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Money to burn? Comparing the costs and benefits of drought responses in pastoralist areas of Ethiopia

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Introduction

For many years the deliberate removal of livestock from pastoralist areas of Africa during drought has been suggested as an appropriate drought response (e.g. Toulmin, 1995). Drought-related purchase of livestock and distribution of dried meat was used in pastoral areas of Mali in the 1980s (Oxby, 1989) and more recently, destocking was used in northern Kenya (Aklilu and Wekesa, 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 cash, thereby giving pastoralists the cash they need to buy food, maintain a core herd and access the services they want (rather than the services aid agencies provide). This herd maintenance might involve purchase of fodder or veterinary care, thereby supporting local markets and service providers. Over time, two specific types of destocking have been recognized (LEGS, 2009). "Commercial destocking" refers to the purchase of animals by traders, and assumes that animals are still in a reasonable condition for sale and transport at relatively early stages of a drought. In contrast, "slaughter destocking" occurs later in drought, when animals are no longer in reasonable condition and therefore, not purchased by traders. As such animals are still fit for human consumption, slaughter destocking leads to the distribution of fresh or dried meat to selected households, and sale of hides and skins. Both approaches to destocking lead to cash transfers to pastoralist households during drought.

The emergence of yet another humanitarian crisis in the Horn of Africa in 2011 has led to a new round of reviews and evaluations of drought response programs. Within these programs, livelihoods support to pastoralist communities is now common, but accounts for only a small proportion of overall expenditure relative to food aid. For example, in Ethiopia in the drought in 2011 total aid including food aid was valued at US\$800 million, while livelihood support totaled US\$17.8 million (Anon, 2012) or 2.2 per cent. In addition, the distinction between food aid and livelihoods inputs is not always clear because food aid can be used by pastoralist households directly or indirectly to support livelihoods (Bush, 1995). In southern Ethiopia for example,

some households reported using food aid as a supplementary feed for livestock during drought (Abebe et al., 2008).

In terms of livelihoods-based post drought recovery, the theory of drought cycle management indicates approaches such as restocking should only be needed if earlier livelihoods inputs were not implemented or where unsuccessful, as these earlier responses often aim to protect core livestock assets. Similarly, restocking can follow food aid provision as a stand-alone response that does not explicitly aim to protect assets. Various evaluations and studies on restocking in pastoralist areas are available, and provide lessons on issues such as the type and number of animals needed per household, and the extent to which restocked households reduce their reliance on food aid over time (Lotira, 2004; Wekesa, 2005). A longstanding issue with restocking is the relatively high aid cost per household, which relates to both the cost of the initial transfer of livestock and the cost of additional support such as food aid and other inputs until a viable, productive herd develops (LEGS, 2009).



Although the theory and practice of both food aid and livelihoods-based programming are now well known, relatively limited information is available on the relative costs and benefits of these two broad approaches. This paper provides a cost comparison of the different approaches by drawing on the impact assessment of the commercial destocking program in southern Ethiopia (Abebe et al., 2008) and using additional expenditure figures from the implementing agency, Save the Children US (SCUS). The destocking costs are compared to the cost of local and imported food aid, also by SCUS, followed by restocking of pastoralist households. Restocking costs plus additional food aid costs during herd growth were estimated from an evaluation of a restocking project in Ethiopia by Save the Children UK (Wekesa, 2005).

Commercial destocking in Ethiopia

In early 2006 commercial destocking was used in pastoralist areas of southern Ethiopia following weak rains in 2005. The timeline of events is summarized in Figure 1, and shows that destocking took place relatively late in the drought, after substantial livestock deaths had been reported. Despite this, traders and pastoralists agreed prices for the sale of drought-affected cattle, and cattle purchases took place over about four weeks in February 2006. Private traders used their own capital for most of these purchases, and covered their own transport and other costs. The role of NGOs was first to liaise with government to ensure support for the approach, and then introduce the traders to the drought-affected areas. More details of the commercial destocking activities are provided in Box 1.

In late 2006, an impact assessment of the commercial destocking was conducted, focusing on potential livelihoods impacts in households where cattle were sold (Abebe et al., 2008). The assessment comprised two main activities, being interviews with the private traders who purchased cattle, and the use of participatory methods with a random sample of 114 households that sold cattle. This sample was thought to represent 20% of all 570 households involved in the project.

Figure 1. Timeline of key events during the 2005 to 2006 drought, Moyale district, Ethiopia (Abebe et al., 2008)

Month/Season	Events
<i>Gaana</i> 2005	<ul style="list-style-type: none"> Late and insufficient long rain The rain supposed to start in <i>Gurandhala</i>, but came late in <i>Bitotessa</i> for short period
<i>Hagya</i> 2005	<ul style="list-style-type: none"> Pasture did not grow well Late and insufficient rain, which started in <i>Chika</i> instead of <i>Hagaya</i> or <i>Bira</i>
<i>Sadassa</i> 2005 (November)	<ul style="list-style-type: none"> Livestock started to die, beginning with calves and then later adult cattle, sheep and even donkeys
<i>Abrassa</i> 2005 (December)	<ul style="list-style-type: none"> Dams completely dried and no water sources available for livestock and human beings Different livestock diseases occurred such as <i>Awarssa</i>, <i>Luxxa</i> and <i>Sombessa</i> Food shortage occurred and people started starving
<i>Amaji</i> 2006 (January)	<ul style="list-style-type: none"> Food aid started by government and GAYO (a local NGO) Migration to town and different areas started Large number of cattle died Abdhuba Abakude, a pastoralist from Tuqa Kebele, killed himself because he lost all his cattle
 <i>Gurandhala</i> 2006 (February)	<ul style="list-style-type: none"> Destocking started by traders supported by Save the Children US Pastoralists transported some of their remaining animals to other places (Yabello, Fincha, Surupa, Arero, Didera and Liben –Dawa River) Food aid and water tankering from government started Water tankering and provision of water containers and water purification medicines provided by Red Cross Livestock feed supplement started by CARE and GAYO Road construction under safety net program started as a source of cash for the community
 <i>Bitotessa</i> 2006 (March)	<ul style="list-style-type: none"> Destocking stopped Started raining Water tankering stopped
Support to destocking ended	
<i>Chamssa</i> 2006 (April)	<ul style="list-style-type: none"> Pasture started coming up but not in all places yet Livestock are in better condition Migrated livestock started to return

* *Ganna* is the long rainy season (*Gurandhala* –February; *Bitotessa*-March and *Chaamsa* – April)

* *Hagya* is short rainy season (*Hagaya* – August; *Bira* – September and *Chika* – October)

Box 1.

Some key features of the commercial destocking initiative in southern Ethiopia (Abebe et al., 2008)

Initial discussions

SCUS called meetings with traders using national TV and radio, and then introduced the traders to the district officials. Community meetings were held in areas where livestock were concentrated viz. Afdher and Liben Zones (Somali Region) and Borena Zone (Oromiya Region). The meetings were attended by local government staff, SCUS staff, traders and pastoralists, and provisional arrangements were made for the establishment of 'commercial destocking markets.' Follow-on meetings were held between these same parties in Moyale area when the two traders expressed serious interest in the purchase of cattle. SCUS staff provided vehicles for traders and officials to travel to areas of livestock concentrations.

Selection of destocking sites

As a result of the meetings outlined above, the pastoralists and traders agreed to establish buying centers in roadside locations. The traders felt that they would be able to buy all the stock they wanted near the road, and they were also aware that the interior roads were poor and transporters would charge higher rentals, which they wanted to avoid. The exact locations for the destocking markets were negotiated between the traders and pastoralists.

Selection of livestock species to be destocked

Bearing in mind that cattle are particularly susceptible to drought and would suffer highest mortality, SCUS suggested to the traders that cattle should be purchased. The purchase of cattle was also thought to be a more rapid approach for stabilizing livestock prices generally, and it was known that Ethiopia was encouraging the export of cattle to Egypt. Although pastoralists were initially skeptical about the traders, soon after the purchasing actually started they saw that the traders would buy thin cattle for reasonable prices that were above normal market price at the time. They also realized that they could sell cattle and use the money to buy food for both the household and to feed their goats and sheep.

Purchasing arrangements

Groups of pastoralists nominated a person to represent them in the destocking markets. This was a common practice already used in the area because many pastoralists were not confident negotiating with traders and were unsure of reasonable prices. The traders also liked this system as they could negotiate the purchase of large numbers of animals through few people.

Sale price of cattle

Prices were determined by negotiation between traders and pastoralists. The destocking markets were not normal 'open markets' with lots of traders, but more closed with few traders. Hence normal market values did not apply. In some cases prices were lower than in 'normal markets' and in others considerably higher. The trend towards higher prices was influenced by the export of cattle to Egypt.

Interviews with traders indicated that they had purchased at least 20,000 cattle, resulting in cash transfers to pastoral households valued at approximately US\$ 1.01 million. These figures were used to estimate a basic benefit-cost ratio for the approach, by assuming a benefit of US\$ 1.01 million and comparing this to the aid costs incurred by the NGO implementer, Save the Children. The result was a benefit cost of 41:1, while also noting that the activity was implemented late and an earlier response would probably have achieved an even greater benefit-cost (Abebe et al., 2008).

The participatory impact assessment with pastoralist households showed that while 28 per cent of income from destocking was spent on human food, 37 per cent of income was used to protect livestock through motorized transport of animals to distant grazing areas, livestock feed, and veterinary care (Abebe et al., 2009).

The comparative model

We developed a simple comparative model to compare two scenarios. The “food aid plus restocking” scenario involved provision of food aid, substantial livestock herd depletion, followed by restocking. The “commercial destocking” scenario involved a timely commercial destocking program at the onset of drought, without the need for food aid or restocking. Each scenario is explained in further detail below.

Food aid plus restocking scenario – after the failure of the long rainy season in 2005, a pastoralist household faces destitution as the next rainy season, in late 2005, also starts to fail. Grain prices are rising and as livestock lose body condition, their market value starts to fall. A few weeks pass and stories of livestock deaths and drought prompt UN agencies and NGOs to conduct drought assessments. Some weeks later, bags of emergency food aid are appearing in towns and villages, and the household distributions begin. By this time, the pastoralist has slaughtered his calves to try to protect their mothers during the drought, but now the cows are also dying. After another two months, his 20 core breeding stock are decimated. A month later, some light rain falls and a “drought recovery” program is designed with the objective of “returning destitute pastoralists back to a sustainable livelihood”. The pastoralist is restocked with 30 sheep and goats, and given more food aid.

Commercial destocking scenario – after the failure of the long rains in 2005, humanitarian agencies are carefully tracking rainfall in late 2005. As drought begins, they contact livestock traders and support events where the traders meet pastoralist leaders and discuss if and how cattle and other livestock might be purchased. A commercial destocking program quickly evolves within days, with the traders using their own cash and trucks to buy livestock from drought-affected areas. The pastoralist gets involved and sells two young bulls. The prices are not high relative to the best market values in a good year, but with the income he knows that he can buy enough maize to feed his family of six people for two months, while also spending additional income to protect his best breeding cows. His decision is based on the fact that he can sell a young bull for Ethiopian birr 440 (US\$50, at 2005-6 drought prices), and with that money, can buy 200kg of maize (cost Ethiopian birr 160/100kg). Also, he knows that each person will eat around 0.5kg of maize a day and so for two months, he will need 180kg of maize for the family. From the sale of the other bull, he can buy some livestock feed and transport some cows to a better grazing area. At the end of the drought, the core breeding stock are alive, the household has not received food aid, and a restocking program is not needed. The

main assumptions and variables used in the model are presented in Box 2.

Box 2.

Cost comparison assumptions and variables

- Human adult grain energy requirements and grain consumption – assume an adult requires 0.5kg maize/day to meet basic energy requirement.
- Model household comprises six people, two adults and four children; no adjustment of grain requirement by age or gender.
- Cost of maize – the cost of maize in local markets in late 2005/early 2006 in southern Ethiopia was EB 160 (US\$18) per 100kg.
- Sale value of cattle – the price paid for cattle during commercial destocking by private traders in southern Ethiopia in 2006 was EB 438 (US\$50); agency costs were \$24,483 for 5,400 households (Abebe et al., 2008).
- Private traders pay for cattle in the commercial destocking program (Abebe et al., 2008) i.e. no cattle purchase cost to aid agencies/donors. Agencies pay for some transport for traders, stakeholder workshops, and publicizing the program.
- Local food aid cost – EB 1.6/kg (US\$ 0.18); 2006 price
- Imported food aid cost – EB 4.0/kg (US\$ 0.46); 2006 price
- Restocking involved provision of a minimum herd size comprising 30 adult female sheep and goats and 1 donkey per household. Households also received 250kg maize, plastic sheeting and blankets. The cost of the project per household, including NGO staff costs, veterinary care, monitoring and overheads, was US\$487 (Wekesa, 2005).

Cost comparison

Using the scenarios and assumptions above, costs are summarized in Table 1. The results in Table 1 indicate that for support that meets basic food security objectives over two months, and before restocking, the provision of local food aid cost 17 times the cost of commercial destocking (b/a, Table 1), whereas the provision of imported food aid cost 29 times the cost of commercial destocking (d/a, Table 1). If the costs of restocking are included in the analysis, local food aid plus restocking cost 125 times commercial destocking (c/a, Table 1), whereas imported food aid plus restocking cost 137 times commercial destocking (e/a, Table 1).

Table 1.

Aid cost comparison of drought programs

Scenario	Cost (US\$) per household
Commercial destocking	
Agency costs (staff, transport, etc.) plus overhead at 17%	4.53
Restocking costs	0
Total	4.53^a
Local food aid plus restocking	
Food cost	33.23
Transport cost for food	20.86
Agency food monitors salary and per diems	16.74
Agency overhead @ 10%	7.08
Sub-total	77.91 ^b
Restocking costs	487.00
Total	564.91^c
Imported food aid plus restocking	
Food cost	83.69
Transport cost for food	20.86
Agency food monitors salary and per diems	16.74
Agency overhead @ 10%	12.13
Sub-total	133.43 ^d
Restocking costs	487.00
Total	620.43^e

Discussion

The scenarios we developed for the cost comparison involved assumptions and estimates, leading to an imperfect analysis. However, the scale of the difference in costs between commercial destocking and food aid plus restocking indicates that minor errors in the model are unlikely to alter the overall result viz. that a food aid plus restocking approach is vastly more expensive than early response with commercial destocking. Also, we did not include in the analysis the potential economic benefits of commercial destocking such as support to local markets and services when people use the income from destocking to buy the items and services they need (Abebe et al., 2008). In contrast, food aid may also lead to livelihood benefits and assist asset protection, but in the absence of evidence that quantifies these benefits, the use of food aid for asset protection is difficult to justify. It is also evident that during severe drought, high levels of livestock losses occur during food aid provision. At present, food aid dominates drought response whereas our analysis indicates that the balance of funding needs to shift radically towards early drought response and approaches such as commercial destocking. The destocking experience in Ethiopia indicates that pastoralists will sell animals during drought if a reasonable price is offered and when cash payments are made promptly by buyers. Also, livestock prices in the 2011 drought were substantially higher than 2006 as more traders were operating in the area. There is still a role for food aid during drought, but relative to livelihoods-based responses pastoralists in Ethiopia saw this role as benefiting mainly poorer households with few or no livestock (Abebe et al., 2008).

The further use and adaption of the simple modeling method used in our analysis would help donors and aid agencies better understand the economic implications of late response and asset depletion in pastoralist areas relative to enabling asset protection during drought. However, the analysis of food aid benefits and comparison with other types of support is now further complicated by the emergence of safety net programs in pastoralist areas of Kenya and Ethiopia (Devereux and Tibbo, 2012). Although these programs focus on cash transfers, food transfers are also used in some areas and may be preferred when for example, local markets are disrupted or not functioning, or when cereal price inflation is high. Food or cash transfers may be expanded during drought in communities that are already receiving a safety net, thereby hindering analysis of specific drought-related support compared to regular support. Although safety net programs may have objectives related to food security, asset protection and asset building, analysis of cash transfers in pastoralist areas indicates that the level of transfer is too low to achieve meaningful asset building, and almost by definition, very poor or destitute pastoralists have no assets to protect (Catley and Napier, 2011). It follows that food aid transfers of an equivalent value to cash transfers are likely to achieve comparable impacts, being mainly food security impacts. A more rigorous analysis could use the type of model described in this paper, and compare the cost of safety net provision of food or cash, with the cost of commercial destocking during drought. For example, assuming that a safety net is continued to our model pastoralist household of two adults and four children during two months of a drought, how does the cost compare to the cost of commercial destocking at US\$4.3 per household?

At first sight, the benefits of commercial destocking point to a need to strengthen livestock marketing in pastoralist areas, as a robust trade and active private sector enables commercial destocking. In the case study in southern Ethiopia in 2006, a growing formal livestock export trade was an important factor for encouraging private traders to invest in destocking (Abebe et al, 2008). However, the links between livestock trade, strengthening of pastoralist livelihoods and drought

response are complex, not least because ongoing commercialization of livestock systems in pastoral areas benefits wealthier herders far more than more vulnerable, poorer herders. In high-export areas of southern Ethiopia and Somali areas, commercialization is seen by some analysts as a key driver of pastoralist destitution and explains the apparent contradiction between increasing numbers of destitute pastoralists with simultaneous growth in livestock exports (Catley and Aklilu, 2012). Critically, commercialization results in larger herds for the wealthy and smaller herds for the poor, and an increasing asset gap. For drought recovery programs, these trends indicate that a pastoralist household in a commercializing system needs far greater livestock holdings than the “minimum herd size” used by some restocking projects, and clearly, not all households can achieve a commercial herd size. It follows that approaches such as restocking and safety nets need to recognize that not all pastoralist households with very low or no livestock can, or want to, return to pastoralism. For NGOs and donors working in high-export pastoralist areas, the challenge is to integrate these issues into long-term development strategies, and structure strategies according to pastoralist wealth groups and commercialization trends. A hard reality seems to be that while commercialization and population growth trends have been evident for decades and contribute to vulnerability, among aid actors drought is the more noticeable event and so responses are framed narrowly around dealing with drought. However, drought recovery and development programs need to consider whether a return to pastoralism is really viable for many poorer households given the competition they will face from a commercializing, wealthy and well-connected sector within pastoral areas. A further consideration, given this context, is how to reshape the use of food aid to complement coherent, long-term poverty reduction strategies in these areas (Barrett and Maxwell, 2005).

Overall, the experience in Ethiopia point to three main conclusions. First, in a context of drought occurring in a wider context of a dynamic livestock export trade, commercial destocking is a very effective way to support pastoralist livelihoods. Second, the wider use of commercial destocking and aid investments in livestock export markets needs to take account of wealth differentiation in pastoralist areas and how wealthier households tend to benefit more from exports than poorer households. Third, far more evidence is needed to show the impact of livelihoods-based drought responses, and especially, impact assessments and economic analysis involving comparison of different approaches with food aid. Such assessments need to take account of the repeated cycles of food aid, provided over decades, and the long term costs of food aid and attempts to rebuild pastoralist herds.

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