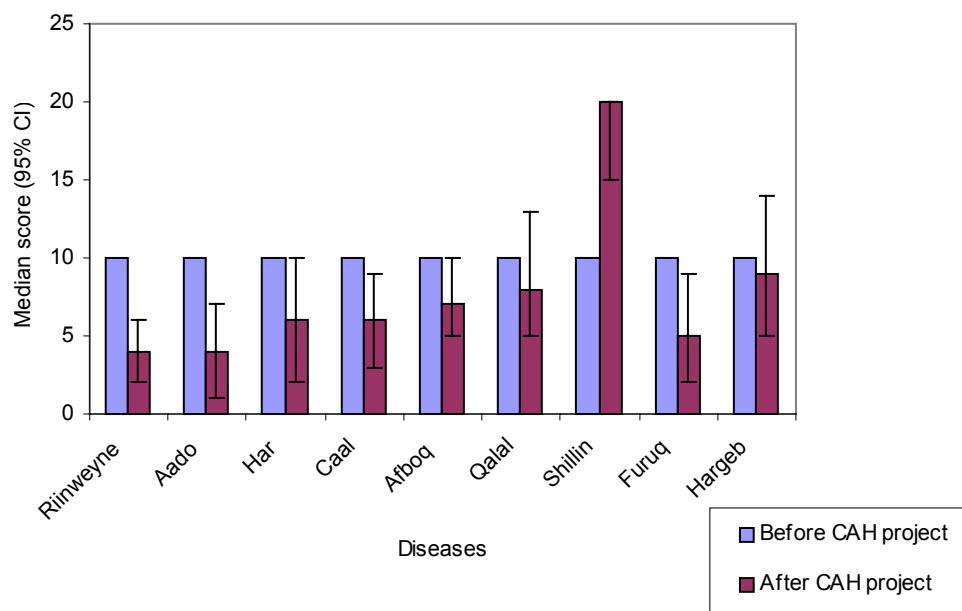
3.3.3 Sheep and goats

Diseases of shoats that were handled by CAHWs like *riin weyne* (CCPP), *har* (diarrhoea), *caal* (internal parasitism), *caadho* (mange) and *hargeb* (pasteurellosis) showed a notable decline in incidence. Diseases like *furuq* (sheep and goat pox), *qevel* (tick paralysis), and *afbog* (contagious ecthyma) also decreased in incidence. In general, owners gave shoats better veterinary care because it was easy to treat many shoats for a small amount of money. Tick infestation (*shillin*) increased due to the same reasons as noted for camels and cattle.



Figure 3.3

Local perceptions of Incidence and mortality changes in different Sheep and Goats diseases before the CAH project and now



Notes

Number of informant groups = 10; $W = 0.44$ ($p < 0.001$). The CAHWs treated or prevented *garabgoye*, *kud* and *goriyan*. The CAHWs were not trained to handle *cabeeb*, *jommo/halah*, *gubato* or *tuunyo*. CAHWs were trained to treat/prevent *shilin* (tick infestation) but were constrained by delayed supply of acaricide and the high cost of the acaricide when it arrived in the project area.

3.3.4 Donkeys

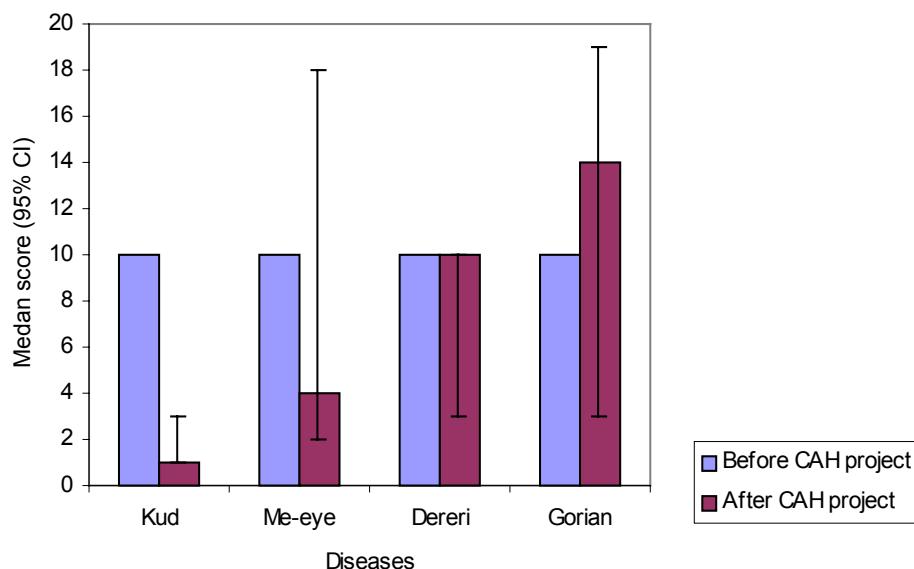
Neither the community or the CAHWs seemed to have much knowledge of donkey diseases, and could hardly list four diseases that affected donkeys. *Dereri*, that literally meant 'nasal discharge' might have been strangles, whereas *kud*, *gorriyan* and *me-eye* (possibly trypanosomiasis) were the other common diseases mentioned by the communities.

Diseases like *kud* and *me-eye* were controlled through treatment and vaccinations of donkeys by CAHWs. The communities reported that no change in the number of cases of *derei* and an increase in cases of *goriyan* (due to lack of medicine).



Figure 3.4

Local perceptions of incidence changes of donkey diseases before the CAH project and now



Notes

Number of informant groups = 10; $W = 0.69$ ($p < 0.001$). The CAHWs treated or prevented *kud* and *me-eye*. The CAHWs were not trained to handle *dereri* and although trained to treat *gorian*, medicine was in short supply.

3.3.5 Poultry

As the CAHWs were not trained to handle poultry diseases and there were few drugs available to treat poultry, data on poultry diseases was not analysed in any detail. However, informants in all 10 groups who conducted the proportional piling described high incidence of *injir /yaakil* (mites/fleas), *kudodiye* (possibly coccidiosis) and *shuben* (diarrhoea). They also mentioned a fourth disease called *baaldhig* (possibly mineral deficiency).

3.3.6 Reasons for improved animal health

Semi-structured interviews were used to identify factors that had contributed to the changes in disease incidence described in sections 3.3.1 to 3.3.4 above. Respondents listed and ranked the main factors contributed for the change as shown in Table 3.4.

It was explained that increased settlement of communities had led to reduction in the incidence of diseases such as *cabeeb* (FMD). However, people also associated reduced mobility with increases in other health problems, particularly *shillin* (tick infestation).

Table 3.4
Ranking of factors attributed to changing patterns of livestock diseases

Factor	Median rank
Increased usage of modern veterinary drugs due to attitudinal change of the community for modern veterinary services.	1 st
Biannual vaccination for communicable diseases by CAHWs and public AHTs	2 nd
Good rain and better availability of pasture (during 2002).	3 rd
Reduced herd mobility and herd mixing due to increasing settlement.	4 th

Notes

N=10 informant groups; there was a high level of agreement between the groups ($W=0.75$;
 $p<0.001$).

3.4 *Impact on the animal health delivery system*

Semi-structured interviews with informant groups in the 10 assessment sites revealed the following forms of animal health service provision at two points in time - before and after the project. The responses included:

- There are now drug dealers in every sites and also drug shops in Mandera (Kenya) who sale different drugs.
- Government animal health workers provided free vaccines during the Haileselassie and Dergue time, and also sometimes 'once in a bloom' brought drugs. This was a very centralised service and not widely available.
- In 1993-1994 SC (US) began to provide vaccines freely and then introduced CAHWs who provided drugs and vaccination up to now.
- Traditional healers used various local herbs and trees, religious treatments such as Quran readings, bone settings performed by bonesetters called *sancaale*.
- Sometimes pastoralists have individual experience of treating and injecting their animals and themselves.

The next stage involved categorizing these animal health services providers into 5 service provider categories and ranking them against a set of 10 indicators. The results are shown in Figure 3.5.

Figure 3.5
Summarised matrix scoring of service providers

Indicator	Government veterinary service	Drug dealers (black market)	Traditional medicine	CAHWs	Others
1. 'Service is near to us, so our animals are treated quickly' ($W=0.69^{***}$)	!!!!! !!!!! !			!!!!! !!!!! !!!!!	
	11 (6-15)	0 (0-16)	0 (0-2)	15 (7-22)	0 (0-0)
2. 'Service always has medicines available' ($W=0.94^{***}$)	!!	!!!! !!!!	!!!!	!!!!!! !!!!!! !!	!
	2 (2-6)	8 (4-10)	4 (2-6)	14 (10-20)	1 (0-4)
3. 'The quality of medicines is good' ($W=0.66^{***}$)	!!! !!!!	!!!!	!!!!	!!!!!! !!!!!!	
	7 (1-10)	4 (2-13)	4 (3-9)	12 (7-19)	0 (0-2)
4. 'Our animals usually recover if we use this service' ($W=0.73^{***}$)	!	!! !!!	!! !!	!!!!!! !!!!!! !!!!!!	!!
	1 (1-3)	5 (1-17)	4 (2-8)	19 (6-23)	2 (1-3)
5. 'We get good advice from the service provider' ($W=0.62^{***}$)	!	!!! !!!!	!!! !!!!	!!!!!! !!!!!!	!!!!
	1 (0-4)	7 (1-10)	7 (3-9)	12 (5-15)	4 (2-14)
6. 'This service can treat all our animal health problems' ($W=0.69^{***}$)	!! !!!	!!!!	!!!! !!!!	!!!!!! !!!!!!	
	5 (3-12)	4 (0-15)	9 (0-18)	11 (5-23)	0 (0-0)
7. 'This service is affordable' ($W=0.76^{***}$)		!!! !!!	!!!!	!!!!!! !!!!!! !!!!!!	!!
	0 (0-6)	6 (0-19)	4 (2-10)	18 (4-24)	2 (0-2)
8. 'We trust this service provider' ($W=0.62^{***}$)		!!! !!!!	!!!!	!!!!!! !!!!!! !!!!!!	!!
	0 (0-11)	7 (0-11)	4 (2-7)	16 (5-18)	2 (1-5)
9. 'The community supports this service' ($W=0.54^{**}$)		!!!	!!! !!!!	!!!!!! !!!!!! !!!!!!	
	0 (0-0)	3 (0-16)	7 (4-12)	15 (4-23)	0 (0-9)
10. Change in service usage ($W=0.62^{***}$)	!!!		!!!	!!!!!! !!!!!! !!!!!!	!!
	3 (0-11)	0 (0-3)	3 (0-9)	20 (5-24)	2 (0-5)

Number of informant groups = 10; W = Kendal coefficient of concordance (** $p<0.01$; *** $p<0.001$). W values vary from 0 to 1; the higher the value, the higher the level of agreement between informants. The black dots represent the scores (number of small stones) that were used during the matrix scoring. Median values (range) are presented. A higher number of dots indicate a relatively strong association between an indicator and service provider, whereas a low number of dots indicate a weak association.

Figure 3.6
Community members doing matrix scoring on animal health service providers



Figure 3.7
Completed service providers scoring matrices by Bengol community



Regarding the accessibility of the service, respondents from different sites agreed that CAHWs are near to the community and respond quickly when their animals get sick. Informants also noted that the government brings the NGOs to work in the community and were happy with the mass vaccinations supported by the government whenever possible.

Regarding drug availability, informants agreed that drugs were more available from CAHWs than other service providers. It was more convenience for herders to get drugs from CAHWs than the other drug sources. In the absence of the CAHWs and at any time when drugs from CAHWs became expensive, herders preferred to get drug from drug dealers.

Communities stated that the best quality drugs were in the hands of CAHWs, followed by the government clinics. Sometimes people are using drugs from Mandera (Kenya) but they recognized that these were not of good quality. Also, most of the drugs sold by dealers were from Mandera and these were thought to be less effective – some informants had stopped buying drugs from the dealers. The assessment team concluded that community attitudes towards the use of good quality modern veterinary drugs had changed for the better. Mostly, animals treated by the CAHWs recovered from illness. Informants felt that the government service was very far from them and conducted only vaccinations some time ago.

The CAHWs were providing advice to the community. They advised herders to vaccinate their animals to prevent diseases and also not to use drugs that had not been handled properly or were outdated. Drug dealers and traditional healers also advise people because they are both close to the community.

The CAHWs were also considered to have good capacity to solve animal health problems relative to other service providers. CAHWs treated some major infectious diseases, internal and external parasites and also provided vaccination and castration services. There were a few problems which the traditional healers could handle but the CAHWs could not e.g. correcting bone fractures and dislocation, venesection and cauterisation. Therefore, herders also valued the traditional healers.

Informants agreed that the service provided by CAHW was more affordable than other service providers. People were paying for the service and frequently utilized it. This was related to the close proximity of the CAHWs and changing attitudes regarding the effectiveness of modern medicines. It was noted that traditional healers were few in number and the transfer of traditional knowledge from elders to their children was in decline.

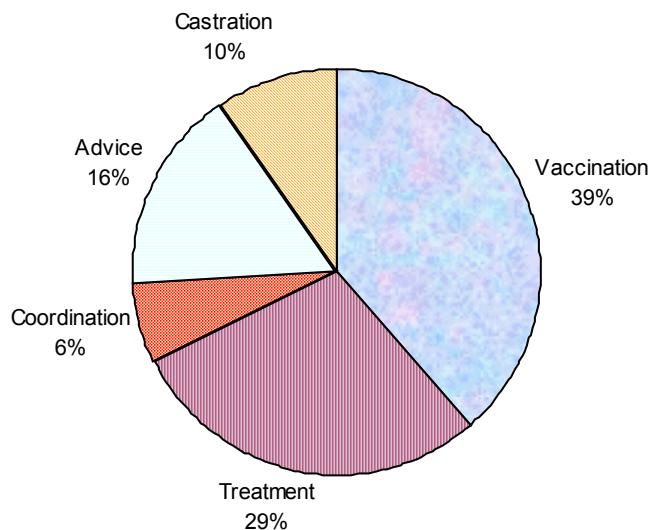
The roles of CAHWs as perceived by the community include the following:

- *Tallal* (vaccination)
- Sale of drugs and treating animals
- Professional advice
- Reporting of disease outbreaks
- Castration

Tallal (vaccination) is the most appreciated CAHW activity by the beneficiaries. The community seems to have developed a good knowledge on the importance of disease prevention through immunization. The deployment of the CAHWs in the community has

created attitudinal changes of the pastoralists in the use of modern medicine and user pay philosophy. The CAHWs are motivated with (the significant amount of income they get from the donkey cart) and with the income they get from the margin of drug sales and treatment fees.

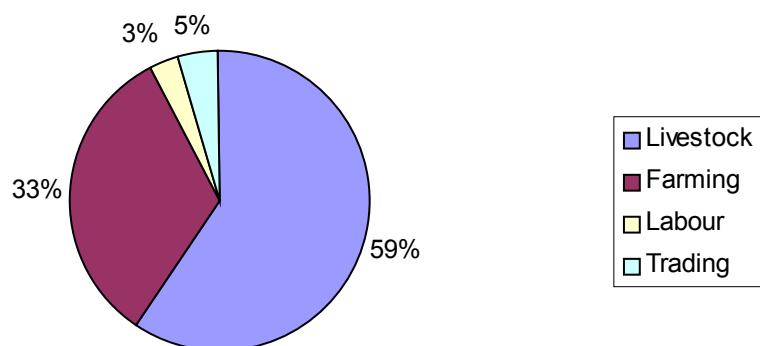
Figure 3.8
CAHW activity profile



3.5 Impact on livestock producer livelihoods

During the assessment, people described their main means of livelihood (Figure 3.9) and how the benefits derived from healthy animals had changed during the CAH project (Figure 3.10).

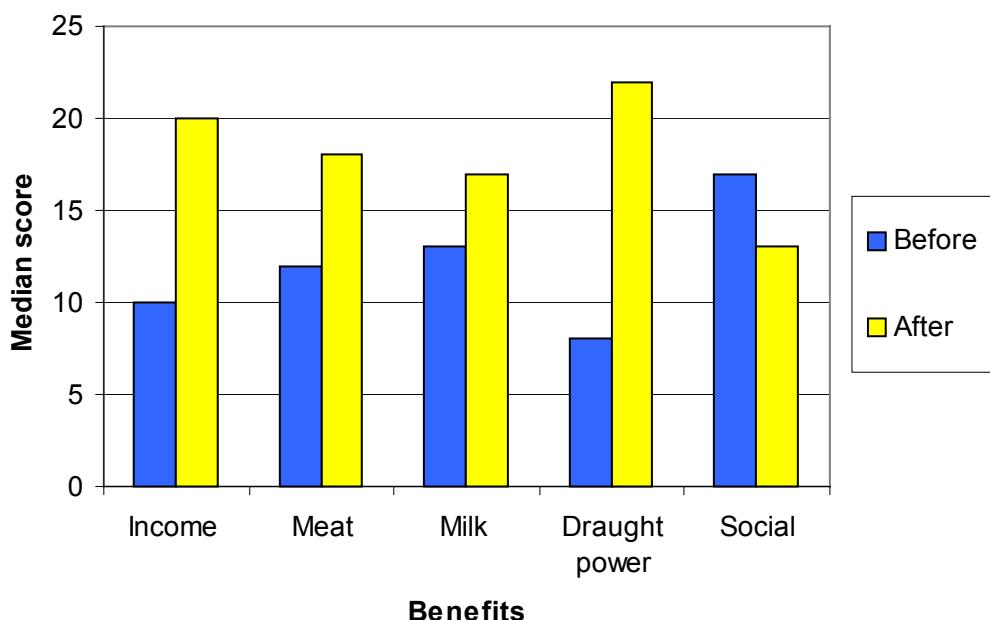
Figure 3.9
Means of livelihoods in Dollo Ado and Dollo Bay woredas



Notes for Figure 3.9

Data is the sum of scores allocated to different livelihood means by proportional piling (n=10 informant groups). Incense collection and blacksmithing were also mentioned as means of livelihood, and comprised less than 1% when assessed during proportional piling.

Figure 3.10
Benefits derived from improved animal health during the CAH project



The CAH intervention contributed a lot to the livelihoods of the communities:

- The cash income from sales of livestock increased around two-fold.
 - The quantity of meat obtained from individual animals has increased.
 - Milk production and cash from milk sales increased.
 - In the agro-pastoral communities, the use of draught animal power increased.
- Consequently, communities had developed confidence in the CAHWs.

The reduced social benefit from livestock arose because fewer animals were transferred to others during marriages and payment of penalties. This was related to cultural change taking place within the community and had nothing to do with the animal health intervention.

4. CONCLUSIONS AND RECOMMENDATIONS

The SC(US) Community-based Animal Health Project has registered an appreciable result in the reduction of livestock disease incidence and beneficiaries are happy with the project.

Having examined the project, the assessment team would like to recommend the following:

Regarding the selection of CAHWs

- The community be fully empowered to select the CAHWs to be trained according to the stated criteria.
- The project has to facilitate the selection of CAHWs at the community level.
- The project together with the community critically evaluate the existing CAHWs and correct their short comings before the launching of any other training.

Regarding the training: of CAHWs

- To be consistent with the national guideline for the training of CAHWs, the trainers should attend a Training of Trainers course.
- The training of CAHWs should be participatory and informal

Regarding linkages with government

- Improving the linkage between the project and government line offices will ensure the sustainability of the service after the end of the project.
- The only option to realise this recommendation is to build the capacity and capability of the government staff.

Regarding supervision

- There is a need to work hard to establish a sustainable monitoring and supervision mechanism.

Regarding drug supply

- Ensure the availability of drugs in the project area by supporting the establishment of a private veterinary pharmacy.
- Correct the fund management of the project at the CAHW level. This includes the handing over of the donkey cart and start-up capital to the community.

ANNEXES

Annex 1.

Names and dominant production practice of the sample sites by woreda.

Dollo Bay	Dominant production system	Dollo Ado	Dominant production system
Lake	Agro-pastoral	Birole	Agro-pastoral
Derso	Pastoral	Awal Haji	Pastoral
Elekuran	Pastoral	Wadlahube	Agro-pastoral
Bengol	Pastoral	Fikow	Agro-pastoral
		Holmoge	Pastoral
		Shambel	Agro-pastoral

Annex 2.

Number of informants in each assessment site

Site	Number of informants		
	Men	Women	Total
Holmoge	7	8	15
Shambel	16	12	28
Birole	28	0	28
Awalhaji	11	3	14
Fikow	14	6	20
Wadlahube	27	3	30
Lake	22	0	22
Derso	27	5	32
Elkuran	37	0	37
Bengol	12	10	22
Total	201	47	248

Annex 3.

Impact Assessment Team members

Dr. Solomon Nega	PACE Ethiopia
Dr. Berhanu Admassu	AU/IBAR/CAPE Unit
Dr. Tesfaye Haile	National Animal Health Research Centre (NAHRC)
Dr. Bayou Abera	ACF (NGO)
Ato Alemayehu Reda	USAID
Dr. Abdulahi Hussien	LECDB Animal Health Department
Ato Nigatu Feleke	DPPB
Dr. Fisheha Meketa	SC (US)
Ato Wagari Alemu	SC (US)