

Indigenous Knowledge

of animal breeding and breeds



An ethnic Raika pastoralist from Rajasthan (India) with Nari cattle.
This breed is yet not scientifically documented.

Photo: I. Köhler-Rollefson

Indigenous Knowledge of Animal Breeding (IK-AB)

Indigenous knowledge of animal breeding is made up of various concepts and practices used by livestock breeders to influence the genetic composition of their herds. It includes :

- ◆ Cultural concepts on the uses of animals (general breeding objectives)
- ◆ Local preferences for certain characteristics, such as colour, size, behavioural patterns and disease or drought resistance (specific breeding objectives)
- ◆ Selection practices for certain qualities (castration, culling, offspring testing)
- ◆ Pedigree-keeping
- ◆ Social restrictions on the sale of genetically valuable breeding animals that lead to closed gene-pools.

Local breeds: as valuable as they are hardy

Well-adapted local breeds that are widely kept without special feed concentrate or preventive health care are now increasingly recognised as being more productive than imported exotics. They thus form the most suitable foundation for sustainable livestock production in developing countries, especially in marginal locations or where fragile ecosystems are concerned. This perspective is a departure from earlier approaches, which routinely sought to upgrade or even substitute indigenous farm animals with high-performance exotic breeds.

Local breeds play a multi-functional role in rural livelihoods, contributing not only cash products but also manure and traction. They are of social benefit as “insurance” against natural disasters or economic bottlenecks. Furthermore, indigenous breeds may have valuable genes with commercial potential. Especially the breeds kept by pastoralists, which are regularly exposed to stressful con- ▶

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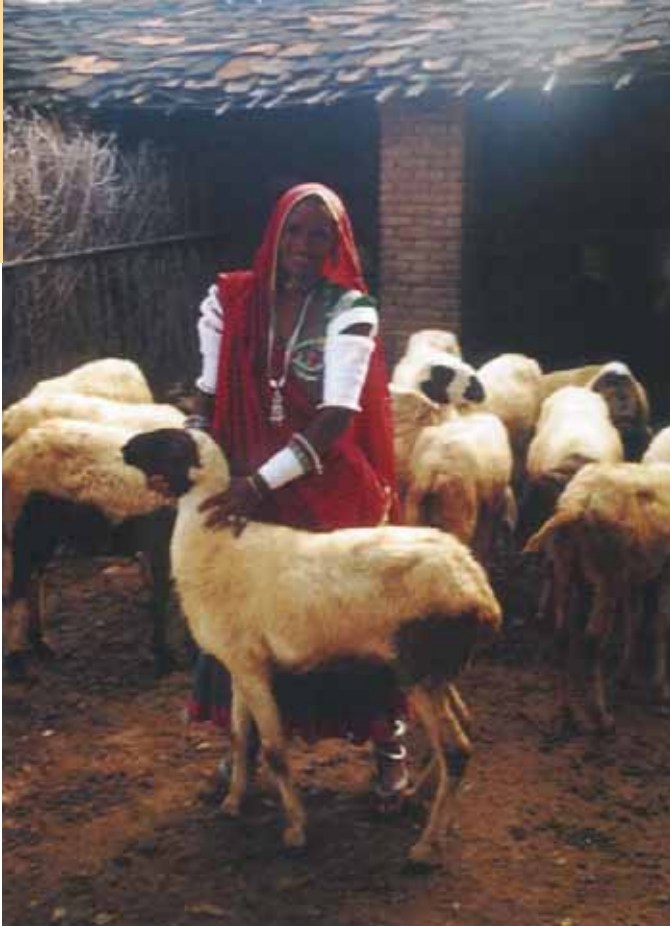


Photo: I. Köhler-Rollefson

How does documentation help?

Documentation of the indigenous knowledge of livestock keepers about animal breeds and breeding (IK-AB) should be an integral part of the work of rural development projects, institutions and organisations because:

- ◆ It can be a source of information about the existence of breeds that scientists have overlooked and which may have unrecognised advantages and potential. IK-AB provides an opportunity for identifying these breeds and their special qualities.
- ◆ Piecing together the history of a breed is a means of tracking changes in land-use and agricultural production patterns.
- ◆ Documentation of IK-AB also puts on record the intellectual contribution of the farming and pastoral communities that created the breeds. Such testimony is a prerequisite for negotiating benefit-sharing arrangements and can preempt attempts by outsiders to exploit, appropriate, or even patent these genetic resources.
- ◆ Recognition of local communities as stewards of important farm animal breeds and genetic resources is a source of pride to them.

General insights

Leaders in the field have only recently become aware of the existence and extent of IK-AB, whose significance is slowly being recognised. In the context of a GTZ-supported project, Lokhit Pashu-Palak Sansthan and other Indian NGOs of the LIFE Network (see box) have developed participatory approaches and tools for documenting breeds on the basis of their keepers' breeding goals and IK. This process has turned up several scientifically as yet unrecorded breeds, such as Nari cattle (see photo).

- ▶ ditions such as great heat or shortages of feed or water, are rich in survival and fitness traits, which have disappeared from high-performance breeds.

The safeguarding of locally adapted livestock breeds is therefore very much in the interest of developing countries both for present and future food security. Beyond this, such breeds harbour assets whose potential cannot even be estimated today.

It was not environmental conditions alone that shaped these breeds. In many cases it was active manipulation on the part of local animal breeders - herdsman and nomads - whose breeding decisions were influenced not only by cultural preferences but also by technical knowledge gathered, developed and preserved by local communities for generations.

Not without pastoralists

Using and maintaining animal genetic resources within the framework of a village or livestock-keeping community calls for different procedures and methods than *ex situ* or government-farm conservation. Today, documentation of traditional local breeding knowledge must be added to community-based management of animal resources, which links the empowerment of livestock-keeping communities with the sustainable use of breeds. IK-AB risks being lost at a pace proportionate to the collapse of traditional pastoral community social structures and the dwindling of the foundations for survival of pastoralists and nomads, in particular – for example, as grazing rights are withdrawn.

Genuinely participatory approaches and techniques are a prerequisite for documenting IK-AB. This is one of the reasons for the low success rate achieved to date by projects with a purely technical or veterinary medicine platform. Such participatory approaches should therefore be made part of natural sciences and technical curricula.

GTZ has been supporting participatory approaches for many years, not only in its own projects but also in cooperative efforts with government and NGO partners. When a sufficient number of organisations have developed capabilities in this area, they could play an important role in documenting IK-AB.

Care must always be taken that documentation is not only gathered but also given back in order to raise awareness among livestock-keepers of the significance of local breeds. Preferred methods are informal interviews with a question guide, participant observation and group discussions, and conversations with local experts. Local taxonomy merits special study as it often supplies interesting information about the properties of local breeds.

After documentation has been completed, the results should be shared with both the community and government agencies.

Tracking down interesting genes

All of the major institutions are currently devoting considerable resources to the exploration of livestock genetic resources – and not only out of concern for biodiversity. They are on the lookout for genes of interest to the livestock industry, such as resistance to diseases caused by parasites. Rapid advances in genetic engineering raise hopes for the selective transfer of disease resistance genes from one breed to another.

Intellectual property is an important issue, since a number of the livestock breeds with genetic traits of possible commercial potential are in the hands of marginalised communities. For instance, the Red Massai sheep has been identified as resistant to intestinal parasites, a trait of immense interest for the sheep industry globally. Private-sector use of these genetic traits should run parallel with equitable benefit-sharing arrangements.

Photo: R. Faidutti



Opening the discussion

At the time of the World Food Summit in 2002, various NGOs organised events on the topic of IK-AB, which aroused great interest and resulted in calls to discuss an International Treaty on Animal Genetic Resources. The FAO's International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), agreed in 2001, could serve as a model.

Just as the ITPGRFA recognises the eligibility of farmers' breeding inputs for protection and their contribution to the emergence of crop diversity, the IK-AB of traditional stock keepers should be acknowledged and safeguarded.

Photo: I. Baldexi



LIFE: An initiative to foster community-based conservation of animal genetic resources

LIFE stands for "Local Livestock for the Empowerment of Rural People". It aims to strengthen rural livestock-keeper communities. It works on the grassroots level and thus complements the efforts of the FAO, which cooperates with governments. The initiative seeks to conserve domestic animal diversity by building on the knowledge of farmers and pastoralists and promoting their institutions. Aims include:

- ◆ Promotion of endogenous livestock breeds maintenance and development using local resources and local knowledge
- ◆ Intellectual property protection for the village and pastoral societies that have created unique breeds
- ◆ Consideration of local livestock in land use planning and rural development
- ◆ Creation of positive market conditions for the products of local breeds

Further Information

ANTHRA: <http://www.anthra.org>

GTZ Agrobiodiversity Project: <http://www.gtz.de/agrobiodiv>

GTZ Publications. Community-based Management of Animal Genetic Resources by Ilse Koehler-Rollefson, 2001.

GTZ/FAO, Proceedings of the Workshop "Community-Based Management of Animal Genetic Resources – A Tool for Rural Development", held in Mbabane, Swaziland. 2003.

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This document is a preliminary working paper. Making use of your comments and the experience you have gained, we would like to expand the paper step by step.

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