

# Documentation of animal genetic resources: the LIFE method

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Livestock play a vital role in supporting the livelihoods of millions of people in many different ways. Full documentation of existing livestock breeds is needed to enable the sustainable use and conservation of domestic animal diversity. Conventional documentation methods focus on population sizes and production characteristics. They are based mostly on numerical data and body measurements and results from the controlled conditions of a government farm. But looking at a breed from this perspective does not consider the keepers' priorities, nor understand the contribution to livelihoods that goes beyond numbers. The resulting information therefore does not reflect the situation from the farmer's point of view, for whom cash products are often of secondary importance.

Conventional breed descriptions also have another large gap. They fail to recognise and document the role of livestock keeping communities. They also fail to highlight the indigenous knowledge that has been important in the development and management 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. It also allows such local breeds to be seen as free for all to use for commercial interest; at random and without compensation for their traditional breeders or custodians.

## A comprehensive approach

In the context of a GTZ-supported project, the Indian NGO *Lokhit Pashu-Palak Sansthan* (LPPS) and a small number of other 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. The aim was to show the intellectual contribution of the livestock keepers, and document breeds from a people centred point of view. The method captures important characteristics of traditional breeds that had previously been ignored, and records breeds based on the knowledge and priorities of the associated communities. Most significantly, it understands breeds as products of social networks. First tried in India, this approach has been termed the "LIFE approach".

The LIFE approach is not a fixed method or recipe but rather a framework that uses flexible participatory methods instead of pre-determined forms. Until now it has been tested with large animals, such as cattle, buffalo, and sheep, and mainly in pastoral contexts. But it can also be used in other livestock species and farming systems. There are seven phases, and based on the information required, different methods are used at each phase:

### 1. The social and cultural context

The first phase aims to look at the broad context in which livestock, and the selected breed in particular, are found. This means looking at the breed's link to a particular community, cultural entity or social sphere. To decide whether an animal population represents a breed, it is necessary to determine if there are any breeding institutions (such as, for example, a communally kept bull), or if most animals are born into the herd and are not bought or brought from outside. This is something

that can be found out with informal enquiries, interviews or discussions. Local people often have many different words to describe the various age and sex classes as well as colour types of breeds. The number of different terms used can be an indirect way of discovering how much indigenous knowledge there is about one breed. Listening to and recording the terms commonly used helps to promote an understanding of the local concepts, and assists in communication.

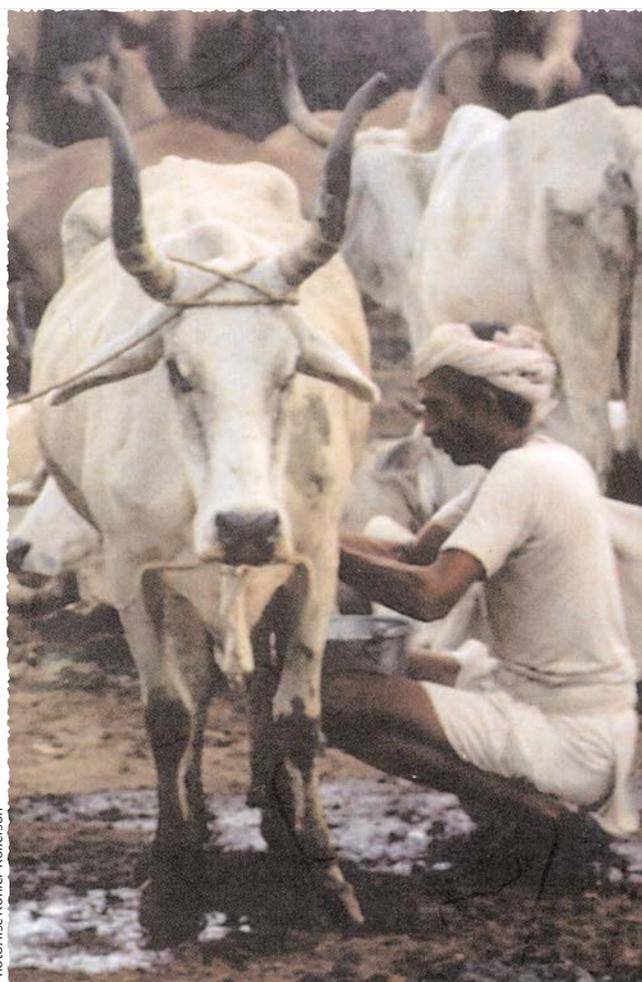


Photo: Ilse Köhler-Rollefson

Milking Nari cattle in Rajasthan, India.

### 2. The ecological and production context

A second phase starts by defining the breeding area. This is seen as the region in which both female and male animals are kept. Asking people to draw a map helps to work out if the region where the breed is found relates to any particular ecological zone. At the same time this will define the main land uses and farming systems in the area, and establish how the breed fits in with these. It is important to understand how animals are integrated into the cropping system (in a farming context) or how they utilize local vegetation (in pastoralist systems). Similarly, breed distribution is often closely linked to soil types and their mineral content, so it helps to understand the basis of the local classification. It is also important to ask where animals graze, at what time of the year,

and which fodder or forage species they prefer. The answers will often reveal the difficulties faced by a breed due to reduced grazing areas.

### 3. Livelihood significance (“Breeding Objective”)

People shape a breed so that it suits 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 production system. In traditional breeds the breeding objective is often a mixture of characteristics and can, for instance, consist of reasonable milk yields combined with the ability to survive in an unfavourable environment. For a sheep breed kept in a pastoral system it could be meat and wool yields as well as the ability to go on migration. Good mothering instincts could also be a breeding objective in extensively raised cattle. The need for social currency (acting as dowry or bride price) could be another breeding objective. By questioning local experts, this phase aims to document:

- the range of products and uses, not just including the obvious but trying also to consider social, environmental and ritual roles as well;
- the production performance under local conditions, focusing on those types of performance which are relevant to the people, and
- the reproductive performance, collecting data on e.g. age at first birth, birth intervals, offspring survival rates, etc.

### 4. Management of the gene pool

A fourth phase looks at the breeding management. This starts by looking at the local preferences or “breeding goal”: besides the

breeding criteria determined by the overall production system, people usually also have more specific 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.

It is then important to determine what makes this breed different from others kept nearby or from high performance breeds. These special characteristics can relate to disease resistance (or also proneness to certain diseases), to behavioural patterns, or to the use and taste of their products. This, together with the definition of key characteristics, helps to determine whether an animal belongs to the breed or not.

This phase also looks at the breeding mechanisms and strategies, because breeding can be influenced by social considerations or rational strategies. Social mechanisms include taboos on selling female animals to anybody outside the community; the custom of lending animals to poorer relatives, or that of devoting certain male animals to a god or goddess. On the other hand, as “strategies” we consider the practices used to intentionally shape a breed according to peoples’ preferences and priorities. They include, for instance, selection by sex, oral record keeping of the breed’s history, castration of unwanted male animals, or avoidance of in-breeding. Finally, it may be important to try to identify and meet with dedicated breeders who are known for the high quality of their animals.

### 5. Population size and trend

After determining the breeding area, it is necessary to establish the population size of that species in the region, starting from official data or records and checking it with surveys in a random sample of villages. This is then compared to older census or statistics, trying to determine the general trend for that population. The opinion of older members of the community is vital here.

### 6. Chances for sustainable use and conservation

A next phase looks at the difficulties which the breed faces that threaten its survival or sustainable use, and at the interest which the local community shows for its revival or conservation. The challenges may include: loss of grazing, changes in the agricultural production systems, loss of traditional institutions, lack of health care, lack of market demand, general lack of interest by the younger generation, drought or other natural catastrophes, conflicts or social upheavals. The interest of the local community may be seen through the existence of local institutions, or because of identity or cultural reasons.

### 7. Baseline data to monitor social impact

Finally, as the last phase, it is essential to know how many people are partly or totally dependent on the breed, especially when relating the documentation process to a conservation project. A community-based project can only work if local people benefit from keeping the breed, so its objective must be to create opportunities to earn money or produce food. Knowing how many households depend on a breed, before and after a project, is essential for monitoring the success of the activity.

### Different methods for collecting information

The different phases use different methods for collecting information, all of them stressing the participation of the population. These include group discussions and informal enquiries or unstructured interviews, choosing community elders

## Overview of the LIFE approach

### 1. Social and cultural context

- Association with the community
- Breeding institutions
- Local perceptions about the origin of the breed
- Local terminology and ethnotaxonomy

### 2. Ecological and production context

- Breeding area
- Local soil types and classification
- Local farming system
- Seasonal forage calendar, preferred grazing species

### 3. Livelihood significance (types of products)

- Range of products and uses
- Production performance
- Reproductive performance

### 4. Management of the gene pool

- Local preferences (breeding goal)
- Special characteristics
- Breeding mechanisms
- Identification of top breeders

### 5. Population

- Population estimate
- Population trend

### 6. Chances for sustainable use and conservation

- Pressures
- Interest in revival and conservation by the local community

### 7. Baseline data to monitor social impact

in some cases and expert breeders in others. In principle, 50 percent of all informants should be female. Group dynamics can also be used for e.g. preference ranking, using photographs of animals with different traits or characteristics. At the same time, participatory observation is also required throughout the whole process, while a search for background information may also be useful.



The LIFE initiative logo.

The main objective is to understand a breed from an insider's viewpoint, something which requires a good relationship and a permanent attitude of respect. Information gathering should be empowering, not extractive: it must go hand in hand with raising the awareness of the local keepers for the value of their own breeds. Needless to say, prior consent from community authorities is essential, as it is to share and check results with the whole community.

Collected information can then be presented in many ways. It can be stored in a book or article, or documented as part of a breeding project, serving as input for the design of a breeding programme. It can become part of a school book, training material, and it can also be presented in small booklets in local languages. Benefits are many, especially if we consider the raised awareness of the value of the peoples' own knowledge and culture, the process of learning new ideas and methodologies, or the learnings which result from working with outsiders.

### Safeguarding indigenous knowledge

Documenting indigenous knowledge is controversial. It may lead to outsiders helping themselves to it and exploiting it to make money. Some believe that recording it and making it well known can pave the way for biopiracy. Others argue that by providing a written record of indigenous knowledge, biopiracy can be prevented and attempts at patenting prevented. Some NGOs, especially in India, promote community registers or "people's biodiversity" registers, where documents about people's

knowledge of biodiversity and their conservation practices are kept. Within the context of current intellectual property rights systems, such registers establish indigenous knowledge as "prior art", and the community as the primary rights holder. By documenting indigenous livestock breeds as "prior art", the LIFE method also supports efforts by communities to claim animal genetic resources as their property and avoid them being stolen. It therefore is an important tool in the emerging movement for "Livestock Keepers' Rights" that has been started by pastoralist representatives and their support organisations in order to secure the rights of livestock breeding communities over their animal genetic resources.

In October 2003, representatives of indigenous livestock breeding communities met in Kenya to discuss issues related to animal genetic resources, genetic engineering and intellectual property rights. They issued a statement, known as the "Karen Commitment", which calls for an international agreement recognising the historical contribution of pastoralists and other communities to the development of domestic animal diversity. It also calls for a recognition of the livestock keepers' rights, including the right to access, save, use, exchange, or sell their genetic resources, unrestricted by Intellectual Property Rights; the right to have their breeds recognised as products of their communities and knowledge and so remain in the public domain; and the right to a fair benefit from the use of animal genetic resources in their own communities and by others. It is hoped that scientists too will adopt the LIFE method and include the questions it poses into their research designs. This would certainly be an important contribution to more people-centred approaches to the sustainable management of the world's animal genetic resources.

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