

Integrating the Indigenous Knowledge of Borana Pastoralists into Rangeland Management Strategies in Southern Ethiopia

Rangeland management in Borana: past and present

Pastoralists' indigenous knowledge (IK) about ecology and social organisation led to rangeland-management strategies appropriate to deal with the erratic rainfall in African drylands. Herd mobility was traditionally practised as the key strategy to make use of the scattered rangeland resources on a large scale. Communal resource-tenure regimes were designed for extended user groups to coordinate access to shared grazing resources in normal years and to allow for negotiations over use of key resources during times of scarcity. The Borana pastoralists in southern Ethiopia and northern Kenya developed an exceptionally efficient system of managing natural resources. The supply of permanent water was limited to clusters of deep wells in a central area. Access to water determined the utilisation of the surrounding pastures. Herds were moved between dry- and wet-season pastures. Social organisation coordinated and enforced decisions in rangeland management among multiple resource users. Specialised in cattle husbandry, the Borana reached an outstanding level of productivity in terms of livestock and rangeland resources. However, research and development interventions ignored the Borana knowledge and skills in rangeland management. Interventions aimed at increasing rangeland production started in the 1970s. Construction of watering ponds in wet-season grazing areas was intended to release grazing pressure from the dry-season pastures. Instead, it opened the wet-season area up for year-round grazing and attracted unconrangelands and two important well

clusters to the neighbouring Somali Administrative Region. This effectively denied the Borana access to the most fertile pastures, destroyed reciprocal arrangements between Borana and Somali pastoral communities and fuelled ethnic conflict. The extension services favoured cultivation within valuable grazing areas and blocked herd movements. The official ban on rangeland burning and the establishment of private commercial ranches exacerbated the disruption of the Borana's traditional resource-use system. The experience in Borana shows very clearly that ignoring pastoralists' IK contributes to progressive degradation of rangelands, erosion of important social structures and poverty among the pastoral population.

The challenge for future pastoral development planning is to design practical concepts for revitalising pastoralists' IK. The solution is not to romanticise this, but rather to support the proven practices and to redirect

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external interventions in order to support pastoralists' strategies in securing their livelihoods. Innovative approaches are needed to integrate indigenous and external knowledge in development planning and decision making. Lessons can be drawn from research that explored possibilities of IK-based pastoral development in the Borana rangelands of southern Ethiopia. A stepwise approach generated specific knowledge on pastoralists' rangeland-management strategies and helped to understand the current constraints to applying them.

Steps in exploring IK-based rangeland management

Identifying IK in rangeland management

Two locations in Borana were compared. These differed in terms of functions within the traditional grazing system and the extent of external interference. *Web* is a traditional dry-season grazing area with one of the oldest clusters of deep wells. *Dida Hara* is a former wet-season grazing area where the construction of watering ponds induced year-round grazing and uncontrolled settlement. On the basis of pastoralists' rangeland classification, seasonal land-use patterns were identified. Participatory land-use mapping was combined with GPS measurements of land-use categories and with herd mobility calendars.

Herd movements have reduced considerably over time: 30 years ago, Borana rangeland management was organised over large areas. The permanent encampments were clustered near the traditional deep wells, the only permanent source of water. During rainy seasons, the pastoralists led the herds to very distant pastures. This dispersed the grazing pressure. During dry seasons, the lack of surface water forced the herds back to the pastures around the wells. The milking herds were grazed in the inner circle around the wells, and the other animals were kept in the outer circle. The herders – being in close contact with their herds, the natural environment and other herders – knew exactly where to move their animals in order to find available forage and water resources.

Development interference restricted herd mobility, and differences emerged between the two locations. One year after the last drought in southern Ethiopia, there were scarcely any herd movements in *Dida Hara*, the location where water-development interventions had been made, but mobility was still pronounced in *Web*. Settlements in *Dida Hara* had expanded rapidly, as long-distance wet-season movements were no longer needed. A few wealthy Borana established very large herds, whereas most households barely sustained their livelihoods from livestock. Households cooperated much less in herding, their animals were more likely to die during droughts, and the formerly abundant pastures de-

graded rapidly. The herders from *Web* had no wet-season grazing areas for their mobile herds and became confined to areas closer to the deep wells. Within this group of pastoralists, the gap in wealth remained less and most households continued to cooperate in managing very small herds.

This comparison shows that possibilities for herd movement have been drastically reduced. Availability of water lost its function of regulating the spatial organisation of grazing. The Borana have almost ceased to distinguish between pastures for milking herds and pastures for more mobile herds. Separate grazing systems evolved in *Dida Hara* and *Web*, reinforced by different socio-economic trends. Analysing pastoralists' IK thus revealed the rationale of local rangeland-management strategies and the negative effects of interventions in the name of pastoral "development".

Comparing changes in indigenous institutions

Changes in Borana institutions regulating natural resource management were analysed through participatory community meetings. Following the traditional rules, the elders in *Dida Hara* and *Web* were invited to delegate participants to the meetings, held at the traditional meeting places. The pastoralists were split into two groups and drew Venn diagrams to show all institutions relevant for natural resource use – one group depicting the current institutions and the other depicting the situation before the development interventions. The groups jointly presented the completed Venn diagrams and discussed the differences.

The comparison showed how the organised access to natural resources had been disturbed. Traditionally, large-scale land-use planning was coordinated by complex institutional networks. The right of free access to water and pastures for all Borana was regulated by trusteeships for each well held by a specific clan. Appointed supervisors handled the daily administration of the wells. Water management at clan level was supported by institutions determined by grazing locality. Elders' committees coordinated the access of livestock to each well with the use of nearby pasture. Further committees were responsible for the shared grazing areas. The responsibility for local land-use planning was conferred to sub-committees in the settlement clusters, neighbourhoods and single villages. Social security, including the peaceful resolution of conflicts over resource use, was assured by local clan representatives. Directives for good governance for the entire Borana society were supported by a complex administrative system including a legislative assembly that reviewed existing prerogatives and obligations. Special counsellors were appointed as mediators within the institutional network.

The governmental introduction of local administrative units – "Peasant Associations" (PAs) – undermined the flexible control through experienced elders. Younger community

members, inexperienced in pasture management, were appointed and given powers of decision-making at local level. The additional transfer of authority for formal education, relief and extension to the PAs further undermined the authority of the traditional institutions. Today, the elders' committees are no longer able to apply their knowledge. This has caused conflicts between generations and within the communities. The committees for the large-scale coordination of herd movements have almost lost their function. Instead, immediate-response reactions are made by the village heads and formal administration. The multiple cross-linkages of the indigenous institutions for land-use planning to the indigenous institutions for social security have been almost completely destroyed. Mediation by the traditional governance body is now minimal.

Nevertheless, the Venn diagrams show that – despite the erosion of most indigenous institutions – those concerned with administration of water (such as the deep wells in Web) have retained their importance. The essential principles of water management have been transferred to the newly constructed ponds in Dida Hara. To regain control over rangeland management, elders at both locations started to negotiate with the PA Committees to re-implement traditional directives for restricted settlement and thereby stop the over-utilisation of the rangelands.

Analysis of the existing pastoral institutions involved in controlling mobility revealed weaknesses in power structures and related conflicts. Enforcement of decisions for using, maintaining and rehabilitating rangeland resources has been severely weakened. Shortage of pasture and water, as well as inter-ethnic conflicts, led to disregard of directives. The deteriorating procedures for negotiation weakened the information and communication structures needed to coordinate herd movements in time and space. However, the diagrams also revealed the Borana's organisational expertise and still viable social structures. The current initiatives of the elders show that pastoralists can be innovative in adapting their strategies to changing conditions.

Determining socio-economic profiles of pastoral households

An in-depth survey was made of 60 households in Dida Hara and Web to determine socio-economic features favouring herd mobility during and after the last drought. During the drought, mobility was similar in Dida Hara and Web, as herd movements were driven by the crisis. The only clear trend was that households selling their animals at export markets were those which were most mobile. In the year after the drought, mobility was higher in Web than in Dida Hara. Mobility of households increased when they were part of larger herding groups and was higher for households with enough

animals to live solely off the livestock. Households with camels (an innovation in herd composition made by the Borana in response to changing rangeland conditions) were more mobile than others. More households in Web kept camels than in Dida Hara.

Greater mobility was linked to larger herd size and/or capability of organising cooperative networks. As herds are becoming smaller and family members forced to engage in other activities, cooperation is essential to support mobility. Therefore, it is anticipated that the ongoing socio-economic differentiation and the loss of negotiating networks and information flow will lead to further reduction in mobility.

Initiating and encouraging multi-stakeholder platforms

Representatives from the local communities, research, development and the government were invited to multi-stakeholder workshops at the end of the field research. The objectives were to give feedback to those involved in the study and to discuss the implications for sustainable rangeland management. The workshops also provided platforms for joint reflection to support ongoing efforts in participatory development planning.

The participants affirmed that pastoral IK was under-utilised. Their statements matched with the study recommendation to focus on herd mobility in order to generate concrete options for improved rangeland management. This helps to define institutional responsibilities such as land-use planning at the level of local encampment clusters, grazing reserves controlled by committees of mobile herders, participatory monitoring and evaluation by genuine organs within the traditional system, and mediation among the stakeholders by sensitised pastoral representatives. The role of government is to facilitate enforcement of the decisions.

Conclusions

The Borana's IK has been exposed to external and internal disturbances, but persists in some applied rangeland-management strategies and negotiation networks. External support is justified to facilitate structures for continuous pastoral experimentation and negotiation networks. External support is justified to facilitate structures for continuous pastoral experimentation and negotiation. Multi-stakeholder platforms can provide a framework for participatory exploration of the potentials and constraints of IK-based development. The preceding steps allow an informed debate mediated by development agents. These agents should also support pastoral communities in redefining their objectives and further developing their innovations. A fundamental challenge is the implementation of a favourable pastoral policy. This depends on the willingness to learn from pastoral IK, to ensure a

transparent information exchange and to agree on concerted development actions.

Restructuring mobile rangeland management will not turn back the clock or overcome the fact that many Borana households depend on additional sources of income and can no longer survive on pastoralism. Population growth, recurrent droughts, lack of investment opportunities, and political

and economic marginalisation hinder progress. However, exploring ways to support mobility and the pastoral control of resource use makes development efforts more tangible and target-oriented. Backstopping mobile pastoralists for political organisation and the constructive use of networks can help keep IK alive and constructive.

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