



# Policy Note (October 2007)

## Community Based Drought Management for the Pastoral Livestock Sector in Sub-Saharan Africa

This ALive Policy Note on **Community based drought management for the pastoral livestock sector in Sub-Saharan Africa** is the result of a participative and consultative multi-step process of elaboration that involved the key actors of the livestock sector development in Sub-Saharan Africa.

**The recommendations were endorsed by the ALive Executive Committee on September 20, 2007.**

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*This Policy Note was prepared by the ALive Secretariat, with inputs from Nikola Rass (LEAD), Cees de Haan, and Patricia Larbouret and comments from ALive Executive Committee members. It is a contribution to the ongoing review of the livestock sector policies in Sub-Saharan Africa. This publication is available online at [www.alive-online.org](http://www.alive-online.org)*

*An ALive Drought Toolkit is available to supplement this Policy Note with more detailed information.*

### Executive Summary

The recurrence of severe droughts in the dry lands of Sub-Saharan Africa is a major cause of human suffering and restraint to pro-poor livestock development, particularly in pastoral and agro-pastoral systems. Drought kills millions of animals and reduces millions of people to destitution and dependence on food relief. But drought also affects the reliability of supply of livestock to markets, exacerbates conflicts, is a disincentive for investments in the livestock sector, and most likely a contributing factor in environmental degradation, in particular of the perennial vegetation of the rangelands.

Climate change will most likely increase the frequency and severity of meteorological droughts in the decades to come. And already the impact of meteorological drought on pastoral people has increased. The reasons for this increased vulnerability of pastoralists to drought are manifold, including reduced mobility, increased market instability, growing populations, and increased numbers of livestock concentrated in the hands of absentee herd owners.

The cost of doing nothing will exceed by far the cost of taking action, as inaction not only will increase the monetary costs of livestock lost and the relief aid delivered, but carries also the long-term costs that destitute pastoral livelihoods impose on the entire society.

There seems to be wide agreement that the main focus of public policy in drought management needs to be that of making pastoralists and agro-pastoralists less vulnerable to meteorological and pastoral drought, with an emphasis shift from relief to development interventions. This will include:

1. **Establishing a policy and investment framework that promotes general good practice in the management of pastoral systems, including:**
  - Establishing or strengthening institutions for pastoralists to manage their own affairs;
  - Promoting mobility of pastoral herds as the best adaptive response to the erratic rainfall conditions of the arid and dry fringes of the semi-arid areas;
  - Improving animal health, particularly by enabling the development of sustainable delivery systems adapted to the scarcely populated dry areas;
  - Supporting the conservation, breeding, and marketing of more drought resistant breeds and species;
  - Improving pastoral marketing opportunities to enable a quick off-take in times of an imminent drought, by removal of unnecessary constraints on marketing such as unnecessary restrictive veterinary

regulations, and the provision of investments in infrastructure, provision of market information, etc.; and

- Supporting livelihood diversification, both directly by stimulating non-pastoral employment opportunities outside the pastoral sector and alternative income opportunities within the pastoral system, i.e., ecotourism, payment for environmental services.

**2. Promoting institution building for savings and insurance, including:**

- Promoting livestock-banking and other forms of savings among pastoralists; and
- Further development of livestock insurance schemes, in particular the index based schemes, which are now being pilot tested (although for different conditions) in East Asia.

**3. Promoting an enabling institutional environment for community-based drought management, including:**

- Allocating responsibilities, according to the subsidiarity principle, i.e., entrusting management to the lowest level competent authority, in particular in contingency planning on drought mitigation and rehabilitation.

**4. Providing the appropriate investments, including:**

- Establishing cost effective early warning systems in order to maximize their chances of financial sustainability, preferably with a high degree of local participation;
- Preserving livestock through ensuring access to grazing lands, water, supplementary feed, and veterinary services in times of drought;
- Reducing vulnerability of pastoral livelihoods through market support such as those that induce selective de-stocking of unproductive livestock at the onset of a drought by providing transport subsidies, price support for slaughter animals in times of drought, etc;
- Providing the correct mix of relief and rehabilitation support, ensuring through appropriate targeting to reach the needy without creating excessive food aid dependence; and
- Restocking support, using the considerable experience now available.



## Community Based Drought Management

### Introduction

The recurrence of severe drought is a cause of human suffering and a major restraint to pro-poor livestock development in Sub-Saharan Africa, particularly in pastoral and agro-pastoral systems. Drought kills millions of animals, and reduces millions of people to destitution and reliance on food relief. But drought also affects the reliability of supply of livestock to markets, exacerbates conflicts, is a disincentive for investments in the livestock sector, and most likely a contributing factor in environmental degradation, in particular for perennial vegetation.

This Policy Options Paper seeks to inform African policy-makers and decision-makers in international aid and development organizations, of the urgency of managing drought for the livestock sector, particularly in pastoral and agro-pastoral systems, and the main options for doing so at policy and investment levels. It provides an overview of the current trends and what may be expected in the future, describes the impact of drought and lays out the rationale for involvement, with emphasis on the public good elements, and gives recommendations for policy adjustments and investments, stressing the need for community involvement in drought management.

### Drought – Some Definitions and Concepts

As periods of low rainfall have different impacts on different production systems, it is necessary to distinguish between meteorological drought, agricultural drought, and pastoral drought.

- *Meteorological drought* is defined “solely on the basis of the degree of dryness (often in comparison to some normal or average amount) and the duration of the dry period” and must be region-specific. In the dry lands of Sub-Saharan Africa, for example, definitions will need to take into account the differences between areas of bi-modal rainfall (as with many but not all of the pastoral areas of east Africa) and of mono-modal rainfall (as in the Sahel).
- *Agricultural drought* focuses on factors such as differences between actual and potential evapotranspiration and soil-water deficits, is crop-specific and depends heavily on the timing of rain and dry periods

relative to crop-cycles.<sup>1</sup> Agricultural droughts can therefore occur in the absence of meteorological drought, and vice versa.

- *Pastoral drought*<sup>2</sup> could be defined as lack of forage availability as a result of particular sequences of meteorological drought. This definition remains however at the borderline - when lack of forage availability is only triggered by meteorological drought but caused by mismanagement of the rangelands i.e., non-effective water cycling<sup>3</sup>. Furthermore, this definition gets blurred by the fact that long distance movements of pastoral herds from areas of meteorological drought to areas of better rainfall are a main feature of pastoral systems and have to be understood as long-standing adaptations to the agro-ecological conditions of the drylands. Lack of forage ability is very often triggered by meteorological drought but caused by constraints to pursue long distance movements to areas of better rainfall and reduced access to traditional dry season grazing reservoirs.
- In this context it becomes important to distinguish between local and regional droughts as the regional event may effect all herds and have a major impact on recovery (restrict stock transfers and sharing post drought) whereas the more localized event will obviously affect fewer herds. Therefore in this paper the term pastoral drought refers to a lack of forage availability within a confined region historically used as rangelands caused or triggered by meteorological drought.

<sup>1</sup> White 2000

<sup>2</sup> Bruins 2000

<sup>3</sup> ALive/LEAD 2006 – Savory



## Community Based Drought Management

### Recent and Future Trends

#### • Increased Frequency of Meteorological Droughts

While there is still a debate on whether the frequency and severity of meteorological droughts in dry land areas of Africa has increased or remained stable in recent decades,<sup>4</sup> there is an increasing consensus that meteorological drought is likely to become more frequent and more severe in decades to come, as part of global climate change. In arid or semi-arid areas, warming will decrease available soil moisture. Significant changes in precipitation, distribution in space and time are also expected, including an increased frequency of extreme climate events, such as droughts and floods. "Increased summer continental drying and associated risk of drought" is "likely over most mid-latitude continental interiors". Further, "even with little or no change in the El Niño amplitude, global warming is likely to lead to greater extremes of drying and rainfall intensity and increase the risks of droughts and floods that occur with El Niño events in many different regions".<sup>5</sup>

#### • Increased Vulnerability to Pastoral Droughts

It is almost certain that, unless corrective measures are pursued, the vulnerability of pastoral livelihoods to pastoral drought will increase, and the impacts of pastoral drought will worsen. Repeated shocks followed by traditionally late or inadequate responses have led to loss of livelihood and increasing chronic food insecurity.

#### • Causes for Increasing Vulnerability

There are many reasons for increasing vulnerability, since the "capacity to anticipate, cope with, resist, and recover from the impact of" drought<sup>6</sup> is determined at the level of communities and regions by socio-economic trends, policies, markets, and institutions, and at the level of household by wealth, labor availability, knowledge, and networks.

• Pastoral mobility becomes more and more restricted by encroachment on rangelands by non-pastoral forms of land use, by changes in land tenure systems in the direction of individual plots and group ranches, and by administrative boundaries.

• Sedentarization by pastoralists, undertaken because of their inability to practice pastoral migration, the attraction to access goods and services found in small towns, or their dependence on food aid distribution, can result in reduced herd mobility and localized land degradation around settlements.<sup>7</sup>

• Conflict and insecurity are both causes of vulnerability, as they limit mobility and access to rangelands. Drought related resource scarcity fuels further conflict.

• The increasing number of livestock in the hands of absentee herd owners is both a cause and a result of vulnerability. On the one hand absentee herd owners with their hired herders have fewer incentives to use distant pastures. This may increase localized degradation, which also reduces the ability of the remaining self-employed pastoralists to cope with drought. On the other hand increased vulnerability may result in rising stock numbers in the hands of absentee herd owners. Urban entrepreneurs take advantage of the worsening market situation by purchasing stock as an investment since they have the means to maintain them during drought.

<sup>4</sup> Hendy 2001 reviews data for Northern Kenya

<sup>5</sup> Direct quotes in this paragraph from IPCC 2001

<sup>6</sup> Willhite 2000

<sup>7</sup> ALIVE (2006)



## Community Based Drought Management

### Impact of Pastoral Drought

- **Pastoral Drought Causes Major Losses in Livestock**

Pastoral drought affects pastoral and agro-pastoral livestock systems essentially by reducing the amount of forage grazing<sup>8</sup> and thereby leading to the death of livestock. It may also kill livestock through lack of drinking water. By weakening livestock, pastoral drought may also increase their vulnerability to a wide range of animal diseases, both during the dry phase and the successive recovery phase when internal parasites may flourish in rainy conditions. Table 1 shows some quantitative data.

- **Pastoral Drought Reduces Pastoralist Purchasing Power**

Pastoralists generally depend for their sustenance on cereals purchased with the proceeds from sales of livestock and livestock products for their staple food. Agro-pastoralists by definition grow some, perhaps most of their own food, which makes them vulnerable to drought in different ways. During droughts, a number of things may occur: a) pastoralists lose stock through mortality and thus cannot sell them; b) the stock that pastoralists do sell are in poor condition and thus fetch lower prices; c) pastoralists sell more stock, and thus market prices, even per unit live weight, decline sharply; and d) grain prices go up, if drought has also affected the grain-supplying regions. The combined result will be a sharp decline in pastoralists' ability to purchase food, and thus a risk on famine. Of these points, c) the price effects of gluts on the market, remains somewhat controversial. Systematic selling of stock has been assumed by many authorities on pastoralism as a means by which pastoralists respond to or "track" rainfall<sup>9</sup>, if not hampered by lack of transport and market infrastructure.<sup>10</sup> Some careful large-scale surveys in East Africa now suggest that livestock sales fail to correlate with drought cycles.<sup>11</sup> The picture in the Sahel is clearer: livestock prices in Niger plummeted during the drought of 2005, reaching 10% or less of pre-crisis levels, even for healthy animals, and cereal purchasing power of livestock-dependent households dropped by 75%.<sup>12</sup> Marketing infrastructure seems to play a major role here, where poor infrastructure tends to increase the effect of the drought,

whereas good connections with the markets in the rest of the country would have a stabilizing effect.

- **Pastoral Drought Can Lead to Famine**

Since pastoralists are highly dependent on cash to satisfy their nutritional needs, and typically trade their livestock and derived products for staples, they are extremely vulnerable to food insecurity in case of drought. The situation becomes alarming when households with already depleted herds are forced to sell more animals at the market due to low animal prices and high cereal prices. Drought turns into famine when households have lost all their livestock or when the value of livestock drops to the extent that pastoralists can no longer purchase the food they need to sustain themselves.

- **Pastoral Drought Discourages Investment in Livestock**

Private and public sector investments in the livestock sector (i.e., marketing) is discouraged since the risk of drought makes the flow of animals and animal products to both domestic and export markets insecure and unpredictable. Recurrent drought may also make it difficult for pastoralists themselves to invest in improving animal health. Over recent years, the failure of government veterinary services to provide for pastoral areas has become apparent. There has therefore been increased interest in alternative models of animal health care, involving Community-based Animal Health Workers (CAHWs) and other sorts of para-veterinarians, based on cost recovery from pastoralists (usually through a mark-up on drugs sold)<sup>13</sup>.

However, in periods of drought pastoralists may find it difficult to continue to pay for animal health services. This will mean a risk of disease outbreaks, and also diminish the viability of the CAHWs' businesses. Intervention by donors and NGOs to provide free or subsidized veterinary drugs (as has been practiced by several NGOs in Kenya and Ethiopia) may alleviate short-term animal health crises but, unless well designed, undermines the long-term viability of CAHW systems based on cost-recovery.

- **Drought Contributes to Conflict**

Drought undoubtedly contributes to violent conflict, between pastoralist groups and between pastoralists and farmers. Obviously conflicts in which pastoralists are involved have other causes: poor governance, unequal resource allocations, uncertain rights over land, spillovers from national- and international-level conflicts, and easy availability of firearms

<sup>8</sup> Tooling 1995

<sup>9</sup> Toulmin 1995, Scoones 1995

<sup>10</sup> Morton and Barton 2002

<sup>11</sup> McPeak and Barrett 2001 for pastoralists in Northern Kenya and Southern Ethiopia

<sup>12</sup> ILRI 2005

<sup>13</sup> Alive 2006 note on Animal Health



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triggering large-scale cattle theft for sale by criminal elements. In the Sahel, many explanations of conflict focus on the erosion of former reciprocal relations between farmers and pastoralists as farmers increasingly keep livestock, and pastoralists settle to farm.<sup>14</sup> But drought has had a role in triggering violent conflict, as in the Sahel pastoralists move deeper into settled zones, and earlier in the season, than they are accustomed to do,<sup>15</sup> and as competition for water points, key grazing resources and livestock itself intensifies between different groups in many parts of Africa.<sup>16</sup>

- **Pastoral Drought Contributes to Desertification, which Contributes to Pastoral Drought**

As with the relation between drought and livestock sales, the links between drought and desertification are controversial. The scientific concept known as the “new range ecology” points out that desertification is too broad a concept, used excessively and unscientifically, and in a way that fits governments’ and donors’ preconceptions about pastoralists<sup>17</sup>; and it shows that that the productivity of African rangelands is defined more by rainfall than by grazing, and that “overgrazing” is a seriously problematic concept.<sup>18</sup>

However, the new range ecology fails to recognize the importance of trees in African rangelands, and to emphasize their vulnerability to prolonged overbrowsing or overcutting.<sup>19</sup> Supporting the view that desertification and degradation are only triggered by episodes of drought, and that both are influenced more by socio-economic factors<sup>20</sup> others would focus on the effects of drought-driven sedentarisation in small towns or relief centers and the resulting localized degradation and deforestation.<sup>21</sup>

Others would even suggest that cause and effect are the other way around and state that desertification causes pastoral drought.<sup>22</sup> This statement is supported by the argument that pastoral droughts are more often the result of desertification caused by of non-effective rainfall generating non-effective water cycles than the result of meteorological drought (lack of rainfall). This means that the lack of forage is due to inappropriate soil-water management causing desertification rather than due to lack of rainfall termed as meteorological drought.<sup>23</sup>

**Table 1. Impacts of Selected African Pastoral Droughts on Livestock, 1981- 1999**

1981-84	Botswana	20% reduction in national herd	FAO 1984 in Toulmin 1986
1982-84	Niger	62% loss of national cattle herd	Toulmin 1986
1983-84	Ethiopia (Borana Plateau)	90% of calves, 45% cows, 22% mature males	Coppock 1994
1983-85	Ethiopia (Borana)	37% of cattle	Desta and Coppock 2002
1991	Northern Kenya	Cattle 556,000 (28%) Sheep & Goats 723,000 (18%)	Surtech 1993 in Barton & Morton 2001
1991-93	Ethiopia (Borana)	42% of cattle	Desta & Coppock 2002
1993	Namibia	22% of cattle 41% of goats and sheep	Devereux & Tapscott 1995
1995-97	Greater Horn of Africa (ø 9 areas)	29% of cattle 25% of sheep and goats	Ndikumana <i>et al.</i> , 2000
1995-97	Southern Ethiopia	78% of cattle 83% of sheep and goats	Ndikumana <i>et al.</i> , 2000
1998-99	Ethiopia (Borana)	62% of cattle	Shibru 2001 in Desta & Coppock 2002
2004-05	Niger (Dakoro)	20 % cattle; 13% sheep and goats	Charasse & Gouteyron 2005

<sup>19</sup> Illius and O'Connor 1999

<sup>20</sup> Dregne 2000

<sup>21</sup> McPeak 2003

<sup>22</sup> Alive/LEAD 2006 - Savory

<sup>23</sup> To be effective as much rainfall as possible has to soak into the soil and will be stored there to be effectively released from the soil through either plant transpiration or seepage to underground reservoirs (boreholes) or to perennial river flow or springs. This helps to supply trees and bushes with sufficient water for long time after rainfall. When livestock grazing is done in the right way the hooves of the animals have the function of a plow which helps to induce the penetration of water. Non-effective water cycle is one in which water penetration is impeded by soil surface capping and water is subsequently released from the soil mainly through soil surface evaporation.

<sup>14</sup> Toulmin 1983 and many references since

<sup>15</sup> ICE 1997

<sup>16</sup> Reuters 22nd July 2005 for Niger and Nigeria, BBC 6th February 2006 for Kenya

<sup>17</sup> Swift 1996

<sup>18</sup> Behnke 1993



## Community Based Drought Management

### Rationale for Involvement

- **Achieving Poverty Reduction and Food Security**

Without significant changes to policies in favor of inhabitants of the drylands, the increased frequency of meteorological drought will go hand-in-hand with a continued increase in vulnerability to pastoral droughts resulting in famine and aid-dependence. While comparatively well-off in assets, pastoralists worldwide constitute one of the poorest population sub-groups in income, and among African pastoralists the incidence of extreme poverty ranges from 25 to 55 percent.<sup>24</sup> Regarding the vulnerability of pastoral livelihoods to droughts and the current number and percentage of poor pastoralists, it becomes evident that without immediate intervention the number of poor pastoralists will increase dramatically. The commitment to achieving the Millennium Development Goal of fighting hunger and halving poverty levels by 2015 carries the moral obligation not to bypass pastoralists.

- **Maintaining Efficient Natural Resource Use**

Mobile pastoral production systems are not the sole means to produce (high-value) agricultural products under the eco-climatic conditions of the drylands, but also represent an important reservoir of knowledge and experience of good environmental management and indigenous breeds<sup>25</sup>. This becomes increasingly important regarding the observed trends of climate change. Total Economic Values (TEV), which estimate the economic contribution of mobile pastoral systems including services such as the supply of live animals, milk, meat, manure, hides, transport, and/or animal traction shows that mobile pastoralism is a rational economic land-use system<sup>26</sup>. It points out that by preserving the natural rangelands and water resources of the drylands, it also contributes to many more aspects of interest to socio-economic development such as bio-fuels, human and veterinary health care products, shelter materials, water transport, cultural values, and environmental enhancement, such as the conservation of bio-diversity and carbon sequestration, and sometimes eco-tourism.

- **Supporting Regional and National Trade**

Mobile pastoral systems contribute significantly to national and regional economies. Unless corrective measures are introduced, drought is likely to cause a disruption in the flow of animals to both domestic and export markets, possibly by gluts during drought onset, probably by scarcities during

drought and post-drought phases. This will make the physical and financial planning of livestock marketing more difficult, both for government authorities and for the private sector. Drought may also decrease the quality of livestock presented to market and increase the risk of disease. These factors will become even more important as markets for African livestock become increasingly interdependent and regulated and quality conscious in traditional importing countries such as the Gulf States but also within Africa. Public policy involvement is needed to secure a consistent throughput in domestic markets and gain a high reputation in export markets. It is the government's responsibility to facilitate an enabling environment for livestock trade by setting incentives for private investment of traders' associations and other local associations into market infrastructure and by setting in place a sound management of disease risk including quality control.

- **Cost of Doing Nothing Exceeds by Far the Cost of Taking Action**

The majority of the current emergency systems is often not able to save livelihoods, and is only sufficient to save lives of the transiently food-insecure. Therefore repeated shocks followed by traditionally late or inadequate responses have led to the loss of sustainable livelihoods and increased chronic food insecurity, as reflected in the rising trend in the number of people requiring assistance<sup>27</sup>. Required emergency relief and rehabilitation programs will raise dramatically, if no preventive interventions are pursued since pastoral livelihoods lose their most important asset, the livestock.

A better understanding of the impact of drought on pastoral livelihoods needs to be established. The critical issue is to determine the losses since livestock does not only have a market value but more importantly a capital value for income generation as well as an intrinsic value as the preserver of genetic resources. Thus the cost of doing nothing in terms of not actively managing drought includes not only the monetary value of livestock lost and the relief aid delivered, but also the long-term costs that destitute pastoral livelihoods impose on the entire society.

Taking into account the long-term costs, it is evident that much smaller sums need to be spent on building resilience to drought and on mitigating impacts on livelihoods at an early stage, since this will not only drastically reduce the cost of livestock losses and relief expenditure but also the indirect socio-economic impacts. In the 1999-2001 Kenyan drought for example, despite the delayed response, the EWS did mitigate the effects of the drought. Comparing the costs of no or later intervention with the proceeded invention in Kenya, it has

<sup>24</sup> Rass 2006

<sup>25</sup> Hesse 2006; CGRFA/WG-AnGR-2006

<sup>26</sup> Hesse et al 2006

<sup>27</sup> Hess, Wiseman, Robertson 2006; Alive/LEAD 2006 : Hess



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been estimated that the economic benefit (in terms of value of animals saved and livelihoods thus protected) from this operation was \$US 10 million.<sup>28</sup> Other estimates come to the conclusion that a modest reduction in livestock losses alone resulting from early warning and early reaction would save US\$9 million in a severe drought (every 10 years) and US\$6 million in less severe droughts (every five years). Thus over 20 years the total saving would be US\$43 million.<sup>29</sup>

### • **Public Goods Character of Drought Management Calls for Investment by Public Sector**

Management of the risk of drought calls for public sector involvement due to the covariant nature of the risk. While idiosyncratic risks which threaten individuals (e.g., the death of the main income earner) bear a great potential for local responses drawing on community or household resources<sup>30</sup>, covariant risks require public sector involvement including national level budgets. This is due to the fact that they threaten larger regions and cannot be borne by community resources.

Furthermore, one can argue that drought early warning and management capacity are public goods, since they are non-excludable and non-subtractable.<sup>31</sup> This means that a natural environment free from degradation, a social environment free from violent conflict, a society with adequate protection to its citizens from mass death and destitution, and an enabling environment for livestock trade benefits all, and no private individual can seize the benefits exclusively for him or herself.

Public sector involvement can also be justified in economic terms, in which a good risk-management aid should enable farmers and herders to take greater risks in their quest for higher average returns. However, if not carefully planned, public intervention aiming at higher average returns e.g., in form of subsidized feed interventions could reduce risk costs of pastoralists and farmers below their true social value. This could potentially lead to excessive risk taking and increased exposure to future drought losses. Therefore, some authors recommend that, wherever possible, public interventions should refrain from subsidies and rather opt for drought-management interventions that pastoralists and farmer pay for themselves such as rainfall insurances or for interventions that prevent increased exposure to the risk due to better knowledge such as early warning systems.<sup>32</sup>

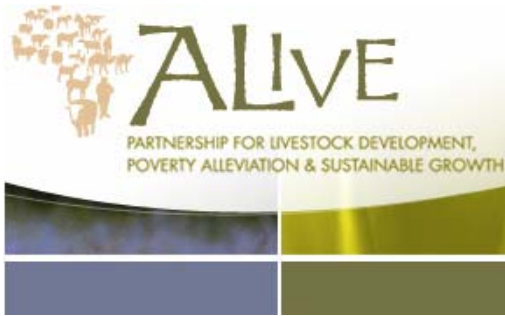
<sup>28</sup> Aklilu and Wekesa 2001

<sup>29</sup> World Bank 1995 cited in Swift 2001

<sup>30</sup> Lybbert et. al., 2001

<sup>31</sup> Swift, Barton et. al., Unknown

<sup>32</sup> Hazell 2000



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### Policy Recommendations

There seems to be wide agreement that the main focus of public policy in drought management needs to be that of making pastoralists and agro-pastoralists less vulnerable to meteorological and pastoral drought<sup>33</sup>. In recognition of the increased vulnerability, a shift of the focus of public policies from relief interventions to development interventions needs to take pace. This would include policies promoting general good practice in pastoral development and long term drought resilience, policies promoting institution building for saving and insurance, and policies promoting an enabling institutional environment for community-based drought management.

#### • Policies Promoting General Good Practice in Pastoral Development and Long Term Drought Resilience

Because drought is such an important feature of pastoral livelihoods, many general good practices in pastoral development are recommended under a banner of long-term drought management. There is ultimately no clear boundary between promoting drought resilience and general good practice in pastoral development. But certain investments can definitely be recommended under a banner of long-term drought management:

- Establishing or strengthening institutions for pastoralists to manage their own affairs as much as is feasible, to represent their concerns effectively to higher authorities, and to manage conflicts between themselves, or between pastoralists and farmers;
- Promoting mobility of pastoral herds as the best adaptive response to the erratic rainfall conditions in a non-equilibrium environment. This would include protecting pastoral rangelands, and most critically dry-season grazing areas from further encroachment<sup>34</sup>, and establishing or strengthening land tenure and natural resource management systems that allow collective management of resources as well as facilitating regional pastoral mobility and trans-boundary herd migration, as described in the Alive Policy Note on Mobility;<sup>35</sup>
- Introducing holistically resource management as an option to prevent that meteorological droughts or dry periods, are exacerbated in severity by Ineffective water cycle

management.<sup>36</sup> Successful examples exist for private ranches in Zimbabwe and Namibia, however the same concept has not yet been successfully applied to common property lands in non-equilibrium environments;

- Improving pastoral marketing opportunities by removal of unnecessary constraints on marketing such as inappropriate veterinary policies, investments in infrastructure, provision of market information;
  - Improving of animal health, particularly enabling the development of sustainable delivery systems;<sup>37</sup>
  - Supporting the breeding and marketing of more drought resistant species such as sheep, goats and camels (especially in arid areas) as they are less vulnerable to drought<sup>38</sup>;
  - Promoting the maintenance of indigenous livestock breeds against the unplanned importation of exotic and less-drought resistant genes; and
  - Supporting livelihood diversification, both directly by stimulating non-pastoral employment opportunities and indirectly through provision of education.
- #### • Policies Promoting Institution Building for Savings and Insurance

Other policies may involve the building of institutions more specifically concerned with reducing drought vulnerability. There has been much recent discussion of two sorts of intervention, which must still be considered speculative or in a pilot phase:

#### • Promoting of livestock-banking and other forms of savings among pastoralists

The concept of livestock-banking<sup>39</sup> is based on the assumption that converting the livestock wealth of inter-drought periods into cash savings presents an option to be better insured in case of drought, since the money can be withdrawn in times of need to buy cereals and thus the purchase of breeding stock can be prevented.<sup>40</sup> A more general constraint is the lack of experience in micro-finance institutions that can effectively serve the scarcely populated pastoral areas and provide similar interest rate than the reproductive capital of livestock.

<sup>33</sup> Alive/LEAD 2006 – diverse contributions

<sup>34</sup> Hendy and Morton 2001

<sup>35</sup> ALive (2006)

<sup>36</sup> Alive/LEAD 2006 - Savory

<sup>37</sup> Catley, Blakeway and Leyland 2002

<sup>38</sup> Alive/LEAD 2006 – Maurizio Dioli, Yohannes Mehari, Chi Lawrence Tawah

<sup>39</sup> Coppock 1994, Swift 2002

<sup>40</sup> Coppock 1994



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### • Promoting new types of livestock insurance, particularly index-based insurance systems

Index based insurances which pay out on the basis of regional mortality rates or weather based rates are still in the testing phase and are so far only being tested in Mongolia<sup>41</sup>, where the re-imbursment for losses is based on livestock mortality rates. The index insurance would pay all participating herders in the same region an indemnity payment based on the difference between the defined average regional mortality rate and the rate in the disaster year. However, the insurance here is not for drought, but for the occurrence of ice-storms “dzuds”, which are a much more discreet event, and therefore easier to measure.

The advantage of regional index based insurance as compared to individual livestock insurance is that instead of inducing a moral hazard to let livestock die in order to receive the indemnity it sets incentives for herders to prepare for extraordinary weather risks since herders will benefit to have lower than average mortality rates. In order to reduce the threat of insurers to lose their viability in case of large payouts the Mongolian model combines self-insurance, market-based insurance and social insurance. Herders retain small losses that do not affect the viability of their business, while larger losses are carried by the private insurance industry and only the final layer of catastrophic losses is borne by the government.<sup>42</sup>

There is no experience in other countries on insurance of nomadic livestock. However, experiences with weather-based insurance programmes for cropping systems in the Horn of Africa (especially Ethiopia)<sup>43</sup> could guide policy makers in the development of index-based livestock insurances in Africa. The key issues remain: a) to ensure that the likelihood of the drought and the damage it will cause are well enough known for the insurer to calculate a realistic premium; b) the premium can be afforded by the herders concerned; and c) that a good legal and regulatory system for supervision of insurance companies is in place<sup>44</sup>.

### • Policies Promoting an Enabling Institutional Environment for Community-based Drought Management

Providing the enabling institutional environment for the integration of drought management activities along the drought cycle of planning-mitigation-relief-rehabilitation should follow the principle of subsidiarity. In theory the principle of subsidiarity suggests that management should be handled by the, lowest competent authority while the central authority should have a subsidiary function, performing only those tasks which cannot be performed effectively at a more immediate or local level. This means that the different responsibilities should be allocated each at the level where it can be best administered and requires good exchange mechanisms across the levels of community, district (or appropriate local government unit) and nation, and between investment and policy. In practice this often implies a shift in responsibilities away from attempts at extensive state provision in pastoral areas to decentralized, local control with local solutions being the key response.

Drought management among pastoralists and agro-pastoralists has to involve the participation of communities. This is true for two main reasons:

- First, the participation of communities will maximize the chances of interventions being appropriate to their needs. Pastoralist knowledge of what constitutes a severe drought as well as the integration of their traditional and adapted coping strategies (see box 1) will be a necessary part of early warning systems. The successful design of mitigation and rehabilitation interventions as part of drought contingency planning clearly needs to be founded upon these strategies. While researchers might be able to gather information and gain knowledge of these strategies, for example, by applying the methods of rapid rural appraisal, a participatory dialogue making use of tools of participatory rural appraisal such as semi-structured interviews, social mapping, food ranking and seasonal calendars will give better insights into pastoral knowledge and strategies.
- Second, community involvement in drought management will favor sustainability. The interventions will have a better foundation if their development is based on a truly participatory dialogue between the communities and the agencies. Participatory Rural Appraisal combined with Participatory Action Research<sup>45</sup> and capacity building gives the communities a sense of ownership and thus helps to ensure long term sustainability of donor supported ongoing activities (early warning, contingency planning and policy formulation).

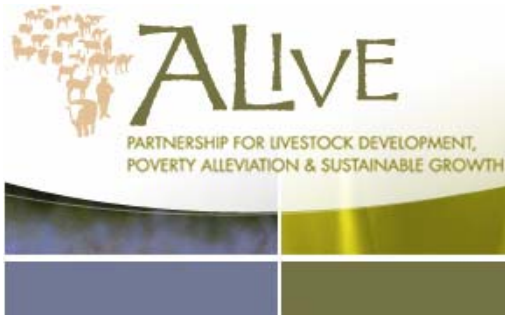
<sup>41</sup> Swift 2002

<sup>42</sup> Mahul and Skees 2006

<sup>43</sup> Alive/LEAD 2006 : Hess

<sup>44</sup> Mommens 2006

<sup>45</sup> A collection of methods and tools on RRA, PRA, PAR is presented at FAO toolbox on participation (FAO 2007).



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### Box 1. Drought Coping Strategies among Sahelian Pastoralists

In the Sahel as elsewhere, pastoralists' strategies for coping with drought are diverse and may be pursued by different households in different orders, and raise questions as to when coping strategies can be said to have failed, or to have become more permanent adaptations. One indicative list of strategies drawn from studies of Fulani pastoralists across several Sahelian countries includes as short-term strategies:

- New, longer-distance, and possibly trans-boundary pastoral migration routes;
- Splitting of households into smaller family groups to spread the herds geographically;
- Selling of more animals at lower prices, than in normal years;
- Use of wild resources as food, and shift from milk to grain as the basis of the diet;
- Redistribution of animals to the destitute, according to traditional stock-loan customs;
- As more permanent adaptations, a shift to wage-herding for others or into other non-pastoral occupations, and sedentarization; and<sup>46</sup>
- Engaging in violent conflicts and other low-level disputes - such as attempts to gain and maintain control over wells - is also a form of coping, albeit one with significant costs.<sup>47</sup>

It is best to consider increasing the level of community participation in relation to each of the main components of drought management. For each activity there are arguments for increasing participation; constraints on community participation, or reasons why going beyond a certain level of participation is not possible or not desirable for that activity; and practical measures and methods to increase participation towards the optimum level. These are outlined in Table 2.

However, there are also strong limits to the degree to which communities can participate in its management. Communities cannot be expected to define their own rightful share of scarce relief resources compared to other communities, neighboring or distant. Communities are unlikely to call a halt to free food distribution on the grounds that it is creating "relief dependency", or incentives against productive work or for potentially harmful sedentarisation, although all these are very real concerns for food donors. They are also unlikely to have the same concern as donors in the transparency, accountability, and monitoring of food relief. Therefore several

responsibilities such as coordination of national programmes, policy formulation, and regulation are best administrated at the national or district level.

Following this line of argumentation the dominant trend in thinking and practice within the pastoral livestock sector has been to develop a community based district-level drought management system, with exchange mechanism between the different levels as described in Box 2.

### Box 2. District-level Drought Management in East Africa

A system designed for Turkana District in 1985 has subsequently been scaled-up, under Netherlands and then World Bank funding, across the arid Districts of Kenya.<sup>48</sup> It has also been adapted for use elsewhere, such as the pastoral areas of Ethiopia. At the heart of this model are:

- An agreed district-level drought policy, expressing why district-level bodies should manage drought;
- A bureaucratic structure, regulating responsibilities and exchange of funds and information: Under the responsibility of an emergency drought management sub-committee and a District Drought Contingency Planning Officer, EWS is decentralized for data collection, analyses, and dissemination. Final decision making is centralized at national level by the Kenya Food Security Steering Group, which also reviews satellite imagery and associated forage resource analyses received from the USAID-funded famine early warning system (FEWS);
- An early warning system, whose outputs are summarized by assigning each administrative division to one of four warning stages: normal, alarm, alert, emergency (some versions add a recovery stage); and
- A system of phased responses to those warning stages in the form of appropriate mitigation, relief and rehabilitation measures, already planned and "on the shelf".

Such a District-based model is not necessarily "participatory" or "non-participatory": it can involve either a high or a low level of participation by drought-affected populations.

<sup>46</sup> Bovin 1990

<sup>47</sup> Thébaud and Batterbury 2001

<sup>48</sup> Swift 2001



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**Table 2. Community Participation in Drought Management**

<b>Drought management component</b>	<b>Arguments for increasing community participation</b>	<b>Constraints on community participation</b>	<b>Actions to increase community participation</b>
Early Warning	<ul style="list-style-type: none"> <li>To make use of local knowledge on environment and drought impact</li> <li>To increase cost-effectiveness</li> </ul>	<ul style="list-style-type: none"> <li>Can lead to over-collection of hard-to-analyze information</li> <li>Can make geographical standardization difficult</li> <li>Can encourage exaggeration of drought severity</li> </ul>	<ul style="list-style-type: none"> <li>Use of PRA methods in questionnaire design and in regular surveys</li> <li>Community appointment (and remuneration?) of data collectors</li> </ul>
Contingency planning	<ul style="list-style-type: none"> <li>Shelf projects must incorporate knowledge of environment, impacts, and existing coping strategies</li> <li>Capacity building to respond</li> </ul>	<ul style="list-style-type: none"> <li>Overall coordination and management of external resources should rest with local government</li> </ul>	<ul style="list-style-type: none"> <li>Use PAR methods to create local and district committees (or use of traditional bodies) to plan projects and be prepared for their implementation</li> </ul>
Mitigation and rehabilitation	<ul style="list-style-type: none"> <li>Projects benefit from strong community governance, e.g., to target, to promote trust with private-sector operators or other communities, and to minimize supervision costs</li> </ul>	<ul style="list-style-type: none"> <li>Where mitigation is intensive of external funds, need to ensure accountability through independent monitoring</li> </ul>	<ul style="list-style-type: none"> <li>Use of local bodies (as used in contingency planning) in project implementation</li> <li>Introduction of participatory evaluation as well as external evaluation</li> </ul>
Relief	<ul style="list-style-type: none"> <li>Community participation may aid targeting of most vulnerable</li> </ul>	<ul style="list-style-type: none"> <li>Need for accountability and independent monitoring</li> </ul>	<ul style="list-style-type: none"> <li>Appointment in advance of local relief committees linked to broader drought management bodies</li> </ul>
Community-level development	<ul style="list-style-type: none"> <li>Should be based on local knowledge, local understanding of needs, and local organization</li> </ul>	<ul style="list-style-type: none"> <li>Policy issues (e.g., land tenure, conflict) will be highly limiting</li> </ul>	<ul style="list-style-type: none"> <li>Strengthening of local decision-making bodies or creation of new committees</li> </ul>
Policy-level development	<ul style="list-style-type: none"> <li>Allows local knowledge and local needs to be incorporated in policy</li> </ul>	<ul style="list-style-type: none"> <li>Policy must respond to different sectors and processes, which may be beyond experience of livestockkeepers</li> </ul>	<ul style="list-style-type: none"> <li>Careful and innovative participatory investigation,</li> <li>Scope for innovative advocacy methods, e.g., participatory video</li> </ul>



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### Investments

Drought management has to involve the collaboration of national and local government, communities, and in many cases aid donors and national and international NGOs. This section deals with the major investment tasks that have to be performed to manage drought, with particular attention to the role of local level communities.

- **Early Warning**

Those managing drought must, to the extent it is practical, equip themselves with the best available knowledge on the likelihood of future drought and its major impacts. This knowledge is increasingly monitored and managed by elaborated early warning systems. In order to be sustainable and practical, early warning systems must meet the following criteria:

- Information monitored can come from various sources. Increasingly, international technological capacity in remote sensing and climate modeling can provide useful seasonal forecasts of drought. Large scale quantitative surveys of the availability and price of food in markets can pick up economic warning signs of drought at an early stage. Livestock keepers' knowledge of their own environment as well as their past experiences to cope with drought will be invaluable in designing and implementing systems that can detect severe drought in its onset phase. Such knowledge will be locality-specific, and needs therefore thoroughgoing participation of livestock keepers in early warning systems.<sup>49</sup>
- Early Warning systems must be cost-effective in order to maximize their chances of financial sustainability. Generally, a high degree of participation is likely to favor this, as community labor can be substituted for that of paid enumerators. There are dangers, though, if community participation results in pressures for the collection of unfeasibly large amounts of information, or information, which being mainly qualitative, is difficult to aggregate and analyze.
- Early Warning systems must generate information that, to some extent, can be standardized across geographical areas, as this information will be used in government and donor decisions to commit resources to relief and to subsidized mitigation programmes. A system that relies too heavily on the participation of livestock keepers and therefore unduly favors locally-identified indicators and qualitative information

jeopardizes such standardization, and can lead to manipulation by politicians and present a "moral hazard" if beneficiaries and their representatives slant responses to exaggerate drought severity and claim relief resources. The Kenyan Arid Lands Program (see Box 3) has been able to arrive at an acceptable mix between beneficiary participation and reliable quantified and verifiable drought indicators.

Early Warning systems must be set up within the greater framework of contingency planning and capacity building as discussed below. Such a monitoring system should as a minimum cover all the components of an Early Warning System (risk assessment, risk monitoring, phase classification and contingency planning), as described in the toolkit on pastoral drought management

### Box 3. Early Warning Systems in the Kenyan Arid and Semi-Arid Lands

Early Warning Systems have been a key component of the district-level drought management structures in Northern Kenya as described in Box 2, while also being linked to national and regional early warning.<sup>50</sup> The most important forms of information gathering are:

- Monthly questionnaire-based interviews and anthropometric measurements with a sample of households, conducted by contracted part-time monitors, who are local literate people;
- Monitors' own observations on a set of community indicators;
- Information collection from government departments; and
- Incorporation of seasonal forecasting and resource monitoring supplied by the regional office of FEWS (Famine Early Warning Systems).

Information from these sources is collated and used to produce a regular assessment of the situation in each sub-district according to the fourfold schema of normal, alert, alarm, and emergency, each triggering certain sorts of action. Such systems are now in place in 21 districts, and a similar system is being constructed for pastoral areas of Ethiopia.

- **Contingency Planning**

Knowing about forthcoming drought is of little use if the participants in the drought management system are not able to act upon it, either because they do not have the capacity and the plans or because they lack the resources. Contingency planning is necessary to ensure that capacity to respond or plans of responses to the different drought phases are in place and resources for their implementation are readily available.

<sup>49</sup> Swift 2001

<sup>50</sup> Swift 2001



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Contingency planning can cover any or all of the responses to drought outlined below. Contingency plans should be developed at local levels and should especially take into account livestock keepers' traditional and existing coping strategies (see Box 2), including mechanisms of mutual assistance. However, they should also recognize the limitations of such coping strategies in the face of deeper and more widespread vulnerability to drought described above. The final decisions should be made by using traditional decision making bodies or by creating new "community drought committees". Some participatory evaluations in Kenya have shown a strong preference for elected committees over variants on traditional bodies. In either case, attention must be paid to capacity building and to avoid problems of inequity of gender, age, livestock holding or social stratum.

Past experience has shown that accurate and timely warning, contingency planning and capacity building can only lead to rapid response when predictable funding is ensured. A new funding mechanism was established in 2006 that is geared towards providing a rapid and flexible response to humanitarian needs. The Central Emergency Revolving Fund (CERF), which was approved by the UN General Assembly on 15 December 2005 and launched on 9 March 2006 allows for an immediate response to an emergency as OCHA<sup>51</sup> will administer the CERF and disburse loans and grants within 3-4 days.

### • Responding to Drought

Governments, donors and NGOs across Africa, and elsewhere in the world have responded to droughts among pastoralists and agro-pastoralists in a variety of ways. These responses take into account the drought cycle and whether they have aimed at saving lives or at preserving or rebuilding livelihoods. There is no single standard terminology for classifying these responses, but the following terms have been found useful:

<sup>51</sup> The humanitarian organisations are clarifying roles and responsibilities among themselves by agreeing upon mechanisms to develop and follow a common strategy and coordinating planning and funding. Having the mandate to coordinate the humanitarian response, policy development, and humanitarian advocacy, the Office for the Coordination of Humanitarian Affairs (OCHA) brings together the agencies in the Inter-agency Standing Committee. The Inter-agency Standing Committee brings together all humanitarian partners from UN agencies, funds and programmes to the Red Cross Movement and NGOs in order to plan, implement and monitor their activities. This strengthens capacities and fills gaps, and ensures that the rich diversity of humanitarian organisations becomes more than the sum of its parts.

### 1. Mitigation

Mitigation activities are aimed at preserving livelihoods, and are typically planned for the early stages or onset of drought. However, mitigation activities are generally still practiced only on a small scale and largely by NGOs because of high transaction costs that the careful planning and in-depth knowledge of local conditions require. Mitigation activities provide a better basis for sustainable livelihoods post-drought, and they are generally regarded as preferable to food relief.

Investment options concentrate on the preservation of breeding assets and reducing the vulnerability of livelihoods through market-support.

#### • Preservation of livestock through access to grazing lands, water, supplementary feed and veterinary services

##### • Access to grazing lands

The most prominent livelihood strategy of pastoralists in reaction to drought and dry periods is the movement of their herds to less affected rangelands. However, this strategy is increasingly being constrained by encroachment of other land use forms on livestock routes and watering areas and by national and administrative boundaries<sup>52</sup>. In case of an emergency, strategies are needed that aim to preserve breeding stock such as setting up emergency grazing land in form of "cow-calf camps"<sup>53</sup> or regulations to open protected areas or commercial land as well as regional agreements to facilitate trans-boundary migration.

##### • Access to water

Access to grazing land is closely related to access to water, since traditionally, pastoralists ensure access to grazing lands in dry areas by digging their own wells and watering points<sup>54</sup>. Water provision, involving emergency drilling of boreholes and repair and maintenance of existing boreholes appears to be highly cost-effective in preventing livestock losses as well as reducing the hidden costs of the labor, particularly women's labor, used in water collection. There is evidence that local management arrangements can function if linked to the use of grazing resources and include the capacity to shut boreholes in "normal" years. The key issue in this context is to ensure that emergency boreholes do not become perennial and contribute to localized overgrazing. Another issue is how to achieve financial sustainability. A study on borehole management in northeastern Kenya showed that boreholes can be maintained and managed sustainably by water user

<sup>52</sup> ALive (2006)

<sup>53</sup> Heath 2002

<sup>54</sup> Thébaud and Batterbury 2001



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associations making use of cost recovery arrangements including contributions to depreciation.<sup>55</sup>

- Access to supplementary feed

Supplementary feeding livestock, particularly selected breeding stock, has some appeal to pastoralists, and there is some evidence of its cost-effectiveness. However, unless there only specially hard-hit areas are targeted, feed needs to be imported on large scale, which makes it a massive logistical task. Attention also needs to be paid not to induce overgrazing and environmental degradation when introducing large scale feeding. Furthermore, large scale feeding makes it difficult to target appropriately and to prevent that a disproportional share of the subsidized concentrates goes to large herders and to commercial farms instead of herders in need, which has arguably resulted in North Africa and the Middle East.<sup>56</sup> Positive experiences have been made with a self-targeting strategy delivering subsidized feed to herders in exchange for de-stocking of mature male animals during the drought alert phase.<sup>57</sup>

- Access to veterinary services

Veterinary interventions that involve emergency provision of free or subsidized veterinary drugs and vaccination services can be extremely cost-effective in preventing the loss of livestock. However, it is also important that such measures do not erode the sustainability of emerging community-based animal health schemes which practice full cost-recovery through a mark-up on drugs sold.

### • Reducing the Vulnerability of Livelihoods through Market Support

Market interventions to induce selective de-stocking of unproductive livestock at the onset of a drought does not only aim to increase the purchasing power of pastoral households, but also helps to focus forces on keeping the breeding stock alive through the drought to the recovery period. Timely de-stocking of livestock removes unproductive animals from the land sufficiently early in a drought to avoid long-term damage to vegetation and soils, and ensure rapid reconstitution of the livestock economy in the post drought period<sup>58</sup>. Furthermore timely purchase of unproductive livestock is likely to increase the pastoral purchase power, since the unproductive stock is sold before it becomes emaciated and before livestock prices plummet. The increased purchasing power should help

pastoral households to meet their cereal needs without having to sell their most productive breeding stock.

Two forms of de-stocking are practiced; they can be distinguished as emergency relief de-stocking and emergency mitigation de-stocking. Both forms of intervention can be highly successful given their objectives, although it is crucial to be clear about what those objectives are. Emergency relief de-stocking involves the purchase of animals from pastoralists and the distribution of the meat to those of neighboring poor communities as relief food. Emergency relief de-stocking to redistribute meat is costly, though not necessarily more costly than the relief operations it partially replaces, and the barriers to scaling it up are chiefly logistical. A smaller number of experiences have been made with emergency mitigation de-stocking. Policy options are the support of increased off-take of non-breeding adult stock at the early onset of a drought through trading and transport subsidies or a tax moratorium on livestock markets and the provision of subsidized supplementary feeding to breeding stocks or the contractual arrangements of cow-calf camps.

Emergency mitigation de-stocking through subsidy is potentially a more sustainable intervention – it may be possible to finance it through levies on sales in good years or insurance-like mechanisms – but its ultimate success depends on an understanding more about why and in what circumstances pastoralists are prepared to sell animals during droughts.<sup>59</sup>

## 2. Mixed Mitigation and Relief Operations

Many drought responses sit between mitigation and relief, because of their large-scale and high levels of explicit subsidy. These include labor-intensive public works programmes paid for by cash or food, free or subsidized distribution of animal feed, and de-stocking programmes where the animals are slaughtered and the meat distributed as food relief. The questions around such interventions are not whether they should be classified as mitigation or relief, but whether they fulfill their objectives in a cost-effective way (and in the case of animal feed whether they are environmentally sustainable). However, as interest in mitigation grows, there is a growing consensus that relief should be reserved for the worst period of the drought cycle, and for the most destitute households and individuals that mitigation has been unable to reach. Communities may offer very useful assistance in the targeting of food relief to the most needy. It cannot be assumed that they will always have the same views on targeting as food donors, e.g., in some cases there may be a strong belief that

<sup>55</sup> WASDA, 2002

<sup>56</sup> Hazell 2000

<sup>57</sup> This has been practiced by the DFID-funded ACK-MDO project in Marsabit, Kenya as documented in Akililu and Wekesa (2001).

<sup>58</sup> Toulmin 1995

<sup>59</sup> Morton and Barton 2002, Morton (2006)



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all households, wealthy or poor should receive equal shares, and donors' strong concerns for targeting food to children or pregnant/lactating women may not be shared. Nevertheless, if these concerns can be discussed openly, the devolution of some targeting and delivery to a local committee, perhaps a sub-body of a more general drought management committee, and preferably with strong female representation, will be very useful.

### 3. Rehabilitation

Rehabilitation activities should take place at the end of the drought cycle as rainfall returns. They aim to restore people – either to their ex-ante livelihoods or, as is increasingly realized, to improved and less vulnerable livelihoods. They are:

- Restocking

Restocking is the gifting or subsidized sale of large numbers of animals. There have been many restocking experiences, mainly on a pilot scale and mainly implemented by NGOs. There is now a substantial literature on the subject<sup>60</sup>, as shown in Box 4.

#### Box 4. Lessons learned in past restocking programmes

A policy option to help marginalized pastoralists to re-establish their herd is the introduction of restocking schemes. In local restocking programmes wealthy herders sell their surplus livestock to a managing agency, which in turn hands them over to poor herders in form of a loan or grant. A recurring issue is that once poor herders have been given some animals, they are likely to sell some to satisfy immediate food needs. The animals will be sold to traders and owners of larger herds, at prices that are likely to be lower than the original purchase price. Thus, inequalities in access to livestock between richer and poorer households might be exacerbated by restocking projects<sup>61</sup>.

Therefore some of the most important questions include:

- How can restocking be done on a large scale, particularly as female stock is likely to be very rare and costly on local markets after a drought?
- Should external agencies use their own staff or other outsiders to manage restocking, or devolve stock purchases to communities?
- How can beneficiaries be targeted to maximize the chances of the gift or loans of animals being efficiently used?
- If severe droughts are frequent and restocked animals may be lost in a future drought, under what circumstances can restocking be justified?

- Exit and Diversification

There seems to be wide agreement that in the context of growing imbalance between human populations, livestock and rangeland resources, it is necessary to also strengthen options for diversification of incomes such as processing of livestock products, payment for environmental services, trade or engagement in eco-tourism as well as options to exit the pastoral production system<sup>62</sup>.

- Building an Evidence Base

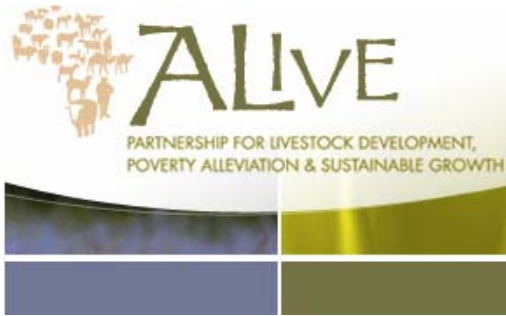
It is important to examine how drought management can be made more sustainable, and mechanisms such as using insurance markets are certainly interesting in this connection. But as the likelihood of drought increases in dry land Africa, it is important not to take a narrow view of sustainability. At times, governments will have to make transfers to drought-stricken households as a form of social protection, without regard to short-term or long-term recovery of those costs. Attempts to make each household sustainable, or to separate, institutionally or conceptually, the “development” efforts to make households sustainable from the “welfare” efforts directed at households judged unsustainable, will be counterproductive for sustainability at ecosystem or national level.

Finally, drought management for pastoralists and other poor livestock-keepers is still a new form of development. There is much we do not know about what works, especially in mitigation. Donors and governments must continue to invest in pilot activities, research, and building frameworks that allow real comparative evaluation of different experiences.

<sup>60</sup> Heffernan *et al.* (2004) and Oxby (1994)

<sup>61</sup> ALive/LEAD 2006 – Nikola Rass

<sup>62</sup> ALive/LEAD 2006 – Several contributions in response to keynote of Stephen Sandford: “Too many people, too few livestock: the crisis affecting pastoralists in the Greater Horn of Africa.”



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Chart 1. Schematic representation of main inter-linkages between cause and effect of drought in pastoral systems

