

Policy Brief

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More Food for Thought: Benefits and Costs of Supplementary Cattle Feeding During Drought

Background

A livelihoods-based drought response in pastoralist areas could aim to protect key livestock assets and support rapid rebuilding of herds after drought. Research in Ethiopia shows that during drought the main cause of livestock death is starvation – see PLI Policy Brief November 2007. Therefore, the protection of productive stock, especially adult breeding females, should include ways to feed these animals during drought. Pastoralists already use this strategy, and when means allow, will buy feed from private suppliers or move certain types of animals to distant grazing areas, sometimes using trucks.

In terms of aid responses by government or NGOs, programme managers need to understand the potential impacts of supplementary feeding, and the benefits and costs.

Supplementary feed for adult cows

During drought in Borena and Guji zones in southern Ethiopia in early 2008, Save the Children US used funds from USAID and the UNOCHA Humanitarian Response Fund to implement an emergency livestock supplementary feed program. As cattle were particularly affected by the drought, the program focused on the establishment of cattle feeding centres where in consultation with communities, an agreed number of adult cows received concentrate feed and roughage. Ten feeding centres were established in the two zones, and a total of 6,750 cattle were fed in the two zones.



Impact Assessment

In May 2008, Dr. Gezu Bekele of Tufts University and Tsehay Abera of Save the Children US conducted an impact assessment of two cattle feeding centres, in Bulbul and Web. The assessment measured mortality in cows in the centres and unfed cows outside the centres, and also examined other impact indicators such as calf survival and milk production. A benefit-cost analysis and sensitivity analysis were also conducted. This Policy Brief uses results from the assessment in Bulbul, where a 22-day feeding program for 1000 cows was used.

The findings of the impact assessment were as follows:

- Private feed purchases - prior to the onset of the feeding program, 48% of pastoralists were buying livestock feed from private suppliers. While this indicated a strong local demand for feed, the capacity of people to buy feed was hindered by a credit system for cattle sales which delayed the physical receipt of cash by herders, and as the drought progressed, increasing livestock feed prices. Consequently, an insufficient quality and quantity of privately-acquired feed was fed to cattle.
- Mortality –was significantly lower in cows in the feeding centre relative to unfed cattle ($p < 0.001$); see Table overleaf.
- Body condition – relative to unfed cattle, cows in the feeding centre gained body condition, with up to 70% of cows moving from 'poor' body condition to 'moderate' body condition
- Milk and calves – 97 cows gave birth in the feeding centre and 87 calves survived to the start of the rains. In addition, some cows maintained lactation while in the feeding centre and this milk – amounting to 2,276 litres – was reported to have been fed to children.

Mortality in cattle receiving supplementary feed was 68% lower than in unfed cattle.



Mortality in fed and unfed cows during drought in Bulbul

Type of feeding	Cattle mortality
Unfed cattle moved to grazing areas	108/425 (25.4%)
Cows fed using SC US feed	13/161 (8.1%)

Benefit-cost analyses

In Bulbul the benefit-cost of the intervention was 1.6:1. Sensitivity analysis showed that the intervention was robust and the benefit-cost was not unduly affected by moderate to high changes in market conditions. For example, an increase in feed price of 250% was needed to push the benefit-cost ratio below 1. These results indicate that despite the apparently high cost of livestock feed programs, such programs perform well in terms of economic performance and are relatively low-risk.

Key policy and programming issues

- Cattle supplementary feeding during drought can be justified in terms of livelihoods objectives and economic rationale.
- Depending on the type of drought, targeting vulnerable milking and pregnant cows may be more appropriate than targeting breeding stock in general, and will have beneficial side-effects in terms of milk production and calf survival.
- Long-term, it will be essential to ensure an adequate supply of affordable livestock feeds. This will require action on a number of fronts, for example, promoting private sector feed supply, investing in fodder production and the sustainable management of traditional grazing reserves. Approaches to fodder production and supply such as irrigated fodder production along permanent water sources, and the sustainable management of traditional grazing lands. Land use policies for pastoral areas should limit the conversion of watershed-based dry season pasture to farmlands and ban the establishment of year round water facilities in traditional wet season grazing areas.
- The private sector might also be involved in developing or managing local feed supply systems which include feed stores for use at time of drought, thereby avoiding delays due to the purchase and transport feed when drought occurs, and also, drought-related increases in feed prices.
- Given the increasing local demand for livestock feed among pastoralists, there are opportunities for aid agencies to work more with the private sector and design interventions with more attention to cost-recovery for feed, or, the supply of feed through the private sector using approaches such as voucher schemes targeted at the most vulnerable households.
- Financial institutions could be supported to facilitate the provision of financial services to pastoralists that would allow them either to borrow feed 'in kind' or cash for feed purchase, to be repaid following the drought period.

Further reading:

- *Food for Thought: Supplementary Livestock Feeding During Drought.* PLI Policy Brief, November 2007.
- Bekele, G. and Tsehay, A. (2008). *Livelihoods-based Drought Response in Ethiopia: Impact Assessment of Livestock Feed Supplementation.* Feinstein International Center, Tufts University and Save the Children US, Addis Ababa.

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