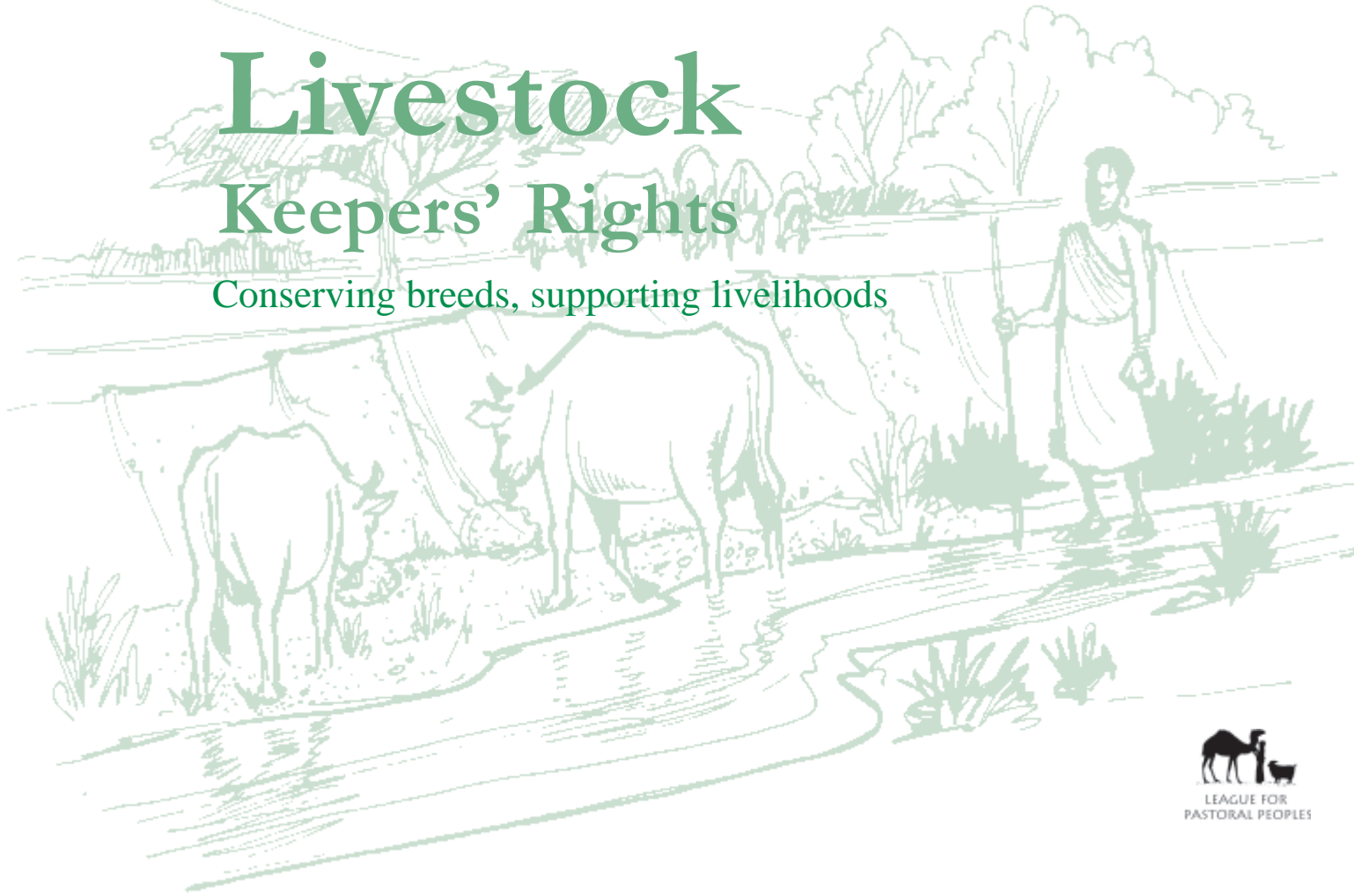


Livestock Keepers' Rights

Conserving breeds, supporting livelihoods



LEAGUE FOR
PASTORAL PEOPLES

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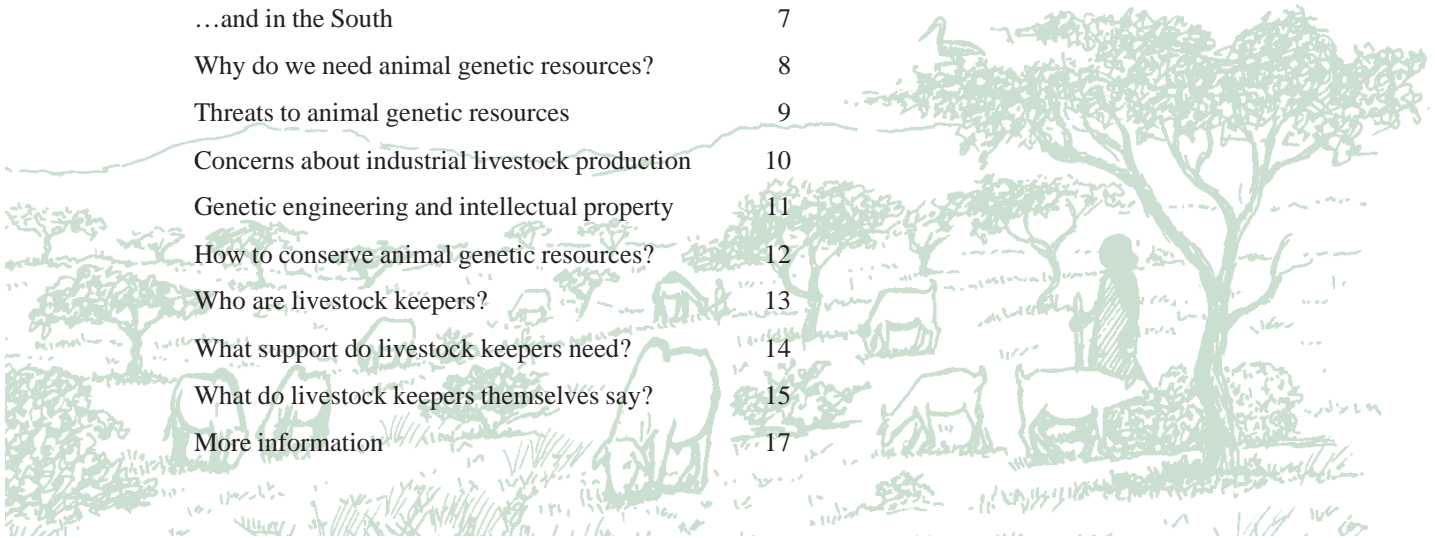
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Conserving breeds, supporting livelihoods

Millions of the world's poor rely on livestock for their living. Their cattle and sheep, pigs and goats, chickens and camels produce milk, meat and eggs – a vital source of protein and income for small farmers and pastoralists in Africa, Asia and Latin America. They provide wool and leather, and pull ploughs and carts. They graze on parched drylands, steep hills, mountains and roadsides – resources that would otherwise go to waste. They act as a savings bank and a store of value: if you are a small farmer, it is easy to sell a goat if you need cash, or to trade a chicken for a bag of maize.

But the basis of these livelihoods is under threat. Many of the animal breeds farmers and herders have developed over thousands of years are becoming **extinct**. These breeds are being replaced by a few imported breeds, which grow well when pampered, but fall ill quickly if the supply of medicines and feed falters.

Livestock breeds in the developing world are **uniquely adapted** to the harsh environments where they evolved. They resist diseases, tolerate droughts and can survive in conditions where modern 'high-performance' breeds have long succumbed. They embody genetic traits that may be vital to maintain the world's food supplies.

Farmers and herders are custodians of this vital pool of **biodiversity**. It is vital to conserve these breeds before it is too late.

The **rights of livestock breeders** are key to this effort. But these rights are themselves under threat. Livestock keepers are in danger of losing the right to breed their own animals in the long term. And every day, they are losing the right to use grazing lands where they have kept their herds for generations.

Defending these rights is an important step towards conserving breeds.

Seeds and breeds

For thousands of years, farmers have saved some of the seed from their crops for sowing in the next season.

That is a simple but vital right. It means that they don't have to buy a new batch of expensive seed every season. It means they can exchange seed with their neighbours, or sell it in the local market. It means that they can select plants that grow best in their conditions.

Over time, farmers have developed thousands of local crop varieties that are adapted to poor soils, resist pest attacks, tolerate diseases and withstand drought. The rights to save and sell seeds are called "Farmers' Rights".

International law aims to ensure that plant genetic resources stay in the open domain, and to ensure free and open access to them. The relevant treaty – the **International Treaty on Plant Genetic Resources for Food and Agriculture** – was agreed in 2001. It has been signed by nearly 80 countries, including Australia, Brazil, Canada, the European Union, India and the United States.

Why are these rights important?

Scientists can now read the genetic code of living organisms. Advances in biotechnology threaten a practice that farmers have taken for granted for thousands of years. It is now possible to identify and patent individual genes. Patent holders might accuse farmers of infringing their patents – merely by planting seed they have grown themselves. The treaty helps shield farmers from this risk.

How about Livestock Keepers' Rights?

That's the situation for crops. How about for animals?

There is still no equivalent set of rules for livestock. But writing the rules is urgent – for two reasons:

- **Animal genetic resources** – the breeds that have evolved over millennia – **are under threat** as never before. Many are on the verge of extinction.
- **Biotechnology and gene technology** are advancing rapidly in livestock. At the moment this is happening in a legal vacuum.

What are animal genetic resources?

Since the dawn of agriculture, humanity has domesticated about 40 species of animals, from chickens to camels, and from alpaca to yaks. Livestock keepers have developed over 7000 breeds. Each one is specialized for a particular area or production system.¹

This cornucopia of breeds is a vital but neglected part of **agricultural biodiversity**.

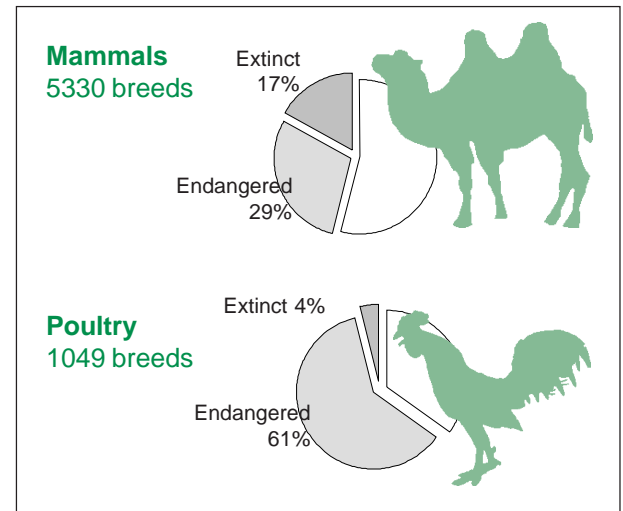
Each animal and each breed carries a particular set of genes – a code that determines everything from the animal's colour to its milk-yielding ability, from disease resistance to the number of offspring it is likely to have.

But many traditional breeds are endangered. Among the 5330 breeds of livestock **mammals**, over 900 breeds, or 17%, are already extinct. Another 1500 breeds, or 29%, are endangered.²

The situation with **poultry** is hardly better. While only about 40 of the 1000+ breeds are thought to be extinct, nearly two-thirds are endangered.

¹ Scherf (2000)

² Unless stated otherwise, figures are from Geerlings et al. (2002)



Livestock breeds in the North...

In developed countries, most livestock belong to a few **high-performance breeds**. Examples are the familiar black-and-white Holstein-Friesian dairy cattle, black Angus beef cattle, and the Leghorn chickens that produce most of our eggs.

These breeds have been developed over the last two centuries with the help of scientific breeding programmes. Animals have been selected for productivity, not for adaptation to their environment. They produce a lot of meat, milk or eggs. But they are also fussy: they require standardized conditions and a high level of inputs.

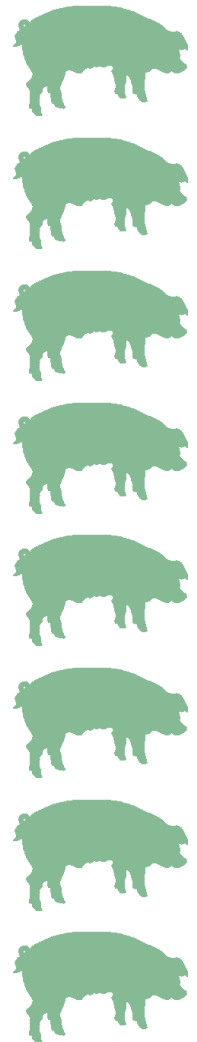
Livestock production in developed countries is industrialized. In the USA, for example, the pig and poultry industries are in the hands of a few companies. The breeding of chickens and turkeys is dominated by **only three firms**, which protect the pedigrees of their birds with contracts and trade secrets. Poultry producers also grow grain to use as animal feed. They own feed mills and slaughterhouses, and they run processing plants and wholesale enterprises. This is called **vertical integration**.

With pigs, the situation is similar. Smaller, independent farmers have been squeezed out. Hog farmers have become employees or contractors of a handful of companies. In the USA, the top four companies occupy 63% of the market.

There are still individual cattle breeders. But it is predicted that cattle breeding companies will merge to form fewer firms that operate worldwide, providing farmers with semen and embryos.

Most farmers no longer can make their own breeding decisions. With breeding of high performance animals concentrated in the hands of a few companies, these animals are genetically very similar – **almost uniform**. About 90% of North American and 60% of European dairy cattle belong to the same breed – those same black-and-white Holstein-Friesians. A Canadian bull, “Starbuck”, has over 200,000 registered daughters all over the world, all sired by artificial insemination.³ By 2015, the genetic diversity within this breed may correspond to that of **only 66 animals**.

³ www.ciaq.com/Estarb2.htm#ancre1



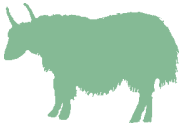


...and in the South



Developing countries have a much larger number of breeds. The vast majority are the result of breeding by **farmers and pastoralists** over many generations.

Livestock holders select breeding stock that can survive and produce well in their specific area. These animals may not be the highest producers. But they can withstand pests and diseases. They survive droughts. They thrive on scrubby vegetation where a high-performance animal would starve.



Different communities have different environments, needs and preferences, so their breeds are also very different. The shorthorned Borana cattle, for example, produce well on the semi-arid rangelands of northern Kenya and southern Ethiopia. The N'dama cattle of West Africa tolerate trypanosomiasis, a disease that prevents cattle production in large parts of Africa.



Breeds like the Borana are often linked to specific communities, and are named after them. This is particularly so in pastoralist areas, where breeds and people have developed together over many generations. People see their breeds as community property and heritage. Pastoralist communities are very attached to their animals, and they are very aware of the need to steward their animal genetic resources wisely.

Countries that are too dry for growing crops often have the **richest animal genetic resources**. In Asia, it is Mongolia, Yemen and Oman that have the greatest number of breeds. In Africa, it is the countries of the Sahel, and Botswana and Namibia.⁴

⁴ Hall and Ruane (1993)

Why do we need animal genetic resources?

Animal genetic resources are the **building blocks** for all livestock development. They form the raw material that livestock keepers depend on – to adapt to changes in the natural environment and in production conditions, to cope with disease outbreaks, and to respond to new market opportunities.

If all livestock become uniform, there is no more potential for adjustment. Diseases can spread rapidly through populations that are genetically similar.

For many years, the livestock industry was interested only in a breed's **performance and productivity**. It neglected other qualities. But recently, bacteria and internal parasites have started to become resistant to antibiotics and other medicines. So scientists are trying to breed **disease resistance** into the animals. To do this, they need genes from animals that already have such resistance – such as long-neglected and endangered breeds, many of which are to be found in the developing world.

Plus, consumers are becoming concerned about the **medicine residues** in meat and milk. A market for animals “raised naturally” has sprung up. To fulfil this demand, farmers need animals that are resistant to diseases, do not depend on processed feeds, and can thrive in a natural rather than an artificial environment.



Threats to animal genetic resources

Over the last few decades, **high-performance breeds** from Europe and North America have been exported throughout the world. Many farmers have given up their own breeds in order to adopt the exotic ones. Often they have cross-bred their own animals with the high-performing foreigners.

Livestock industries are expanding rapidly in developing countries. Demand for livestock products is growing quickly in developing countries, while it has levelled off in the developed world. And opposition from consumers concerned about animal welfare and pollution in high-income countries is forcing the pig and poultry industries to move production elsewhere.

In the harsh, semi-arid areas of Africa and Asia, exotic animals and crossbreeds have no chance. Many of the pastoralists who live there have kept their indigenous breeds pure. But these pastoralists face a different threat: they are **losing the basis for their livelihood**. The rangelands they use for grazing are being taken over by irrigated agriculture – even though such schemes typically fail after a few years. The grazing lands are being catego-

rized as nature reserves, and the pastoralists who have lived there for centuries are being pushed out. Policies in many countries support settled farmers rather than mobile pastoralists. Drought, conflicts and wars contribute their share.

When pastoralists are forced to give up their livelihoods, their breeds also **become extinct**. That is a loss not only for the pastoralists themselves. The destruction of animal genetic resources is also a loss for humanity as a whole.

Growth rates of livestock products, 1990–95 (%)⁵

	Developing countries	Developed countries
Beef, sheep/goat meat	+ 4.3	-2.0
Pork	+8.5	-1.2
Poultry	+12.1	+1.9
Milk	+3.4	-1.9
Eggs	+9.4	-1.5

⁵ Delgado et al. (1999)

Concerns about industrial livestock production

Disease

Concentrating large numbers of animals in one spot creates the risk of massive **disease outbreaks**. Huge economic losses may result. The 1997–98 swine fever epidemic in the Netherlands is thought to have cost \$2.3 billion. The 2001 foot-and-mouth disease outbreak in the UK cost \$9.2 billion. In the 1990s, “mad cow” disease cost another \$3.8 billion. In 1997, Taiwan had to spend \$6.6 billion to control foot-and-mouth disease.

Pollution

Industrialized animal production requires large amounts of feed. The **stinking waste** is spread on nearby land, where it may seep down into the groundwater. One large pig farm in Utah will produce more waste than the City of Los Angeles.

Dependence on cereal imports

A country that starts an intensive livestock industry has to import cereal feeds, fuel oil, and equipment. That is expensive and **risky**: during the 1999 economic crisis, Asian chicken production slumped when producers were no longer able to import enough feed.

Animal welfare

Industrialized production all too often involves **cruelty** to animals: tiny, overcrowded pens; long periods of stressful transportation, and high mortality rates.

Employment

For developing countries, the biggest drawback of industrialized animal production is that it **destroys rural income opportunities**. In all developing countries, people move from the countryside into the towns. But industrial livestock production threatens to turn this movement into an unmanageable flood. The cities cannot cope: they lack the jobs and infrastructure to absorb the influx, and the migrants lack the education and skills they need to survive in their new surroundings.

What would be better, and cheaper? To design policies that **support rural livelihoods**, or to risk the catastrophe that current trends will bring?

Genetic engineering and intellectual property

Another threat to livestock diversity is posed by advances in **genetic engineering**.

It is now possible to identify genes that confer certain traits, such as resistance against a particular disease. Scientists can insert the gene into another animal, so transferring the disease resistance to it. They hope to create “**super animals**” which are both highly productive *and* disease resistant.

Researchers are systematically screening livestock breeds for genetic traits that may have commercial potential. The hardy breeds that have been developed by pastoralists are of particular interest for research.

One example is the Red Maasai sheep, a fat-tailed breed kept by the Maasai herders of East Africa. Its resistance to internal parasites is of enormous interest to the sheep industry worldwide. Scientists hope to take the gene that confers this resistance and insert it into other sheep breeds.

Such research is very expensive and time-consuming. Scientists, and the sponsors of their research, need to recover their costs. So they try to **patent** the gene they discover, then license the rights to use it.

But who actually owns the gene? Whose “intellectual property” is it? The scientists’? Or the pastoralist community’s—the people who originally developed the breed? Or should it be open for anyone to use—part of the public domain?

Besides, is it right to patent any form of life?

A company might claim a gene as its own, then not return any of the profits to the pastoralists or farmers who originated it.

Developed country governments are very concerned about defending the **intellectual property rights** of software producers, the music industry and industrial designers. Why are they not concerned about the intellectual property rights of millions of poor people in the developing world?

How to conserve animal genetic resources?

Plants can be stored “**ex-situ**” – for example, deep-frozen in seed banks. But storing semen and embryos in this way is expensive. For some species, it is technically difficult. That is why the Food and Agriculture Organization of the United Nations (FAO) recommends conserving animals “**in-situ**” – in the surroundings where they evolved.

Conserving animal genetic resources means working with farmers and pastoralists. But if livestock keeping is no longer profitable, they will give it up. Their breeds will die out. So conserving breeds means ensuring sustainable livelihoods for farmers and pastoralists.

Conservation of animal genetic resources is **central to rural development**. If livestock keepers can make a reasonable living from their animals, they will not need to migrate into the cities. And animal genetic resources will also be conserved.



Who are livestock keepers?

In developing countries, livestock ownership is widespread. About **70% of the world's poor** are thought to own livestock.

Some **640 million subsistence farmers** keep animals on their farms. Livestock are an important, but not dominant, part of their businesses. They keep animals as a source of food. They use them to pull ploughs and carts. They use the manure as fertilizer and fuel. They sell live animals, or meat, milk, eggs and wool. They exchange animals at weddings and slaughter them for feasts.

For the world's **190 million pastoralists**, animals are vital. These people live in the world's steppes, deserts and mountains. In Africa, they live in the Sahara, the Sahel and the Horn of Africa. In Asia they are found in the Middle East and a broad swathe from Pakistan and western India to Tibet and Mongolia. In South America, the highlands of Peru, Bolivia, northern Chile and Argentina support many herders.

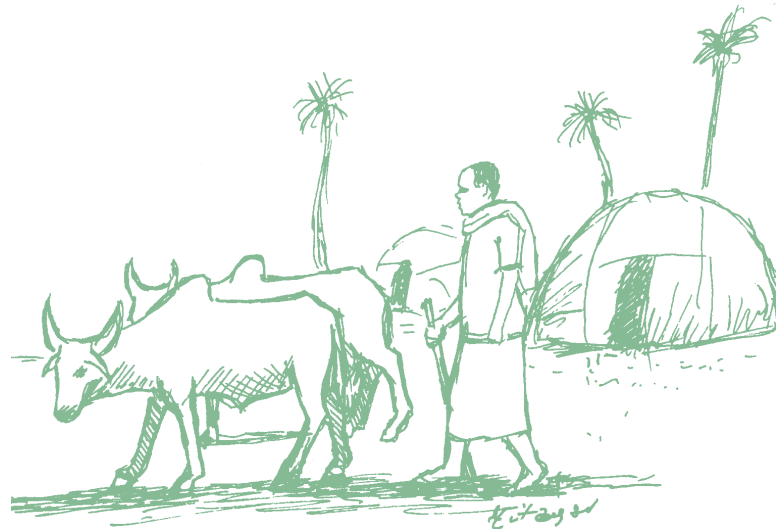
Pastoralists are guardians of some of the world's most important animal genetic resources. Because they expose their animals to the harsh environments where they live, the animals are **hardy and resistant to a number of diseases**. Many pastoralist breeds have interbred little with outside stock, so are pure-bred.

Living and working with their herds, pastoralists have a deep attachment to their animals and an unparalleled knowledge about them. Their animals are their life and their heritage.



What support do livestock keepers need?

- Livestock keepers need the right to make their own **breeding decisions**. They must not be forced into dependence on large companies for the supply of animals. That way diversity will be conserved, and livestock keepers will remain flexible enough to respond quickly to changing circumstances.
- Livestock keepers must have free and open **access to animal genetic resources**. They must be able to sell their own animals without having to pay royalties. They must be assured that genes of their animals are not being patented.
- Livestock keepers need a **fair and level playing field** with animal industries. Their contribution to conserving animal genetic resources and their environment-friendly way of production must be rewarded. Animal industries must be taxed to **compensate for environmental pollution** and their **erosion of animal genetic resources**.
- Livestock keepers must have secure **access to grazing lands, water and other key resources**, such as markets and education.



What do livestock keepers themselves say?

In October 2003, representatives of pastoralist communities met in Karen, Kenya, to discuss Livestock Keepers' Rights. They issued the following statement.⁶

The Karen Commitment

We call on governments and relevant international bodies to commit themselves to the formal recognition of the historical and current contribution of pastoralists and pastoralism to food and livelihood security, environmental services and domestic animal diversity.

We also demand that they recognize the contributions of pastoralists and other livestock keepers, over millennia, to the conservation and sustainable use of **animal genetic resources** for food and agriculture including associated species and the genes they contain.

Furthermore, we insist that there is international legally-binding recognition of inalienable **Livestock Keepers' Rights** and the Rights of their communities to:

- Continue to use their knowledge concerning the conservation and sustainable use of animal genetic resources, without fears of its appropriation.
- Participate democratically in making decisions on matters related to the conservation and sustainable use of animal genetic resources.
- Access, save, use, exchange, sell their animal genetic resources for food and agriculture, unrestricted by **Intellectual Property Rights** and [modification through] genetic engineering technologies that we believe will disrupt the integrity of these genetic resources.
- Have their breeds recognized as products of their communities and Indigenous Knowledge and therefore remain in the public domain.

⁶ www.pastoralpeoples.org/karen.htm

- Benefit equitably from the use of animal genetic resources in their own communities and by others.

We call on the **Food and Agriculture Organization** of the UN to start negotiating such a legally-binding agreement, without delay, ensuring that it will be in harmony with the Convention on Biological Diversity.

We further call on FAO to develop a Global Plan for the conservation and sustainable use of animal genetic resources by pastoralists, other livestock keeping communities and relevant public institutions.

Finally, we insist that animal genetic resources for food and agriculture be excluded from **Intellectual Property Rights** claims and that there should be a moratorium on the release of genetically-modified livestock until bio-safety is proven, in accordance with the Precautionary Principle. We call on relevant institutions concerned with food, agriculture, trade, intellectual property and animal research to provide assurances and such legal protection as is necessary to sustain the free flow and integrity of animal genetic resources, vital to global food security and the environment.

Next steps for Livestock Keepers' Rights

For Livestock Keepers' Rights to become reality, countries represented in the Commission for Food and Agriculture must vote to start negotiations for an **International Treaty on Animal Genetic Resources**. This commission is hosted by the Food and Agriculture Organization of the United Nations.

It is not enough just to start negotiations. **Livestock Keepers' Rights must actually be included in the treaty.**

An **International Technical Conference on Animal Genetic Resources**, coordinated by FAO, is planned for 2007 to discuss these issues.

More information

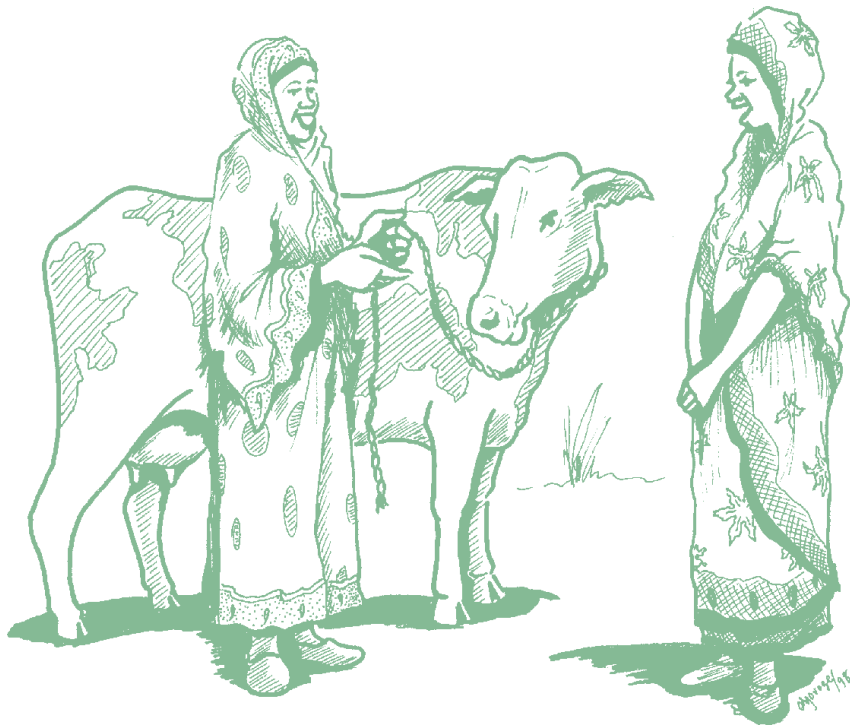
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- League for Pastoral Peoples** www.pastoralpeoples.org
- DAD-IS** Information system for the Global Strategy for the Management of Farm Animal Genetic Resources, <http://dad.fao.org/en/Home.htm>
- The LIFE Initiative** Local Livestock for Empowerment of Rural People, www.lifeinitiative.net



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