

Using Participatory Impact Assessment (PIA) to Inform Policy: Case studies from Ethiopia.

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Abstract

Participatory methods were used to assess the impact of a community-based animal health worker (CAHWs) project implemented in Dollo Ado and Dollo Bay districts; and a commercial destocking relief intervention in Moyale district, southern Ethiopia. The CAHWs project had been operating for 3 years at the time of the assessment, and the commercial destocking intervention was piloted during the drought of early 2006. Participatory methods were standardized and repeated with 10 groups and 114 household informants in the CAHWs and destocking interventions respectively.

The CAHWs impact assessment showed significant reduction 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 the mange, trypanosomiasis, helminthiasis, anthrax and non specific respiratory disease. In cattle there was a significant reduction ($p < 0.001$) in the impact of blackleg, anthrax and helminthiasis. In sheep and goats there was a sign reduction ($p < 0.001$) in the impact of mange, helminthiasis, contagious caprine pleuropneumonia, orf and non-specific diarrhea. The project inputs and activities such as increased use of modern veterinary services provided by CAHWs and vaccination campaigns involving CAHWs were rated as the most important factors attributed to the reductions in disease impact. 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. Specific types of positive impact attributed to CAHW activities were increases in milk, meat, income and draught power. The findings of the PIA were used to inform and influence policy changes supporting CAHWs in pastoral areas.

The commercial destocking intervention led to the purchase of an estimated 20,000 cattle valued at USD 1.01 million. On average, destocked households received USD 186 from the sale of cattle under the programme—approximately 5,405 households were involved. In terms of aid investment, the approximate cost-benefit ratio was 41:1. During the drought, income from destocking accounted for 54.2 per cent of household income ($n=114$ households), and was used to buy food, care for livestock, meet various domestic expenses, support relatives, and either pay off debts or augment savings. Seventy-nine per cent of the income derived from destocking was used to buy local goods or services. Expenditure on livestock care amounted to 36.5 per cent of local spending, and included the private transportation of livestock to better grazing areas. The buoyant livestock export trade was considered to be an important driver of commercial destocking, demonstrating a positive link between livestock and meat exports, and pastoral vulnerability during drought.

Keywords: impact assessment, participatory methods, community-based animal health worker, commercial destocking, cost–benefit, Ethiopia, pastoralists, policy

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Introduction

Policy reforms is often viewed among policy makers and researchers as a rational and linear process in which scientific studies are conducted in response to a policy problem, leading to apparently logical and objective policy reform based on study findings. However, the use of conventional methods to undertake scientific research in pastoralist communities is difficult. These areas have poorly developed infrastructure, remote, livestock herders are mobile and often difficult to access. Conventional studies conducted by outside experts using predefined indicators, and survey tools such as questionnaires fails to capture perceptions and opinions of the local people.

Participatory approaches and methods are emerging as an alternative to conventional approaches studies and research in remote pastoral communities. Participatory approaches and methods are often viewed as purely qualitative, but some standardisation and repetition of participatory approaches and methods allows numerical data to be collected and analysed using conventional statistical tests. When used well, participatory approaches and methods can generate both qualitative insights and usually more accurate quantitative data than more conventional approaches and methods (Chambers and Mayoux, 2003).

The use of participatory impact assessment (PIA) approach to inform policy process is based on three fundamental assumptions. First, scientific data will always be interpreted differently by different stakeholders, and this problem can be overcome if stakeholders work collectively to define problems and conduct research to propose solutions. Second, research has a role to play in policy process but only if it responds to the key questions of stakeholders, and is conducted using methods and researchers who are known and trusted. Third, many policy makers have limited direct experience of pastoralist areas and misperceptions about pastoralism are partly due to this lack of exposure. Research and learning approaches such as PIA can be used to put policy makers face-to-face with pastoralists, while also collecting information in a participatory and systematic way

Participatory impact assessment uses tools originating from other forms of participatory methods such as PRA and PLA with some adaptation to measure indicators of changes over time (Guijt, 1998). Participatory approaches and methods have been widely applied by veterinary epidemiologists in marginalised areas (Catley, 2005; Thrusfield, 2005). The approach has also been used to assess the animal health projects in Nepal (Young et. al., 1994), Somaliland / north Somali (Action Aid-Somaliland, 1999, 1998), Afghanistan (Blakeway, 1998), southern Sudan (Catley, 1999) and Tanzania (Nalitolela and Allport, 2002).

This paper discusses the use of PIA to inform policy related to pastoral livelihood interventions in Ethiopia. Two cases studies where PIA approach was used to assess the impact of a project intervention and the influence of the findings on policy changes and development intervention and strategies is discussed.

Generic methodology

Generic approach for design and implementation of PIA was developed and used to assess the impact of various projects on the livelihood of the target beneficiaries. The steps followed include:

Establish PIA team and provide training in generic PIA approach:

Key stakeholders of the project on which the project has an impact directly or indirectly are identified. The stakeholders are selected on the basis of their role in influencing policy and legislation, conduct training and research, experience of implementing community-based projects...etc. This mainly involves in most cases the implementing organization, government representatives at various level (federal, regional and local) who are technical as, NGOs (both local and international and local) and CBOs. Key stakeholders came together to form the PIA team.

A training workshop is then organized and conducted for PIA team for about 8-10 days depending on their prior experience and knowledge of participatory principles and approaches of the team. The training is prepared in such a way to achieve the following objectives:

- to introduce the principle of participatory approaches and sustainable development;
- to understand the importance of community participation in activities affecting their lives;
- to improve understanding and practices of participatory tools;
- to understand the importance of PIA tool in lives and livelihood improvement projects;
- to develop a common understanding of a generic approach for designing PIA methods;
- design and field testing of PIA method.

Design and conduct a participatory impact assessment:

After the training workshop, the team works with the target community to design the PIA for the project. There is a wide and growing literature on how participatory approaches can be used for impact assessment, see for example Guijt (1998), Abbot and Guijt (1998), Oruko (2002). A step-by-step approach followed in this case listed in Box 1.

Box 1. Key steps for participatory impact assessment in Ethiopia
Step 1. Define the question to be answered through the assessment: key questions that should be answered through the assessment should be identified and prioritized; these may include questions related to policy and legislation, project design, implementation, monitoring and evaluation ...etc. However, the number of questions to be answered through the PIA should be limited to only 3-4 to keep the assessment focused.
Step 2. Define the geographical and time limits of the project as perceived by the community: this is to create understanding and reach on consensus on the geographical coverage of the project and duration of the project period.
Step 3. Identification and prioritization of locally-defined impact indicators: local community (project beneficiaries) has their own ways of describing changes, and their own priorities for improving their lives. Therefore, they should define and identify impact indicators. This can be facilitated by simply asking the beneficiaries the ways in which they benefit from having the project. The indicators should be very specific and not general, for example 'we drink more milk' instead of 'we get milk from our livestock. If the beneficiaries identify many indicators, prioritize the most important indicators using ranking. The number of indicators should be limited to the maximum of 5.
Step 4. Decide which methods to use to measure the indicators, and test the methods: participatory tools suitable to measure each of the identified indicators selected and tested in the field.
Step 5. Sampling and sample size: sampling method decided taking into consideration various factors among which are accessibility, social, wealth differences ...etc. Sample size is also decided based on resource and time available. However, where the sampling unit is a group of people the minimum sample size used is 10 (informant groups, and where the sampling unit is household the minimum sample sized used is 50 household informants.
Step 6. Measure changes in the impact indicators during the project and statistical analysis: community-defined indicators can be either quantitative or qualitative. Although many impact indicators have a qualitative nature, it is possible to measure systematically and express numerically. A wide range of PRA tools such as ranking, scoring and diagramming are available to measure qualitative impact indicators. Data generated using participatory tools can be analyzed using standard statistical packages such as SPSS.
Step 7. Assess project attribution to the changes observed in the impact indicators: non-project factors may have contributed to the changes observed during the project, and therefore, the importance of the project inputs and activities relative to other factors need to be assessed. Semi-structured interviews are used to identify factors that contributed to the observed change, and simple ranking method is used to rank the factor in order of their importance.
Step 8. Triangulate the changes in the impact indicator using process indicator: the finding of the impact assessment can be cross-checked with the monitoring information.
Step 9. Feed back and verify the results with the community: the findings of the assessment should be presented to the representatives of the community and other stakeholders to build consensus and agreement.

Case study 1. Participatory impact assessment of a community-based animal health project in Dollo Ado and Dollo Bay Districts, southern Ethiopia².

Background

This case study describes the use of participatory methods to assess the impact of a community-based animal health project implemented by NGOs in Dollo Ado and Dollo Bay Districts, Somali National Regional state, southern Ethiopia. The project was designed to improve primary veterinary services.

Conventional veterinary services are not present or have limited coverage in remote pastoral areas of Ethiopia. Community-based animal health workers (CAHW) systems were introduced to improve access to basic veterinary services. The Pan African Rinderpest Campaign used CAHWs to good effect in the Afar region and proved evidence that CAHWs outperformed government vaccination teams in terms of the number of cattle vaccinated, vaccination efficiency and cost-effectiveness (Catley and Leyland, 2002). Despite this evidence, in common with many other countries in the Horn of Africa, CAHWs system was not accepted by the veterinary establishment and supported as alternative service providers in remote pastoral areas of Ethiopia. CAHWs system was viewed among the veterinary professionals as an approach which undermined the profession, due to their lack of understanding and ignorance about pastoralists' indigenous knowledge on livestock diseases. Consequently, their response was emotive, not evidence-based, thus, there was no an appropriate policy environment' to support CAHW systems. The sustainability of the CAHW system was then threatened.

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 (Hopkins and Short, 2002). The impact assessment team comprised representatives from the Ministry of Agriculture, Faculty of Veterinary Medicine, University of Addis Ababa, National Animal Health Research Center, the Ethiopian Veterinary Association and non governmental organizations.

The team assessed the impact of CAHWs project implemented by Save the Children US. The objectives of the assessment include:

- assess changes in the effect of the CAHW system on disease impact during the project period
- assess attribution factors to the changes observed
- assess and compare characteristics of the different animal health service providers
- assess changes in the livelihood of the livestock keepers during the project
- assess and compare the quality and sustainability of the CAHWs system established by different implementers

The information collected were used to influence policy and legislative changes towards community-based animal health system

Methodology

Participatory methods

A PIA methodology specific to the CAHWs project was designed. Participatory tools such as semi-structured interviews (SSI), 'Before' and 'After' proportional piling, disease scoring and ranking, and matrix scoring were used to collect information required (see Table 1). Simple drawings on cards and locally available materials (stones, steak, leaf ...etc) were used to represent indicators and as a counter to measure changes.

Data analysis

Data derived from before-and-after disease impact scoring, and from matrix scoring of service providers was analyzed using 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). Disease scoring data was summarized using the median, changes in disease impact 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.

² See for detail, Admassu, B., Nega, S., Haile, T., Abera, B., Hussein, A. and Catley, A., 2005. Impact assessment of a community-based animal health project in Dollo Ado and Dollo Bay districts, southern Ethiopia. *Tropical Animal Health and Production*, **37(1)**, 33-48.

Table 1 Summary of methods

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

Results

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

The first objective of the impact assessment was to compare changes in the impact of disease 'handled' and 'not handled' by CAHWs during the project period. Figures 1, 2 and 3 show the median changes in the disease impact for camels, cattle and small ruminants respectively. 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.

<insert Figure, 1, 2 and 3 here> [See end of paper for figures]]

Agreement between the informant groups was assessed using Kendal coefficient of concordance (W) (Siegel and Castellan, 1988) and there was strong evidence of agreement between the informant groups regarding their scores. The reduction in disease impact scores for diseases handled by CAHWs was significant compared with diseases not handled by CAHWs (Table 2).

Table 2 Comparison of reduction in disease impact for diseases handled and not handled by CAHWs

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 ranks test; N = 10 informant groups.

Assessment of attribution

The importance of the project inputs and activities relative to other, non-project factors that may have contributed to changes in livestock health was assessed with the same informant groups that conducted the disease impact change. Four attribution factors were identified to explain the changing impact of livestock diseases, as shown in Table 3. There was evidence of strong agreement between the informant groups regarding their ranking of the four attribution factors.

Table 3 Ranking of factors attributed to changing patterns of livestock diseases

Factors	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

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

^b During 2002 only

Comparison of different animal health service providers

The relative strengths and weakness of the different animal health service providers was assessed using matrix scoring method adopted from Catley and colleagues (2001). The results of the assessment is summarized and shown in Table 4. For each indicator, there was evidence of strong agreement between the informant groups. 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.

Table 4 Summarised 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).

Local perception of impact of improved animal health on the livelihood

The relative importance of livestock as a source of livelihood, and local perceptions of specific benefits derived from improved animal health was assessed. Sources of livelihood are presented in Figure 4 and perceptions of the main benefits derived from livestock (all species) 'before' and 'after' the project are shown in Figure 5.

<insert Figure 4 and 5 here>

Case study 2. Impact of a commercial de-stocking relief intervention in Moyale district, southern Ethiopia³

Background

It is widely recognised that recurrent drought has a major impact on the vulnerability of pastoralists in Ethiopia. While opinions vary on the severity and frequency of drought over the past 20 years or so, few would argue that it continues to result in excessive loss of pastoral livestock, cause severe hardship to pastoralists, and lead to repeated bouts of humanitarian assistance. Borana and Somali pastoralists reportedly expect a widespread failure every four or five years, and a major drought every ten years (Hogg, 1997).

Over the past 15 years, the concept of destocking has often been presented as an appropriate drought response in pastoral areas (see, for instance, Toulmin, 1995). Specific information on experiences of destocking can be gleaned from areas such as northern Kenya (Aklilu and Wekesa, 2002; Morton and Barton, 2002). Destocking and other types of livestock-related drought assistance fit well with the concept of saving lives and livelihoods. When viewed from a livelihoods perspective, destocking is a way to exchange some animals for money, thereby giving pastoralists the financial resources they need to buy food, maintain a core herd, and access the services that they want to (rather than those that aid agencies provide). This herd maintenance might involve the purchase of fodder or veterinary care, extending support to local markets and service providers.

In Ethiopia, the importance of safeguarding livestock assets in pastoral areas during drought was recognised in the National Policy for Disaster Prevention, Preparedness and Management, prepared (Transitional Government of Ethiopia, 1993). In the policy, each district was required to respond to drought by preparing an action plan describing interventions to save livestock, including the supply of feed and water, veterinary inputs, livestock purchase centres, and mobile abattoirs. However, these types of emergency livestock-related intervention were not widely applied and food aid has remained the dominant response in pastoral areas since emergency interventions began in the 1970s. Similarly, despite the apparent rationale for destocking as a drought response in pastoral areas of Ethiopia (Hogg, 1997), up to 2006 its application in Ethiopia was limited.

Information available on the impact of emergency interventions in pastoral areas of the Horn of Africa region, particularly the consequences for livelihoods is very limited. Many agencies monitored and reported on the implementation of project activities, but their effect on people's lives was rarely assessed. Given the operational constraints in pastoral areas and the difficulties of using conventional research approaches, participatory impact assessment (PIA) was developed and used to assess the impact of emergency interventions and to use the results to inform government and donor policy and emergency interventions.

This case study describes the impact of a destocking relief intervention on the livelihood of the pastoralists in Moyale district in the far south of Ethiopia, during the drought of early 2006. The paper also discusses the relative importance of the different food and non-food emergency interventions during drought.

Methodology

The impact assessment of the destocking initiative combined participatory approaches and methods with conventional sampling methods and statistical analysis, and was adapted from methodologies previously used in pastoral areas of Ethiopia (Admassu et al., 2005; Abebe, 2005). Results from participatory approaches and methods were cross-checked against the project process monitoring data. The assessment was carried out in seven kebeles (a cluster of villages representing the smallest administrative unit in Ethiopia) where commercial destocking had been conducted. From each kebele, 20 per cent of destocked households were randomly selected, giving a total sample size of 114 households out of 570 households that had destocked cattle during the drought. Table 5 summarises the participatory approaches and methods used in the assessment. The proportional piling and matrix scoring methods were standardised and repeated with all 114 informants. Semi-structured interviews were used with formed part of each of these methods, providing a flexible opportunity to verify and probe responses, and to clarify information as necessary.

³ See for detail: Abebe, D., Cullis, A., Catley, A., Aklilu, Y., Mekonnen, G. and Ghebrehirstos, Y., 2007. Impact of a commercial de-stocking relief intervention in Moyale district, southern Ethiopia. *Disasters*, in press

Tabel 5 Participatory methods used in the assessment of commercial destocking in Moyale woreda

Method	Use	Sample size
Timeline	To determine the times when the intervention started and ceased	Seven groups of informants (one group per kebele; 10–15 people per group)
Proportional piling	To determine relative proportions of different sources of income and expenditure	114 households
Matrix scoring	To compare the relative importance of different food and non-food relief interventions using community-defined impact indicators	114 households
Semi-structured interviews	Used with all other methods to cross-check information and clarify responses	114 households

Result

Impact of de-stocking on livelihoods: income and expenditure during the drought

The first objective of this assessment was to identify the relative importance of destocking as sources of income compared to other sources of income during the drought. Figure 6 shows the relative proportions of different sources of income for destocked households. On average, 54 per cent of household income was derived from the sale of animals during the drought, significantly higher than any other source (at the 95 per cent confidence level). In absolute terms, this amounted to approximately EB 1,618 (USD 184) per household, and therefore represented a substantial injection of cash. The second most important source of income during the drought was labour (safety net), which, on average, comprised around 21 per cent of total household income, significantly higher than all other sources apart from destocking (at the 95 per cent confidence level).

<insert Figure 6 here>

The second objective of the assessment was to identify how the income derived from destocking was used by destocked households. Figure 7 summarises use by households of income derived from destocking; 11 main types of expenditure were identified. Although the purchase of food for people was the highest single expenditure (28 per cent), pastoralists also invested heavily in safeguarding their remaining livestock. Expenditure on livestock accounted for 37 per cent of the money obtained from destocking, comprising feed for animals (19 per cent), transporting animals to other grazing areas (12 per cent), and veterinary care (six per cent). Livelihoods-based interventions, such as destocking, are partly justified on the basis of supporting local markets and economies. With this in mind, 79 per cent of the money acquired through destocking was used to purchase local goods or services: food for people (28 per cent), feed for animals (19 per cent), trucking fees (12 per cent), human medicines (nine per cent), veterinary care (six per cent), and clothes (five per cent). In addition, people were able to use some of the money from destocking to pay school fees, wipe out debts, offer support to relatives, and augment savings.

















































<insert Figure 7 here>














Comparison of the relative importance of the different relief interventions

The third objective of the assessment aimed to assess the relative importance of the different relief intervention in saving lives and livelihoods during drought. Table 6 shows a comparison of different relief interventions. The indicators reflect both short-term and longer-term needs, such as 'Saves human lives' and 'Helps fast recovery and rebuilding herd', respectively. Looking at each in turn, the indicator 'Helps us to cope with the effect of the drought' reflects the value of an intervention to buttress a household's capacity to cope with the shocks and stresses caused by the drought. Destocking was considered to be the most useful intervention (mean score 9.1), with a significantly higher score (95 per cent confidence limit) than any other intervention. In follow-up interviews after scoring this indicator, all informants confirmed that they were able to buy their own food with the money obtained from destocking, instead of having to wait for food aid as they did during droughts of previous years. They also described the advantage of destocking over food aid, explaining that money from destocking could be used to buy other things, such as medicines and clothes (as

confirmed in Figure 7). Food aid was perceived as the second most important intervention to help people cope with the effects of drought (mean score 6.9).

Table 6 Community perceptions of interventions during and after the drought

Indicators	Mean scores (95% ci) for interventions							
	Destocking	Veterinary support	Livestock feed supplementation	Food aid	Water supply	Labour (safety net)	Credit	Others
Helps us to cope with the effect of the drought	 9.1 (8.5, 9.7)	 3.5 (3.2, 3.9)	 5.7 (5.1, 6.2)	 6.9 (6.5, 7.4)	 3.0 (2.4, 3.6)	 0.8 (0.5, 1.1)	 0.5 (0.2, 0.8)	 0.4 (0.2, 0.7)
Helps fast recovery and herd rebuilding	 11.1 (10.5, 11.7)	 4.4 (3.9, 4.9)	 5.7 (5.0, 6.3)	 4.9 (4.4, 5.6)	 1.9 (1.5, 2.4)	 0.9 (0.5, 1.4)	 0.6 (0.1, 1.1)	 0.4 (0.1, 0.7)
Helps the livestock to survive	 10.3 (9.5, 11.2)	 4.9 (4.4, 5.4)	 8.9 (8.1, 9.7)	 2.3 (1.8, 2.8)	 2.8 (2.2, 3.5)	 0.2 (0.1, 0.4)	 0.3 (0.1, 0.6)	 0.2 (0.0, 0.4)
Saves human life better	 9.8 (8.9, 10.6)	 2.4 (1.9, 2.8)	 3.7 (3.1, 4.3)	 8.8 (8.1, 9.6)	 3.6 (2.9, 4.3)	 0.9 (0.5, 1.3)	 0.5 (0.2, 0.9)	 0.3 (0.1, 0.5)
Benefits the poor most	 7.6 (6.7, 8.6)	 1.9 (1.6, 2.3)	 3.2 (2.5, 3.8)	 11.0 (10.1, 11.9)	 3.7 (2.8, 4.3)	 1.6 (0.9, 2.2)	 0.7 (0.3, 1.1)	 0.5 (0.1, 0.8)
Socially and culturally accepted	 11.5 (10.6, 12.4)	 5.1 (4.7, 5.6)	 5.8 (5.1, 6.4)	 3.4 (2.8, 3.9)	 2.6 (2.1, 3.2)	 0.9 (0.5, 1.4)	 0.3 (0.1, 0.5)	 0.3 (0.1, 0.5)

Timely and available	 8.4 (7.8, 9.0)	 3.3 (2.9, 3.7)	 4.3 (3.9, 4.6)	 8.5 (7.9, 9.1)	 3.5 (2.8, 4.1)	 1.2 (0.7, 1.7)	 0.5 (0.2, 0.8)	 0.3 (0.1, 0.5)
Overall preference	 10.6 (9.9, 11.2)	 4.2 (3.8, 4.7)	 6.2 (5.5, 6.9)	 4.7 (4.1, 5.2)	 2.6 (2.1, 3.2)	 1.0 (0.5, 1.5)	 0.4 (0.1, 0.6)	 0.3 (0.1, 0.6)

Notes:

n=114 households. Results derived from matrix scoring of each indicator using 30 stones; mean scores (95 per cent confidence interval) are shown in each cell. The black dots represent the stones used during matrix scoring.

Discussions

The inability of conventional approaches for impact assessment to reflect changes related social cost-benefit analysis and social impact assessment resulted in calls for involvement of the beneficiaries, who are the most aware of, and better able to explain, qualitative developments (Marsden et al, 1994). Participatory approaches and methods can generate data and numbers on numerous topics similar to outputs from questionnaires (Chambers and Mayoux, 2003). The participatory methodologies used in these assessments were standardized and inter-group or inter-household agreement was calculated for the group/individual informants. The information collected and the result is likely to be more accurate and reliable because group and / or individual responses are subjected to immediate examination and cross-verification from other informants, and triangulated with information from process monitoring.

Participatory approaches and methods involve 'local people, development agencies, and policy makers deciding together how progress should be measured and results acted upon' (IDS, 1998). Using these methodologies is useful in bringing decision makers into contact with the realities in the field by observing, listening, sharing, and learning from rural communities.

The PIA of the CAHWs (Case study 1) was very successful to influence policy supporting community-based animal health workers in pastoral areas. The key policy and legislative changes followed from this process include; in 2003 the Ethiopian government issued a proclamation which legalized privatised CAHW systems in pastoral areas of the country, and secondly, a 'National Minimum Standards and Guidelines for the Design and Establishment of CAHW systems in Ethiopia' was published and issued in 2004 by the Federal Ministry of Agriculture and Rural Development.

The findings of the PIA of destocking (Case study 2) is contributing to the development of national guidelines on destocking in pastoral areas of Ethiopia, as well as informing the development of global Livestock Emergency Guidelines and Standards⁴. The latter is intended to complement the Humanitarian Charter and Minimum Standards in Disaster Response. An important principle being applied in the emerging Ethiopian guidelines is the notion of drought as 'normal' and therefore, an event that ultimately should be predicted and planned for in long-term development processes rather than being treated as a recurrent emergency. This concept is not new, having featured in discussions on drought response in Ethiopia for at least 10 years (Hogg, 1997) and in the wider literature on drought management in pastoral areas (Barton, Morton and Hendy, 2001). While livelihoods-based approaches to relief programming in pastoral areas can provide more appropriate assistance than typical emergency relief, to some extent livelihoods-based programmes necessitate the pre-existence of livestock services and markets. A strong, pre-existing livestock export trade will drive commercial destocking. A strong, pre-existing network of primary veterinary service delivery will provide a system through which emergency veterinary care can be delivered.

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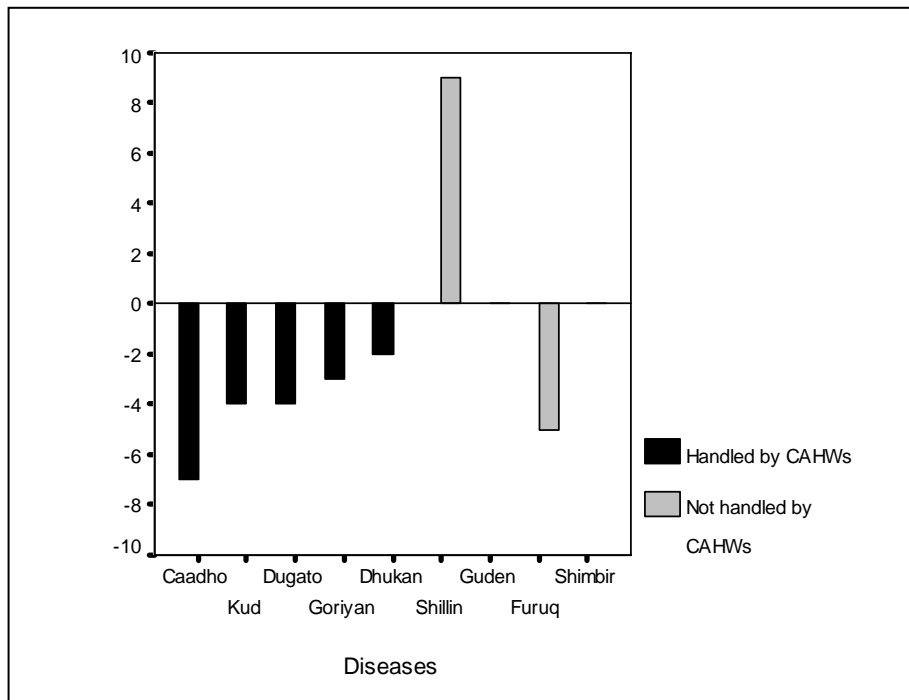
⁴ More information on the Livestock Emergency Guidelines and Standards can be found at <http://www.livestock-emergency.net>.

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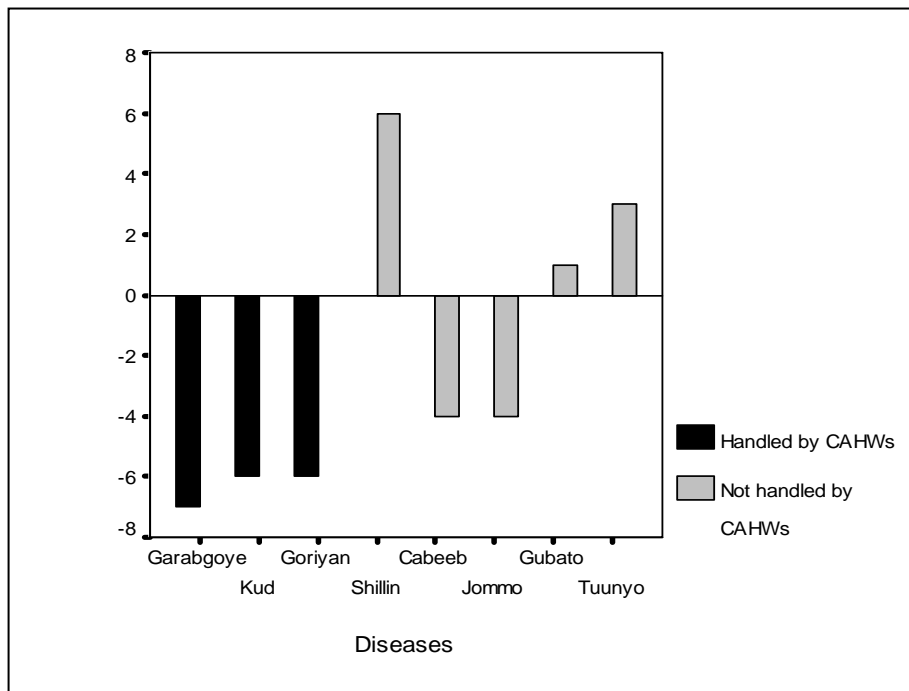
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Figure 1 Changes in disease impact scores for camel diseases



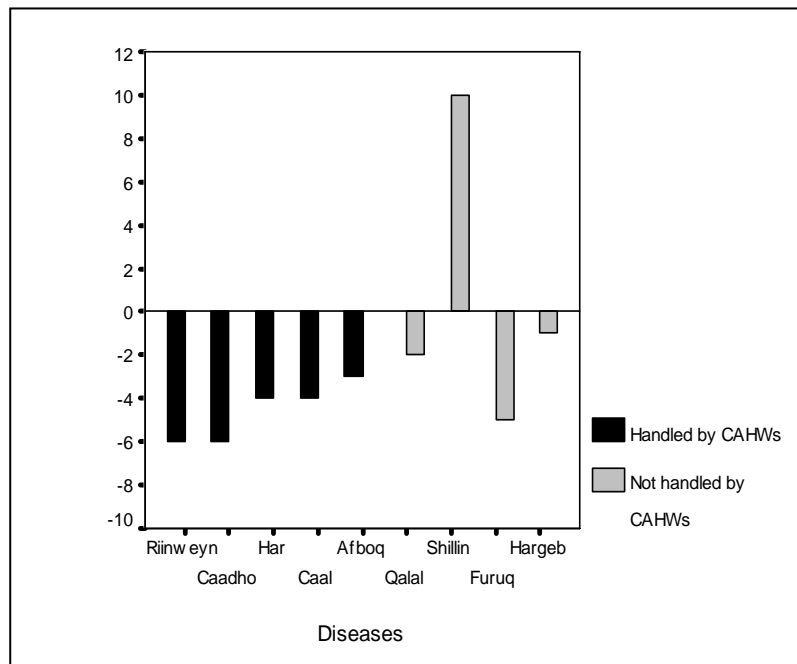
Number of informant groups = 10; $W = 0.25$ ($p=0.008$)

Figure 2 Changes in disease impact scores for cattle diseases



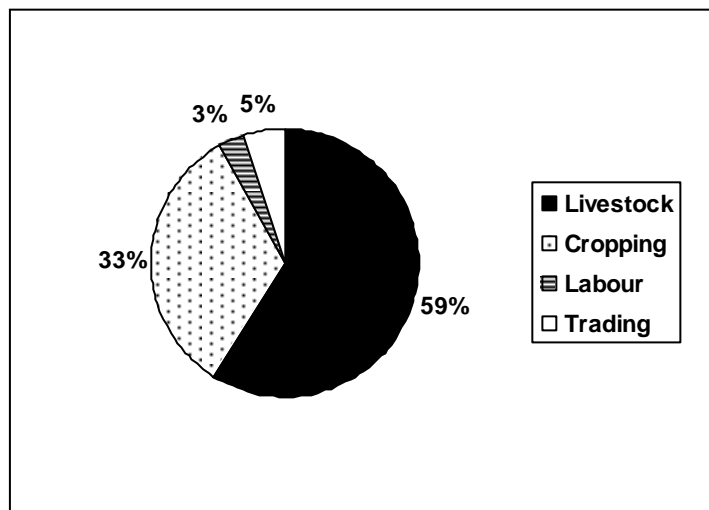
Number of informant groups = 10; $W = 0.40$ ($p < 0.001$)

Figure 3 Changes in disease impact scores for sheep and goat diseases



Number of informant groups = 10; $W = 0.44$ ($p < 0.001$)

Figure 4 Means of livelihoods in Dollo Ado and Dollo Bay woredas



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 5 Benefits derived from improved animal health during the CAH project

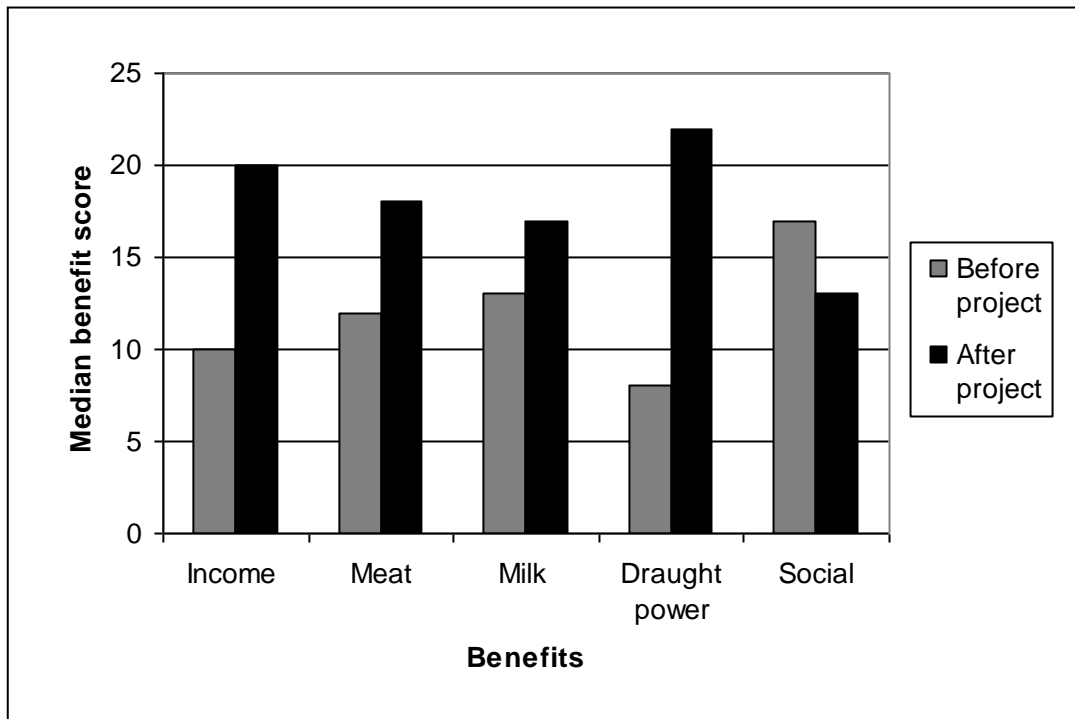


Figure 6 Mean proportion (%) of household income by income source for destocked households during the drought (n=114 households)

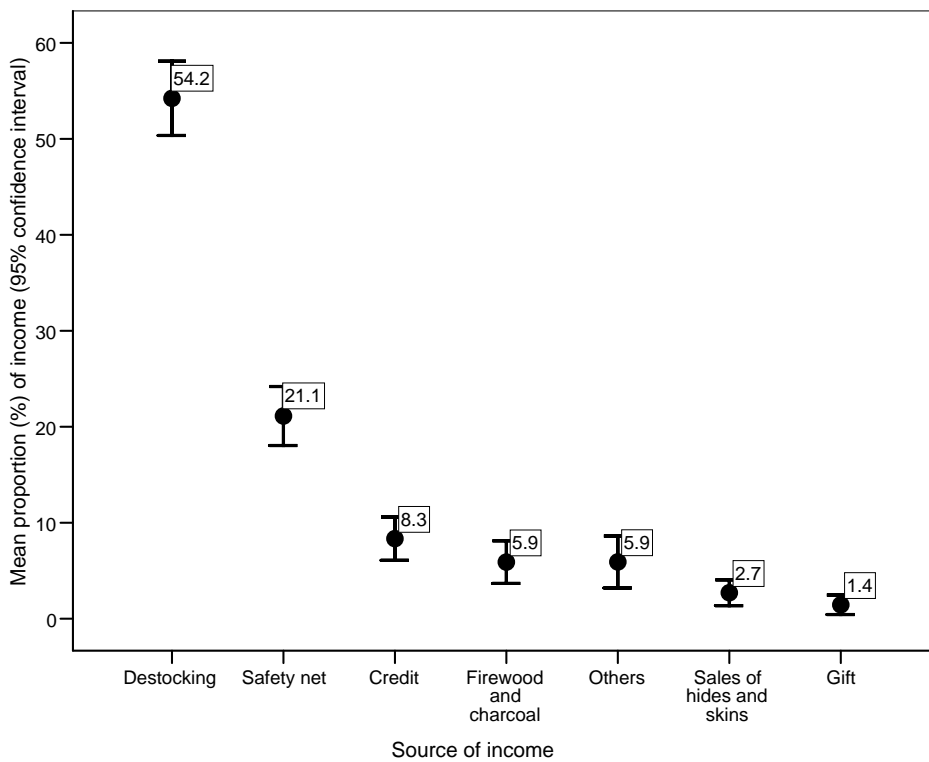


Figure 7: Proportional (%) use of income derived from commercial destocking (n=114 households)

