

# Innovations and diverse livelihood pathways: alternative livelihoods, livelihood diversification and societal transformation in pastoral communities

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## Summary

Pastoralists have a rich tradition of ‘innovation’, as continuous adaptation to new ecological and economic scenarios has been a prerequisite for their survival through the millennia. One of their greatest assets is the large number of locally adapted livestock breeds they have developed, which represent a major resource for climate change adaptation as well as mitigation. Pastoralists are beginning to position themselves as providers of ecological services as well as of livestock products that represent a healthy and eco-friendly alternative to the products from industrial production systems. Nevertheless, many governments continue with antagonistic policies, being unaware of the ecological and economic significance of their pastoral populations. Biocultural Community Protocols, as specified in the Nagoya Protocol on Access and Benefit-Sharing to the Convention on Biological Diversity, are emerging as an important tool for setting the record straight about the role of pastoralists in food security and biodiversity conservation. There is a need for increased recognition of the inherent ‘modernity’ of pastoralism and the role it can play in creating a more green economy. If this recognition is forthcoming and is rewarded appropriately with government support, this may also overcome the current problem of finding enough capable young people interested in pursuing pastoralist careers.

## Keywords

Biocultural Community Protocol – Eco-tourism – Environmental services – Innovation – Livestock biodiversity – Nutritional quality – Pastoralism.

## Introduction

Contrary to their traditional image and backward reputation, pastoralists continuously ‘innovate’; they are experts at adapting to new situations, responding to challenges and taking advantage of emerging opportunities. Arguably, pastoralists have a ‘heritage of innovation’. Since their beginnings, some 9,000 years ago in the Near East, the search for good grazing conditions for their livestock has been the driving force for pastoralists to move into new, often remote, areas. In the process of infiltrating and ‘colonising’ new territories, they also created new breeds of livestock that were optimally adapted to the ecological conditions of these areas. The number of breeds and the

diversity of domestic animals are very high in countries with prominent pastoralist populations. The Food and Agriculture Organization of the United Nations (FAO) thus terms pastoralists as ‘guardians of biological diversity’ and recognises women as being a key factor in this role (1, 2, 3). The association between pastoralists and biodiversity, the rich livestock genetic diversity that is associated with their way of life and their ability to produce food without any of the agricultural inputs required in crop cultivation represent a great long-term asset for themselves and for humanity. However, they need innovative mechanisms to enable them to fully benefit from these advantages (see below for an example of one such mechanism: Biocultural Community Protocols).

## What is an innovation?

The term 'innovation' in itself is new, becoming popular only in the 20th Century in the context of economic and commercial discourse; prior to that, the concept was considered something undesirable (4). Innovation is commonly understood as 'bringing to market a new technology', but innovations can also be social or institutional. Some scholars distinguish between product, process, position, and paradigm innovation (5), and this classification will be used to structure the discourse about pastoralist innovations below.

## Product innovations

Product innovations relate to changes in the things, including products and services, that pastoralists offer.

Pastoralists have always delivered live animals and/or livestock products, but in a generic way. There is gradually increasing realisation that pastoralist products are special and often superior to those being produced in industrial systems. Having the advantage of being more natural and healthier, they have strong appeal for a health- and environment-conscious urban clientele. In countries with a substantial middle class, there are good opportunities for niche markets to develop, but a couple of logistical and organisational hurdles to overcome. For one, there are difficulties in bringing pastoral products to the market, as they are usually produced in comparatively small quantities in a decentralised manner and in remote areas in which environmental conditions are often harsh. Furthermore, separate marketing channels from the mainstream have to be created to cash in on the higher value. A number of relatively small projects have attempted to do so.

### Taste

The Slow Food Movement and the SAVE (Safeguard for Agricultural Varieties in Europe) Foundation are promoting products from pastoralist systems based on their special taste. Products being marketed in this way include those of the Karakachan nomads in Bulgaria, who may be descendants of the ancient Thracian livestock breeding communities who lived in the high mountains of Bulgaria (6).

### Products with regional or cultural value

#### Northern Neuquén Criollo Kid

In the Argentinean Andes there are about 1,500 families of transhumant goat herders ('crianceros') who engage in seasonal movements on public rangelands. They produce

kids and skins and a geographical indication has been developed for the Criollo goat meat produced in Neuquén Province (7).

### Gongadi

The Gongadi is a traditional blanket woven by pastoralists of the Deccan Plateau in India from the wool of their black sheep. It has both ritual and practical value for the local communities. By making small adaptations to the traditional design and capitalising on its heritage value, efforts are made to promote it to an urban and educated clientele (8, 9).

### Agro-ecotourism

Being located in scenic spots and undisturbed environments, pastoralists can provide excellent opportunities for eco-tourism, which attracts urban people who are keen to connect with nature and are often fascinated by the pastoralist way of life and their close relationship with their animals. One example of pastoralist-run eco-tourism can be found in Iran among the Qashqai nomads, and opportunities for eco-tourism will soon also be offered by the Shahsevan nomads in Azerbaijan (10).

## Process innovations

Process innovations are changes in the ways in which products and services are created or delivered.

Pastoralists quickly adapt to changing or newly emerging market opportunities for their livestock. A well-documented example is that of camel pastoralists from northern Kenya and southern Ethiopia responding quickly to the expanding market for camels for meat and for milk (11).

In western India, Raika sheep pastoralists, on their own initiative, and well before the government research and extension system, changed their sheep husbandry system from wool production to meat production when market demand changed. They continuously conduct breeding experiments to create optimal genotypes by bringing in male animals from new breeds and examining closely how the offspring develop (12).

Pastoralists have developed innovative processing and marketing systems that they themselves control. The Keekonyokie Slaughter House, which is a Maasai community-owned social enterprise that was established in 1981 in Kiserian on the outskirts of Nairobi, has grown from processing 30 cattle per day to 180 per day in the last five years. It has enabled the community to obtain 30% higher prices for their livestock. It is now the largest pastoralist-

owned livestock enterprise in East Africa, with an average daily turnover of 5 million Kenyan schillings (USD 50,000). It has improved income for more than 100,000 households in Kajiado County (80 miles south of Nairobi) and in northern Tanzania (13). In northern Kenya and Ethiopia, women have formed groups with detailed constitutional frameworks outlining the rights and responsibilities of each member in order to facilitate the process of bringing their pastoral products to the market (14).

## Position innovations

Position innovations are changes in the context in which the products/services are framed and communicated.

Pastoralists increasingly position themselves, or are positioned, as providers of ecosystem services, especially with respect to carbon sequestration and the conservation of biodiversity and ecosystems. In Germany, the Federal Association of Professional Shepherds has the slogan, 'We take care of the landscape that you love', and in their presentations to the public, they make the claim that, 'we conserve plant diversity, conserve wildlife biodiversity, improve soil quality, keep groundwater clean and improve air quality through the maintenance of grasslands' (15).

### Conservancies

In Kenya's wildlife areas, many conservancies are run by pastoralist communities. Their purpose is wildlife conservation, ecosystem management, social development and the safeguarding of communal land. The first pastoralist conservancy in Kenya was started by the Olare Orok community in the Koiyaki group ranch and comprises 147 Maasai landowners that manage 22,000 acres of land. They partner with tourism investors to ensure sustainable use of the natural resources and receive payments for ecosystem services. Other communities have followed this model and the Masai Mara Conservancies Forum has united eight groups that manage more than 88,000 hectares of land (16). However, a study found that the benefits trickling down to pastoralists are often very small (17).

### Carbon sequestration

Many of the grasslands managed by pastoralists, especially in East Africa and Northwest China, have the potential to increase carbon sequestration through improved management. Consequently, it has been suggested that pastoralists should receive funds from carbon finance schemes in the context of Nationally Appropriate Mitigation Actions; however, a number of hurdles have to be overcome for these to become operational (18).

## Conservation of domestic animal diversity and livestock breeds

Pastoralists have successfully positioned themselves as 'guardians of biological diversity' or 'keepers of genes' and especially of livestock genetic diversity. The large variety of livestock breeds they have created is expected to increase significantly in value in the near future, due to an increase in feed prices, the need to adapt to climate change, consumer desire for products from healthy animals raised without antibiotics and according to higher animal welfare standards, and demand for tasty and healthy livestock products with heritage value (2, 19). To ensure that their role in maintaining diversity is recognised, pastoralists are coming together to establish formal associations at national and global level.

In India, pastoralists have formed associations around specific breeds, such as the Banni buffalo, the Kutchi camel, the Jaisalmer camel, Pullikulam cattle, Vembur sheep, etc. In some cases they have been able to mobilise government support, leading to recognition of previously unregistered livestock breeds and to higher prices for their animals (20).

### Livestock keepers' rights

At the global level, pastoralist associations, in partnership with non-governmental organisations, have formed the LIFE Network ('Local livestock for empowerment of rural people'). The network supports community-based, as opposed to *ex-situ*, conservation of livestock breeds and promotes livestock development on the basis of local animals rather than exotic or high-performance animals. The LIFE Network emerged during the 'Interlaken process', which culminated in the First International Conference on Animal Genetic Resources, which was held in Interlaken, Switzerland, in 2007 (21). At this event, the network pressed for formal recognition of livestock keepers' rights as a framework for supporting the role of pastoralists and other indigenous livestock keepers in sustainably managing livestock diversity. These rights, which were developed in a workshop with legal experts held in Kalk Bay, South Africa, in 2008, are composed of a set of three principles and five rights (see Box 1) (22).

### World Association of Mobile Indigenous Peoples

The World Association of Mobile Indigenous Peoples (WAMIP) was founded in 2003 during the World Parks Conference in Durban. Its aim is 'to assist and empower mobile indigenous peoples throughout the world to maintain their mobile lifestyles in pursuit of livelihoods and cultural identity, to sustainably manage their common property resources and to obtain the full respect of their rights' ([www.wamipglobal.org](http://www.wamipglobal.org)). WAMIP was one of the organisations that supported the Global Gathering

**Box 1****The Declaration on Livestock Keepers' 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 adhering to ecological principles of animal production, shall be given the following Livestock Keepers' Rights:

Livestock Keepers have the right to make breeding decisions and breed the breeds they maintain.

Livestock Keepers shall have the right to participate in policy formulation and implementation processes on animal genetic resources for food and agriculture.

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.

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.

Livestock Keepers shall have the right to effectively access information on issues related to their local breeds and livestock diversity.

*Source:* LIFE Network (23)

of Women Pastoralists, which brought together more than 100 women from 32 countries in November 2010 in Mera (Gujarat), India. They talked about key issues such as markets, rules, rights, education and health, and identified priorities for action. The gathering culminated in the issuing of the Mera Declaration, which consists of 23 recommendations to governments, governing agencies of the United Nations, other relevant international and regional organisations, research institutes and customary leaders for actions in support of pastoralism (23).

## Paradigm innovation

Paradigm innovations are changes in the underlying beliefs which shape what pastoralists and the livestock sector do.

Pastoralism is very much in line with modern ecological thought and demands for a sustainable way of life. It corresponds to the three pillars of a green economy, i.e. it aims to be socially, ecologically and economically sustainable (24). As a land-use strategy, pastoralism combines food production with the conservation of biological diversity, both wild and domestic. As a food production strategy, it requires minimum inputs in terms of water and fossil fuels and does not necessitate the use of fertiliser. It supports the maintenance of grasslands as carbon sinks and therefore represents a means of both climate change mitigation and adaptation. Furthermore, the quality of food in terms of nutritional composition, especially with respect to fatty acids, is regarded as higher than that produced in industrial systems. Last but not least, pastoralism scores positively in terms of animal welfare, as livestock are managed in social groups and can express their natural behaviours.

Nevertheless, pastoralism continues to contend with a negative image and is often considered to be backward. In the minds of many it is automatically associated with 'overgrazing', and deeply ingrained misconceptions about its efficiency and output prevail. There is some gradual progress and the African Union recently expressed support for pastoralism (25). But major countries in Asia with significant pastoral populations, including China, India and Iran, have decidedly anti-nomadic and anti-pastoral policies and attitudes. They favour the settlement of nomads and often implement it with the purported goal of protecting their natural resources. In China, Tibetan nomads are forcefully settled (26). In India, the legal entitlements of pastoralists are enshrined in the Forest Rights Act, but the Act is not properly implemented and pastoralists are still being denied their rights. In Iran, legislation put into place during the Pahlavi regime to make grazing lands state property has not been reversed by the present government (27).

## Biocultural Community Protocols: an innovative mechanism for achieving recognition and asserting rights

In order to change government perceptions and claim and obtain their rights under the Convention on Biological Diversity (CBD), pastoralists are developing Biocultural Community Protocols (BCPs) in consultation with lawyers and specialists on indigenous knowledge. Community Protocols are a tool validated by the Nagoya Protocol on Access and Benefit-Sharing to the CBD that was ratified in 2014 and they are therefore legally binding for all countries that are signatory to the CBD. BCPs put on record the community's role in the management of biological diversity and its contribution to managing the ecosystem. They provide details of the community's breeds, its traditional knowledge of the animals, and its lifestyle in relation to the environment (28). At least ten pastoralist communities across India, Pakistan and Kenya have developed such

BCPs (29). Others are being developed in Iran and Latin America, and the African Union is piloting a BCP for the Fulani pastoralists in West Africa.

## Societal transformation

The backward image of pastoralism makes it an unattractive career option for young people, despite it often being more profitable than the jobs they can find in the city (the only urban jobs that are within reach of most people with pastoralist backgrounds are those that pay low wages). In India, an increasing number of young Raika abandon the traditional profession and migrate to the cities to find menial jobs. As a result, the sheep population is in decline, with impacts on food security and the ecology of the region. In order to better understand their motivations, semi-structured extended interviews were undertaken with 52 Raika youths. Sixty-five percent of the interviewees said that the financial returns from shepherding had decreased and that they expected to earn better incomes in the cities. Furthermore, migration was considered exhausting, lonely and very hard work. Another major disincentive is that, due to urban sprawl and the growing number of roads and fences, it is increasingly difficult for pastoralists to access grazing areas. The negative image of herders as being dirty, poor and uneducated is another reason why young people are turning their backs on the traditional work of their

communities. Unfortunately, most of the young Raikas in the cities fail to reach their goal of earning more money than in their traditional herding profession (29).

The lack of young people interested in pastoralism is a threat to food security and environmental management. However, not everyone can become a pastoralist, so alternative livelihood options also have to be available. One example of an organisation working to find alternatives is the Raika Education Charitable Trust ([www.rectindia.com](http://www.rectindia.com)) in Rajasthan, India, which has the goal of placing children of pastoralist backgrounds in white collar jobs. Thus far it has achieved this for about 2,000 Raika youths by setting up hostels and coaching centres.

At a recent meeting of UNICAMEL, an association of camel breeders from all over Iran, held in July 2015, one of the members stated that because of the difficulties of pastoralism, young people were becoming radicalised and had a tendency to engage in criminal activities.

The creation of enabling policy environments for pastoralism at national levels, combined with practical measures that facilitate movement and raise the status of pastoralist producers, would go a long way not only towards ensuring future food security but also towards reducing conflict, and possibly terrorism. With more international organisations recognising the social and ecological benefits of pastoralism there is hope that such policy changes will eventually occur.



## L'innovation et les différents moyens de subsistance : moyens de subsistance alternatifs, diversification et transformation sociétale dans les communautés pastorales

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### Résumé

La capacité d'« innovation » est une tradition très présente dans le pastoralisme, la survie des pasteurs au cours des siècles étant tributaire de leur adaptation continue à de nouveaux scénarios écologiques et économiques. L'une de leurs grandes réussites a été le grand nombre de races de bétail sélectionnées localement, qui représentent une ressource importante en termes d'adaptation au changement climatique et d'atténuation des effets de celui-ci. Les pasteurs commencent à concevoir leur rôle en tant que fournisseurs de services écologiques et de produits de l'élevage offrant une alternative saine et écologique aux produits issus des systèmes d'élevage industriels. Néanmoins, de nombreux gouvernements n'ont pas conscience du rôle écologique et économique essentiel de leurs populations pastorales et continuent à appliquer des politiques qui leur sont défavorables. Des protocoles communautaires bio-culturels tels que ceux présentés dans le Protocole de Nagoya à la Convention sur la diversité biologique

(CDB) sur l'accès et le partage des avantages commencent à se développer en tant qu'outils pertinents permettant de faire valoir l'importance du pastoralisme pour assurer la sécurité alimentaire et la protection de la biodiversité. Il est nécessaire de mieux faire reconnaître la « modernité » intrinsèque du pastoralisme et le rôle que celui-ci peut jouer dans le développement d'une économie plus verte. Une meilleure reconnaissance à l'avenir, obtenant le soutien qu'elle mérite de la part des gouvernements pourrait apporter des solutions au problème actuel du nombre insuffisant de jeunes gens capables et motivés s'orientant vers les activités pastorales.

#### **Mots-clés**

Biodiversité du bétail – Écotourisme – Innovation – Pastoralisme – Protocole communautaire bio-culturel – Qualité nutritionnelle – Services écologiques.



## **Innovaciones y diversas formas de ganarse la vida: medios de sustento alternativos, diversificación de esos medios y transformación de la sociedad en las comunidades pastorales**

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#### **Resumen**

Las sociedades pastorales cuentan con una rica tradición de «innovación», no en vano la continua adaptación a nuevas condiciones ecológicas y económicas viene siendo desde hace milenios un requisito previo para su supervivencia. Uno de sus mejores activos es el gran número de razas de ganado adaptadas a las condiciones locales que han sabido generar, lo que supone un recurso importante a la hora de adaptarse al cambio climático y atenuar sus efectos. Las sociedades pastorales empiezan a posicionarse como proveedores de servicios ecológicos y de productos ganaderos que representan una alternativa sana y ambientalmente responsable a los productos industriales. Sin embargo muchos gobiernos, incapaces de aprehender la importancia ecológica y económica de sus poblaciones pastorales, siguen aplicando políticas que les son desfavorables. Los protocolos bioculturales comunitarios, definidos en el Protocolo de Nagoya (del Convenio sobre la Diversidad Biológica) sobre «Acceso a los recursos genéticos y participación justa y equitativa en los beneficios derivados de su utilización», empiezan a cobrar relevancia como una importante herramienta para poner las cosas en su sitio acerca de la función que cumple el pastoreo para la seguridad alimentaria y la conservación de la diversidad biológica. Es preciso reconocer en mayor medida la «modernidad» intrínseca del pastoreo y la función que puede cumplir en el advenimiento de una economía más ecológica. Si este reconocimiento llega, y si se acompaña de un adecuado apoyo gubernamental, ello también podría resolver las dificultades actuales para encontrar un número suficiente de jóvenes capaces e interesados en dedicarse profesionalmente al pastoreo.

#### **Palabras clave**

Biodiversidad ganadera – Calidad nutricional – Ecoturismo – Innovación – Pastoreo – Protocolo Biocultural Comunitario – Servicios ambientales.



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