ICRISAT INTERNATIONAL CROPS RESEARCH INSTITUTE FOR THE SEMI-ARID TROPICS

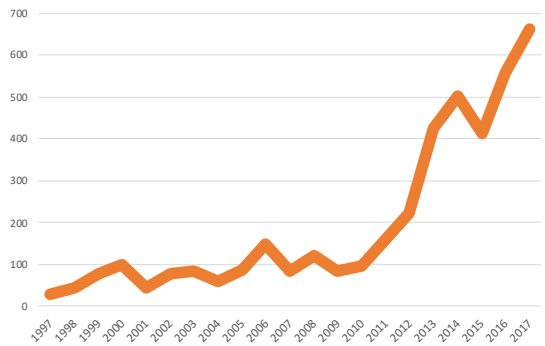
Issue Brief

Towards a Green New Deal mitigating conflicts between pastoralists and farmers

The issue

Resource conflicts over land and water are common in Africa. Herders invade farms searching for pasture for their livestock, and croplands are encroaching into rangelands. These communal conflicts have intensified across Africa and are now widespread in Mali, Burkina Faso, Nigeria, Sudan and Kenya.

Conflict incidents between farmers and herders in Africa (1997-2021)



Source: ACLED, data accessed 2018

Although fatalities are comparably low, the ripple effects of farmer-herder conflicts reach deep into communities. They cause grievances, retaliations, widespread food insecurity and slow economic development in the affected regions.

The **drivers of farmer-herder conflicts** are complex, historically grown and entangled with organized crime and political interests. Disentangling them from climate risks is essential to understand why these conflicts erupt.

Drylands with **variable rainfall and high evapotranspiration** and seasons disrupted by flash floods are prone to displacement of people. Then, resource scarcity and competition over space, fodder and water can translate into communal violence. If climate risks remain unaddressed, conflicts between communities are likely to worsen over time.

Disputes over land between cattle herders and farmers are common during drought emergencies. Picture (Fulani herders in Kano, Nigeria) © Hauser, 2019

The **pressures on land** increase due to the demand by a growing population and decreased soil health and water availability. **Adverse land-use decisions** contribute to communal tensions. Tenure arrangements tend to benefit settled crop farmers. Overgrazing, deforestation and charcoal production compromise feed and forage production. Also, it is unplanned urbanization, encroachment of infrastructure and energy production in other areas.

Rangelands continue to be necessary during the rainy season as grazing for livestock; however, they often cannot sustain large livestock populations over the long dry season.

Landscape degradation is often severe, and crop failure is all too common, signifying the climatic vulnerabilities of people in agropastoral areas. It is now evident that with expanding **landscape degradation, diminishing rangelands and declining tree cover,** croplands must provide the feed resources to sustain livestock populations.

Opportunities

The transformation of conflicts into a peaceful co-existence of farmers and herders is anything but easy. Also, local governments tend to handle conflict transformation, measures to enhance environmental health, and efforts to increase agricultural production in isolation. Yet, there are opportunities to negotiate Green New Deals between farmers and herders, supported with technical knowledge and insights from resource governance, circular economies and agroecology.

It is necessary to **increase feed and forages** and central water points for livestock in the region. Such investments must be supported by landscape-level planning to balance feed and water availability with livestock populations. This, in turn, requires deliberate investments by public and private sector actors into annual and perennial feed and forage crops, the deployment of new germplasm and crop varieties and improved agronomic strategies within the economic reach of farmers and herders.

Rhodes Grass (Chloris gayana) is one of the many fodder options for pastoral communities. Picture (VSF-Suisse fodder support in Isiolo, Kenya) © Hauser, 2021

Through our research we explore ways to combine technical advances in crop improvement (e.g. early-maturing and short-duration dual-purpose groundnuts, sorghum, millet) and natural resource management (bio-reclamation of degraded lands, flash flood management and crop-livestock integration) with knowledge of animal health and husbandry, agricultural market development, land governance and conflict transformation.

The increase in feed availability reduces the pressure on natural resources and communal rangelands. Coupled with financial incentives, it is possible to support farmers in producing feed and making it available to herders, who compensate the farmers in exchange or against payments.

Equally crucial for such forage investments is the **availability of land, water, and access to production advice and weather service**s. To drive this, livestock markets that pay premium prices for quality must provide the means for forage production and improved animal husbandry. New forage production systems such as hydroponics fodder should be considered to provide additional fodder during droughts at low cost. They require little space and no soil. Overall, such investments enhance feed, food, nutrition and climate security.

Rather than competing over scarce resources, these circular systems linking farmers and herders **foster cooperation between conflict parties** via territorial integration of production systems and linking the value chains for food, feed, forage and livestock products. Supported with remote sensing, livestock mobility can take advantage of spatial and temporal heterogeneity in feed availability at the landscape level.

Crushing of crop residues such as sorghum increases the utilisation by ruminants (ICRISAT trials, Nigeria) © Ajeigbe, 2021

Quality feed, especially during the dry season, reduces mortalities, improves animal health and thus increases the market value of livestock. Such added value of circular

economies in agropastoral areas manifests as enhanced **availability of livestock products** such as milk, meat and access to animal manure as organic fertilizers. The latter two resources are essential for reducing environmental stress. All of these livestock products help reduce inequalities and economic disparities among community members. These are crucial pillars contributing to peace and security.

Livestock feed agribusiness creates jobs for young men and women. Picture (Hay transport in Narok, Kenya) © Hauser, 2021

It is essential to demonstrate to farmers that livestock and the **presence of herders in agricultural areas offer added value to them and society**. Not only does owning livestock protect people from severe livelihood shocks, but if managed well, livestock and related fodder production can become part of the solution to reduce poverty and environmental degradation, vulnerability to market shocks and the overall decline of the quality of life.

We see that the rise in the **supply and quality of livestock** will achieve better market prices for livestock. For example, as researchers, we work along meat value chains to increase quality-based payments. We demonstrated so in Zimbabwe, and have learned how to do so in Malawi. Higher prices for quality livestock allow sellers to invest part in feed, especially during the pronounced dry season. One binding element between pastoralists and farmers is the soil organic matter building in the landscape. Soil organic matter is an ecosystem protection variable that is enhanced by reforestation and intensified agro-silvopastoral systems, which have the potential to be a **below-ground and above-ground carbon sink**.

No technical measure works without the necessary **institutional reforms** regulating access to land and water. Therefore, a central component of every technological intervention is developing and moderating resource negotiation platforms in which herders, farmers, traders and political representatives participate. Therefore, improving land governance is a central component in any theory of change supporting a Green New Deal.

Our approach

Our conflict transformation approach supports new forms of collaboration between pastoralists and farmers for enhanced nutrition, income and stability. In other words, our approach helps to address the natural resource and land governance dimension of peacebuilding, hence Green New Deals in the drylands.

When we work with public and private actors, we draw on a variety of tools.

- Resource negotiation and transaction platforms to coordinate investment decisions within communities in program areas.

- Information services: Satellite-based land-use planning, weather data and future climate developments, biomass estimates and geotagging livestock to monitor movements.

- Season-specific, landscape-scale feed balances with farm- and community-level herd management strategies to reduce drought-related risks while maintaining only highly productive animals.

- Experiments for local adaptation of forage seeds for intensifying annual, perennial forage crops and fodder trees and training in hydroponics fodder production.

- Seed systems for intensifying feed and forage crop production (such as early-maturing, drought- and heat-tolerant, dual-purpose sorghum, millet and groundnuts ensuring high grain and fodder yields; high-yielding biomass fodder and trees).

- Post-harvest management of feed and fodder; integrating feed formulation; integrate choppers and stover crushers to process high volumes of crop residues into tradeable livestock feed; silage technologies for forage conservation.

- Rangeland rehabilitation: Spatially explicit strategies for soil and water rehabilitation, flash flood management and land rehabilitation

- **Business incubation,** entrepreneurship with particular emphasis on livestock feed and fodder processing, livestock health, finance and trade, land governance and resource use mediation.

No situation and region are the same. Therefore, we conduct a comprehensive and inclusive system analysis at the beginning of every strategic planning of interventions, and feed interim outcomes back into the planning process. Through such an analysis of the interlinked social, economic, governance, political and ecological systems, we can understand the underpinning drivers of vulnerabilities to conflicts, disentangle the various conflict dimensions from each other, and identify strong leverage points for future interventions. From the start, we cooperate with formal and informal local players engaged in agriculture and peacebuilding.

Way forward

Moving towards a Green New Deal between herders and farmers in complex drylands is difficult but possible when drawing on empirical knowledge, technical experience, broad stakeholder participation, conflict assessments and social theories that anticipate human behavior.

Several modalities help to sensibly accompany development and investment programs and increase the likelihood of conflict transformation.

- **Evidence-based planning and implementation** of agricultural sector programs, coordination between fragmented climate adaption and peacebuilding efforts have relevance for conflict transformation.
- **Space for niche experiments and pilots** enabling technical and social innovations, supporting the development of niches and neutral grounds where herders and farmers develop new modalities for cooperation.
- **Communication and learning between science, policy and practical implementation** of development and investment programs.

Across Africa, ICRISAT maintains a vast network of partners. In Kenya, for example, ICRISAT works with the new Kerio-Valley Initiative on Climate Security in cooperation with seven drought-prone counties, Egerton University and VSF-Suisse. We support similar arrangements in West Africa. Yes, there are no readymade solutions or one-size-fits-all approaches to reconciling resource-based conflicts between farmers and herders. Yet, we see opportunities for enhancing stability through a Green New Deal between farmers and herders.

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