

TOWARDS RESILIENCE AND SOCIAL SUSTAINABILITY OF THE LIVESTOCK SECTOR

APPROACHES OF THE LIFE NETWORK IN INDIA TO SUPPORT BIODIVERSITY-BASED LIVESTOCK DEVELOPMENT

Input to the Global Agenda on Sustainable Livestock

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ABOUT THE AUTHOR

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FOREWORD

Ilse Köhler-Rollefson, League for Pastoral Peoples and Endogenous Livestock Development

The global livestock sector is in trouble, causing great concern at highest levels because of its significant environmental impacts, such as pollution, greenhouse gas emissions and biodiversity loss. This situation has been highlighted especially by FAO in a series of publications, beginning with “Livestock’s Long Shadow” (FAO 2007). In an effort to address these threats, the Global Agenda on Sustainable Livestock (GASL) has been initiated as a multi-stakeholder platform to drive the livestock sector towards more sustainable practices.¹

GASL embraces not only environmental, but also economic and social sustainability. One of its strategies is to “close the efficiency gap”, which means that the less efficient livestock systems are to catch up with the more efficient ones. This is to be achieved by applying already existing technologies and institutional frameworks to those systems that lag behind and thereby improve their natural resource use efficiency and generate economic and social gains.

But does “natural resource use efficiency” really generate economic and social gains, or even environmental gains? Is it an appropriate concept for contributing to poverty alleviation? What is the experience of local livestock keepers in developing countries when they adopt the more efficient systems, including higher yielding breeds? What is the value of the traditional livestock systems?

LPP has been working with small-scale livestock keepers since 1992 in collaboration with a number of grassroots organizations that adhere to the principles of endogenous livestock development: building on locally adapted breeds, locally available feed resources as well as traditional knowledge and customary institutions. In the context of the “Interlaken process” which led up to the Global Plan of Action of Animal Genetic Resources, LPP and its partner organizations – which came to be known as the LIFE Network – pioneered the concept of Livestock Keepers Rights, which links the survival of breeds to the livelihoods of their keepers.

Over the years, it has become clear that livestock keepers are often better off when they not only stick to their traditional breeds, but also have secure access to grazing, reliable animal health care, as well as marketing support.

Elizabeth Katushabe is a long-term LIFE Network member and represents LIFE in the Agricultural Biodiversity Community, a global knowledge and experience network of people and organizations working to promote and defend agricultural biodiversity for resilient food systems. In the spring of 2014, she travelled to India to visit with and learn from Indian LIFE Network organizations about their approaches. In this report she has

¹www.livestockdialogue.org

written up her experiences and impressions which throw some caution on the validity of the “resource use efficiency” paradigm as an approach to addressing the dilemma of livestock sector sustainability.

INTRODUCTION

Between 1970 and 1980, while I was growing up, my family of Bahima pastoralists in Uganda who keep Longhorn Ankole cattle lived basically on indigenous cows' milk. In addition, we ate a variety of wild fruits (we call them *enyoonga*, *ebinyamakara*, *emikoogi*, *ehuuki*, *obukanja*, *ensheeka*, *amamuuna*). Today, these fruit trees are all gone: indiscriminate cutting and clearing has created grazing land for Friesian cattle, and the use of chemicals to control ticks also destroyed the pollinating insects.

We also used to eat honey, which was harvested around April/May. Now there is no more honey because the bees have also fallen victim to the toxic chemicals, and deforestation has cleared the trees that used to house the hives. My father occasionally bought plantains and cassava from the neighbouring communities who were cultivators, and we would also eat meat on occasions like Christmas or when a special guest was visiting.

Back then, our diet was very rich and nutritious. This has changed gradually since my family and relatives began to rear exotic cattle. They now sell milk, but they use the proceeds to buy maize flour (which is cooked to make *posho*, a sticky porridge for their daily food). They consider this as "development" and they have built brick houses and now drive cars. However, the transition to exotic livestock also brought with it modern diseases. Today my mother spends most of her profits from selling her "abundant Friesian milk" to treat a heart problem. One of my uncles died of diabetes; two other uncles, an aunt and three cousins are being treated for diabetes, and a cousin has gone to Bangalore for treatment for stomach cancer. All these diseases are linked to modern living and diet.

With the introduction of the exotic breeds and commercialization of milk, herders have been selling off their big herds of Ankole cattle (which are said to produce less milk) and have taken on the "more profitable" Friesian breeds, which are said to produce a lot of milk. The Ugandan government says that even those with small areas of land would benefit. But it is evident that unless these herders also use exotic feeds, they need to have a lot of land, grass and water to satisfy these exotic animals' big appetites and thirst. The Friesian cows cannot produce a lot of milk without commercial feed and a lot of water. Plus, the costs of other inputs (antibiotics, acaricides, pesticides, labour) cause financial stress to those herders with little land.

There is need to reconsider the advantages of our native Ankole Longhorn cattle, which can survive on minimal natural grass and water. Their manure has always maintained natural nutrients in the soil, and our livestock has lived in harmony with wildlife from time immemorial. Today's herders are getting depressed because of worries about the huge financial burden of sustaining the exotic breeds and treating their diseases.

With the loss of the Ankole Longhorn cattle we are losing our life and livelihood, our culture and heritage, status in society, dowry, our traditional knowledge and organic medicine, our healthy and nutritious diet – and we may not be able to educate our children.

UGANDAN GOVERNMENT POLICY

The government of Uganda's plan for the modernization of agriculture has encouraged many former Ankole Longhorn cattle keepers to cross this indigenous breed with the exotic Friesian cow for higher milk production. However, there is no corresponding organized market. Herders experience various problems: inconsistent and low milk prices, poor feeder roads, expensive equipment (such as milk cans), and competition with bigger investors who have monopolistic tendencies.

On 21 April 2014, there was a demonstration by some herders in Ngoma, Nakaseke district (part of Uganda's "cattle corridor"), against a law that requires herders to deliver their milk in coolers from the farm to the market. This is not viable, as herders cannot afford to buy coolers. The herders claimed that the government aimed to push them out of business, leaving the sector open to Sameer Agriculture & Livestock Ltd, a company owned by Sameer Group of Kenya and R.J. Corp. of India. The next day, 22 April 2014, I asked a group of herders what had happened. One elder, Yokaana Kyomukuku, said, "we would have no problem with Sameer collecting our milk from our farms in the coolers. However there should be terms and conditions that are not exploiting us. We should have a fixed fair price for our milk. And our milk should be collected during all seasons and instead of us pouring it away during rainy seasons when milk has not been collected because of the impassable roads". "Otherwise," he continued, "the government should come and buy from us all the Friesian cows that we own today and bring back our Ankole Longhorn cattle since the government is the one that told us to cross our Ankole cows with the Friesian breed."

Raw-milk producers, traders and consumers have been sidelined, and a big number of people are losing their livelihoods, as Moses Kamukama (a member of Uganda National Dairy Traders Association) pointed out in an appeal to the President of Uganda, in a letter to the editor of New Vision newspaper.²

² New Vision, Letters to the Editor, Thursday 12 June 2014, p. 15. www.newvision.co.ug

THE LIFE NETWORK

The LIFE Network is a group of organizations (herders' associations, civil society) and individuals that promote the use of indigenous animal genetic resources as an intervention to support biodiversity-based livestock development.

I became a member of the LIFE Network in 2007 during a 3-day workshop in Addis Ababa, Ethiopia, on "Managing animal genetic resources in Africa: Strategies, priorities and Livestock Keepers' Rights and the way forward". The conference awakened me to the danger that our beloved Ankole Longhorn cattle were one of many breeds in the world that would soon become extinct.

The LIFE Network emphasizes the rights of the livestock keepers to conserve their breeds *in-situ*, instead of relying on *ex-situ* gene banks. Since 2009, I have worked with other stakeholders to remind ourselves and sensitize policymakers about the importance of protecting our indigenous breeds for our sustainable livelihood and our food and nutrition security. Through my interaction with the different small-scale livestock keepers and pastoralists in Uganda, other parts of Africa, Asia and Europe, I have learned that most of them appreciate the importance of their indigenous breeds. Poor people, especially women, would prefer them to the stressful exotic breeds, if they could get the right support: to access their grazing lands, to use their indigenous knowledge of selective breeding to improve their breeds, to have suitable infrastructure, and to benefit from improved market chains for their products.

WHAT DOES THE LIFE NETWORK DO?

In its quest to support biodiversity-based livestock keepers, the LIFE Network has developed and tested a range of approaches. One of these is the LIFE method of **documenting breeds**, which was developed to record and describe animal genetic resources based on the knowledge and concepts of the communities that created them (Lokhit Pashu-Palak Sansthan 2005).

Another important tool promoted by the LIFE Network is **biocultural community protocols**, whose purpose is to record the contribution of traditional farmers and pastoralists in the creation and maintenance of domestic animal diversity, and to lay the groundwork for international recognition and acknowledgement of their role in sustaining a broad genetic base for the world's farm animals. A biocultural community protocol is a document developed after a community undertakes a consultative process to outline their core cultural and spiritual values and customary laws relating to their traditional knowledge and resources. It provides clear terms and conditions regulating access to their knowledge and resources (Natural Justice 2009). A biocultural community protocol is the result of a facilitated process in which communities learn about their rights over these resources under existing national and international legal frameworks. They reflect about the importance of traditional knowledge for their livelihoods and their aspirations for the future of this knowledge (Lokhit Pashu-Palak Sansthan 2010).

The LIFE Network also promotes **Livestock Keepers' Rights**, a concept that is frequently referred to, but has not yet been institutionalized. Livestock Keepers' Rights were developed by pastoralists and civil society organizations during the "Interlaken process" that led up to the Global Plan of Action on Animal Genetic Resources, a strategic framework that was endorsed by all FAO member countries in 2008. Originally modelled on the Farmers Rights enshrined in the International Treaty on Plant Genetic Resources for Food and Agriculture, they have developed into a more comprehensive concept through a series of consultations and workshops held with hundreds of livestock keepers from more than 20 countries in Karen (Kenya) in 2003, Bellagio (Italy) and Yabello (Ethiopia) in 2006, and Sadri (India) and Addis Ababa (Ethiopia) in 2007.

Rather than representing legal rights, Livestock Keepers' Rights correspond to development principles that would help livestock keepers continue to conserve biodiversity. They address the economic survival of small-scale livestock keepers in general. Some partners are engaged in niche-market and value-addition activities. If these rights were implemented, they would support and encourage livestock keepers to continue making a living from their breeds and thereby achieve the combined effect of conserving diversity and improving rural livelihood opportunities (Köhler-Rollefson et al. 2010).

Box 1: Livestock Keepers' Rights

During a workshop with legal experts held in Kalk Bay, South Africa, in December 2008, Livestock Keepers' Rights were subdivided into principles and rights:

Principle 1: Livestock keepers are **creators of breeds** and custodians of animal genetic resources for food and agriculture.

Principle 2: Livestock keepers and the sustainable use of traditional breeds are dependent on the **conservation of their respective ecosystems**.

Principle 3: Traditional breeds represent collective property, products of indigenous knowledge and cultural expression of livestock keepers.

Based on these principles articulated and implicit in existing legal instruments and international agreements, livestock keepers from traditional livestock keeping communities and/or those adhering to ecological principles of animal production, shall be given the following Livestock Keepers' Rights:

1. Livestock keepers have the right to make **breeding decisions** and breed the breeds they maintain.
2. Livestock keepers shall have the right to participate in **policy formulation** and implementation processes on animal genetic resources for food and agriculture.
3. Livestock keepers shall have the right to appropriate **training and capacity building** and equal access to relevant services enabling and supporting them to raise livestock and to better process and market their products.
4. Livestock keepers shall have the right to participate in the **identification of research** needs and research design with respect to their genetic resources, as is mandated by the principle of **prior informed consent**.
5. Livestock keepers shall have the right to effectively **access information** on issues related to their local breeds and livestock diversity.”

The Declaration on Livestock Keepers' Rights³ that emanated from the Kalk Bay Workshop references these principles and rights to existing international agreements and legal frameworks such as the Convention on Biological Diversity,⁴ the United Nations Convention to Combat Desertification,⁵ the Global Plan of Action for Animal Genetic Resources and the Interlaken Declaration on Animal Genetic Resources, the Universal Declaration of Human Rights,⁶ the International Covenant on Economic, Social and Cultural Rights,⁷ the United Nations Declaration on the Rights of Indigenous Peoples,⁸ the Convention on the Protection and

3 www.pastoralpeoples.org/docs/LKRdeclaration.pdf,

4 www.cbd.int

5 www.unccd.int/en

6 www.un.org/en/documents/udhr/

7 www.ohchr.org/EN/ProfessionalInterest/Pages/CESCR.aspx

8 www.un.org/esa/socdev/unpfii/documents/DRIPS_en.pdf

Promotion of the Diversity of Cultural Expressions,⁹ the Convention (No. 169) concerning Indigenous and Tribal Peoples in Independent Countries,¹⁰ the Declaration on the Rights of Persons belonging to National or Ethnic, Religious and Linguistic Minorities¹¹ and other pertinent instruments.

The Declaration was signed by a large number of individuals and organizations.

More information: www.pastoralpeoples.org/docs/LKRdeclaration.pdf

9 portal.unesco.org/en/ev.php-URL_ID=31038&URL_DO=DO_TOPIC&URL_SECTION=201.html

10 www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C169

11 www.un.org/documents/ga/res/47/a47r135.htm

THE LIFE NETWORK INDIA

The LIFE Network is a consortium of NGOs and livestock keepers' organizations that support community-based conservation of local livestock breeds and seek to empower livestock breeding communities to secure their resources, including access to land and genetic resources.

The vision of LIFE Network India is a socially inclusive and ecologically sustainable livestock sector which strengthens rural livelihoods, conserves India's domestic animal diversity and produces healthy and delicious food.

The mission of LIFE Network India is to create support and space for ecologically and socially sustainable livestock keeping – in India and globally – by establishing a platform for the exchange of information and by collectively engaging in applied research and influencing policymakers.

Activities

- Maintaining a common platform for the exchange of information (the LIFE Network mailing list)
- Organizing meetings, conferences and workshops, and publishing publications
- Empowering livestock keepers through training and awareness raising
- Representing the voice of Indian livestock keepers in global forums
- Liaising and advocating with government departments and international platforms
- Promoting and backing up biocultural community protocols
- Supporting the implementation of the Forest Rights Act
- Marketing initiatives highlighting the benefits of products from indigenous breeds.

IMPRESSIONS AND LESSONS FROM INDIAN LIFE NETWORK MEMBERS

The LIFE Network India was chosen for this study because it has been very active and has more than ten membership organizations as well as many dedicated individuals working with it. They have been active for a number of years and have consistently tried to change India's livestock policies.

In spring 2014, the LIFE Network India invited me to visit four of its member organizations to exchange experiences on the work on saving indigenous livestock breeds and so I could learn about their approach to livestock development.

From my field notes

"As I prepared for the 20-day trip, I was excited but sceptical at the same time because I was wondering whether I could have lessons from cultures where eating cow meat is forbidden. Traditionally the Bahima never slaughtered their cattle; whenever one died, they would either call their neighbouring cultivator community to slaughter and eat it, or it would be buried.

By 1973, when I became aware of my culture, the Bahima had copied other cultures and they had started eating meat. However I still remember that most Bahima ate meat only on special occasions like Christmas, wedding parties or when special guests visited. However due to "modernization", most of them today eat cow meat!

Maybe the Bahima need to be reminded of the good old times where their beliefs helped them to conserve biodiversity and avoid diseases such as gout that are caused by new eating habits that have become common among the red meat eaters."

LOKHIT PASHU-PALAK SANSTHAN (LPPS)

Lokhit Pashu-Palak Sansthan is Hindi for "welfare organization for livestock keepers". It is a non-profit organization registered under the Rajasthan Societies Act. It was set up in 1996 to support Raika camel pastoralists in an acute crisis by providing veterinary care. In its initial years, its activities focused on camel health services and support for camel milk marketing in Pali District, but it then expanded to encompass services and advocacy for livestock keepers in general. Today its work continues to be inspired and shaped by the close association with this traditional pastoralist community, but its goals have widened to embrace people-centred livestock development and the sustainable management of biodiversity-rich agro-ecosystems. Led by its director, Hanwant Singh Rathore, it has done tremendous work to save the unique camel of Rajasthan and improve the livelihoods of the Raika community.

Activities

Information sharing. LPPS publishes educational information in the form of books and other documents aimed at protecting biodiversity and improving livestock keepers' livelihoods. These can be found on the LPPS website, www.lpps.org

Documentation. LPPS has documented migratory sheep pastoralists in Rajasthan and has made visible the important economic and ecological role of this system as a foundation for policy changes. It is currently documenting the Boti, a unique sheep breed that resists diseases and tolerates drought. The community is encouraged to keep this breed, which has good-quality carpet wool.

Advocacy . LPPS carries out various types of advocacy, such as participating in peaceful demonstrations by the tribal communities demanding their traditional right to access forests which have been turned into a nature reserve, and which are currently controlled by the Forest Department. LPPS also supports the fight against corruption by forest officials who demand bribes for providing access to the forest.

The LIFE Network has organized meetings with the Tribal Minister, Forest Minister and parliament committees to convince them to change the Forest Act to permit use by other communities who used to depend on forests before 2005 (or three generations, i.e. 75 years).

From my field notes

LPPS in action. I witnessed LPPS participating in a peaceful demonstration by the tribal community demanding the right to access the forests. The police accompanied the demonstrators to protect them and prevent any violence. In my country, people mainly demonstrate to support one politician against another; they forget the real issues that affect the common people. The police use tear gas to stop demonstrations, since they always end in violence anyway!

It was impressive to see the energy of the women, in their colourful saris, as they led the long line to the

administration offices and then to the rally ground. Even with all the hullabaloo about the empowerment of women in Uganda, it would be challenging to bring out the pastoralist Bahima women in such big numbers to lead in claiming their rights!

Value addition/marketing. LPPS has initiated a range of product development activities to generate income for camel breeders, and labour and income for women and young people. It has developed products such as camel-wool rugs and stoles, camel-dung paper, camel-milk ice cream, and camel-milk soap! These projects aim to add value to camel products, empower young people and women through employment, provide a marketing chain to create jobs and income for the widows who spin camel wool and weavers who make carpets. They also provide sustainable livelihoods for rural people and conserve biodiversity in the Kumbhalgarh area of Rajasthan.

Impacts of LPPS

- LPPS's advocacy work has enabled camel herders to overcome some negative religious beliefs concerning the consumption of camel milk and thus benefit through the sale of camel milk and its by-products (ice cream and soap). Camel milk is today sold to tea kiosks in Sadri.
- LPPS pioneered the development of biocultural protocols by livestock keepers in India and globally. With the help of Natural Justice, an NGO focusing on legal issues, the Raika were the first community to establish a biocultural protocol which records their customary rights and traditional knowledge and the several breeds they have created. The Raika biocultural protocols motivated other livestock communities to follow suit – such as the Banni buffalo breeders in Kutch (Gujarat) and the Kutchi camel breeders who established biocultural protocols with help of the NGO Sahjeevan (also a member of the LIFE network).
- Biocultural protocols have received much international attention. They were shared with the United Nations community (Convention on Biological Diversity) by Raika woman leader and LPPS board member Dailibai Raika, with African community leaders, as well as in side-events of the Commission on Genetic Resources for Food and Agriculture. They are expected to become more powerful once the Nagoya Protocol on Access and Benefit-Sharing is ratified.
- The government of Rajasthan has now taken note of the declining camel population and has vowed to develop legislation to protect camels. This legislation is to help to give rights to camels e.g. by recognizing its milk, allocating grazing rights, investing in dairy infrastructure, and stopping the sale and export of female camels.
- As member of the LIFE Network, LPPS has pushed for the inclusion of pastoral nomads in the Forest Rights Act of 1996. This act provides customary rights in forests to communities that can prove they have used the forest for more than three generations or 75 years. While this act is law, there is strong resistance to its implementation by the Forest Department, which even denies its very existence. LPPS is raising awareness about this legal tool and supports local villages to submit their claims. It is prepared to take the case to the courts.

From my field notes

I feel there are a lot of lessons to learn from LPPS for us who want to save our indigenous breeds like the Ankole longhorn cattle. For example, adding value to the breed's by-products, empowering young people and women who can save the breed, and developing a marketing chain to create jobs and income for spinners and carpet makers. However, I noticed that a lot has been invested in these projects: land, equipment, electricity, water, labour, etc. I am sure we will need a lot of will and commitment. As civil society or breeders, we cannot go it alone: we have to look out for private entrepreneurs whom we have to convince to support use to achieve our goals.



The author (left) meeting women spinners in Rajasthan

INNOVATE ORISSA INITIATIVE: “PATHE PAATHSHAALAA”

Pathe Paathshaalaa means “moving school”. It is a “peoples’ university” for pastoralists, run by the Innovate Orissa Initiative, a trust based in Bhubaneswar that was registered in 2006. It is managed by Dr Balam Sahu, a government veterinarian who provides free training for communities. He teaches livestock keepers about animal health and other subjects in their own language. He gives them tips on low-input-based herbal treatments for their livestock, organic farming, the use of cow dung and *panchagavya*, a concoction of five cow-based ingredients (including milk, dung and urine) that is used to promote growth.

Dr Balam has written a training manual on subjects of interest to rural communities. He also learns from them about their traditional knowledge and practices, which he carefully documents.

Activities

Most Pathe Paathshaalaa activities can be described as information-sharing and training. The information is shared among livestock keepers, academics and practitioners.

- **Scouting and documentation of indigenous traditional knowledge** and grassroot innovations on livestock keeping, agriculture, fisheries, biodiversity conservation, handicrafts, pottery, weaving, herbal healing, etc.
- **Publication of books in Odia (the local language) and English** to spread local innovations and traditional knowledge on these subjects.
- **Holding moving schools** for livestock keepers and pastoralists at their localities, at convenient times and in their language.
- **Documenting and conserving native livestock breeds**, including cattle, buffaloes, sheep, goats, pigs, chickens and ducks.
- **Providing the “Televet programme”**: a network that offers free advice on low-cost animal rearing and healing by pastoralists by mobile phone.
- **Making short films** on domestic animal diversity conservation and products from local breeds. See an example at www.youtube.com/watch?v=Yw496ylnOZE



From my field notes

I visited two sites of indigenous breeds: Angulia cattle and Badasingia long-horned buffalo.

During a discussion on why water in wells dries up faster than before, people explained that toxins kill an insect that produces a film on top of the water that reduces evaporation.

The participants complained about the National Aluminium Company. They said that there was not enough labour for agriculture since many young people go to work for the company. One participant complained that industrial toxins affected the water: if water is left in a container for 30 minutes, a film of fluorine forms on it. Goats and cows are dying, animals are becoming lame and abortions are more common because of fluorine.

The Odissa government and the university have registered several indigenous breeds (Chilika buffalo, Bingharapuri cattle, Motu cattle, Khariar cattle). The LIFE Network has published information on these breeds in its magazine, *Ama Akhapakha* ("In my neighbourhood"). The government is interested in the conservation of indigenous breeds and has allocated a budget to conserve the Kuji sheep, Basinghia buffalo, Hansil poultry and Pakhri/Swara pig.

Dr Balaram Sahu described Pathe Paathshaalaa like this: "This is... a seat of learning and a moving university for pastoral people. This concept is a great version of communicating with pastoral people, low-cost

livestock healing, their in-situ conservation work and small livestock holding.”

What do people think about keeping indigenous breeds that cannot compete with high-yielding exotic breeds? “Small is beautiful!” says Balaram Sahu. This is a concept I totally agree with. I would not support the notion of producing too much, eating a lot and dying in big numbers at a very fast rate!

Impacts

- Pathe Paathshaalaa was started in November 2008 and since then 350 mobile schools have been conducted. A total of 6,234 pastoralists and farmers, both women and men, have been trained on herbal/indigenous animal healing system and feed formulations using local biomass.
- Innovate Orissa Initiative has published 14 books and 33 issues of the magazine *Ama Akhapakha* on low-input animal and crop husbandry. Each issue reaches about 1,000 people.
- A total of 3,286 agricultural and veterinary practices have been documented. Some 321 pastoralists have been given awards at Pathe Paathshaalaa, including 81 women at special women’s Pathe Paathshaalaa and indigenous food festivals.
- The following native breeds have been documented;
 - **Cattle** 4 breeds: Binjharpuri, Khariar, Motu, Ghumsari
 - **Buffalo** 3 breeds: Chilika, Rairakhol, Dadsingia
 - **Pigs** 1 breed: Kuji/Pakhri
 - **Poultry** 3 breeds: Dhinkia, Hajra, Hanseel
 - **Goats** 3 breeds: Ganjam, Ghumsari, Baneigarhi
 - **Sheep** 1 breed: Kuji



Ethnoveterinary ingredients prepared by Dr Balaram Sahu

SENAAPATHY KANGAYAM CATTLE RESEARCH FOUNDATION

The Senaapathy Kangayam Cattle Research Foundation (SKCRF) is a trust that was formed in 2008 by people who were passionate about the indigenous Kangayam cattle breed in Tamil Nadu. It is managed by Karthikeya Sivasenapathy. The population of this breed dropped from 11.7 million in 1990 to 4.7 million in 2000. The main aim of the foundation is to conserve this valuable animal genetic resource. The Kangayam cattle breed is important for “zero budget” farming, in which neither pesticides nor chemical fertilizers are used. The breed also produces good-quality milk without certain proteins which are found in the exotic cattle’s milk. The animals are disease-resistant, and their dung and urine enrich the land and help trees thrive even when water is scarce. They are used in religious festivities and in temples, and for the traditional sports of *jallikattu* and *rekhla*. Small-scale farmers like to use them as draft animals because of their low maintenance requirements.

Vivekanandhan is a farmer in Pothiyapalayam, a village in Tamil Nadu, who won an award for the best Kangayam bull. He keeps this animal for breeding; other farmers from a radius of 10 km bring their cows to mate with it; they pay 200 rupees for the service. Though he also rears exotic breeds (Jersey and Holstein Friesian) for high milk production, Vivekanandhan likes to keep the indigenous breed for several reasons: ploughing, carrying loads, and its high-quality, healthy milk (his family drinks the Kangayam milk and he sells the Friesian milk). He earns money from the mating services of his bull.

Activities

***In-situ* conservation.** SKCRF is an *in-situ* conservation and breeding centre that functions as a resource centre and research institute on native breeds of cattle in Tamil Nadu. Kangayam cattle herds are bred and continually improved through systematic selection, crossing and pedigree maintenance. Pedigree bulls in the foundation are used for stud. SKCRF runs a special village livelihood programme that provides heifers to landless women and families.

Raising awareness about indigenous breeds among livestock keepers and policy makers. SKCRF has organized several activities in collaboration with the LIFE Network. In 2010, for example, it organized a cattle show to restore pride in raising native breeds. It also managed a preparatory meeting for the UN Convention on Biological Diversity held in Nagoya.

The foundation works with Kangayam cattle-breeders in seven districts in Tamil Nadu. It organizes cattle shows and helps livestock buyers and sellers identify the best cattle. It prints and disseminates literature on the preservation of endangered livestock species. It runs training programmes for livestock keepers, as well as lecture presentations in schools and colleges.

Promoting organic agriculture. SKCRF practices, advocates and trains livestock keepers and farmers in the use of cow dung and urine as substitutes for chemical fertilizers.

Protecting *korangadu* pasture land. SKCRF tries to protect and use *korangadu*, a silvipasture system of which Kangayam cattle and Mecheri sheep are part. It undertakes studies and supports individuals and

institutions to work on the Kangayam breed and the *korangadu* land. SKCRF also tries to protect the biocultural values and preserve the uniqueness of indigenous breeds and the traditional knowledge associated with them. This includes promoting livestock keepers' rights to access grazing land and water, and their rights over genetic resources and associated traditional knowledge.

Advocacy. SKCRF tries to influence the policies of the state and union governments on these topics. It has informed the government about Livestock Keepers' Rights, but implementation still has a long way to go: the government is interested only in importing exotic breeds.

SKCRF has shared its work and publications with the National Biodiversity Authority of India, an autonomous body under the Ministry of Environment and Forests. This authority now provides financial support to publish documents that explain the importance of biodiversity in the light of climate change and agriculture.



Notes from a conversation with Karthikeya Sivasenapathy, managing trustee of SKCRF

Since the 1960s there has been the “white” revolution (Holstein Frisians for milk), and the “green” revolution (to increase rice production). Hybrids are sold at subsidized prices. Foot-and-mouth disease affects exotic animal breeds more than indigenous breeds.

There is need for small machinery (not the big equipment like in the USA) to help farmers work on their land.

The soil has lost fertility, so we need to apply more manure.

There is need to dig small ponds to harvest rainwater and replenish groundwater intact. This is important as rain is getting scarcer each year.

If agriculture is made more profitable, people will come back to the villages and reduce overpopulation in towns and reduce the pollution in urban areas.

Pesticides bring diseases. Some of them, such as endosulphan, are banned in the USA but are used in India. Endosulphan was sprayed using helicopters, leading to child deaths and the birth of handicapped children

It is important to feed the population, but we should think how we do it. If you feed them on unhealthy food, then you will spend more on medical treatment.

Farmers do not get remunerated; instead it is the middlemen who get all the profits. The middlemen buy the farmers' produce during the high season and hoard it until the off-season. Then they sell at very high prices, so even consumers are exploited since they pay unnecessary high prices.

In order to feed the growing population, we should think of alternative foods, and not only staple foods such as rice.

Provide market opportunities (good infrastructure – roads, chilling plants) to enable those starving to access the surplus from the producers.

Impact

Since the 2010 Kangayam Cattle Show, there has been a big rise in interest among small-, marginal and large-scale farmers in keeping the Kangayam breed. Farmers have been buying Kangayam cows for organic farming, racing, *rekhla*, *jallikattu* and even for the love of the breed.

The Tamil Nadu government supports the foundation to organize shows where participants are presented with certificates. The herders with the best breeds are awarded a prize of \$200.

ANTHRA

ANTHRA is a non-profit organization set up 20 years ago by women veterinary scientists to work on issues of livestock development and sustainable natural resource management. ANTHRA searches for alternative systems in livestock health and management practices to support poor rural farmers, especially women. ANTHRA works mainly with marginalized communities like Adivasi (tribal) groups, pastoralists, small-scale farmers. It focuses on livestock health, livelihoods, agriculture and the environment. The executive director is Dr Nitya Ghotge.

Activities

- Research, documentation and validation of **traditional knowledge**.
- **Knowledge and Information sharing**. ANTHRA has published educational materials in the form of books, publications, documents and training manuals.
- **Capacity building** of livestock owning communities.
- **Collaboration with government departments** to enable small livestock owners to access their services.
- **Policy research and advocacy**.
- **Animal health**. ANTHRA prepares and packages herbal medicines for livestock based on the knowledge of traditional healers and validated by livestock-owning communities.

From my field notes

About 80 km north of Pune, in Narayan Gaon and Chakan villages, there are mobile pastoralist shepherds who are landless, move around with their livestock and reside only for a short time on any piece of land provided by farmers who invite them to pen their animals on their fields. The shepherds also graze their livestock on common grazing land, but substantial portions of this land have been put to other uses. The shepherds divide into small groups to make it easy to manage the livestock they graze on the spaces between the fields. ANTHRA advocates for the implementation of the 2006 Forest Act for pastoralists, which would enable them to use forest land to graze their animals.

ANTHRA also assists small-scale dairy farmers. One is a farmer in Nanegaon village who uses his family land to rear crossbred Friesian cows and run a dairy enterprise. He bought his animals with a loan that he has to repay within 5 years. With the loan he also built a structure for the cows. But 2 years after getting the loan, he still cannot start repaying the principal. The price of milk has not increased, while fodder, medicines and veterinary care have all got more expensive. If he fails to repay the loan, the farmer will have to sell his family land. He is very worried about the loan. ANTHRA's helps him reduce his input costs by improving his management, diagnose problems early, use simple, low-cost ways of improving nutrition, and applying locally prepared herbal medicines to treat simple conditions.



Impacts

- The Indian government has been convinced to integrate ethnoveterinary medicine into the veterinary curriculum. As a result there are also proposals to initiate and maintain herbal gardens in the universities, and several veterinary students are carrying out master's and PhD theses on ethnoveterinary medicine.
- The Pune District Co-operative Milk Producing Organization has proposed to provide ANTHRA with land to grow medicinal plants.
- ANTHRA has begun to bring about a heightened sensitivity towards pastoral communities and their contribution to the local economy.
- ANTHRA has managed to negotiate with the forest department in Maharashtra to allow pastoralists to graze their animals in forest areas.
- ANTHRA has advocated for indigenous breeds to be conserved and maintained.

Notes from discussion with Dr Vivek H. Ksheersagar, Managing director of Pune District Co-operative Milk Producing Organization

Dr Ksheesagar feels that the dairy enterprise is essential for small Indian farmers. “Milk is best when the cow at your door,” he says. “Even indigenous breeds should be improved using selective breeding because even when a cow is at ‘A’ level, it can be improved to ‘A+++’ level.”

“Farmers need to be organized into societies because individual farmers, for example, cannot afford the fees of a veterinary doctor but as a society, they could afford one.”

Support is needed for small-scale dairy processing plants e.g. those involved in value addition of milk whereby products like *paneer* (a type of cheese) are produced for the local market. In some places the big commercial dairy companies sell their milk products mainly to richer people in Mumbai since it is believed that these products are not ‘contaminated’ by humans because most of the processing is done by machines!

CONCLUSIONS

From the activities of the four LIFE Network member organizations in the four different states of India (Rajasthan, Odisha, Tamil Nadu and Maharashtra), I can confidently say that conservation of biodiversity is necessary. It is essential for sustainable livelihoods; it is the main source for food security; and it is the main means for the survival of the future generations. There is need for more stakeholders like the veterinarian, Dr Vivek H. Ksheersagar, to come out and speak sincerely about the importance of organic products which can be produced only by small-scale farmers and pastoralists. The efficiency of hybrid cattle is only a short-term solution to our food-security problems.

It is important to conserve livestock diversity *in situ*, promote socially inclusive and ecologically sustainable livestock farming, support the development of diverse products from native breeds of livestock, strengthen rural income opportunities, and advocate holistic conservation.

IMPLICATIONS FOR THE GLOBAL AGENDA ON SUSTAINABLE LIVESTOCK

The recently initiated Global Agenda on Sustainable Livestock has so far ignored the role of livestock diversity in achieving socially inclusive and long-term sustainable livestock production. It is oriented at improving resource use efficiency, mainly measured in terms of greenhouse gas emissions per kg of product. Framing sustainability in these narrow terms favours high-input production systems based on a narrow range of genetic resources and feedstuffs. Therefore it is urgent to expand this notion and include sustainable use of biodiversity as an indicator of sustainability.

The mainstream view is that local animal genetic resources are “inefficient” and that they are even bad for the environment because they supposedly produce too many greenhouse gases per unit of product. They are also said to become extinct because they are not economically worthwhile. However, evidence is accumulating to prove that the rapid expansion of crossbred and exotic breeds is due to skewed policies, to information asymmetry and to subsidies, rather than being more profitable to farmers. Rather than high performance genetics, livestock keepers require secure access to grazing resources and animal health care, as well as training in value addition and market linkages – all the points that are encapsulated in the Livestock Keepers Rights concept.

RECOMMENDATIONS FOR THE GLOBAL AGENDA ON SUSTAINABLE LIVESTOCK

I am a member of two international networks, LIFE and the Agricultural Biodiversity Community, where stakeholders appreciate the importance of small-scale livestock keepers who stick to the values of nature to breed their indigenous livestock and who work towards agricultural biodiversity for resilient food systems. I suggest that while addressing the dilemma of the livestock sector sustainability, the Global Agenda strategy of “closing the efficiency gap” should not only overemphasize “resource efficiency” but should also consider other factors contributing to a sustainable livestock sector for food security. These include communities’ livelihoods for poverty alleviation, healthy and nutritious food, social cultural heritage rights, and sustainable traditional environmental management for future generations!

Livelihoods

GASL should support pastoralism and small-scale producers to overcome unemployment issues. It should ensure that everyone appreciates and recognizes pastoralism as a viable production system. It is important to acknowledge the contribution of pastoralist systems to the livelihoods of a large number of people in the world, and thus to global food security. In Uganda, for example, pastoralists constitute 22% of the population. Nationally, mixed farming smallholders and pastoralists own over 90% of the national cattle herd and 100% of the small ruminants and non-ruminant stock. Livestock production contributes 5.2% to the national GDP and 12% to the agricultural GDP. The livestock sector in Uganda produces hides and skins, which are exported to Europe and Asia; in 2009 these earned the country up to \$6 million.

Markets

There should be proper animal health care and infrastructure so livestock keepers can market their animals and their products. Livestock keepers need training in value addition. Support is needed for small-scale dairy plants that make *paneer* and other products for the local market. This would help malnourished populations to get milk that herders now pour on the ground because they cannot deliver it to the market.

Health and food security

When considering food security, nutrition and good health of the people should come first. Small-scale livestock producers should be supported to continue producing organic meat and milk for a healthy future population! What benefit do we gain from producing a lot of unhealthy food, fill our stomachs, get ill, spend all our income on medical bills, live with stress and worry, or die as soon as we have satisfied our hunger?

Environment

GASL should critically look at the value of the traditional livestock systems. I am worried that so far this paradigm of “natural resource use efficiency” is already showing diminishing returns. For example our environments have been destroyed in the name of clearing bush and cutting trees to create more and clean space for exotic breeds. This “natural resource efficiency” does not generate economic and social gains

because in the developing countries, small-scale farmers and pastoralists who have adopted the “more efficient systems” like high-yielding breeds are being pushed out of production by commercial and industrial producers, so they are getting poorer.

Livestock Keepers' Rights

It is important to stop providing patronizing support, but instead allow small-scale producers to decide what they think is appropriate for them.

There is need to support the governments of developing countries to implement favourable policies that allow livestock keepers to stick to their traditional breeds and have secure access to grazing land which will help them sustain their livelihood, culture and heritage.

Herders should be supported to improve their indigenous breeds, instead of promoting high-performance genetics which only appear more efficient and profitable because of skewed policies, information asymmetry and subsidies.

Patenting of animal genetic resources should be banned to allow breeders to access their resources and enable traditional and modern knowledge to be combined in selecting sustainable breeds.

National governments should be encouraged to implement policies that redress historical injustices, protect the land rights of groups and communities that have been marginalized by history or on the basis of gender, religion, ethnicity and other forms of vulnerability. These groups and communities should be helped to achieve balanced growth and social equity. Most pastoral communities have been exploited because they own land communally, while private property systems have left them landless. In addition, many pastoral lands are home to critical biodiversity reserves, putting them at odds with conservation efforts. There should be prescriptions to shift the way in which these regions and or groups of people can obtain land security in order to avoid further exploitation.

Access and benefit-sharing

GASL should integrate the LIFE approach that advocates for access and benefit-sharing. This stipulates how genetic resources may be accessed, and how users and providers should reach agreement on the fair and equitable sharing of the benefits that might result from their use.

Rich people or institutions (the users) that seek access to a genetic resource should seek the prior informed consent of the country where the resource is located. Moreover, the users and country hosting the genetic resource need to agree on the terms and conditions of access and use of this resource (mutually agreed terms). This includes the sharing of benefits arising from the use of this resource, with relevant authorities in the provider country.

Benefit-sharing with providers will take various forms, ranging from royalties to joint ventures, technology transfer, capacity building, etc. It will thus contribute to poverty reduction and sustainable development in developing countries. In return for these benefits, providers of biodiversity will enable access to their genetic resources for research or other purposes. This can contribute to the advancement of science and to human well-being through the use of genetic resources in pharmaceuticals, cosmetics, agriculture and other sectors.

Biodiversity

GASL should include sustainable use of biodiversity as an indicator of sustainability by supporting the role of livestock diversity in achieving socially inclusive and long-term sustainable livestock production. Livestock biodiversity is the best way of spreading risks and is the best surety in cases of epidemics and thus the most reliable source of sustainable food security.

All in all, the stakeholders of GASL should realize that the “natural resource use efficiency” paradigm favours intensive, industrial production systems, where livestock production is clustered in huge holdings and is concentrated in specific locations. Policies are needed that support the “declustering” and dispersal of livestock production into more marginal and remote areas, and that promote the use of local biomass instead of reliance on imported grain and oilseeds.

EPILOGUE

We need to wake up to the reality that protecting indigenous local livestock such as Ankole Longhorn cattle of Uganda is crucial for achieving the Millennium Development Goals, including reducing extreme poverty and hunger, promoting gender equity and empowering women.

Livestock keeping based on locally adapted breeds that require no or low inputs is economically more beneficial than high performance breeds which may produce more but also draw the farmer or livestock keeper into a debt trap because they require expensive inputs and a functioning market mechanism. Take the example of the Indian farmer I visited in Pune, who was worried because he had not been able to service the loan he had taken to invest in cross-breeding. When switching to exotic breeds, livestock keepers become worried about inputs. Indigenous breeds are environmentally friendly and they play a major role in food security and in supporting rural livelihoods.

Small-scale livestock-keeping and pastoralism are important in maintaining productive biodiversity within communities – instead of the focusing on gene banks.

Policymakers should always take biodiversity into consideration. “At least 40 per cent of the world’s economy and 80 per cent of the needs of the poor are derived from biological resources. In addition, the richer the diversity of life, the greater the opportunity for medical discoveries, economic development, and adaptive responses to such new challenges as climate change”.¹² Livestock diversity can help people cope with adversity while also providing prospects for livestock improvements.

Worldwide, one billion people are involved in animal farming, and domestic animals supply 30 percent of total human requirements for food and agriculture. In developing countries, 70 percent of the rural poor depend on livestock as an important part of their livelihoods, and livestock account for some 30 percent of agricultural gross domestic product, a figure expected to rise to 40 percent by the year 2030. Currently, more than 600 million rural poor people rely on livestock for their livelihoods (FAO 1999).

In Uganda and in other developing countries, there is a problem of unemployment, so I wonder what would happen to all the pastoralists and other small-scale producers if all the livestock is owned by ranchers and industrialists.

I think leaders and policymakers should endeavour to put in place appropriate policies and improve the infrastructure and market links to create an environment that will allow the world’s people to enjoy their human rights by carrying out their livelihoods and accessing healthy food. According to ILRI “Sixty-three per cent of the developing world’s total population lives in rural areas, including 75 per cent of the 1.2 billion people trapped in extreme poverty; of these 900 million rural poor, some 70 per cent, or 630 million, raise

¹² www.cbd.int

livestock as part of their livelihoods”.¹³ The developing world’s large and rapidly growing livestock markets make livestock production an income-generating opportunity similar to horticulture and other high-value agricultural commodities. The advantage of the livestock markets is that they are largely domestic and thus require no export infrastructure. Poor farmers know how to produce livestock, and they have access to feed and other resources to produce it competitively.

There are a number of forces threatening the long-term viability of livestock production in Africa. These include landscape degradation and cross-breeding with exotic breeds imported from Europe, Asia and the Americas. The imports have been unable to cope with the disease, heat, humidity, scarce and poor-quality feed in many developing-country environments. The indigenous breeds that are being neglected not only have intrinsic value, but also may possess genetic attributes critical to addressing future food security challenges, in developed or developing countries, as the climate, pests and diseases all change.¹⁴

According to leading conservationists, “conserving the world’s remaining biodiversity is not just a moral imperative; it is a necessary investment for lasting economic development. But in many places where the poor depend on these natural services, we are dangerously close to exhausting them, resulting in lasting poverty. Poverty and biodiversity loss are two of the world’s dire challenges” (Turner et al. 2012).

Biodiversity is very important because diversity is our strength, it cannot be co-opted, it is our resilience and it is the means and end of our movement!

¹³ www.ilri.org/ilrinews/index.php/archives/552

¹⁴ www.ilri.org/ilrinews/index.php/archives/category/indigenous-breeds

REFERENCES

- FAO. 1999. Global strategy for the management of farm animal genetic resources. Food and Agriculture Organization of the United Nations, Rome.
- Köhler-Rollefson, I., E. Mathias, H. Singh, P. Vivekanandan and J. Wanyama. 2010. Livestock keepers' rights: The state of discussion.
- Lokhit Pashu-Palak Sansthan. 2013. The camels of Kumbhalgarh. A biodiversity treasure. LPPS, Sadri.
- Lokhit Pashu-Palak Sansthan and I. Köhler-Rollefson. 2005. Indigenous breeds, local communities: Documenting animal breeds and breeding from a community perspective. LPPS, Sadri.
- Lokhit Pashu-Palak Sansthan. 2010. Biocultural community protocols for livestock keepers. League for Pastoral Peoples and Endogenous Livestock Development and LIFE Network.
- Senaapathy Kangayam Cattle Research Foundation. Incredible Kangayam cow.
- Senaapathy Kangayam Cattle Research Foundation. Unbridled Kangayam.
- Steinfeld, H., et al. 2006. Livestock's long shadow: Environmental issues and options. FAO, Rome.
- Turner, W.R., K. Brandon, T.M. Brooks, C. Gascon, H. K. Gibbs, K. S. Lawrence, R. A. Mittermeier, and E. R. Selig. 2012. Global biodiversity conservation and the alleviation of poverty. *BioScience* 62: 85–92.

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