

Impact Assessment of a Community-based Animal Health Project in Dollo Ado and Dollo Bay Districts, Southern Ethiopia

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ABSTRACT

Participatory methods were used to assess the impact of a community-based animal health worker (CAHW) project in two remote pastoralist districts of Ethiopia. The CAHW project had been operating for 3 years at the time of the assessment. Participatory methods were standardized and repeated with 10 groups of informants in the project area. The assessment showed significant reductions in disease impact for diseases handled by CAHWs compared with diseases not handled by CAHWs. In camels, there was significant reduction ($p < 0.001$) in the impact of mange, trypanosomosis, helminthosis, anthrax and non-specific respiratory disease. In cattle there was a significant reduction ($p < 0.001$) in the impact of blackleg, anthrax and helminthosis. In sheep and goats there was a significant reduction ($p < 0.001$) in the impact of mange, helminthosis, contagious caprine pleuropneumonia, orf and non-specific diarrhoea. In order of importance, these reductions in disease impact were attributed to (1) increased use of modern veterinary services provided by CAHWs, (2) vaccination campaigns involving CAHWs, (3) good rainfall and availability of grazing and (4) decreased herd mobility. Decreased herd mobility was also associated with negative impact of tick infestation. Community-based animal health workers were considered to be highly accessible, available, affordable and trustworthy relative to other service providers. They were also perceived to be suppliers of a good quality service. Specific types of positive impact attributed to CAHW activities were increases in milk, meat, income and draught power.

Keywords: community-based animal health worker, Ethiopia, impact assessment, participatory methods

Abbreviations: CAHW, community-based animal health worker; CBO, community-based organization; FMD, foot and mouth disease; PIA, participatory impact assessment; PRA, participatory rural appraisal; *W*, Kendall coefficient of concordance

INTRODUCTION

Community-based animal health worker (CAHW) systems have been developing in the Horn of Africa since the 1970s. These systems are intended to improve access to basic veterinary services in areas where conventional services are not present or have limited coverage. Community-based animal health workers are selected by their communities and receive basic training in animal health, usually focusing on a small number of important disease problems. In Ethiopia, CAHW projects have been implemented by governmental and non-governmental agencies, particularly in remote areas of the country occupied by pastoralist communities. For example, the Pan African Rinderpest Campaign used CAHWs to good effect in the Afar region and provided evidence that CAHWs outperformed government vaccination teams in terms of the number of cattle vaccinated, vaccination efficiency and cost-effectiveness (Mariner, 1996). Despite this experience and in common with many other countries in the Horn of Africa, CAHW systems in Ethiopia are characterized by diverse methods for selection, training and monitoring CAHWs. Also, very limited published information is available on project impact.

The use of conventional methods to monitor livestock health and production in pastoralist communities in Africa is problematic (de Leeuw *et al.*, 1995). These areas have poorly developed infrastructure and can be insecure and livestock herds are mobile and often difficult to access. Furthermore, basic human and animal population data are either lacking or unreliable. These factors make pastoralist areas unpopular with researchers. Despite these constraints, it is widely recognized that pastoralist groups in Africa possess detailed indigenous knowledge on livestock diseases (Mathias-Mundy and McCorkle, 1989). Typically, CAHW projects use this existing knowledge resource when designing projects and working with communities to identify and prioritize local disease problems (Hadrill *et al.*, 2002). Similarly, indigenous knowledge is the basis for effective CAHW training (Iles, 2002).

Participatory impact assessment (PIA) aims to involve communities and community-based organisations (CBOs) in describing and analysing changes in an area during, or shortly after, the implementation of a project. The approach focuses on the use of indicators of change that are identified by the intended beneficiaries of projects, and can be linked to developing the management capacity of CBOs. The methods of participatory impact assessment are similar to those of participatory rural appraisal (PRA) but with some adaptation to measure indicators of change over time (Guijt, 1998). Participatory impact assessment has been used to assess projects in pastoralist areas, particularly natural resource management projects (Bayer and Waters-Bayer, 2002). The approach has also been used to assess animal health projects in Nepal (Young *et al.*, 1994), Somaliland/northern Somalia (ActionAid-Somaliland, 1994, 1998), Afghanistan (Blakeway, 1998), southern Sudan (Catley, 1999) and Tanzania (Nalitolela and Allport, 2002). Guidelines for the use of PIA to assess CAHW systems are also available (Catley, 2002).

In 2002 the African Union/Interafrican Bureau for Animal Resources (AU/IBAR) worked with different agencies in Ethiopia to establish a national impact assessment team for CAHW projects (Hopkins and Short, 2002). The aim was to use information

derived from field-level assessment to inform policy makers about project impact and issues concerning the quality and sustainability of CAHWs. The impact assessment team comprised representatives from the Ministry of Agriculture, academic and research institutes in Ethiopia, the Ethiopian Veterinary Association, non-governmental organizations and AU/IBAR. This team decided to assess CAHW projects in different ecological zones of Ethiopia, and initial assessments were conducted in Afar and North Wollo. The methodology for these assessments was typical of PIA and involved a mixture of interviewing, visualization and scoring methods to assess changes in animal health attributable to CAHWs, and associated benefits to livestock-rearing communities. In common with much participatory inquiry, different methods were used only a few (three or fewer) times in each project area and no attempt was made to summarize data or conduct statistical analyses.

This paper describes the third PIA conducted by the Ethiopia impact assessment team. The assessment differed from the Afar and North Wollo assessments by focusing on changes in the impact of diseases during the project period, the factors that caused these changes to occur and the characteristics of different animal health service providers. The paper also discusses the advantages and disadvantages of PIA relative to conventional data collection methods in marginalized areas.

MATERIALS AND METHODS

Background information on the project and project area

Dollo Bay (Liben Zone) and Dollo Ado (Afdar Zone) districts are located in the far south of Ethiopia in the Somali National Regional State, and border Kenya and Somalia (Figure 1). The people in the area are Somali pastoralists and agropastoralists who make their livelihood either exclusively or primarily from livestock. They manage their livestock through a combination of seasonal movements of mixed herds of cattle, camel, sheep, goats and donkeys. 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 area is classified as semi-arid; the Genalle, Dawa and Weyib are the main rivers that are used as sources of water for irrigation both for humans and for livestock.

In the late 1990s, veterinary services in Dollo Ado and Dollo Bay districts were poorly developed. Although the total livestock population (all species) in the two districts was estimated at 2.1 million animals, there was only one government veterinary clinic, which was staffed with three animal health technicians. These workers had no means of transport and a limited budget for veterinary medicines and equipment. The nearest veterinarian was located in Negele town, approximately 360 km away.

In October 1999, a non-governmental organization called Save the Children USA (SC US) established a pilot CAHW project in Dollo Ado and Dollo Bay districts. The project aimed to develop an effective and sustainable model of self-supporting CAHW services for pastoralists in the project area. Thirty-five CAHWs in different locations



Figure 1. Map of Dollo Ado and Dollo Bay districts, southern Ethiopia

were trained to prevent or treat intestinal helminthosis, mange, tick infestation, trypanosomosis (in camels), diarrhoea (in sheep and goats) and various respiratory diseases. Medicines were supplied by SC US to CAHWs on a cost-recovery basis. The CAHWs were also used in vaccination campaigns for anthrax, blackleg and pasteur-ellosis. The original project period was from October 1999 to September 2001, but this was later extended for 15 months to December 2002.

Assessment sites and timing

In discussion with project staff, the assessment team categorized the 35 CAHW locations according to their proximity to district towns as 'close', 'moderate' and 'distant'. A sample of 10 CAHW locations by random selection of three 'close' sites (Shambel, Bengol and Holmogey), three 'moderate' sites (Lakey, Fikow and Wolde-hube) and four 'distant' sites (Derso, Elkuran, Awalhaji and Biyole). The assessment was conducted during a 10-day period in December 2002.

Assessment of changes in the impact of livestock diseases during the project

The first objective of the assessment was to compare changes in the impact of diseases 'handled' and 'not handled' by CAHWs during the 3-year SC US project (October 1999 to October 2002). A scoring method was developed that required groups of informants to identify livestock diseases with high impact at the start of the project in October 1999. Some of these diseases were later included in CAHW training and were handled by CAHWs, whereas other diseases were not (Table I). Somali disease names were used in the scoring method, and 'impact' was defined generally and included various locally defined impacts such as reduced milk yield, mortality, infertility and reduced sale value. Ten stones were assigned to each of the named diseases to represent the impact of that disease at the start of the project. Taking each disease in turn, informants were asked to reduce, increase or leave the pile of 10 stones to show the impact of the disease 3 years later. Thus, informants could remove stones from the pile, add stones to the pile or leave the pile unchanged. Informant groups were asked to discuss the task among themselves and as a group, decide how they wished to apportion the stones. After scoring, informants were asked to explain the reasoning behind their scores. Open and probing questions were used to clarify information and follow up unusual or interesting perceptions.

TABLE I
Diseases handled and not handled by community-based animal health workers

Species	Diseases handled by CAHWs		Diseases not handled by CAHWs	
	Somali name	English name	Somali name	English name
Camels	<i>Caadho</i>	Mange	<i>Furuq</i>	Camel pox
	<i>Kud</i>	Anthrax	<i>Guden</i>	Twisted neck syndrome
	<i>Dugato</i>	Respiratory disease	<i>Shillin</i>	Tick infestation
	<i>Goriyan</i>	Intestinal helminthosis		
Cattle	<i>Dhukan</i>	Trypanosomosis		
	<i>Garabgoye</i>	Blackleg	<i>Cabeeb</i>	FMD, acute form
	<i>Kud</i>	Anthrax	<i>Jommo</i>	FMD, chronic form ^a
	<i>Goriyan</i>	Intestinal helminthosis	<i>Gubato</i>	Undiagnosed skin disease
Sheep and goats			<i>Tuunyo</i>	Ephemeral fever
	<i>Caadho</i>	Mange	<i>Shilin</i>	Tick infestation
	<i>Riin weyne</i>	CCPP	<i>Furuq</i>	Sheep and goat pox
	<i>Har</i>	Diarrhoea	<i>Qe'el</i>	Tick paralysis
	<i>Caal</i>	Intestinal helminthosis	<i>Shillin</i>	Tick infestation
	<i>Af bog</i>	Orf	<i>Hargeb</i>	Pasteurellosis

FMD, foot and mouth disease; CCPP, contagious caprine pleuropneumonia

^aPresumed to be a sequel to acute FMD and characterized by hirsutism, heat intolerance and poor production

The method was repeated with one informant group in each of the 10 assessment sites. Group sizes varied from 14 to 37 people, and a total of 248 people were involved in the assessment in the 10 sites. Agreement between the 10 informant groups was assessed using the Kendal coefficient of concordance (W) (Siegel and Castellan, 1988) in SPSS version 11.0 software (SPSS, 2001). Changes in disease impact for all diseases handled and not handled by CAHWs was assessed using the Wilcoxon signed-rank test (Abramson and Gahlinger, 2001).

Assessment of attribution

The second objective of the assessment was to determine the importance of project inputs and activities relative to other, non-project factors that may have contributed to changes in livestock health. With the same informant groups that conducted the disease impact scoring, semi-structured interviews were used to identify factors that contributed towards changing livestock disease impact during the project period. A simple ranking method was then used to rank these factors in order of importance. Agreement between the 10 informant groups was again assessed using the Kendal coefficient of concordance (W). After ranking, open and probing questions were used to cross-check the ranking and gather more information on the relative importance of the different attribution factors.

Comparison of different animal health service providers

The third objective of the assessment was to assess the relative strengths and weaknesses of the different animal health service providers in the project area. The method used was adapted from the matrix scoring method described by Catley and colleagues (2001). Semi-structured interviews were used to identify five categories of animal health service provision, viz. government veterinary services, drug dealers (black market), CAHWs, traditional medicine, and others. The service providers in the 'others' category were herders treating their own animals and informal, untrained 'forest doctors'. The impact assessment team identified nine indicators encompassing service accessibility and availability, quality of service and advice offered, range of services on offer, affordability and trust between the community and service provider. A tenth indicator was used to measure the community's changing use of the different service providers during the 3-year project period.

Both the service providers and indicators were represented using simple line drawings on pieces of card. The service provider drawings were arranged in a row on the ground to form the x -axis of a matrix. Indicator drawings were added in turn to the matrix, to form the y -axis. Using 25 stones per indicator, informant groups were asked to show the relative association of the five categories of service provider for that indicator. After all 10 indicators had been scored, the matrix was used as the basis for discussion on the relative merits and problems of the different service providers.

The method was repeated with one informant group in each of the 10 assessment sites. The level of agreement between informant groups was assessed using the Kendall coefficient of concordance (W).

Local perceptions of benefits associated with improved animal health

The fourth objective of the assessment aimed to assess the relative importance of livestock as a source of livelihood, and examine perceptions of specific benefits derived from improved animal health. Sources of livelihood were assessed by asking informant groups ($n = 10$) to list the different livelihood sources and then show the relative importance of these sources by dividing a pile of 100 stones. The term 'livelihood' was explained as a general term that encompassed all benefits, including food consumption, income and social benefits.

Specific benefits derived from animal health were identified by asking informant groups ($n = 10$) to list the main benefits derived from livestock. The relative importance of these benefits 'before' and 'after' the project was then assessed by asking informants to divide pile of stones using a similar method to that used to assess changes in disease impact.

RESULTS

Figures 2, 3 and 4 show the median changes in the disease impact scores for camels, cattle and small ruminants respectively. For each livestock species there was evidence of strong agreement between the 10 informant groups regarding their scores. Although CAHWs were trained how to handle *shillin* (tick infestation), delivery of acaricide to the project area was delayed. When this drug was delivered, the price was set at a level that pastoralists were unwilling to pay. Therefore, *shillin* was categorized as a disease that was not handled by CAHWs.

For all diseases handled by CAHWs, there was a reduction in the median disease impact score. For diseases not handled by CAHWs, median disease impact scores increased, decreased or remained unchanged according to the disease in question. Notable increases in disease impact were evident for *shillin* (tick infestation) in all species. Informants explained this increase by reference to relatively high rainfall and favourable conditions for increases in tick populations. Also, better grazing as a result of good rainfall led to reduced movement of livestock, and higher exposure to ticks in those areas where tick populations were high. Less livestock movement was also used to explain the reduced impact of *furuq* (pox diseases) and *cabeeb/jommo* (foot and mouth disease, FMD), because herders recognized that these diseases were spread by direct contact between animals. The reduction in disease impact scores for diseases handled by CAHWs was significant compared with disease not handled by CAHWs (Table II).

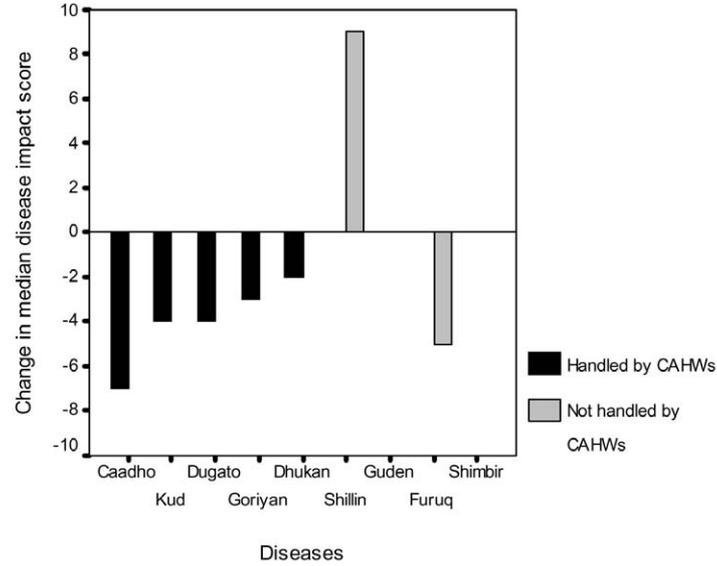


Figure 2. Changes in disease impact scores for camel diseases. Number of informant groups = 10; $W = 0.25$ ($p = 0.008$); see Table I for translation of Somali disease names

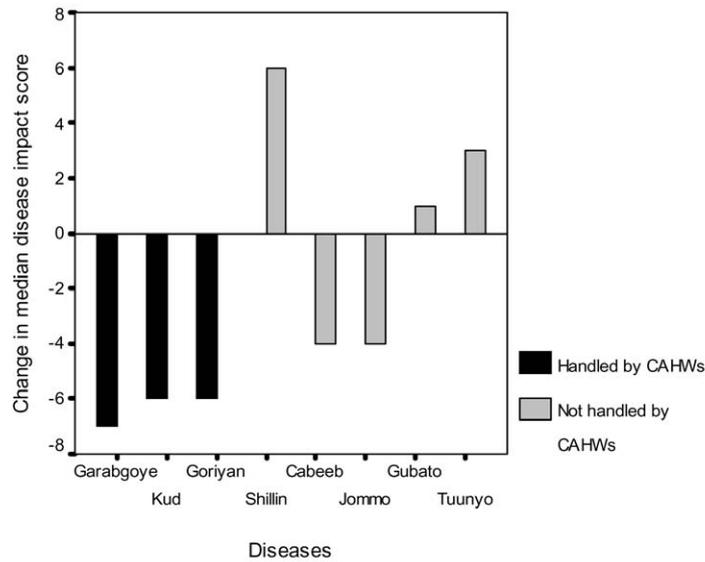


Figure 3. Changes in disease impact scores for cattle diseases. Number of informant groups = 10; $W = 0.40$ ($p < 0.001$); see Table I for translation of Somali disease names

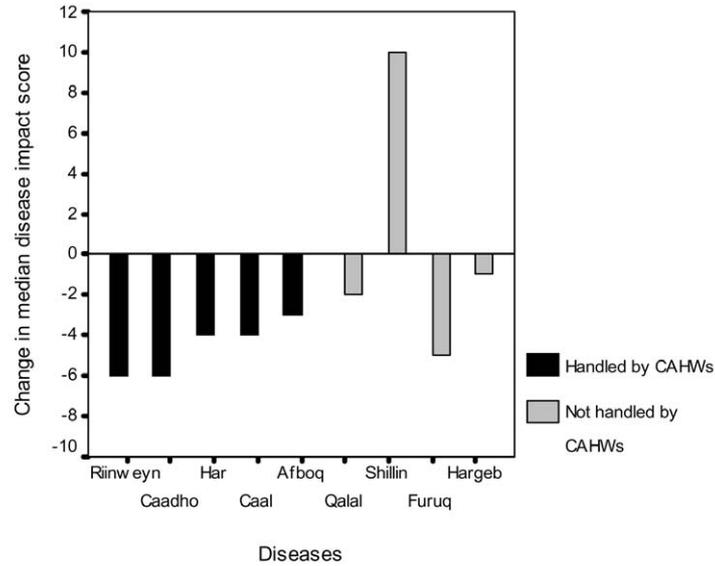


Figure 4. Changes in disease impact scores for sheep and goat diseases. Number of informant groups = 10; $W = 0.44$ ($p < 0.001$); see Table I for translation of Somali disease names

TABLE II
Comparison of reduction in disease impact for diseases handled and not handled by CAHWs in Dollo Ado and Dollo Bay districts

Species	Disease handled by CAHWs	Diseases not handled by CAHWs
Camels	Number of diseases = 5 $Z^a = -3.95$; $p < 0.001$	Number of diseases = 3 $Z = -0.46$; $p = 0.64$
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 $Z = -0.49$; $p = 0.69$

^a Wilcoxon signed-rank test
 $N = 10$ informants groups

TABLE III
Ranking of factors attributed to changing patterns of livestock diseases

Factor	Median rank (range)
Increased usage of modern veterinary drugs, associated with attitudinal change of the community for modern veterinary services	1 (1–2)
Biannual vaccination by CAHWs ^a	2 (2–3)
Good rain and better availability of pasture ^b	3 (1–3)
Reduced herd mobility	4 (4–4)

N = 10 informant groups

W = 0.75; *p* < 0.001

^aGovernment-employed animal health technicians were also involved in the vaccination

^bDuring 2002 only

Four attribution factors were identified to explain the changing impact of livestock diseases, as shown in Table III. There was evidence of strong agreement between the 10 informant group regarding their ranking of the four attribution factors.

Table IV summarizes the results of matrix scoring of different animal health service providers. For each indicator, there was evidence of strong agreement between the 10 informant groups. Community-based animal health workers were considered to highly accessible, available, affordable and trustworthy relative to other service providers. They were also perceived to be suppliers of a good quality service. When asked to list and rank the specific tasks of CAHWs, informants described these tasks as (1) vaccination, (2) treatments, (3) advice on animal health, (4) reporting disease outbreaks, and (5) castration of livestock. Vaccination was the most appreciated CAHW activity. Informants seemed to have developed a good knowledge on the importance of disease prevention through immunization. Also, informants explained how the introduction of CAHWs led to attitudinal changes among pastoralists in the use of modern medicine and the need to pay for services. The CAHWs were partly motivated by the income they received from drug sales and treatment fees.

Sources of livelihood are presented in Figure 5 and perceptions of the main benefits derived from livestock (all species) 'before' and 'after' the project are shown in Figure 6. The reduced social benefit from livestock was because fewer animals were used 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.

TABLE IV
Summarized matrix scoring of animal health service providers

Indicator	Median score (range) for animal health service provider				
	Government veterinary service	Drug dealers (black market)	Traditional medicine	CAHWs	Others
'Service is near to us' ($W = 0.69^{***}$)	11 (6–15)	0 (0–16)	0 (0–2)	15 (7–22)	0 (0–0)
'Service always has medicines available' ($W = 0.94^{***}$)	2 (2–6)	8 (4–10)	4 (2–6)	14 (10–20)	1 (0–4)
'The quality of medicines is good' ($W = 0.66^{***}$)	7 (1–10)	4 (2–13)	4 (3–9)	12 (7–19)	0 (0–2)
'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)
'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)
'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)
'This service is affordable' ($W = 0.76^{***}$)	0 (0–6)	6 (0–19)	4 (2–10)	18 (4–24)	2 (0–2)
'We trust this service provider' ($W = 0.62^{***}$)	0 (0–11)	7 (0–11)	4 (2–7)	16 (5–18)	2 (1–5)
'The community supports this service' ($W = 0.54^{**}$)	0 (0–0)	3 (0–16)	7 (4–12)	15 (4–23)	0 (0–9)
Increase in service usage ($W = 0.62^{***}$)	3 (0–11)	0 (0–3)	3 (0–9)	20 (5–24)	2 (0–5)

$N = 10$ informant groups

$W =$ Kendal coefficient of concordance ($^{**}p < 0.01$; $^{***}p < 0.001$)

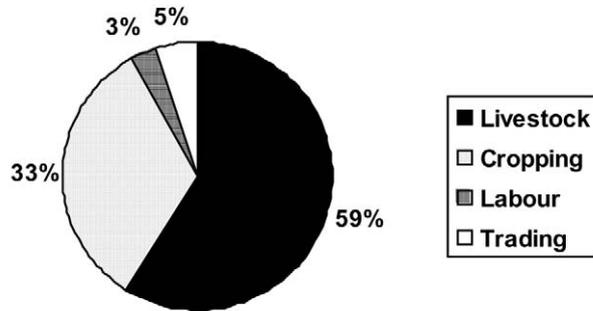


Figure 5. Means of livelihoods in Dollo Ado and Dollo Bay districts. Percentages derived from total proportional piling scores for each source of livelihood. Number of informant groups = 10; $W = 0.74$, $p < 0.001$. Blacksmithing and incense collection accounted for $< 1\%$ of livelihood sources

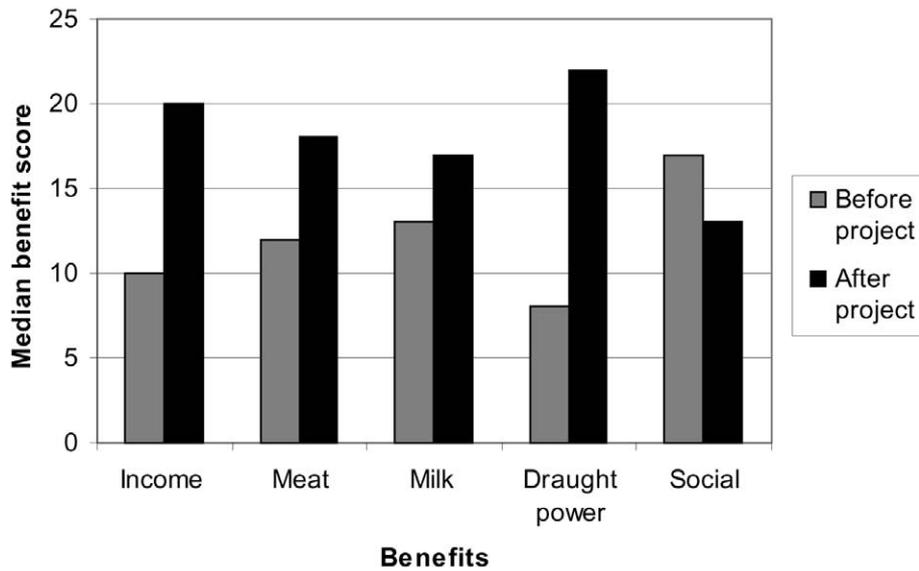


Figure 6. Benefits derived from improved animal health during the CAH project

DISCUSSION

Various methods have been used to assess the impact of veterinary projects. One approach to impact assessment involves an initial comprehensive epidemiological survey of livestock diseases followed by comparison of the disease situation before and after an intervention. While this approach may be recommended from a purely technical perspective, the cost and time inputs required are outside the scope of most CAHW projects in pastoralist areas of Africa. For example, a conventional epidemiological survey related to the design of a primary animal health project requires assessment of a number of diseases in different species, and confirmation of diagnosis using laboratory support. Longitudinal studies are difficult to implement in pastoralist areas (de Leeuw *et al.*, 1995) and, even when changes in animal disease incidence and mortality are accurately measured during a project, these changes can be affected by factors other than project inputs. Livestock keepers may obtain some animal health care from non-project sources, and factors such as availability of grazing and water will affect animal health. These factors may be difficult to identify or to quantify. In addition to these constraints, pastoralists are often confident in their ability to diagnose major animal health problems and may be unwilling to cooperate with lengthy survey activities. This behaviour is most evident in areas with an absolute lack of basic veterinary services or where previous research has failed to result in benefits to livestock keepers.

The participatory methodology used in this impact assessment assumed that Somali pastoralists were able to identify specific diseases and describe changes in disease patterns over a 3-year period. These assumptions were based on literature reporting the indigenous knowledge of Somali pastoralists (Mares, 1954; Anon, 1971; Cheyne *et al.*, 1973; Baumann, 1990; Catley and Ahmed Aden, 1996), and the clinical field experience of the researchers in Somali areas. This experience included recognition of the ability of pastoralists to describe disease events in individual animals over many years. The participatory methods used in the assessment were standardized and inter-group agreement was calculated for the 10 informant groups. In the absence of a gold standard diagnostic test for a particular disease or diseases, agreement between clinicians is a measure of the validity of diagnosis (Martin and Bonnett, 1987). This principle was applied to the impact assessment and it was assumed that pastoralists' observations were comparable to those of professional clinicians. The methods used were intended to show relative changes in disease impact and trends, rather than absolute measures of disease incidence or mortality. The absence of absolute measures is a disadvantage of the approach, but this might be overcome by further adaptation of methods such as proportional piling. Proportional piling has been used to estimate herd incidence of diseases (Catley *et al.*, 2002) and could be adapted for use in impact assessment.

The assessment findings agree with numerous other studies on CAHW systems that demonstrate that livestock keepers with strong indigenous knowledge but limited formal education can be trained to prevent or treat important livestock diseases (Jones *et al.*, 1998; Odhiambo *et al.*, 1998; The IDL Group and McCorkle, 2003), particularly in the many remote areas of Africa where veterinarians are unwilling to work. The

assessment also revealed weaknesses in the SC US project, such as the delayed supply of acaricide despite the perceived increasing impact of ticks (Figures 2 to 4). Not all CAHWs were found to be performing optimally and the assessment was an opportunity to discuss ways to improve CAHW activities through refresher training, improved drugs or replacement of some CAHWs.

For some diseases prioritized by livestock keepers but not handled by the CAHWs, it was difficult for the project to offer solutions. For example, the cause of twisted neck syndrome in camels (sometimes called wry neck syndrome) is unknown, although treatment with vitamin B has been suggested (Dioli and Stimmelmayer, 1992). Although FMD is a disease of major international importance, control measures in pastoralist areas of Africa remain problematic. Cross-border movement of livestock is common and borders are largely uncontrolled by government veterinary services. Also, the use of vaccines requires identification of FMD types and understanding of intratypic variation within types in different locations (Vosloo *et al.*, 2002). Although further research on these and other diseases is required, we propose that CAHW projects can be a useful entry point to communities for veterinary research workers.

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Évaluation de l'impact d'un projet de santé animale basé sur la communauté dans les districts de Dollo Ado et de Dollo Bay, Éthiopie du Sud

Résumé – Des méthodes participatives ont été utilisées pour évaluer l'impact d'un projet d'assistance sociale pour animaux basé dans une communauté (CAHW) dans deux districts pastoraux d'Éthiopie. Le projet CAHW avait été en place depuis 3 ans au moment de l'évaluation. Les méthodes participatives ont été standardisées et répétées avec 10 groupes d'informants dans la zone du projet. L'évaluation a mis en évidence des diminutions significatives de l'impact de la maladie pour les maladies étudiées par les CAHW comparé aux maladies non prises en charge par les CAHW. Chez les chameaux, une diminution significative ($p < 0.01$) de l'impact de la gale animale, de la trypanosomose, de l'helminthiase, de l'anthrax et des maladies respiratoires non spécifiques a été notée. Chez le bétail, il a été constaté une diminution significative ($p < 0.001$) de l'impact du charbon symptomatique, de l'anthrax et de l'helminthiase. Chez les moutons et les chèvres, un signe de diminution ($p < 0.001$) a été observé dans l'impact de la gale animale, de l'helminthiase, de la pneumonie caprine contagieuse, de la dermatite pustuleuse contagieuse ovine et de la diarrhée non spécifique. Par ordre d'importance, ces diminutions de l'impact des maladies ont été attribuées à (1) un usage accru de services vétérinaires modernes fournis par les CAHW, (2) des campagnes de vaccination faisant intervenir les CAHW, (3) de bonnes chutes de pluie et la disponibilité de pâturages et (4) une diminution de la mobilité du troupeau. La diminution de la mobilité du troupeau a également été associée à l'impact négatif d'une infestation de tiques. Les assistants sociaux mis à la charge d'animaux basés dans la communauté ont été considérés comme étant très accessibles, disponibles, peu onéreux et dignes de confiance comparativement à d'autres pourvoyeurs de services. Ils ont également été perçus comme étant des prestataires d'un service de bonne qualité. Les types d'impacts positifs spécifiques attribués aux activités CAHW ont été des augmentations de lait, de viande, de revenus et de puissance de trait.

Evaluación del impacto de un proyecto sanitario animal con base en la comunidad en los distritos de Dollo Ado y Dollo Bay, al sur de Etiopía

Resumen – Se emplearon métodos participativos para evaluar el impacto de un proyecto comunitario de trabajadores sanitarios animales (CAHW, en inglés) en dos distritos pastorales remotos de Etiopía. El proyecto CAHW había estado operando durante 3 años en el momento de la evaluación. Los métodos participativos fueron normalizados y repetidos con 10 grupos de informantes en el área de proyecto dada. La evaluación mostraba unas reducciones significativas en el impacto de enfermedades para las enfermedades tratadas por CAHW comparado con las enfermedades no tratadas por CAHW. En los camellos, hubo una reducción significativa ($p < 0.001$) en el impacto de mange, tripanosomosis, helmintosis, ántrax y enfermedades respiratorias no específicas. En el ganado, hubo una reducción significativa ($p < 0.001$) en el impacto del carbunco sintomático, ántrax y helmintosis. En ovejas y cabras hubo una reducción ($p < 0.001$) en el impacto de mange, helmintosis, pleuroneumonía contagiosa caprina, ectima contagioso y diarrea no específica. En orden de importancia, estas reducciones en el impacto de enfermedades fue atribuido a: (1) el uso incrementado de los servicios veterinarios modernos proporcionados por CAHW, (2) campañas de vacunación en las que estaban involucrados CAHW, (3) buenas lluvias y disponibilidad de pastos y (4) una disminución en la movilidad del ganado. La menor movilidad del ganado se asoció también al impacto negativo de infestación por garrapatas. Se consideró que los trabajadores sanitarios animales comunitarios resultaron ser sumamente accesibles, hallarse disponibles, y ser económicos y fiables con respecto a otros proveedores de servicios. También se consideró que eran administradores de un servicio de gran calidad. Los tipos específicos de impacto positivo atribuidos a actividades de CAHW fueron: incrementos en leche, carne, ingresos y fuerza de arrastre del animal.