

Intellectual property rights regime necessary for traditional livestock raisers

This article discusses the need to recognize the intellectual property rights (IPRs) of pastoralists and other traditional domestic animal raisers in the light of the growing interest in making use of the genetic traits of indigenous livestock breeds.

According to the Food and Agriculture Organization of the United Nations (FAO), which has the global mandate for the conservation of domestic animal diversity, about one-third of the 5000 officially documented livestock breeds are threatened with extinction and are dying out at the rate of almost two per week. At the same time, the value of local breeds and their advantages over high-performance breeds are becoming increasingly evident (FAO 1999).

For decades, local or indigenous livestock breeds were regarded as inferior to the high-performance breeds developed in the North. Cross-breeding with exotic animals has led to the dilution of indigenous breeds, and this is one of several factors responsible for a very severe narrowing of the genetic base of our domesticated animals. But now more and more reports are indicating that the performance of indigenous breeds is equal to or even better than that of improved or cross-bred

animals. In India, for instance, the enormous rise in the country's milk output is due to indigenous buffaloes, rather than cross-bred cattle (Rangnekar 2000). In Ethiopia, a detailed study comparing the outputs of improved goats (Anglo-Nubian x Somali) with those of local breeds revealed that improved goats, while they grew faster, were much more susceptible to weight loss during the dry season, thus offsetting the previous gains (Kebede 2000). Although they gave more milk per animal, this was not the case when the yield was calculated in relationship to body weight.

Disease resistance of indigenous breeds

One of the crucial traits of indigenous breeds has to do with their ability to cope with diseases. For instance, the Red Maasai goat has proven very resistant to infestation with internal parasites (ILRI 1998). The Uda sheep of Northern Nigeria is much less susceptible to foot rot, while the Kuri cattle

Raika sheep pastoralists in Rajasthan (India) have resisted cross-breeding programmes with exotic breeds, and still maintain their traditional breed.

Photo: Ilse Köhler-Rollefson



kept along the shores of Lake T Chad are very resistant to insect bites (Blench 1999). N'dama and other humpless African cattle are trypano-tolerant or resistant against infection with trypanosomes, tiny one-celled parasites that live in the blood. Such disease resistance is compromised when animals are selected only for high productivity. For example, the Orma Boran cattle kept by the Orma people in the Tana River District of Kenya are much more resistant to trypanosomes than their relative, the Improved Kenya Boran, which has been selected for meat gains over several generations. Thus in areas where tsetse pressure is high, the Orma Boran gains weight faster than the Improved Kenya Boran (Rowlands 1995).

Role of indigenous knowledge

Adapting animals to new and unfavourable environments requires care and determination. The Tzotzil women of Chiapas, Mexico, developed their own breed of sheep – which are able to survive and produce under very challenging circumstances – from stock brought over by the Spanish conquerors (Perezgrovas 1996). The Fulani who inhabit the Sahel zone of Africa systematically and gradually expose animals to tsetse-infested areas, resulting in the survival of cattle in environments that were previously considered unsafe for them (Blench 1999).

But apart from adapting animals to new environments, many indigenous people consciously 'shape' their animals according to their own specific breeding goals and utilization patterns. Pastoral societies, in particular, with their extreme dependence on the productivity of their animals, have developed highly intricate indigenous knowledge systems pertaining to animal breeding.

Indigenous strategies for safeguarding and developing their valuable genetic resources include

a variety of social mechanisms. Restrictions against the sale of female animals outside the community are common among pastoral societies, in order to ensure their long-term subsistence base. On the other hand, animals are often freely exchanged within the community, and to some extent are even considered common property. The transfer of ownership is often associated with life-cycle events, such as birth, circumcision, marriage, and death. Stock-sharing arrangements in which user rights are transferred to poor relatives or to friends are common, ensuring that benefits from livestock are distributed more or less equally throughout the community. One such custom is *mafisa*, practiced in Western Zambia, which also prevents inbreeding and can result in upgraded offspring (Beerling 1986).

Inbreeding is fastidiously avoided in many pastoral communities, although not in all of them. Male breeding animals are selected with great care according to a long list of criteria, including vitality and the performance of the female relatives, but also preferences for certain colours or colour combinations. Kenyan pastoralists say they prefer animals with bright colours because looking at them makes them feel good (Njoro & Wanyama 2000). Camel pastoralists are known to practice offspring testing, i.e., deferring the wider use of a stud until its children have shown to be of the desired quality. Castration – to ensure that only the best male animals reproduce – is mandatory in some traditional societies. Pastoralists also study the genealogy of their animals, often tracing their ancestry back many generations and relating them to their own ancestors (Köhler-Rollefson 2000).

Intellectual property protection and the danger of biopiracy

These examples will suffice to demonstrate that indigenous animal breeds are very much the result of active manipulation, and thus represent important human achievements. This intellectual contribution on the part of livestock keepers should now be accorded a corresponding status. In the Sadri Declaration, issued at an international workshop held in November 2000 in Rajasthan, India, to raise awareness of the role of the indigenous knowledge of traditional livestock keepers in the conservation of diversity, participants agreed that indigenous animal breeds should be recognized as a national asset (*see the box on p. 14*).

The Sadri Declaration represents an important step forward in focusing attention on the need to develop intellectual property regimes for domestic animals. So far this subject has received short shrift in international negotiations on intellectual property rights for traditional communities. While in the case of plant genetic resources there is an international undertaking that seeks to establish Farmers' Rights for holders of traditional knowledge, no equivalent process has been set up to accord such rights to livestock keepers (ITDG 1996; Köhler-Rollefson & McCorkle 2000). This matter is extremely urgent, since efforts are now on by scientists to identify the genes that are responsible for disease resistance. Examples include the trypano tolerance of the N'dama cattle and the worm resistance of the Red Maasai sheep. The latter is of enormous interest to sheep producers in Australia and New Zealand, since the internal parasites which infest their sheep have become practically immune to anthelmintics. Genetic resistance to worms would be a boon to them. With the advances in genetic modification, scientists expect to be able to



‘Sadri Declaration’,

being recommendations passed by the participants of the International Conference + Workshop on Livestock Breeds for Sustainable Rural Livelihoods

Udaipur and Sadri (Rajasthan/India), 1-4 November, 2000

Acknowledging the diverse roles of indigenous animal breeds for sustainable rural livelihoods in India (for food security, soil fertility, draught power, as social and cultural asset, source of income and saving etc), especially in marginal areas,

being conscious of the threat to domestic animal diversity, (due to government policies, economic pressures, increasing poverty, cultural erosion, etc., and

concerned about the lack of awareness in all spheres of stakeholders,

we recommend:

1. Policy changes concerning
 - access to resources (grazing, water ...)
 - changes in emphasis in the curriculum for veterinary + animal husbandry scientists, extension workers, etc. (more emphasis on bio-diversity, conservation of indigenous breeds)
 - breeding policy reviews through consultative processes involving all stakeholders
 - formulation of land use plans that guarantee land use/rights for indigenous breeds and indigenous livestock keepers
2. Concerted actions by NGOs, CBOs and communities, including
 - networking, documentation, awareness raising and dissemination of information about the situation and advantages of indigenous breeds
 - improvement of marketing (niches) for the products of indigenous breeds
 - developing of local institutions + breeding organizations
3. Changing/expanding research towards the needs of poor livestock keepers

towards achieving:

- improved economic situation of livestock keepers
- legal recognition of indigenous breeds as national assets
- maintenance of Indian Domestic Animal Diversity (DAD) for the benefit of future generations

Dr D.V. Rangnekar at the conference summarizing the Sadri declaration at the close of the workshop.
Photo: Shivalal Raika

Recommendations passed by participants of the workshop Sadri, November 4, 2000.

insert the genes for disease resistance into high-performance breeds, in order to achieve both productivity and disease resistance (ILRI 1998).

We know that industrial pig- and poultry-breeding companies guard genetic information about their strains like trade secrets. Is it then appropriate to regard equivalent information about traditional breeds as a common good that can be made available to all without any compensation for the pastoralists that have nurtured their animals for generations?

Obviously, this is a very complex and difficult issue with far-reaching implications for the economic survival of traditional livestock keepers and pastoral societies whose identity is rooted in their association with livestock. It urgently needs to become the subject of transparent and informed international debate, involving a broad spectrum of all stakeholders, especially pastoralists and livestock keepers.

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supporting rural communities
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