

People-centred livestock development

A training course for NGOs





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Cover photo: Course participants inspect local cattle in a market in Uganda (Photo:
Evelyn Mathias)

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Introduction



Figure 1. Interviewing camel herders in Rajasthan, India. People-centred livestock development sees livestock keepers' knowledge and their animals as resources – not as things to be replaced. (Photo: Evelyn Mathias)

Livestock is often viewed as a pathway out of poverty for rural people in developing countries. Many government and non-government initiatives focus on improving livestock production to help people escape poverty.

But the record is disappointing. One reason for this is that many projects promote practices that do not match the capabilities of the livestock keepers, and fail to take local constraints into account. They copy the “modern” methods of pig, poultry and dairy production used in industrialized countries, using the same germplasm, external inputs and feed resources. For example, they promote exotic dairy cows or cross-breeding in places where the inputs needed are not available, or where the channels to market the milk are not developed. Although such problems are now widely acknowledged, many projects are still designed by outsiders who lack the local knowledge needed to make the appropriate decisions.

To alleviate poverty, livestock projects need to build on existing resources and assets. They must start out with a detailed analysis of the present livestock production system and its bottlenecks, as well as the specific opportunities and constraints that the

livestock keepers face. Only then should planning begin for a project that takes the specific situation of the targeted livestock keepers into account.

This is the key to **people-centred livestock development**, which builds on existing resources and designs interventions based on the existing cultural, ecological and economic context. It puts the livestock keeper in the centre of its efforts, instead of simply focusing on raising livestock production. And it involves livestock keepers as full partners in initiatives, not as passive beneficiaries.

Course objectives

This book outlines a training course to introduce people-centred livestock development. It aims to enable participants to understand this approach and use it to help local livestock keepers evaluate their own knowledge and resources as a basis for development. The concepts and approaches are useful in planning, designing, implementing, monitoring and evaluating livestock and rural development initiatives.

Course participants

The course is designed for **8–15 participants**. It is intended for staff of non-government organizations and others who wish to use people-centred livestock development in their work. The course participants should have some experience in livestock and rural development, but do not have to be specialized in livestock issues.

Course outline

The course explores various aspects of livestock development from a people-centred perspective. The content and examples are based on modules taught by the League for Pastoral Peoples and Endogenous Livestock Development (LPP) and by Lokhit Pashu-Palak Sansthan (LPPS) in India and Uganda. It consists of five modules:

1. **Why people-centred livestock development?** This introduces the concept of people-centred livestock development.
2. **Breeding.** This focuses on indigenous knowledge on animal breeding and managing animal genetic resources in the community.
3. **Animal health care.** This covers traditional animal health care (ethnoveterinary medicine) and community-based animal health services.
4. **Local feed and fodder resources.** This takes a look at how local people feed their animals and how they can improve their nutrition.
5. **Taking stock of people-centred livestock development.** This final module summarizes people-centred livestock development and explores how to promote it.

The course is envisaged as a combination of classroom presentations, field exercises, and discussions.

The initial **presentation** in each module introduces the topic. Rather than merely presenting information in lecture form, the trainer should encourage discussion among the participants to draw out their own knowledge and enable them to exchange ideas and experiences. The **handouts** can be used to stimulate this thinking and interaction.

There are two types of exercises: **classroom exercises** for the participants to do by themselves or in small groups, and **field visits** to local livestock keepers, traditional healers and others involved in livestock production and services. Each field exercise is built around a task, such as small groups of participants interviewing the livestock keepers about their knowledge or production system. After the exercise, the participants analyse their findings and report back to the plenary group.

The **resources** sections point to more detailed sources of information.



Figure 2. This manual is based on courses taught in India (pictured) and Uganda. (Photo: Evelyn Mathias)



Figure 3. Participants and facilitators in a course on aspects of people-centred livestock development in Uganda

Timetable

The course is designed to last four-and-a-half days. Course facilitators should plan for six days to allow for arrivals and departures. **Appendix 1** gives a sample timetable for the course.

The course should be held in a rural area where it is easy to visit livestock keepers and to view their production systems. The timing of the field visits should not interfere with the daily routine of the livestock keepers, and should make it possible both to meet the livestock keepers and to see their animals. It is best to discuss and schedule the field visits together with the communities before scheduling the other sessions.

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Module 1

Introduction to people-centred livestock development



*Figure 4. People-centred livestock development builds on local knowledge and resources
(Photo: Evelyn Mathias)*

Presentation 1

Why people-centred livestock development?

Purpose

To introduce the concept of people-centred livestock development and explain why it is needed.

Time required

1 hour

Procedure

Combination of presentation and discussion. As far as possible, draw on the participants' knowledge of traditional and modern livestock production in their area. Use the exercises at appropriate stages to make specific points.

The significance of livestock for the poor

Livestock are vital for the world's poor: for some 770,000 million rural poor people who live on less than US\$1 per day, animals support at least part of their livelihood (World Bank, 2007). Many parts of the world are too dry or mountainous to support crops: for 500 million people who live there, livestock is their mainstay (Livestock in Development 1999).

In developing countries, the poor often depend more than the rich on livestock. In Rajasthan, India, for example, the bottom 60% of households own 65% of the animals, and livestock contribute 25% of their income. For the rich farmers, the figure is only 9%.

Who are poor livestock keepers?

Poor livestock keepers can be divided into two groups:

- **Subsistence farmers or smallholders**, for whom livestock is an important, but not dominant part of their livelihood. Livestock pull ploughs and carts, and provide income, food, manure and social benefits. There are an estimated 640 million subsistence farmers owning livestock worldwide.
- **Pastoralists**, for whom animals are the backbone of their economy, and whose social organization depends on their association with animals. Pastoralists occupy those parts of the world that are not suitable for crop cultivation, such as deserts, steppes and mountain areas. About 120 million pastoralists worldwide rely on livestock production as their principal source of livelihood (ILRI, 2002).

South Asia and sub-Saharan Africa have the largest numbers of poor livestock keepers in the world.

An unsatisfactory record

So is livestock development a good way to support poor people? This approach has been disappointing. A study of 800 livestock projects revealed very little impact on the poor (LID 1999):

- The technologies they promoted are not usually adopted.
- Exotic breeds are not successful. Artificial insemination has made few inroads.
- Institutions (both government and non-government) dealing with livestock do not implement appropriate interventions.

An example from Rajasthan

Rajasthan, a state in arid northwest India, is famous for the quality of its livestock. Breeds from Rajasthan form the basis of thriving livestock industries in other countries. Examples include the Tharparkar, Kankrej and Gir cattle. The local Sirohi goat breed is more productive than exotic breeds from Switzerland.

Despite this, governments and NGOs have been promoting crossbreeding with exotic breeds for many decades. They ignore the resources and knowledge of the local livestock keepers. For 30 years, artificial insemination has been implemented by force, but crossbred cows still account for a tiny percentage of the state's milk output. The government does not even recognize indigenous breeds, such as the Nari cattle and the Malvi camel, that are well known to local communities. Both these breeds had escaped the attention of scientists, although they have considerable dairy potential under the harsh, arid conditions.

Inappropriate legislation also threatens local breeds and undermines local economies. Examples are the Nagauri cattle, a draught breed for which there is a big demand outside Rajasthan, but which currently cannot legally be sold outside the state. And the government neglects the one-humped camel, which used to be the lifeline of the desert, but which has been rapidly decreasing in numbers because of inappropriate land use policies.

At best, a lot of funds are spent without benefits. At worst, local genetic resources become extinct, and livestock keepers lose their livelihoods.

Conclusions from the past

- Livestock development generally suffers from a **western bias**, mostly because it is taught that way at local colleges and universities where the curricula were earlier shaped by external influences.
- Livestock development is frequently foisted on people **from above**, based on pre-conceived notions, without taking care to find out the characteristics and opportunities of the existing livestock system.
- Livestock development is different from **livestock keepers' development**. Since livestock have many functions, a one-sided focus on increasing their productivity often distracts from their other functions. High-performance animals often increase the risk for a farmer and add to his or her vulnerability.

The “Livestock Revolution”

In 1999, Delgado et al. predicted that the next food revolution would happen in the livestock sector. By 2020, developing countries are expected to consume 100 million tons more meat and 223 million tons more milk than they did in 1993. Rising consumption of meat and milk products in developing countries will have wide-ranging, global effects that are at least as profound as those caused by the Green Revolution.

This “Livestock Revolution” is both an opportunity and a threat to small-scale livestock keepers.

- The rural poor are the largest stakeholder group in livestock development.
- Livestock keeping and aquaculture are the only significant economic activities in which poor people have a major stake and which are growing rapidly.
- The Livestock Revolution, like the Green Revolution, may increase the gap between rich and poor.

The task is to find ways to enable poor livestock keepers to benefit from the increasing demand for livestock products. We need to find ways for small producers to compete with the large industries, and we need the political will to design appropriate policies that enable them to do so.

Suggestions by mainstream actors

The World Bank and the International Livestock Research Institute suggest these ways for the poor to benefit from the Livestock Revolution:

- Vertical integration and contract farming
- Biotechnology to “secure the assets of the poor”
- International standards to facilitate exports of livestock products
- Improved extension services.

If changes in Europe are any indication, then livestock development will split into two systems that exist side by side:

- **Industrialized production**, generating cheap and plentiful supplies of meat, milk and eggs for the mass market.
- **A small number of individual producers** who keep animals in organic systems and supply the demand better-off urban consumers for healthy and high-quality products.

Endogenous development: An alternative?

People-centred livestock development is “endogenous development”, meaning development “from the inside”. It refers to development that builds on local initiatives, knowledge, institutions and resources. It strengthens local resources so that local people benefit. Local people control it, but can draw on outside influences as appropriate.

Local resources include:

- Local or indigenous knowledge
- Local institutions
- Local breeds and genetic resources
- Local fodder resources.

Conclusion

There is great diversity in the value attached to different animals and in the way in which they are used. Findings from one area cannot automatically be transferred to another one. If we want to change things, we need to understand and take into account the cultural context in which livestock is kept and also consider economic and social aspects.

Exercise 1

The functions of livestock



Figure 5. Raika herder shearing sheep in Rajasthan, India (Photo: Evelyn Mathias)

Purpose

To illustrate the larger meaning of livestock for human society and to demonstrate that cash outputs (meat and milk) are only a small part of the many functions that animals fulfil.

Time required

15–30 minutes

Procedure

Ask each participant to name a function that livestock plays in their society. Write each idea down so that all participants can see the growing list of ideas. Participants may take turns, or the process may be spontaneous.

Example of output

Functions of livestock

Food	Wealth	Dowry
Income	Social status	Clothing, ropes
Source of draught	Service for tourism (riding animals)	Measure of wealth
Transport	Health (ritual, sacrifices, medicinal)	Experimental animals
Compost and manure	Social rehabilitation	Security
Raw material for industrial production	Sports	Bedding
Collaterals (loans)	Building	Means for poor people to access common property resources
Rituals	Fuel	

Exercise 2

Comparing livestock across cultures



Figure 6. By comparing experiences with people from other countries, participants can learn about their own cultures. (Photo: Evelyn Mathias)

Purpose

To understand the importance of culture in determining the way in which people make use of their animals.

Time required

10 minutes for the comparison, 5–10 minutes per pair for sharing, and 10–15 minutes for analysing the findings and extracting the lessons.

Procedure

1. Ask participants to team up into pairs, if possible with someone from a different region or country.
2. Ask each pair to pick one animal and compare its economic, cultural, social, ritual and religious functions in their respective countries.
3. Ask each pair to share their results.
4. Lead a discussion with the whole group about the findings.

Examples of output

Horses: Comparing Mongolia and the Philippines

	Mongolia	Philippines
Social status	Horses contribute 2.9% of family income All herder families keep horses, children do horse racing	Horses are kept mostly by rich people for sports and racing (imported breeds) Are status symbol.
Function	Milk, meat, leather/industry, dung, fuel Other uses: tourism, draught, transportation	Some farmers use for transportation and ploughing (local breeds in hilly areas)
Sports	National animal: highest of all animals, horse festival	Horse fighting in some provinces (local breeds)

Cattle: Comparing the Philippines and India

	India	Philippines
Economic uses	Draught power, milk (family consumption or market), dung for fuel, compost, leather industry	Draught power, meat, fertilizer, manure and compost. Very little for milk.
Breeds	27 native breeds	Government is introducing exotic breeds to promote milk drinking
Cultural and social	All castes raise cattle	Expensive animal, shows social and economic status Rich people give at weddings
Marketing	Organization of fairs to sell cattle on large scale	
Religion	Cattle is holy above all animals	
Ritual	Diwali: Laxmi Puja (cattle worship) Goverdhan Puja [(families put accessories to the cow and give special feed (sweets))]	

Exercise 3

Sharing experiences



Figure 7. A Filipina participant explaining the role of water buffaloes in her country (Photo: Evelyn Mathias)

Purpose

To reflect about prevailing approaches and decide whether they build on local resources and are adopted by livestock keepers.

Time required

5 minutes per participant, plus 30 minutes for discussion. These presentations can be split into different sessions, in the evenings if necessary.

Procedure

1. Ask each participant to share their experience with existing and mainstream approaches to livestock development in their country.
2. Invite the participants to discuss and compare their experiences.

Examples of output

Bangladesh

The government prioritizes crops and traditionally paid little attention to livestock, except for cattle. Here the focus is on cross-breeding and artificial insemination – initially Indian cattle were introduced for crossbreeding, and then Pakistani and finally European breeds. The problem with the artificial insemination system is that the farmer has no choice and control over what kind of semen he gets. Some NGOs have now started to conserve indigenous breeds.

In the last 5 years, the government tried to promote sheep and goat development (through loans, but not crossbreeding programs). Fayoumi chickens were introduced, but these were not popular with local peoples, since the colour of the chicken was different, and the meat was less tasty.

Philippines

The government promotes crossbred buffaloes but also conserves the local breeds. Animal health services collaborate with NGOs regarding health care extension.

Crossbred buffalo (dairy x swamp type) are unsuited for work and have birthing problems (these are due to the size of the calf size), although fertility is not impaired.

In the northern Philippines, crossbreeding with dairy buffaloes was not successful. Animal husbandry services do not reach smallholders. The exotic breeds introduced to the villages mostly failed.

Resources

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Module 2

Breeding and animal genetic resources



Figure 8. Nari cattle, an unregistered breed in India (Photo: Evelyn Mathias)

Presentation 2

Indigenous knowledge about animal breeding and community-based management of animal genetic resources

Purpose

To introduce the importance of conserving animal genetic resources and the role of livestock keepers in developing and managing breeds.

Time required

1.5 hours

Procedure

Combination of presentation and discussion. As far as possible, draw on the participants' knowledge of breeds raised in their area.

The value of local breeds

Livestock development projects frequently introduce “exotic” breeds, or promote the cross-breeding of local animals with exotic breeds. They do this because the exotics – imported breeds bred for their meat or milk production – are expected to boost output. Livestock keepers have heard of these advantages and may demand the imported breeds.

But exotic breeds rely on feed concentrates, improved housing and veterinary care – which are often lacking in developing countries. Without them they often perform poorly. Unadapted to tropical pests and diseases, many die.

Development professionals are coming to realize that well-adapted local livestock breeds can be more productive than the exotics under such conditions. Local breeds are usually very fertile and have long productive lives. Many are resistant to ticks and tick-borne diseases. They can eat and thrive on the poor-quality fodder that grows in the area. They generally perform better than exotic breeds during drought or other weather extremes. That makes them a suitable basis for sustainable livestock production in many developing countries, especially those with difficult environments.

Local breeds play many roles in rural livelihoods. They generate cash through the sale of meat, milk and eggs. They also produce manure, pull ploughs and carts, impart social benefits, and act as insurance against bad weather and economic hardship. That makes them vital for food security in the present.

Local breeds may also carry genes that are valuable in future breeding efforts. Especially those breeds kept by pastoralists, which are often exposed to stressful conditions, are thought to have many traits for survival and fitness that have long disappeared from the genetic make-up of high-performance exotic breeds. That makes them important for food security in the future.

These characteristics mean that it is very much in the interest of developing countries to conserve their breeds.

Local breeds have been shaped not only by the environment, but often also consciously by local animal breeders. The practices and concepts that people use to influence the genetic aspects of their livestock are called **indigenous knowledge about animal breeding**.

Indigenous knowledge about animal breeding

This includes various concepts and practices used by livestock breeders to influence the genetic composition of their livestock:

- **Breeding objectives:** Cultural concepts about how to use an animal.
- **Breeding goals:** Local preferences for certain characteristics, such as colour, size, or behavioural patterns.
- **Selection practices** for certain qualities (castration, culling, offspring testing).
- **Pedigree-keeping.**
- **Social restrictions** on selling animals, leading to closed gene pools.

Documenting local breeds

Documenting the livestock keepers' indigenous knowledge of their animal breeds and breeding is a valuable part of development projects.

It can show the existence of breeds that have escaped the attention of scientists and may have unrecognized advantages and potential. By drawing on the livestock keepers' knowledge, it is possible to identify such breeds and their special qualities. The breeds can then be incorporated into land use and rural development planning.

Documenting this indigenous knowledge puts on record the intellectual contribution of the communities that created the breeds. Such testimony is necessary to negotiate arrangements to share benefits from the breed and to pre-empt attempts by outsiders to exploit, appropriate, or even patent these genetic resources.

Local communities are often proud if they are recognized as stewards of important genetic resources. Helping them document their breeds from their own perspective can be an avenue to empower them. See Lokhit Pashu-Palak Sansthan and Köhler-Rollefson (2005) for a guide on how to help them with this documentation.



Figure 9. Participants in Uganda document their local breeds (Photo: Evelyn Mathias)

Where indigenous knowledge about animal breeding is useful¹

- Discovery and identification of scientifically **undocumented breeds** (for examples, Nari cattle and Malvi camel breeds in India).
- Knowledge about **production and reproduction** characteristics of breeds under field conditions.
- Knowledge about **susceptibility or resistance** of breeds and individual animals or lineages to diseases.
- Identification of maternal lineages with **desirable characteristics** and superior germplasm (setting priorities for conservation).
- Knowledge about the “**pedigree**” and family history of individual animals (including possibly negative traits).
- Knowledge about the special challenges of the **production environment**.

Community-based management of animal genetic resources

Farm animal genetic resources are all animal species, breeds, strains and populations used for food and agricultural production and their wild and semi-domesticated relatives. They encompass about 450 species of domesticated animals that have been diversified into more than 7,000 breeds during the 12,000 years since humans started farming and raising livestock. They are adapted to very diverse and specific challenges.

According to the Food and Agriculture Organization of the United Nations (FAO), about one-third of the documented breeds are threatened or have already become extinct (Scherf 2000).

Community-based management of animal genetic resources is an approach that integrates:

- The **livelihood needs** of local communities (food security and poverty alleviation), and
- The call of the Convention on Biological Diversity (CBD) to **conserve biodiversity** in its “natural habitats” through sustainable use.

¹ Source: Lokhit Pashu-Palak Sansthan and Köhler-Rollefson (2005).

Steps to establish a people-centred project to manage animal genetic resources

1. **Document the local breed** (or species) and its characteristics. See Lokhit Pashu-Palak Sansthan and Köhler-Rollefson (2005) for how to do this.
2. Identify the factors that are acting as **constraints** on the production system.
3. Analyse the comparative **strengths and weaknesses** of the breed.
4. **Raise awareness** about the need to conserve the breed among all stakeholders (livestock keepers, the government, general public, donors) through meetings, workshops, rallies.
5. **Identify livestock keepers** who are interested in and dedicated to maintaining the breed.
6. **Register the individual herds** in order to create a database for long-term monitoring of the population.
7. **Support the registered herders** through training, access to animal health care (medicines), support for group formation (breeders' association).
8. Try to work especially with **young people**
9. Identify opportunities for **niche marketing**; advertise the products and establish market linkages.
10. Lobby with the government to make **policies** more favourable for conserving the animal genetic resource in question.
11. **Build the capacities** of the breeders' association to lobby and mobilize for its interests.
12. Consider providing further training in principles of **organic livestock production**.

Wherever possible, the livestock keepers themselves should be implementing the activities while the NGOs and other “outsiders” should take on a supportive role.



Figure 10. Field visits give participants an understanding of the local breeds and production system (Photo: Evelyn Mathias)

Exercise 4

Field visit: Learning about indigenous institutions for breeding and management

Purpose

To get hands-on experience in obtaining information on the local livestock system and learn about the indigenous institutions for breeding and management.

Time required

1 day

Either arrange for groups to visit different villages, or ask them to focus on a different breed or species in the same village.

Introduce the assignment in the evening, then take the participants to the field early in the morning. The field exercise takes half a morning. Allow the rest of the morning and the afternoon for the analysis, write-up, presentations and discussion.

Procedure

1. Describe the local production system to the participants, and explain the assignment. Divide them into small groups to collect information. Ask each group to think of the questions they will ask and the issues they wish to explore.
2. The participants go to a village and ask local livestock keepers what animals they keep, how they are managing their animals, what breeding practices they use, and what local breeds they distinguish. They take notes on what they see and hear.
3. On returning from the village, the groups of participants analyse their findings and prepare a presentation using a word processor, presentation software or flipchart.
4. The participants present their findings to the plenary.
5. Facilitate a discussion of the findings.

Example of output: Cattle and sheep production and breeding in Latada

Latada village is located in Pali district, Rajasthan, about 15 km from Sadri. The area is semi-arid, and people practise agropastoralism. There are 150 households in Latada, out of which 50 keep livestock, including camels, cattle, goat, sheep and buffaloes. Sheep are the most numerous livestock.

Cattle breeds

Kankrej. Commonest breed in the area. Dual purpose (milk, draught), good body conformation, long upward-inward horn with thick base. Good mother, colour mainly white, sometimes with a black tinge. Long and pendulous sheath.

Nagori. Specific for draught. Lower milk yield; pure white colour, short upward horns. Bullock has button-shaped sheath. Lighter body weight than Kankrej; good quality bullocks.

Gir. Locally called “Rendi”. Specific for milk. Red colour, bulging forehead, rounded long upward- and inward-pointing horns. Long and pendulous sheath.

Cattle breeding

The village selects only one bull for all the cows in the herd. Criteria for selection include the mother’s pedigree record.

The bull stays with the herd for 3-4 years, after which he will be replaced by a younger bull from another village. The bull is given special shed and food. The other bulls are castrated and used for draught purpose or marketed

Buffalo breeds

Mixed Murrah. Milk type. Black colour. Short rounded horns, upright neck, heavy body. Good udder and teat;

Surti. Milk type. Outward- and backward-pointing horns, lighter weight, small udder.

“Chopa” (cattle and buffalo grazing system)



Figure 11. Animals gather in the centre of the village for the chopra (Photo: Evelyn Mathias)

About 100 families in Latada combine their cattle and buffaloes in the *chopa* (*cho* = four, *pa* = legs) herd. One or two men are hired to take the animals out for grazing. Every day before 10 a.m, the animals gather at the centre of the village. The caretakers take the herd to the grazing land about 3-4 km away. At 4 p.m. they start for home, reaching the village at 6–7 p.m. The cows and buffaloes go home to their owners by themselves. The men hired to look after the herd are called “*gawal*” and are paid INR 20 per animal per month, or 4 kg of cereal/animal/month. This amounts to an income per *gawal* per month of approximately US\$ 32.50. The *gawal* can be changed after one year, or the contract can be renewed.

The grazing area is common land owned by the villagers. Areas are grazed in rotation in different directions from the village. The *gawal* prevents animals from other villages grazing on this land. The grazing area has ponds for water. The villagers remove useless trees.

The herd contains about 140 animals (50% buffaloes, 50% cows). Of these, 40% are milking, 40% are pregnant, and 20% are dry (treated with ethnoveterinary medicine by their owners to become pregnant)

Sheep breeds

Bagli. White-reddish colour, long tail, poor wool quality, long pendulous ears, good milk yield, but cannot walk long distances.

Jassi. White body colour with black head, long tail, and pendulous ears, fine wool quality, able to walk long distances.

Bothi. Small ears and tail, white colour, white body and black head, fine wool quality, able to walk long distances.

Sonati. White body and black head, very small ears, larger body size than above three breeds.

Doomi. White, with brown head, prominent nose. Originates from Gujarat. Good for wool.

Sheep breeding

- Selective breeding, natural.
- Sex ratio: 1 male to 40 females.
- Males are kept active for only two years, then they are replaced.
- Breeds which can walk for long distances are preferred.
- Sheep provide milk, wool and manure; males are sold alive.
- Each ewe produces two lambs per year.

Production challenges

Diseases

Sheep pox. Control by indigenous vaccination method: take a piece of flesh from thigh of infected sheep, then make cuttings on healthy ones, then rub the pieces of flesh on cut surfaces. This makes the healthy animals develop immunity for up to one year.

Worms. Deworm with *orandi ka tel*, *tilli ka tel* (sesame) and turmeric.

Difficulty in birthing. Grind flowers of *plaas/kakra* plant; mix with water and drench the animal experiencing difficulty in birthing. This causes the cervix to relax.

Conclusions

Sheep appear to be the most adapted livestock species in Latada. The people have indigenous knowledge for managing their sheep, making production affordable and sustainable. There is a need to document and improve the indigenous knowledge and skills for sheep production.

Resources

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Module 3

Ethnoveterinary medicine



Figure 12. Healers in Uganda measuring amounts of herbal medicines (Photo: Evelyn Mathias)

Presentation 3

Introduction to ethnoveterinary medicine

Purpose

To help participants appreciate the value of indigenous knowledge on animal health care.

Time required

2 hours (including Exercise 5)

Procedure

Combination of presentation, discussion and classroom exercise. Participants are likely to have at least some knowledge of local animal health care. Ensure that they share this experience as far as possible.

What is ethnoveterinary medicine?

Ethnoveterinary medicine is **everything that people traditionally know and do to keep their animals healthy and productive**. It includes:

- Information on diseases, their causes and control.
- Management and preventive practices.
- Medicines and other treatments.
- Breeding for health.
- Magico-religious beliefs and practices.

With the emergence of modern medicine in the 1940s and its global spread, ethnoveterinary practices became considered obsolete, backwards and ineffective. This disregard resulted in an increasing loss of ethnoveterinary knowledge during the 20th century. But nowadays, recognition of the value of this knowledge is growing as people become aware of the limitations of Western medicine and the strengths of local systems.

Local livestock keepers use an integrated approach to keep their animals healthy and productive. Consciously or not, they prevent diseases through locally adapted management and feeding practices. They also use medicines made of plants and other materials.

Goats and sheep in Java

Goat and sheep production in Java, Indonesia, is an example of this.



Figure 13. A goat stable in Java, Indonesia

The animals are kept in a bamboo shed on stilts with a slatted floor. They are fed with fodder cut from roadsides and field boundaries.

- The faeces fall through the gaps between the slats, so the animals do not come into contact with them. Faecal samples show that the animals have few parasites.
- The open design of the shed gives ventilation in the hot, humid climate.
- To improve the general condition of their animals, owners may feed their animals cucumber mixed with soy sauce, or drench them with mixtures of different plants.
- If the animal has little appetite, the owner sprinkles salty water on its feed.

Indigenous animal healthcare systems differ from community to community and are commonly dynamic and changing: Based on their own observations and experimentation, livestock keepers modify and adapt the practices they have learned from their elders and combine them with modern practices. As a result, ethnoveterinary practice is often a mix of local and modern healthcare approaches.

Ethnoveterinary medicine has various strengths as well as limitations (Table 1).

Table 1. Strengths and limitations of ethnoveterinary medicine

Strengths	Limitations
<ul style="list-style-type: none"> • People are familiar with it. • The ingredients are locally available. • People can prepare it themselves. • Self-made medicines are low cost. 	<ul style="list-style-type: none"> • Plant ingredients may not be available in certain seasons. • The preparation and application of plant medicines can be labour-intensive and cumbersome. • The dosage is vague and difficult to standardize, and can lead to safety problems. • Some practices do not work, some are harmful.

Who knows what?

Not everyone in a community has the same ethnoveterinary knowledge. Many societies have ethnoveterinary specialists or healers, who are knowledgeable about particular diseases or treatments, and who may specialize in treating particular problems.

Pastoralists tend to live more closely with their animals than smallholders, so they tend to have better ethnoveterinary knowledge.

Women often are responsible for taking care of poultry, sheep and goats, as well as milking animals and newborns. They often know a great deal about the problems affecting these animals.



Figure 14. Women are often responsible for milking cattle and taking care of small livestock and the young. (Photo: Evelyn Mathias)

Documenting ethnoveterinary medicine

Ethnoveterinary medicine can be documented in various ways: through interviews, direct observation, and participatory appraisal methods.

To be useful, the information on the problem and the treatment has to be complete. It is not enough to say that “Farmers use betel pepper to treat eye diseases”. What eye diseases? At what stage in the disease? What part of the plant is used? How is it prepared? How is it administered? What dosage is used? How often is the dosage repeated?

You can use Exercise 5 to give the participants practice in collecting information on treatments.

Exercise 5

Is the prescription complete?

Purpose

To help participants understand what information to ask for when documenting ethnoveterinary treatments.

Time required

15 minutes to fill in the worksheet, plus 15 minutes to discuss the results.

Procedure

1. Give the participants Handout 1 and ask them to judge whether the prescriptions are complete. A prescription is complete when the readers can follow the instructions and prepare and use it themselves.
2. Ask the participants to identify what information is missing and suggest some words that might fit.
3. Give the participants Handout 2 and discuss the correct answers.

Handout 1. Is the prescription complete?

Below are four prescriptions from different countries in Asia. However, not all are complete.

Imagine that you are asked to prepare and apply the medications described in the prescriptions. Please read them carefully and note which ones are complete and for which ones you need additional information to be able to conduct the treatment in practice.

1. Eye infection in cattle (Indonesia)

- Boil 5 leaves of *Piper betle* (betel pepper) in 500 ml of water and cool. Use as an eye wash twice a day for 3-5 days.

Complete? Yes No

If “no”, what is missing?

2. Eye infection in cattle (Sri Lanka)

- Boil 2-3 handfuls of fresh *Punica granatum* leaves in 5-6 cups of water for 10 minutes. Let cool down and filter the mixture through a clean cloth. Wash the eye with the liquid twice a day for 3-4 days. Do not store the liquid for more than 1 day.

Complete? Yes No

If “no”, what is missing?

3. Broken leg in cattle, pigs, goats and sheep (Rajasthan, India)

- Make a cast from bamboo sticks with a cloth dipped in mud. Use a piece of string to keep in place. Smear sesame oil on skin to protect it from the cast.

Complete? Yes No

If “no”, what is missing?

4. Diarrhoea in ruminants (India)

- Give the water from cooked rice mixed with 1 g of dried ginger rhizome powder to the animal to drink. Repeat twice a day. Give half the quantity for sheep and goats.

Complete? Yes No

If “no”, what is missing?

Handout 2. Is the prescription complete? - Answers

1. Eye infection in cattle (Indonesia)

Incomplete. The missing information is underlined below.

- Boil 5 leaves of *Piper betle* (betel pepper) in 500 ml of water and cool. Filter the mixture through a clean cloth. Use the liquid as an eye wash twice a day for 3-5 days.

2. Eye infection in cattle (Sri Lanka)

Complete

- Boil 2-3 handfuls of fresh *Punica granatum* leaves in 5-6 cups of water for 10 minutes. Let cool down and filter the mixture through a clean cloth. Wash the eye with the liquid twice a day for 3-4 days. Do not store the liquid for more than 1 day.

3. Broken leg in cattle, pigs, goats and sheep (Rajasthan, India)

Incomplete. The missing information is underlined below.

- Make a cast from bamboo sticks with a cloth dipped in mud. Put the cloths around the broken part and place several sticks around the cloth so that they stabilize the broken part. Use a piece of string to keep in place. Before applying the cast, smear sesame oil on skin to protect it from the cast.

4. Diarrhoea in ruminants (India)

Complete

- Give the water from cooked rice mixed with 1 g of dried ginger rhizome powder to the animal to drink. Repeat twice a day. Give half the quantity for sheep and goats.

Exercise 6

Field visit: Healer interviews



Figure 15. Ugandan healers preparing herbal medicines. (Photo: Evelyn Mathias)

Purpose

To give participants hands-on experience in documenting ethnoveterinary information.

Time required

1 day

Either arrange for groups to visit different villages, or ask them to focus on a different breed or species in the same village.

Introduce the assignment in the evening, then take the participants to the field early in the morning. The field exercise takes half a morning. Allow the rest of the morning and the afternoon for the analysis, write-up, presentations and discussion.

Procedure

1. Explain the assignment to the participants, and divide them into groups. Give them Handout 3 and make sure they understand the questions.
2. The participants visit the healers and interview them about the diseases they treat and the remedies they use. They take notes on the responses.
3. On returning from the village, the groups of participants analyse their findings and prepare a presentation using a word processor, presentation software or flipchart.
4. The participants present their findings to the plenary.
5. Facilitate a discussion of the findings.

Handout 3. Ethnoveterinary interview guide

Adapt this guide as required

Do not forget to write down the names and location of the informants and note which information came from which person, so you can trace the information back to its source. The information is the property of the respondents and should only be used elsewhere with the permission of the community!

Part 1. Background

Livestock information

- **Who in the household** is responsible for, manages, or treats sick animals?
- What are the local **seasons** of the year and their relevance for livestock disease?
- What species of **animals** are kept, and what breed, age, or other categories are kept? What breed, age, or other categories are considered relevant for animal health?

Disease names

- Elicit the **names** of all livestock diseases in the area, by species, seasons and other locally relevant variables.
- **Cross-check** all terms for duplications, overlaps, confusions and omissions.
- Decide together with the livestock keepers **which diseases** warrant investigation in Part 2.

Part 2. Question list

- What species, breeds, ages and sexes of **animals** are affected by this disease?
- Is there **seasonality** or other timing to the appearance of the disease?
- Does it usually affect one animal or a group of animals at the same time? Does it **spread** from animal to animal (i.e., is it contagious or infectious)?
- What **causes** the disease: natural/physical causes, supernatural/non-physical causes, or both? Describe.
- Are there ways to **prevent/avoid** this disease? If so, what are they?
- Describe the main **symptoms**, if possible in their order of progression and timing. What is the first symptom seen, and when? What is the second symptom seen, and when? Also what is the symptom, if any, that makes you decide it is this specific disease?
- Are **traditional remedies** available? Basically what are they? Where/ how are they obtained? What happens when they are used (please be as specific as possible)?
- Are **modern treatments** available? What are they? Where/how are they obtained? What happens when they are used (please be as specific as possible)?
- What usually happens if the animal is **not treated**?
- **When** did you last have (or for cropping areas with few livestock per household, hear of) an animal with this disease? What did you do and what happened to the animal?

Source: Adapted from Grandin and Young (1996).

Example of output: Motiram, a healer in Sutharon ka Guda village

1. *Kil lagna* (choking)

Signs: profuse salivation, lacrimation, shaking the head (up-down), swelling

Treatment

1. Fix a *makri* (a speculum, or device to hold the mouth open to prevent biting) in the mouth.
2. Insert your hand through the whole in the *makri*.
3. Locate the foreign object.
4. Remove it manually.
5. Remove the *makri*.
6. Inject terramycin (an antibiotic) once a day intravenously for 2 days (buffalo 20 ml, cattle 15 ml).
7. Smear ghee inside the mouth.

Steps 6+7 are only sometimes done when necessary.

2. Foetal death

Signs: restlessness, arched back, frequent lying down and getting up.

Cause: dilation of cervix – air goes inside, damaging the foetus and interfering with the normal birthing process.

Treatment

1. To open the cervix, use:
 - 0.5 kg of wheat (roasted in a pan until it becomes black)
 - 0.5 kg of ghee
 - 2 litres of milk (for a buffalo use cow's milk, for a cow use buffalo milk)
 - One handful of sesame flowers
2. Grind the solid ingredients and mix all ingredients together well. Drench.
3. After the cervix has opened, use a clean pocketknife to cut the foetus.
4. Inject terramycin into the muscle: 15 ml for cattle and 20 ml for a buffalo.

Presentation 4

Application and limitations of ethnoveterinary medicine



Figure 16. Many herders combine traditional and indigenous treatments (Photo: Evelyn Mathias)

Purpose

To discuss how ethnoveterinary medicine can be used in development projects.

Time required

1 hour

Procedure

Combination of presentation and discussion.

How is ethnoveterinary medicine useful for development?

Alternatives to western medicine. Ethnoveterinary practices can be alternatives to western medicine, especially in areas where western drugs and equipment are unavailable or expensive, and where veterinarians are scarce. But remember, not all ethnoveterinary practices are useful: some may have no effect, and others may be harmful.

Project design and implementation. Understanding traditional practices gives outsiders an insight into the local healthcare system and the names people use for particular problems. That facilitates communication with the livestock keepers and helps with project design.

Epidemiology. Keeping track of livestock diseases can be difficult. Local people are often familiar with diseases, and can provide information on their occurrence and effects.

Monitoring and evaluation. Local people can also keep track of animal health problems for project monitoring and evaluation systems.

See Handout 4 for steps in using ethnoveterinary medicine in a people-centred animal health care system.



Figure 17. Raika herders injecting sheep in Rajasthan. Many livestock keepers use a combination of western and traditional medicines. (Photo: Evelyn Mathias)

Things to consider when promoting ethnoveterinary medicine

Recommend only safe practices. Do not recommend a practice described by only one respondent without testing it.

Information on ethnoveterinary medicine is people's intellectual property. Do not exploit it (e.g., for commercial purposes) without their agreement, and make sure that they benefit from such commercialization.

Many medicinal plants are rare. Make sure that they do not become overexploited.

See Handout 5 for a form that project staff, communities and individual livestock keepers can use to plan which treatments to use for which disease.

Handout 4. Steps in establishing people-centred animal health care systems

1. **Learn about the diseases and problems** from different perspectives: consult farmers and healers as well as veterinary practitioners.
2. **Find out the importance of the diseases.** Again, consult both insiders and outsiders.
3. **Identify which diseases the local people treat** with their own remedies.
4. **Record the remedies for these diseases.** Be sure to write down the preparation method, dosages, application method and schedule as exactly as possible and note the name of the respondent.
5. **Select the promising remedies and practices, and validate their efficacy.** Consider the judgement of farmers and healers as well as pharmacologists and veterinarians; check the literature; test the plants used if no other information is available.
6. **Compare the different prevention and treatment options** available for each disease (e.g., allopathic, Ayurveda, ethnoveterinary, etc.); identify for each the advantages and disadvantages.
7. **Develop a package of options for each disease.** Consider not only treatments, but also management and disease-prevention practices.
8. **Develop training and extension materials** about the selected information.
9. **Train veterinary field personnel** in the use of this information and in participatory approaches.
10. **Train local healers** as paravets.
11. **Develop a monitoring and evaluation system** that includes local indicators. Go beyond mere production indicators. Work closely with farmers when setting up the system.
12. **Monitor plant extraction;** make sure that it does not deplete the environment. If it does, consider protective measures and the establishment of herbal gardens.
13. **Raise the awareness** of policy makers and educators about the value and potential of local knowledge.

Handout 5. Form to develop health care package

Location _____

Date _____

Disease	Ethnoveterinary medicine	Western medicine	Recommendation

Resources

- Grandin, B.E. and J. Young. 1996. Collection and use of ethnoveterinary data in community-based animal health programmes. In: McCorkle et al. 1996.
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Module 4

Local feed and fodder resources



Figure 18. What do they eat? Restrictions on grazing are making life difficult for herders in Rajasthan. (Photo: Evelyn Mathias)

Presentation 5

Introduction to feed and fodder Issues

Purpose

To raise participants' awareness of the actual and potential value of local feed resources.

Time required

30 minutes

Procedure

Combination of presentation and discussion. Consider inviting a livestock keeper from the area to give a presentation about the local feeding system and the challenges that livestock keepers face.

Feed and fodder in traditional livestock production

Feed and fodder are the most important input to livestock keeping. Well-fed animals can fulfil their genetic potential, are productive and not prone to becoming sick. But getting enough feed and fodder is probably the biggest constraint most poor livestock keepers face. Smallholders usually feed their animals on crop by-products, while pastoralists depend on common-property resources and herd their animals from one area of grazing land to another. There is considerable overlap: smallholders may satisfy the nutritional needs of their animals by letting them loose to graze, whereas pastoralists may supplement the diet of their animals with crop residues or branches they have lopped from trees.

In traditional systems, livestock is supported either by grazing or by fodder produced on the farm itself, rather than purchased concentrates and other feed. Traditional systems share this feature with organic farms. That is one of their major advantages.

Implications of industrialized animal production systems

Currently, livestock consume close to 35% of the world's cereal output (FAO 2009). **Industrialized animal production** relies on massive amounts of cereals to use as feed. Delgado et al. (1999) predicted that by 2020, developing countries as a whole will raise their use of feed cereals to some 400 million tonnes, or about double the amount of cereals they fed to animals in 1993. (For comparison, US maize crops in the early 1990s yielded around 200 million tonnes).

According to this prediction, the increased feed amount will be met mostly through imports, rendering many developing countries very vulnerable, as was demonstrated during the Asian economic crisis in 1999. This led to a drastic decline in industrialized poultry, because countries such as Indonesia no longer had enough foreign currency to import feed.

To deal with this predicted increase, institutions such as the International Food Policy Research Institute argue that more investment is needed in genetically modified crops. Already much of the soybean and maize fed to livestock is genetically modified.

The Livestock Revolution is very much in the interest of the major grain-producing countries. These include the USA, the European Union, Australia, the former Soviet Union, Brazil and Argentina.

Another factor to consider is that feeding animals on cereals consumes enormous amounts of water. The production of 1 kg of chicken meat requires 3,500 litres of water, and the production of 1 kg of beef the astronomical amount of 100,000 litres of water. By comparison, producing 1 kg of soybeans needs 2,000 litres of water, 1 kg of rice needs 1,912 litres, and 1 kg of potatoes a mere 500 litres.

Pastoral and smallholder livestock production compares favourably with industrialized livestock production because it relies on natural grazing and crop by-products for feeding animals. Because of this, it does not compete with cereal production for humans. Also, extensive livestock grazing places no burden on groundwater supplies in arid and semi-arid areas.

However, most livestock in developing countries depends on common property resources. These are progressively being alienated or privatized. Plus, the introduction of cash crops such as tobacco, cotton and hybrid cereals has led to the elimination of crop by-products, such as stalks and straw that formed valuable feed resources.

Indigenous knowledge about animal fodder and forage

Most livestock keepers have detailed knowledge about their animals and their environment. This knowledge is a valuable resource for development efforts. Projects can be successful only by building on and integrating it, and by analysing and understanding the objectives of the farmers within the whole farming system.

In **Kenya**, a study compared indigenous and scientific knowledge about fodder trees and shrubs growing on the slopes of Mount Kenya. It found that farmers use 161 indigenous and exotic species as fodder, whereas scientists usually recommend only two or three species. Some of the species known only to farmers were of better quality and quantity than the species recommended by scientists. There was also a close correlation between farmers' preferences and laboratory analyses, suggesting that laboratory analyses are not always necessary for evaluating forage quality. It was concluded that the best naturally occurring plants could almost match the commercial mix of concentrates fed to dairy cattle. And with respect to protein content, they were better (Roothaert 2000).

In **Tanzania**, a study showed that farmers were highly knowledgeable about the species browsed by their goats. It concluded that farmers' knowledge about locally available resources such as feeds added value to scientific research (Komwhiangilo et al. 2001).

In **Socotra** (an island belonging to Yemen), pastoralists know in detail which plants are toxic or unsuited to their animals. Some examples:

- If they feed too much *Cordia* bark to their goats, these will suffer severe internal blockage, which can be fatal.

- If cattle eat too many fruits of the *Dracaena* plant, they become weak and tottery.
- If pregnant goats nibble at the young aloe shoots, or if they feed on a certain species of geranium, they are likely to abort.
- When camels browse on *Acridocarpus* they get the staggers, become incapable of carrying loads, and usually have to be slaughtered.

Herders must be constantly aware of where their animals are and what they are eating.

Exercise 7

Field interviews with livestock keepers and observations on feed and fodder



Figure 19. Participants interview Raika camel herders in Rajasthan (Photo: Evelyn Mathias)

Purpose

To enable participants to learn how local livestock keepers feed their animals, and what they know about their feed and fodder resources.

Time required

1 day

Introduce the assignment in the evening, then take the participants to the field early in the morning. The field exercise takes half a morning. Allow the rest of the morning and the afternoon for the analysis, write-up, presentations and discussion.

Procedure

1. Explain the assignment to the participants. Divide them into small groups and give them Handout 6.
2. The groups of participants visit the field to interview livestock keepers and document their various feed and fodder resources at different times of the year.
3. After returning from the field, the groups analyse and present their findings.
4. Facilitate a discussion of the findings.

Handout 6. Fodder interview guide

Adapt this guide as required.

Part 1: Observations

- Visit the animals in the stable or grazing area (or the place where the livestock keeper collects feed). What are the animals eating? Try to identify as many plants as possible.
- Observe the condition of the animals. Do they appear to be getting a sufficient and balanced diet? What, if anything, is missing?
- Are they growing well? Are they healthy? How much milk (how many eggs) do they produce?

Part 2: Interview

Feeding and grazing practices

- Who in the household manages the animal feeding and grazing? (Interview this person if possible.)
- How are the animals fed? By grazing, with cut-and-carry feeding, using hay or other stored feed, with purchased feed, etc?
- Do you grow fodder crops? Do you feed them on crop residues?
- What plants do your animals eat? What are their names?
- Where do the animals graze (or where do you collect the fodder)? Who owns or manages this land?
- How much do they eat? Is this enough? Do they grow and put on weight? How quickly do they grow to a weight that you can sell them?
- What plants do you (or the animals) avoid?
- Do you provide supplements such as salt or minerals?
- What feed do pregnant or milking animals get? Is this different from other animals?

Seasonal variations

- What do the animals eat at different times of the year?
- Is there a fodder shortage at a particular time of the year? How long does this period last? Has there been a serious shortfall in the last 10 years?
- Is the fodder shortage due to the quantity of feed, or its quality?
- During the period of shortage, is there still enough for them to survive? Is there enough fodder for the animals to put on weight?

Part 3: Overcoming constraints

- What problems do you face in feeding the animals? (labour, cost, distance, quality, amount, storage, seasonal variation, etc.).
- Are there problems with using land for grazing or fodder production?
- Are these problems getting better or worse? What causes the problems?
- How might these problems be overcome? Who is able to solve the problem?
- What can the livestock keepers do to help solve the problems? What can NGOs or development organizations do? What should the government do?

Example of output

Fodder resources named by camel herder Adoji Raika in Rajasthan, India

Bushes	Trees	Feed supplements
<i>Echinops echinatus</i> (Indian globe thistle)	<i>Khijero</i>	Salt
<i>Unt kantala</i>	<i>Rhujio</i>	Turmeric
<i>Silpa</i>	<i>Neemlo</i>	<i>Ajwain</i>
<i>Dav</i>	<i>Rholo</i>	Cotton seed
<i>Gangana</i>	<i>Babul</i>	<i>Gur</i> (jaggery, unrefined sugar)
<i>Jinjo</i>	<i>Khunta</i>	Butter oil
<i>Papli kher</i>	<i>Khamlai</i>	
<i>Kother jhal</i>	<i>Halhak</i>	
<i>Bhat</i>	<i>Hajio</i>	
<i>Khavolai</i>		
<i>Halap</i>		

Camels are fed on bushes and tree fodders according to the season.

- **Summer:** *desi babul*, neem, *kher*, *sangri*, *kumtya* etc.
- **Rainy season and winter:** green fodder and fruits of *kumtya*, *halar*, *harghudo*, *thabu*, *halap*, *khamlai*, *khejuri*, *bhat*, *silap*.

A camel ideally requires about 15 kg of green fodder per day. With good nutrition, it can give up to 7 litres of milk/day. The current ration is reasonably balanced but not optimum. There are nutritional deficiencies that vary with the seasons. It is hard to give a balanced ration because of a lack of pasture forage and holding grounds.

Calves are fed only on milk for three months; then they begin foraging.

Constraints

- Continuous drought.
- Conflict between crop cultivators and camel herders.
- Lack of access to forest land, and degradation of pasture land.
- Good forage plants are becoming scarce, such as *khejiri*, *kumtia*, *kanter* and *bordi*.
- Continuous migration necessary in search of forage and water.
- Herders lack initiative to approach the authorities for grazing rights.

Possible solutions

Herders

- Organize into effective cooperatives and network among themselves and with NGOs.
- Develop and maintain sacred forests and grazing lands.
- Put more emphasis on education for their children so they will not have to herd animals for a living.

NGOs

- Build the capacity of herders and empower them for campaigning, lobbying, and management of grazing land and natural resources.
- Encourage herders to participate in camel fairs.
- Develop modalities to revive the existing pasture lands.

- Share information with like-minded NGOs and herders.
- Conduct research, documentation and dissemination.
- Develop policy recommendations and lobbying.

Government

- Recognize the need for a grazing policy.
- Demarcate sacred forests and grazing land.
- Include camel grazing as part of the livestock development policy.
- Provide capacity building to the camel herders.
- Organize competition for camel keepers as an incentive for good camel keeping.
- Ensure fair marketing of camels so that the herders get a good price for their animals.

Conclusions

Herders have detailed knowledge about forage plants and monitor their presence. Nutritional deficiencies can only be overcome if the government implements a grazing policy. But for this to happen, the herders need to get organized and involved in lobbying. For NGOs, empowerment of the herders may be the most promising way to solve nutritional deficiencies.

Resources

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Module 5

The future of people-centred livestock development



Figure 20. Course participants analysing the potential for people-centred livestock development in Sadri, India (Photo: Evelyn Mathias)

Presentation 6

Elements of people-centred livestock development

Purpose

To enable participants to review the characteristics and advantages of people-centred livestock development.

Time required

2 hours

Procedure

Combination of presentation and discussion. For some parts of the material, consider asking groups of participants to brainstorm and report on their ideas (see the examples of outputs).

Elements of people-centred livestock development

The essence of people-centred livestock development is **mobilizing livestock keepers' own resources and strengths**, rather than foisting upon them approaches that have been developed elsewhere. People-centred livestock development is about husbanding cultural and biological diversity and thereby supporting ecologically sustainable land use.

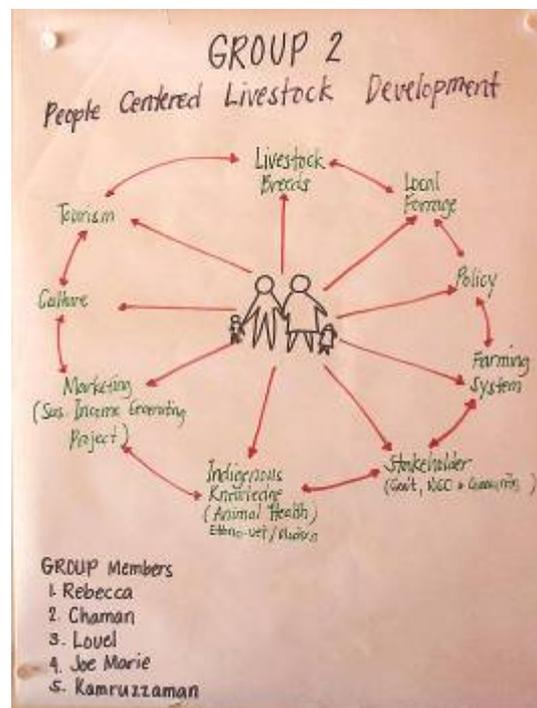


Figure 21. Output from a group discussion on the elements of people-centred livestock development

It is composed of the following elements:

- **(Indigenous) breeds** adapted to the local conditions. It helps conserve and sustainably use animal genetic resources.
- Use of **local forage and natural resources**.
- Integration of livestock with **crop cultivation**.
- Taking into account the **cultural values** of the community.
- **Local practices** in health care and livestock feeding.
- The **local people** and the community: their knowledge, skills, opinions, and capacity.

People-centred livestock development educates local people and builds their awareness of their own potential and that of their livestock breeds. It organizes them and empowers them on issues that affect them, particularly about livestock development.

Stakeholders

- **Local people.** These are the main actors in people-centred livestock development.
- **NGOs.** They help build the capacity of local people, help them get organized, and facilitate interactions with government.
- **Government.** Government organizations develop and enforce policies that may promote or hinder people-centred livestock development.
- **Socially-minded private firms.** They can help livestock-keeping communities to produce and market products from their livestock.

Benefits

Potential benefits of people-centred livestock development include:

- It makes communities aware of their own strengths and the value of their resources and empowers them.
- It generates income and supports livelihoods.
- It creates rural employment, so reducing rural–urban migration.
- It provides healthy food.
- It makes optimal use of natural resources (pastureland and water) and reduces the need for external inputs such as purchased feed and fuels.
- It fulfils cultural and religious needs.
- It is a source of revenue and contributes to the national income.
- It manages biodiversity sustainably.
- It supports eco- and ethno-tourism.
- It contributes to nutrient recycling.

- It provides raw materials for industry, as well as transport (draught animals) and fuel (dung).



Figure 22. One group's mapping of the benefits of people-centred livestock development

Presentation 7

Promoting people-centred livestock development

Purpose

To enable participants to determine how to promote people-centred livestock development in their own work.

Time required

2 hours

Procedure

Combination of group exercises, presentation and discussion. Ask small groups of participants to brainstorm and report on their ideas to promote people-centred livestock development. Finish with a presentation on the outlook for this approach.

Livestock keepers

Livestock keepers can benefit from people-centred livestock development by:

- Building on their own knowledge and resources.
- Realizing the need to continuously learn, adapt and experiment.
- Networking among themselves and with NGOs and government organizations.
- Forming producer and lobbying organizations.

NGOs

NGOs can promote people-centred livestock development by:

- Empowering local people and learning from them, rather than implementing pre-conceived interventions.
- Acting as a link between communities on one side and government and other development agencies on the other, so ensuring that the voices of livestock keepers are heard and their needs acted upon. This can happen through workshops, seminars, conventions, media and lobbying.
- Building a common platform with like-minded NGOs and other interested parties.
- Building links with consumer organizations that are interested in healthy food.

Scientists and universities

Scientists and university staff can:

- Adjust curriculum and school materials to reflect a more people-centred approach to livestock development.

- Conduct research that tests and validates people-centred approaches.

Government

Government organizations can:

- Recognize people-centred livestock development and its merits.
- Creating enabling policy frameworks for people-centred livestock development at regional, national and global levels, with participation from farmers and NGOs.
- Improve the delivery of services to livestock keepers, especially with respect to animal health.

Outlook for people-centred livestock development

People-centred livestock development is an attractive concept with advantages from all perspectives: employment, sustainable natural resource and biodiversity management, healthy food, maintenance of cultural diversity. But livestock development does not happen in an economic and political vacuum. It is embedded in a larger macroeconomic and policy context. Internationally, livestock production is undergoing rapid change, mostly due to the consequences of globalization:

- **Industrialized systems** are expanding, creating powerful competition for small and medium-sized livestock-keeping operations.
- There is a tendency for large companies to control the whole production chain from the producer to the consumer. This is called **vertical integration**.
- There is international pressure for adopting certain **hygiene standards** in slaughtering and dairy products.
- **International trade** in livestock products is rapidly increasing.

If the experiences in North America and Europe are anything to go by, the number of family-owned farms will decrease rapidly in developing countries. For instance, the total number of US pig operations dropped from almost 1 million in 1968 to only 114,380 in 1998 (Consumers Union 2000), whereas with respect to dairy farmers there was a reduction from 70,000 to 6,000 in a similar time period. Most of that decrease is from the loss of small farms.

In developing countries where employment rates are often very high, such developments could be disastrous and accelerate rural–urban migration even further.

At the same time, at least in countries with expanding economies, better education induces people to abandon livestock keeping and opt for more attractive income opportunities (especially if politics and legislation disadvantage small-scale farmers and herders!).

Another trend is that many pastoralists will not be able to continue livestock keeping because of agricultural development and nature conservation projects are restricting their access to pasture.

New opportunities for livestock keepers will also arise:

- As people become more educated, the market for healthy and organic products increases. **Organic agriculture** is the one of the most rapidly advancing agricultural sectors.
- In many marginal areas, pastoralism represents the only long-term sustainable land-use option in the face of rapidly dwindling groundwater supplies. There will always be a rationale for **mobile livestock keeping** in these parts of the world.

Livestock development approaches will need to take these realities into account.

- Projects need to incorporate training about the developing scenarios and **build capacity** in the skills needed to compete in and capitalize on new types of markets.
- Another important strategy is to **strengthen the organization** of livestock keepers so that they can collectively press for their rights for government services, fair trade and access to grazing (FAO Pro-Poor Livestock Policy Initiative).

Presentation 8

People-centred livestock development networks



*Figure 23. People-centred livestock development relies on networking and communication
(Photo: Evelyn Mathias)*

Purpose

To introduce participants to networks on people-centred livestock development.

Time required

1 hour

Procedure

Combination of presentation and discussion.

People-centred livestock development networks

Two networks of organizations and individuals focus on people-centred livestock development.

The LIFE Network. “Local Livestock For Empowerment” (LIFE) is a loose network of like-minded NGOs and individuals dedicated to securing livelihoods through the conservation and promotion of local breeds. Activities include field projects, publications, lobbying and advocacy. Website: www.lifeinitiative.net.

Endogenous Livestock Development Network. This broad network focuses on the development of livestock production based on livestock keepers’ initiatives, their own worldview, values, knowledge, institutions, and locally available plus suitable outside resources. Website: www.eldev.net. It operates a mailing list: subscribe at <http://tech.groups.yahoo.com/group/ELDev/>.

Other networks

Other, local networks of organizations may exist. Ask participants to share their knowledge of these.

Resources

Consumers Union 2000

FAO Pro-Poor Livestock Policy Initiative

Appendix

Sample training course programme



Figure 24. Participants learn from one another and from livestock keepers in Uganda (Photo: Evelyn Mathias)

This is the programme used at a training course on people-centred livestock development in Sadri, Rajasthan, India, in 2005.

Schedule	Activity	Type of activity
Day 1		
	<i>Arrival and registration</i>	
19:30	Getting to know each other and expectations	Plenary
Day 2		
8:00	<i>Breakfast</i>	
9:00	Opening and Introduction	Plenary
Module 1	Introduction to people-centred livestock development	
9:30	Presentation 1. Why people-centred livestock development?	Presentation
10:30	Exercise 1. The functions of livestock Exercise 2. Comparing livestock across cultures	Group exercises
13:00	<i>Lunch</i>	
14:30	Exercise 3. Sharing experiences (4 participants)	Presentations, informal plenary discussion
Module 2	Breeding and animal genetic resources	
15:30	Presentation 2. Indigenous knowledge about animal breeding and community-based management of animal genetic resources	Presentation
17:00	<i>Visit to town</i>	
19:00	Exercise 4. Field visit: Learning about indigenous institutions for breeding and management: Preparing for field activity	Group work
20:00	<i>Dinner</i>	
Day 3		
7:15-	Exercise 4: Field visit	Field visit (in groups)
10:30	<i>Breakfast</i>	
11:00	Exercise 4: Write up and presentation of field research, discussion	Group work and plenary
13:00	<i>Lunch</i>	
14:30	Exercise 3. Sharing experiences (more participants)	Presentations, informal plenary discussion
15:30	<i>Relaxation</i>	

Schedule	Activity	Type of activity
Module 3	Ethnoveterinary medicine	
18:00	Presentation 3. Introduction to ethnoveterinary medicine Exercise 5. Is the prescription complete?	Presentation and interactive learning exercise
20:00	Exercise 6. Field visit: Healer interviews: Preparation of field work	Group work
20:30	<i>Dinner</i>	
Day 4		
7:30	Exercise 6: Field visit to animal healers	Field visit (in groups)
9:45	<i>Breakfast</i>	
10:30	Exercise 6: Preparation of presentations	Group work
11:30	Exercise 6: Presentations and discussion	Plenary
12:30	Presentation 4. Application and limitations of ethnoveterinary medicine	Plenary discussion
13:00	<i>Lunch</i>	
14:30	Exercise 3. Sharing experiences (more participants)	Presentations, informal plenary discussion
Module 4	Feed and fodder	
15:00	Presentation 5. Introduction to feed and fodder Issues	Presentation and discussion
15:15	Presentation by invited livestock keeper	Presentation and discussion
16:30	Exercise 7. Field interviews with livestock keepers and observations on feed and fodder: Introduction to exercise	
17:00	Getting to know the local conditions	Walk through local area
20:00	<i>Dinner</i>	
Day 5		
6:30	Exercise 7. Field interviews with livestock keepers and observations on feed and fodder: Field visit to herd in local area	Field visit (in groups)
10:30	<i>Breakfast, shower</i>	
11:15	Exercise 7: Preparation of field report	Group work
12:00	Exercise 7: Presentations of field report	Presentations and plenary discussions
13:00	<i>Lunch break</i>	
14:30	Exercise 3. Sharing experiences (remaining participants)	Presentations and plenary discussions

Schedule	Activity	Type of activity
Module 5	People-centred livestock development: Bringing it all together	
15:30	Presentation 8. People-centred livestock development networks	Presentations and plenary discussions
<i>Evening</i>	<i>Dinner, cultural programme</i>	
Day 6		
9:00	Presentation 6. Elements of people-centred livestock development	Group work and plenary discussions
11:00	Presentation 7. Promoting people-centred livestock development	Group work and plenary discussions
<i>13:00</i>	<i>Lunch</i>	
14:00	Evaluation and close	Plenary