



# Market-oriented interventions and climate resilience in dryland agro-pastoralism

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## Recommendations

In order to promote climate resilience, market-orientated interventions should avoid excessive reliance on climate-sensitive activities because short-term gains risk being undone by extreme events; The products and networks developed through market engagement should directly contribute to enhanced climate resilience; Reinvest profits from greater market orientation into activities or technologies that promote long-term resilience; and Rather than focusing on fundamental changes in the livelihood activities of pastoral communities, development interventions should prioritize strategies focusing on negotiation around existing practices, social organization, aspirations and priorities.

## Background

Most rural households in Tanzania own livestock, and this brief and its associated studies were part of a three-year EU-funded project on 'enhanced community resilience to drought through innovative market-based system approaches' in six counties in Kenya: Isiolo, Samburu, Marsabit, Baringo, Wajir and Tana River. Under the Kenya Rural Development Program (KRDP), the project objective was to improve pastoral livelihoods through sustainable market systems. The project was implemented through a

partnership between the SNV Netherlands Development Organization, the International Livestock Research Institute (ILRI), the Kenya Livestock Marketing Council (KLMC), the county governments and the livestock marketing associations.

ILRI sought to identify how market-oriented interventions for community resilience in arid and semi-arid lands affect resilience to climate variability. Scoping research was conducted in multiple sites on three topics: fodder production groups, a camel milk cooperative and a livestock market. Subsequently, three MSc students (one from the University of Nairobi and two from Wageningen University) were commissioned to conduct field studies of their respective cases.

Each case study examined how development interventions increasing market orientation in various dryland pastoralism sectors affected climate resilience. While economic development is thought to generally contribute to community resilience, these studies sought to understand how economic development intersects with climate variability, both in terms of how climate affects the economic activities, but also how the economic activities affect communities' ability to withstand climate stress.

The three studies also assessed how the development interventions interacted with existing social and

technical practices within their respective locales. The research analysed how implementation practices affect development outcomes, to inform recommendations about implementation of development interventions themselves.

This research brief summarizes the three projects, distils key lessons and makes practical recommendations that emerge from the research activities collectively.

## Study 1: Fodder production groups in Marigat sub-county

A value chain analysis of fodder and fodder seed production practices was conducted to situate fodder and seed production within household economies, group dynamics and the overall value chains in the area. Technical and organizational challenges within groups emerge as a potential obstacle to effective and profitable production. Subsidization of inputs (e.g. seeds and ploughing services) helps get smallholders groups' production established. However, the common contractual arrangement linking input services to fixed price purchase of fodder seeds was widely viewed as a constraint to more remunerative engagement in the value chain.

While technical and organizational issues in production are important, farmers in fodder groups noted that their knowledge of and access to seed and fodder markets was significantly limited, undermining their bargaining position within the value chain. This indicates that future fodder development interventions take a more holistic approach, rather than focusing primarily on production. Furthermore, intensification of fodder production requires the enclosure of what have historically been common lands, a practice that increases risk of land conflicts.

**Climate resilience lessons.** Fodder production is inherently sensitive to climate variability. While intensification allows for storage of fodder during good years for use in bad years, it takes quite some time for fodder plantations to become established, meaning there is a slow return on investment. Furthermore, improving climate resilience through intensification of fodder production requires significant physical and financial infrastructure, all of which need to be engaged simultaneously for greatest effect.

## Study 2: Anolei camel milk cooperative in Isiolo

This research investigated how women's prior collective organization and practices in camel milk marketing intersected with modes of organization and practice proposed and promoted by SNV. The research found complex and dynamic motives for women's economic behaviour and incentives for collective action. While they were found to be very 'business minded', their engagement in the cooperative was also informed by social objectives beyond profit. Anolei's individual members pursued a range of business models and their value chains, from producers to consumers, were largely constituted by social and

clan networks. As such, reorienting value chains towards industrial processors would be disruptive of important social networks. Clan identity also played an important role in the internal politics of the cooperative, affecting women's trust in collective management processes.



An Anolei woman uses traditional bulking method

Anolei women addressed social challenges of cooperative management through their own means. They sometimes availed of mechanisms that were not necessarily within the by-laws, but nonetheless effective. The adoption of introduced technical practices varied widely. For instance, the financial benefits associated with the cooling tank, in terms of energy savings, led to its adoption. However, aluminium milk cans were largely rejected. Despite being easier to clean, cooperative members did not see hygiene as a significant problem. Consequently, the fact that the aluminium milk cans are impractical and more costly to transport meant that members preferred to continue using plastic jerry cans.

These findings suggest that prior to implementation, technical interventions need to be jointly assessed in terms of their fit with the material practices of the existing value chain. Similarly, the promotion of preconceived forms of dairy cooperative organization should be tempered by members' motivations, aspirations and practices, enabling cooperative members to have greater ownership over their group's evolution.

**Climate resilience lessons.** The primary effect of climate variability on the camel milk value chain relates to the transhumance of production herds. Anolei members estimated that the economic catchment for camel milk was approximately an 80-km radius. The presence of the cooperative creates economic incentive for herders to stay within that radius, an incentive that may work against the ecological incentive to migrate during periods of poor rainfall. On one hand, climate stress can compound milk shortages, but on the other hand, the desire to engage with the market provided by Anolei has the potential to encourage over-grazing within its catchment, decreasing long-term resilience.



Herdsmen milking a camel

### Study 3: Lolkuniani livestock market in eastern Samburu county

The growth of Lolkuniani market has changed social and economic life in the area. It has offered households the opportunity to diversify their economic activities. Moreover, it has changed household organization, such that in most cases, only young men engage in transhumance with their herds. The rest of the family remains sedentary in the area around the market. This enables greater engagement of children in formal education, potentially contributing to long-term diversification.

The market co-management model has been an important part of the success of Lolkuniani market, though not without its challenges. Establishment of the local livestock market association (LMA) to manage the market has created an important sense of ownership and investment in the success of the market. LMA members cited local employment opportunities as an important benefit of the market, but also highlighted how the surplus earned from market fees has become an important community safety net that is often used to fund emergency medical care or school fees for those otherwise unable to afford them. The LMA's relationship with the county was in flux during the study period, indicating instability and a lack of clarity regarding their respective roles and responsibilities in management of the market.

**Climate resilience lessons.** By widening the range of economic options, new forms of social organization appear to be emerging in households, affecting who migrates with herds and gendered distribution of economic activities. While it is often at relatively modest scales, the economic diversification enabled by the market is widely reported to generate income streams that help buffer climate-induced economic stress. The market also provides an avenue for more efficient destocking in the event of drought. As in the case of Anolei, the existence of a market effectively changes incentives for herd management and thus pasture usage, with implications for long-term sustainability in the face of climate variability.

### Emerging practical recommendations

Taken together, these three case studies illustrate the complex relationship between economic development and climate resilience. Increased financial resources and diversification of support/commercial networks are generally helpful in making households and communities become more climate resilient. But in the long term, cash income through market engagement is not enough. To promote climate resilience effectively, market-oriented activities should possess three key qualities. First, they should not be overly based on climate-sensitive activities. If an economic activity is itself sensitive to climate variability, increasing its market orientation will not, in and of itself, improve climate resilience as short-term gains risk being undone by extreme events.

The second quality of climate-resilient market development is that the products (beyond cash) and networks created through market engagement should themselves contribute directly to improving climate resilience. Income-generating activities may generally help buffer against drought-induced economic stress, but if the activities are affected by the same climate variability, benefits can be easily negated. The Baringo case exemplifies how fodder production not only brings in useful cash, but the product itself also enhances livestock keepers' ability to cope with drought. However, the case also emphasizes the difficulty of relying on an inherently climate-sensitive activity to enhance climate resilience.

The third way that market orientation can promote climate resilience is when the profits created are themselves re-invested in specific activities or technologies that promote long-term resilience. For instance, the Lolkuniani LMA aspires to invest in improving water and grazing facilities around a market, improving the ability of the market to sustain higher quality livestock under a broader range of conditions. The LMA's use of profits to underwrite children's education may also improve opportunities for diversification outside of climate-sensitive activities in the long term. The importance of such long-term and indirect pathways to resilience should not be underestimated.

Development interventions aimed at increasing market orientation among dryland pastoralists often propose fundamental changes in the ways people engage in pastoral livelihoods. Such profound changes in cultural practices rarely happen quickly, easily or linearly.

Analysis of the implementation of development interventions in the three cases here suggests that engagement strategies should emphasize negotiation around existing practices, social organization, aspirations and priorities, rather than implementation of new ones. The Anolei case underlines how the implementation of a pre-conceived form of dairy cooperative does not mix well with the women's practices and ideas of how to run their dairy cooperative. Alternatively, engagement with the Lolkuniani LMA and the Baringo fodder groups exhibited greater flexibility in how local actors could integrate new practices into existing social and economic life and take ownership of the interventions, factors that contributed to their success.





A livestock market in eastern Samburu County



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