

Climate change and pastoralists: Investing in people to respond to adversity

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While climatic fluctuations have always been a defining feature of dryland areas, and pastoralists have developed resilient livelihood systems to cope with difficult climates, global climate change is raising new challenges for pastoral systems in Africa and elsewhere. Action at local, national and international levels is needed to prevent destitution and help pastoral groups respond to the changing environment.

Pastoralism and climatic variability

Climatic fluctuations are a defining characteristic of dryland areas in Africa, as rainfall tends to vary substantially between and within years. Pastoralism is a livelihood system that enables dryland people to cope with this difficult environment. Although pastoral systems are very diverse, most display some common characteristics:

- Livestock depend on natural pastures for their diets, and rainfall is the most important factor determining the quantity and quality of pastures and water.
- Herds are composed mainly of indigenous livestock breeds.
- Livestock represent more than just economic assets - they are also social, cultural and spiritual assets, and define social identity.
- Natural resources are managed through common property regimes where access to pastures and water is negotiated and dependent on flexible and reciprocal arrangements.

While pastoral systems are resilient because they enable people to cope with unpredictable environments, they are also dependent on maintaining a delicate and constantly

changing balance between pastures, livestock and people. If there are too many animals, the family herd will not find sufficient pasture, and there is a danger of over-grazing if livestock mobility is constrained. If there are too few animals or the family is too large, subsistence requirements will not be met. If the family is too small, livestock may not be properly managed and, crucially, if quality and quantity of pastures decrease dramatically (e.g. as a result of drought), pastoralists may lose their livestock and face destitution. Pastoralists use a range of strategies to maintain that balance. Central among these is livestock mobility - moving herds to areas with better grazing conditions, and securing access to critical resources during the dry season and in times of crisis.

For a long time, lack of understanding and negative perceptions of pastoral systems resulted in unfavourable policies - particularly policies constraining herd mobility. In many parts of the Sahel, mobility is also hindered by agricultural encroachment on livestock tracks. As a result, many pastoralists have become more "sedentary", and some have lost their traditional contacts in dry-season and refuge areas. Recent research has challenged negative perceptions of pastoralism, however. Herd mobility is now recognised as a rational strategy in unstable environments, and some countries have taken steps to facilitate movement of herds (see for instance the "pastoral" legislation recently adopted by some Sahelian countries).

The impact of climate change

Climate change is affecting drylands and pastoral livelihoods in Africa. Although long-term impacts are difficult to predict and are

KEY MESSAGES:

- **Rising temperatures, decreasing rainfalls, and longer and more frequent droughts increase pressure on pastoral resources leading to a significant rise in destitution among pastoral groups in Africa**
- **Tackling these challenges requires enabling herd mobility while securing rights to natural resources; supporting pastoral livelihoods and their diversification; strengthening conflict management institutions and drought mitigation systems; and strengthening their capacity to participate in policy debates**
- **As most pastoralists live in some of the poorest countries, efforts by national governments must be supported by richer countries, which bear the main responsibility for climate change**

bound to vary from one location to another, most climate change models predict rising temperatures and decreasing rainfall in many dryland areas. As a result, these areas will tend to become drier, and existing water shortages will worsen. In addition, climate change is likely to bring about even more erratic and unpredictable rainfall and more extreme weather conditions such as longer and more frequent droughts. Where this happens, the delicate balance on which pastoral systems depend is undermined. The quality, quantity and spatial distribution of natural pastures are mainly shaped by rainfall. Predicted changes in rainfall patterns are bound to result in increasingly scarce, scattered and unpredictable pastures. The number, distribution and productivity of permanent pastures and water points, which are so critical for livestock survival during the dry season, are bound to decline. Scarcer resources, coupled with current levels of demographic growth, are likely to lead to stronger competition between pastoral communities and between these and other groups - possibly resulting in conflict and even violent clashes. As a result, access to pastures becomes more difficult, leading to loss of livestock and of livelihoods. In north-west Kenya, for instance, several years of low rainfall have recently resulted in the death many livestock, and in a major food crisis among the Turkana pastoralists.

In the past, major droughts such as those that occurred in the 1970s and 1980s in the Sahel inflicted major blows on pastoral livelihoods, with many pastoralists losing most if not all their herd. After each drought, it took many years for pastoralists to reconstitute their herd. Longer and more frequent droughts are likely to result in a significant rise in destitution among pastoral groups. This is because successive years of extreme drought decimate herds and prevent their reconstitution.

In this changing and even more unstable environment, herd mobility will become even more important. Current constraints on mobility resulting from policy and/or from agricultural encroachment on livestock corridors will dramatically increase the vulnerability of pastoralists. In below-average years and during drought, pastoralists risk being unable to take their livestock to refuge areas - thereby facing loss of livestock and destitution. Past experience shows that where pastoralists are unable to move in times of crisis, the little resources available (pastures, water points) experience greater and more continuous concentrations of livestock and people. This exacerbates environmental degradation around water points, and leads to loss of livelihoods through declining livestock productivity and rising mortality.

In the longer term, pastoralists are likely to further diversify their livelihoods, both within the pastoral system (i.e. increasing reliance on more drought-resistant species such as camels) and out of livestock production. However, efforts to diversify out of livestock production are likely to be constrained by the difficult environment characterising pastoral areas in Africa. Over time, pastoral groups will shift out of drier areas that are no longer viable, to zones that are

more humid and have more predictable rainfall patterns. Existing land tenure arrangements and services in these areas will come under increased strain, exacerbating relations between communities and fuelling conflict.

Policy implications

Tackling these issues requires action at local, national and international levels. Long-standing negative perceptions of pastoralism as a backward production system must be replaced by a recognition of the rationale of such systems in dryland areas, and by policies and programmes to support local resilience and adaptive capacity to climate change. Key areas of policy intervention include:

- Enabling herd mobility, both seasonal and as a response to drought, while securing rights to critical resources (dry-season pastures and water).
- Supporting pastoral livelihoods through better water access and tailored service provision, and supporting livelihood diversification, for instance in the areas of tourism and conservation.
- Building robust conflict management institutions and effective drought mitigation systems, including early warning, insurance and safety nets.
- Strengthening the capacity of pastoral groups to engage with debates on policy issues directly affecting their lives.
- As most pastoralists live in some of the poorest countries in the world, efforts by national governments must be supported by richer countries - particularly as they bear the main responsibility for climate change.

