

Traditional Practices on Animal Genetic Resources Management



Most local livestock breeds in rural environments are products of a community of breeders. This community of breeders lives in the same area, keeps and breeds animals for a specific purpose and exchanges animals mostly among themselves. The manner by which people utilize and breed their livestock is determined by their cultural norms.

In some traditional groups, breeds are often associated with a specific ethnic group. In East Africa, the Somali, Rendille and Gabbra keep camels mostly for their milk, but do not use them for riding. In Arabia, camels are used for everything - meat, milk, transportation, racing.

In India, the Raika pastoralists breed camels to sell them as transport animals. They do not eat camel meat and even the sale of camel milk is traditionally taboo. Because these groups breed camels for different purposes, the breeds they have developed are also very different, in terms of production, and also in the way they look.

Some Traditional Practices

Livestock can be Considered Communal, or Private Property

In many livestock dependent societies, animals are regarded as assets of the community as a whole that must be maintained for future generations.

As such, local custom dictates that female animals should not be sold outside the community. The Raika pastoralists follow this rule for camels and sheep. Camels traditionally change ownership only when they are given as marriage gifts of the bride's family to her in-laws. For sheep, this rule is no longer followed strictly. Elder Raikas sometimes attribute droughts and other natural calamities to the Gods being angry, because some community members have started selling female sheep.



Ritual and Social Aspects

Ritual and social aspects can be important reasons for continuing to keep certain breeds that have become economically unviable. An example is the Muturu cattle from west Africa which is not affected by trypanosomes and therefore a valuable genetic resource for tropical livestock

breeding. It is also resistant against ticks, environmental stress and has low feed requirement. The milk that it produces is used for medicinal purposes. Once widely distributed across the whole Sahel belt, it is being gradually replaced by the more productive Zebu cattle. The main reason why it still exists is the fact that it is regarded as sacred by many pastoral communities and is used in ceremonies.

Keeping a Mix of Breeds

To ensure survival in adverse conditions, many pastoralists keep a mix of breeds. For instance, the Raikas keep several sheep breeds. The Woodabe in Niger keep two breeds of cattle, the Awazak and Bororo which differ in their production potential and their ability to handle stress.

Breeding Strategies of Pastoralists

Pedigree Keeping

They often keep mental records of their animals' lineage and their specific qualities. The Maasai group their animals into different lineages consisting of all the animals descended from one particular cow. Similarly, the Raikas also give the same name to all the females of one particular line.

Selection Criteria

Breeders select their animals for their physical attributes, unique qualities, behavior and performance. Certain types of color or combinations maybe considered lucky. Certain horn forms may be regarded as pleasing to the eye.



Offspring Testing

Some pastoralists, such as the Somali and the Raikas may restrict the use of male animals until they have known what the offspring is like.

Avoidance of Inbreeding

Breeding communities vary in their attitude towards in-breeding. The Raikas avoid in-breeding, as they consider it a sin to mate a male animal with his female relatives. They exchange their male breeding camels every four years. But some pastoralists do not see any harm in in-breeding.



Castration

Male animals not selected for breeding are often castrated to prevent them from producing offspring (and also to make them easier to handle and use for work).

The Raika Experience

Camel Breeding

The Raikas keep oral records of genealogies, tracing the ancestry of their herds in female lines. Every animal has a name and a female camel is usually named after its mother. The sale of female camels to anybody outside the community is against traditional customs

(although this is now starting to change). Female animals used to change ownership only at the occasion of marriages, being sent as dhamini when the bride joins her in-laws.

The Raikas are a Hindu caste in Rajasthan who are regarded as the largest pastoral group in western India. Camel breeding is their hereditary occupation. With the changing market demand, eventually, they have also taken up sheep, goat, cattle, buffalo, and even donkey. The Raikas provide an important service to farmers and rural poor by providing draught animals (camels and bullocks), as well as cows with good milk yields.



Selection of male camels is done with utmost care, although, due to economic constraints, not all breeders can afford to use the highest standards. Features such as the looks, size, color, temperament and milk yield of the mother and other female relatives are taken into account. Male animals who produce calves that look similar to their father are regarded as “strong” genetically, and therefore preferred as breeders. If one owns a good quality male camel, he/she is obliged to make it accessible for female camels to be mated. Some breeding bulls can attract hundreds of females, clearly exceeding their service capacity. In the first year, its services are only for a limited number of females, but if it produces quality offspring, then it is used more extensively. In order to prevent inbreeding, the bulls are changed every four years.



Sheep Breeding

Most of the sheep are kept in migratory herds. The Raikas distinguish a large number of different breeds and strains but their classification system shows little overlap with the scientific one.



Keeping a mix of geno-types enables the Raikas to optimize both good and bad years. Breeding rams are selected with great care and only those from excellent mothers are considered eligible. They are singled out as lambs and then given special care. The rams are prevented from breeding during certain times of the year to ensure that lambs are born only during favorable seasons. They are also exchanged with other herds in regular intervals to avoid inbreeding.

For decades, the Sheep and Wool Department of the Government of Rajasthan sought to upgrade the local breeds for prolificacy and wool yields by crossbreeding with exotic rams (Rambouillet and Merino). But due to high mortality, problems with feed supply and other factors, these measures failed to achieve a significant impact and the Sheep and Wool Department was finally dismantled.

The Boti breed is drought and disease resistant and can survive in the most scorching temperatures. While the Bhagli breed is less resistant, but has higher production potential and gives better yields during good years.



The Raikas are astute breeders and adapt their breeding goals to market situations. In the current economic scenario, with the abundant supply of wool, especially of the coarse carpet type, it makes no sense to produce more wool. So, they purposely purchase rams with desired characteristics from far-flung areas, such as the long-legged animals of the Dumi breed from Gujarat, to improve meat yields. Because there is a chronic shortage of milk in the villages (most of it is transported to the cities), some Raikas have begun selecting for the purpose of increasing milk yields as well.

Goat Breeding

The Raikas raise two breeds of goat. One is the "black" or "Marwari" goat, which is highly adapted to drought but has a fairly low milk yield. The other one is the spotted/piebald Sirohi goat, which, in turn, is a good source of milk.

In the 1980s, the Government of Rajasthan and the Swiss Development Cooperation initiated the Indo-Swiss Goat Project, which sought to enhance the performance of local goats by artificial insemination, with semen from imported bucks. Field performance record revealed that the crossbred goats were not superior under the given conditions. The project was reformulated to concentrate on selective breeding within the Sirohi goat.

Cattle Breeding

The Rebaris have also developed the Nari cattle breed, which is locally famous but scientifically as yet unrecognized. This breed is highly resistant to diseases and drought, with reasonable milk yields and good draught qualities. Nari cows produce 4-8 kg of milk per day, depending on the feed quality, in addition to nurturing their animals or oxen. Their milk has a high fat content and is used for the production of mava - the base of Indian sweets. The male calves are used as work animals by local farmers.

The large breeding herds are kept in migratory systems. Milking and late pregnant cows are left behind in the villages while the rest are taken on long treks to Gujarat or Haryana, returning only during the rainy season. Cows may be sold while on migration and many male calves are purchased by Bhats (a caste specialized in trading cattle and salt) who castrate them and then sell them in other areas, especially in the Mewar region of Rajasthan. This breeding system provides a valuable supply of good draft animals or milking cows.

Maybe because the Nari breed has so far escaped the attention of animal scientists, it has fared better than the officially recognized breeds. Most of these have been subjected to crossbreeding with exotic breeds and hardly exist in the pure form.



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