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The LIFE-Method: A People-Centred Conceptual and Methodological Approach to the Documentation of Animal Genetic Resources

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Abstract

Comprehensive documentation of existing livestock breeds is a prerequisite for measures aimed at the sustainable use and conservation of domestic animal diversity. Appropriate conservation policies can only be developed, if the social, cultural and production contexts of livestock breeds are fully understood. Conventional documentation methods focus on population, phenotypic and production characteristics, and are based mostly on quantitative data and measurements. By looking at a breed from an outsider's or scientist's perspective they neglect to consider the priorities and concepts of its keepers and do not grasp the livelihood contribution of a breed that goes beyond production of quantifiable outputs. The resulting information therefore does not reflect the situation from the perspective of the farmer for whom cash products are often of secondary importance. Especially in marginal and remote areas, breeds generate an array of benefits that are more difficult to grasp and quantify than outputs of meat, milk, eggs, and wool. These include their contribution to social cohesion and identity, their fulfilment of ritual and religious needs, their role in nutrient recycling and as providers of energy, and their capacity to act as savings bank and insurance against droughts and other natural calamities. The LIFE-method was developed by a group of NGOs in India in order to document breeds from a people-centred perspective. It captures important characteristics of traditional breeds that were previously ignored and records breeds based on the knowledge, concepts and priorities of the associated communities. Most significantly, it comprehends breeds as products of social networks. This approach consists of a conceptual framework and employs "participatory" methods, instead of pre-determined forms. It has been tested with large animals, such as cattle, buffalo, and sheep, and mainly in pastoral contexts. This paper will present several examples of information collected by this new methodological approach.

INTRODUCTION

Scientific breed descriptions have conventionally focused on phenotypic characteristics and emphasized quantitative data, including body measurements and performance recorded under the controlled conditions of a government farm. These data have the weakness that they neither reflect the real situation at the farmer level, nor the contribution the breed makes to livelihoods. Especially in marginal and remote areas, cash products are often of secondary importance. Traditional breeds generate an array of benefits that are more difficult to grasp, and to quantify, than outputs of meat, milk, eggs, or wool. These include their contribution to social cohesion and identity, their fulfilment of ritual and religious needs, their role in nutrient recycling and as providers of energy, and their capacity to act as savings bank and insurance against droughts and other natural calamities. Ability to survive a drought may often be much more crucial to the farmer than milk yield.

But conventional breed descriptions have another critical lacuna. They fail to acknowledge and document the role of associated livestock keeping communities and their indigenous knowledge in shaping and managing the breed. Crucially, they neglect to make visible the indigenous knowledge that has formed the foundation for the development of any well-defined breed or livestock population. This failure contributes to the wide-spread myth that local breeds have been shaped by natural selection alone rather than by conscious human effort, and allows such indigenous genetic resources to be looked at as a global commons or free for all that can be mined for commercially interesting traits at random and without compensation for their traditional breeders or custodians.

BACKGROUND

In the context of a GTZ-supported project, the Indian NGO Lokhit Pashu-Palak Sansthan (LPPS) and a small number of Indian NGOs composing the LIFE-Network (LIFE stands for Local Livestock For Empowerment of Rural People) cooperated on developing a more participatory approach to documenting animal genetic resources that makes visible the intellectual contribution of the livestock keepers. This approach has been dubbed the “LIFE-approach”. It seeks to document breeds based on the knowledge, concepts, and priorities of the communities that are associated with the breed. The key difference to scientific breed documentation is that it understands breeds as products of social networks that operate according to certain rules. It is not a fixed method or recipe but rather a conceptual framework that uses participatory flexible methods (LPPS and Köhler-Rollefson, 2005).

DATA TO BE COLLECTED

1. SOCIAL AND CULTURAL CONTEXT

- Is the breed associated with a particular community, cultural entity or social stratum ?
- If not, what is the underlying social network?

- Local perceptions about the origin of the breed
- Local categories and terminology (folk taxonomy)
Local people often have an extensive vocabulary used to describe the various age and sex classes as well as colour types. The size of this vocabulary provides an indirect means of gauging the indigenous knowledge related to the breed.

2. ECOLOGICAL AND PRODUCTION CONTEXT

The breeding area is defined as the region in which both female and male animals are kept. This core area can be surrounded by or interspersed with a mixed breeding area, in which either male or female animals are kept. (If the breed is well-known and in demand then people from surrounding areas might purchase male animals from the core breeding area to upgrade their animals. If a breed is in decline then there may be a shortage or absence of male animals fit for breeding.)

- Does the distribution area of the breed correlate with any particular ecological zone and what is the local term for this area?
- What are the main land use strategies and prevailing farming systems in the area? How does the breed articulate with these?

3. LIVELIHOOD SIGNIFICANCE (“Breeding Objective”)

People shape a breed so that it corresponds to the needs of their livelihood. The “breeding objective” can be defined as the traits that are necessary for a breed to fulfil its role in the overall production system. In traditional breeds the breeding objective is often multi-faceted and can, for instance, consist of reasonable milk yields combined with ability to survive in an unfavourable environment. For a sheep breed kept in a pastoral system it could be meat and wool yields in tandem with ability to go on migration. Good mothering instincts could also be a breeding objective in extensively raised cattle. Need for social currency (acting as dowry or bride price) could be another breeding objective.

- Reproductive Performance

- Production Performance

4. MANAGEMENT OF THE GENE POOL

- *“Breeding goal”*

Besides the breed criteria determined by the overall production system, people usually also have more narrowly defined particular preferences and ideas about what constitutes a desirable animal. These culturally grounded preferences for a certain colour, size, or behavioural pattern may be regarded as “breeding goal”. Certain physical traits may in fact be genetically linked to certain performance characteristics.

- *Special characteristics*

What distinguishes this particular breed from others kept in adjoining areas or from high performance breeds?

Special characteristics can relate to disease resistance (or also proneness to certain diseases), to behavioural patterns (for instance Nari cows are said to defend their owners), or to the processability/taste of their products. (Parmesan cheese can be made only from the milk of one particular Italian breed; some pig breeds are famous for the taste of their ham/bacon/sausage).

- *Establishment of defining/key characters*

There is always some variation between the individual animals that form the breed. How does one determine whether an animal belongs to the breed or not? For this certain key characteristics need to be decided upon – on the basis of the breeders own concepts.

- *Breeding mechanisms and strategies*

Traditional means of genetic manipulation can either be unconscious (social mechanisms) or conscious (rational strategies).

Mechanisms are usually of a social nature and include

- taboos on selling female animals to anybody outside the community
- custom of lending animals to poorer relatives
- devoting certain male animals to a god or goddess

Strategies are practices used to intentionally shape a breed according to peoples’ preferences and priorities. They include for instance

- selection (of either or both male and female animals)
- offspring testing
- oral record keeping of genealogies
- castration of unwanted male animals
- avoidance of in-breeding, etc.

5. POPULATION SIZE AND TREND

6. CHANCES FOR SUSTAINABLE USE AND CONSERVATION

Pressures

What pressures does the breed face that threaten its survival or sustainable use ?

- Loss of grazing opportunities
- Changes in agricultural production systems
- Loss of traditional institutions
- Lack of health care
- Lack of market demand
- Lack of interest by young generation
- Drought/floods or other natural catastrophes
- Conflict/War

Interest In Revival/ Conservation By Local Community

Is there interest in maintaining the breed for livelihood reasons, for identity or cultural reasons ? What are the existing local institutions that could be mobilized ? What constraints need to be addressed ? What are the suggestions of the local community and its respected members for action/intervention ?

CONCLUSION

The “LIFE-Method” that was developed by NGOs working with livestock dependent people differs from conventional scientific breed documentation methods by making visible the role of pastoralists and other livestock keepers in consciously shaping and stewarding breeds and in managing global domestic diversity. By documenting indigenous livestock breeds as “prior art”, it also supports efforts by communities to claim AnGR as their property and avert misappropriation by commercial interests. It therefore is an important tool in the emerging movement for “Livestock Keepers’ Rights” that has been initiated by pastoralist representatives and their support organisations in order to secure the rights of livestock breeding communities over their animal genetic resources. As specified in the Karen Commitment these rights include the right to access, save, use, exchange, sell their AnGRFA, unrestricted by Intellectual Property Rights and genetic engineering technologies that will disrupt the integrity of these genetic resources; the right to have their breeds recognised as products of their communities and Indigenous Knowledge and therefore remain in the public domain; and the right to benefit equitably from the use of AnGRFA in their own communities and by others (Köhler-Rollefson and Wanyama, 2003). It is hoped that scientists too will

adopt the LIFE Method and integrate the questions it poses into their research designs. This would certainly be an important contribution to more people-centered approaches to the sustainable management of the world's animal genetic resources.

REFERENCES

LPPS and Köhler-Rollefson, I. 2005. Indigenous Breeds, Local Communities. Documenting Animal Breeds and Breeding from a Community Perspective

Köhler-Rollefson, I. and Wanyama, J. 2003. The Karen Commitment. Proceedings of a Conference of indigenous livestock breeding communities on animal genetic resources, held in Karen (Kenya), 27-30 October, 2003. German NGO Forum on Environment and Development, Bonn

APPENDIX

The Karen Commitment on Livestock Keepers' Rights

At a conference held in Karen (Kenya) from 28-20 October, 2003, representatives of indigenous livestock keeping communities and NGOs defined livestock keepers' rights as including the rights of communities to:

- continue to use their knowledge concerning the conservation and sustainable use of Animal Genetic Resources for Food and Agriculture (AnGRFA), without fears of its appropriation.
- participate democratically in making decisions on matters related to the conservation and sustainable use of AnGRFA.
- access, save, use, exchange, sell their AnGRFA, unrestricted by Intellectual Property Rights and [modification through] genetic engineering technologies that will disrupt the integrity of these genetic resources.
- have their breeds recognised as products of their communities and Indigenous Knowledge and therefore remain in the public domain.
- benefit equitably from the use of AnGRFA in their own communities and by others.

