

FAO ANIMAL PRODUCTION AND HEALTH



paper

ADDING VALUE TO LIVESTOCK DIVERSITY

Marketing to promote local breeds and improve livelihoods



Cover photographs:

Left image: Wool drying (Shramik Kala, India) – Ilse Köhler-Rollefson

Centre image: Camels with milk churn (Tiviski, Mauritania) – Omar Abeiderrahmane

Right image: Bactrian camel herder (Gobi camel wool, Mongolia) – Ilse Köhler-Rollefson

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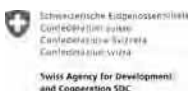
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Executive summary

Throughout the world and over centuries, small-scale livestock keepers and pastoralists have developed animal breeds that are well suited to their local conditions. These breeds are hardy and disease-resistant; they can survive on little water and scant vegetation. They can continue producing meat and milk in areas where modern, imported breeds succumb without expensive housing, feed and veterinary care. They enable people to earn a living in otherwise inhospitable areas, and embody valuable genetics for future breeding efforts.

Nevertheless, these breeds are in danger of disappearing, pushed out by modern production techniques and out-competed by exotic breeds. Finding niche markets for their products is one possible way of ensuring the survival of these breeds, and enabling the people who keep them to earn more from their existing lifestyle.

EIGHT CASES

This book describes eight cases from Africa, Asia and Latin America where outside interventions have attempted to develop markets for specialty products from local breeds. The cases include wool, cashmere, meat, hides, milk and dairy products, from dromedaries, Bactrian camels, sheep and goats. The countries represented are Argentina, India, Kyrgyzstan, Mauritania, Mongolia, Somalia and South Africa. Some of the initiatives targeted urban markets within the country; others were aimed at the export market.

The case from **India** features wool from the Deccani sheep, a brown-wooled breed native to the Deccan Plateau of southern India. Shramik Kala, a federation of self-help groups, buys Deccani wool, weaves it into a range of attractive bags and other handicrafts, then sells them to Europe, Japan and the United States, as well as within India. Shramik Kala developed this new value chain when the previous market, blankets for use by the army and police, collapsed.

The case from **Kyrgyzstan** deals with cashmere from local goats in the Pamir mountains. Currently the goat herders produce low-value, whole fleeces, which they sell to buyers from China. The Odessa Centre and the Kyrgyz Cashmere Producers' Association are exploring ways for goat keepers to comb out the valuable, fine cashmere and sell it separately to a new group of buyers from Europe and Japan.

Bactrian camels in southern **Mongolia** also produce an under-valued product – wool. A group of volunteers, along with the New Zealand Nature Institute, is organizing local women to spin the wool into yarn and to export it to the United States, where it is sold to hobby knitters.

The first of the two **Argentina** cases also deals with wool. The Linca sheep breed is raised by the Mapuche people in the foothills of the Andes in Patagonia. There is little demand for its coloured wool, so flocks of Linca have been declining. Aided by an NGO, the government and a research institute, a network of women has formed a community sales outlet, the Mercado de la Estepa “Quimey Piuke”, to sell ponchos and other traditional items made from the Linca wool.

In the rural Eastern Cape province of **South Africa**, the government has established an abattoir and tannery to slaughter and process the region's native goats. This cooperative-run factory produces meat, sausages and burgers, as well as leather cushions and other handicrafts. It sells the meat products to the Muslim community in nearby towns, and the handicrafts through specialist stores throughout South Africa.

The second case from **Argentina** also deals with goat meat. A group of local institutions in Neuquén province, in Patagonia, has applied for a Protected Domain of Origin designation for the meat of the local Criollo goat breed. This meat is marketed to urban consumers in Neuquén and nearby provinces.

The final two cases focus on milk from dromedaries. In **Mauritania**, the Tiviski dairy is a private company that buys milk from pastoralist herders in the south of the country, chills it and transports it to its dairy in Nouakchott, the capital. There it produces high-quality pasteurized milk, as well as other dairy products. Tiviski has invented camel cheese, and is trying to get regulatory approval to export this to the European Union, a huge potential market.

In **Somalia**, our case paints the picture of a marketing system for dromedary milk that is run by a loose network of female traders. Despite the lack of any central organization, this network collects milk from pastoralist encampments in the interior of Puntland, in northeastern Somalia, transports it to Boosaso, a town on the coast, and sells it uncooled and untreated at markets there. Attempts to improve this chain have had mixed success: low-budget, community-based investments (such as aluminium cans) have been successful, but a new central dairy runs well below capacity.

THE PROMISE OF NICHE MARKETING

These cases show some of the promise and pitfalls of niche marketing of products from local breeds. On one hand niche markets may be vital for the survival of many local breeds which cannot compete with higher-producing exotic breeds in mass markets. On the other hand, many local breeds may be ideally suited for niche markets: they have unique characteristics (coloured wool or hides, extra-fine fibre, meat or milk with special tastes). Many of these traits (such as coloured wool) are undesirable in the mass market, but are ideal for certain market segments – if they are marketed in the right way.

Marketing of products from local breeds can also take advantage of two other characteristics of local breeds: traditional processing techniques (to produce handicrafts or garments with distinctive designs) and strong local ties (since these breeds are found only in certain localities and are raised by certain ethnic groups). Both can be powerful features on which to base a marketing strategy.

Overall, the cases demonstrate that niche marketing of products from local breeds can generate employment and income for the poor – both livestock keepers and others involved in processing and trading the product. It can empower women, reverse the decline in the breeds concerned, and conserve both the environment and cultural values. It can be pro-poor because it is the poor who tend to keep local breeds, and because the type of work and amount of income generated may make it unattractive for wealthier individuals.

MARKETING STRATEGIES

There are various approaches to exploiting a niche market. Among our cases, the most common involved finding new markets, either for an existing product (this is known as **market development**), or for an entirely new product (called **diversification**). Less common were approaches involving existing markets, either for an existing product (**market penetration**) or for a new product (**product development**). After finding a market and developing a value chain, several of the enterprises later shifted their strategy towards lower-risk approaches – either by exploiting existing markets further, or by promoting existing products.

The cases richly illustrate various aspects of the four *Ps* of marketing: product, price, place and promotion. They exploited the special features of the **product**: for example by differentiating them from competing products in terms of colour, taste, texture or quality. Many of these features depended on the particular traits of the livestock breed – coloured wool, fibre fineness, meat taste, and so on.

None of the cases tried to compete on **price**. This is to be expected, since niche products are almost always higher-priced than the nearest mass-market equivalents. Several enterprises positioned their products at the upper end of the market by ensuring quality or by adding value to the raw product.

In terms of **place**, the cases used a variety of sales outlets, including their own stores, third-party retailers, visiting buyers, exports, and the internet. Running its own stores enabled an enterprise to capture more of the value of the final product, but limited the number of customers reached and meant incurring the costs and logistical burden of managing a retail operation.

The enterprises used various approaches for **promotion** of their products. They all drew customers' attention to the unique features of the products or emphasized the products' linkages to their area of origin. Most had some form of branding or labelling, and two had protected their products with geographical indications (a kind of trademark to show the area of origin).

HOW TO GO ABOUT NICHE MARKETING

The interventions included four types of activities: improving **animal production**; **processing**; **organizing**; and **building a value chain**. Of these, improving animal production was part of only two of the cases. The focus of all of the cases was more on processing the product, organizing local people, and building a value chain to link livestock keepers with the market. Accordingly, most of the initiatives worked with groups of processors – spinners, weavers, dairy staff, transporters, designers, traders, etc., rather than (or as well as) the livestock keepers themselves. This shows that for marketing projects, it is necessary to work with people throughout the value chain, and that the livestock keepers, at the beginning of the chain, may not be the first or most important point of contact, even if they and their animals are intended as the main beneficiaries.

The majority of the cases involved a **champion** – a person or organization with a special interest in promoting the enterprise and making sure it works. Individual champions included the founder/owner of a company, a local member of parliament, and committed individuals; organizational champions included NGOs, government agencies, research institutes and donor organizations.

Research was vital to the success of most of the cases. It included research on the existing production process (often done in a participatory way with livestock keepers and other local people), products (usually done by specialist research bodies), and markets (done by marketing organizations and consultants).

Most of the enterprises introduced new **technology** – sometimes expensive and sophisticated (a new factory), and sometimes cheap and simple (combs to separate fine cashmere from coarser fibres). In some cases, the cheaper, simpler technology was more effective than the expensive large-scale investments.

At least four types of **training** were provided: increasing or improving **production** (such as hygienic milk collection), **processing** to add value to products (such as spinning, weaving, sorting and grading), **organization** (group formation and cooperative management), and **enterprise development** (including business and marketing skills).

Building some form of **institution** featured in all eight cases, but the type of institution varied widely: a loose, spontaneous network; production and marketing groups; coordination bodies; large, formal cooperatives; and a private company. Most of these institutions had specialist functions and were active only at one point in the chain, though the larger ones had multiple functions and covered most or all of the chain. None of the institutions attempted to manage all aspects of the chain.

Building institutions is particularly difficult in pastoralist areas because of many factors, including mobile lifestyles and a suspicion of outsiders. Institutions that build on existing social structures, such as kinship ties or trading relationships, are likely to be more successful than those that attempt to start from scratch.

THE CHALLENGES AND OPPORTUNITIES OF NICHE MARKETING

Niche marketing of local breeds faces many **challenges**.

- Local breeds often suffer from a lack of recognition of the value of their products. The products may currently have low quality or be available only in small quantities or during certain seasons.
- Local conditions are often demanding, with distance, drought, disease, and a lack of infrastructure and services all making production and marketing difficult to manage.
- Organizing producers and processors may be difficult, especially among mobile pastoralists.
- Livestock keepers may lack the capacity to manage a market-oriented business.
- Government policies and institutions may be unsupportive.
- It can be difficult to identify a suitable market for products and to establish reliable links with customers, especially in export markets.

Despite these challenges, we can identify many **opportunities** for niche marketing of local breeds:

- Local breeds can produce unique products that can generate significant levels of demand and can help rescue a threatened breed from further decline or extinction.
- Exploiting a local breed is one of the few ways to increase employment and incomes in remote, marginal areas, allowing local residents to maintain their livelihoods.
- Basing an enterprise on a local breed can take advantage of livestock keepers' indigenous knowledge and local people's traditional culture, encouraging the conservation of both.

- Enterprises based on local breeds build on local resources and initiatives. They are likely to be cheaper and more sustainable than enterprises based on imported breeds and technologies.
- A value chain based on local breeds can generate new sources of income, such as tourism or handicrafts. This income benefits local people directly.
- An enterprise based on local breeds is likely to be pro-poor and pro-women, since it is normally the poorer livestock keepers and women who maintain the breeds or who have the skills to process the products.
- A value chain based on local breeds builds the skills of local people and empowers them in relation to the outside world.
- Livestock breeds can stimulate enthusiasm among their supporters like few other products. Such enthusiasm may be vital for marketing efforts to succeed.

RECOMMENDATIONS

- **Use existing resources.** The initiative should be based on existing resources: the livestock breed, natural resources and human resources, and use the environment in a sustainable way.
- **Identify a suitable entry point.** To conserve a breed or benefit livestock keepers, it may be better to focus on some aspect of the chain other than working directly with livestock keepers. For example, developing an urban-based processing industry to increase demand for the raw materials may be the best way to benefit livestock keepers (or conserve the breed).
- **Start small.** The initiative should invest first in human capital and at a small scale, rather than in costly infrastructure. If the activity works, it should then seek more capital investment.
- **Do the research.** It should be based on a thorough understanding of the production system, the product and the market. That means studying the breed and its characteristics, the livestock keepers and their production system, the range of potential products, and the potential customers for the products.
- **Identify special characteristics of the breed.** The initiative should seek ways to market products that reflect these characteristics: by creating new products, refining existing traditional products, or finding new markets for existing products.
- **Find a viable business model.** The initiative should generate income for all actors in the value chain.
- **Focus on quality.** It should emphasize the need to maintain quality. A niche product can command higher prices only if it is superior to alternative products.
- **Build capacity.** The initiative should stimulate the creation of strong local institutions and train people in technical and management skills.
- **Don't depend too much on outsiders.** The initiative may require significant support from outsiders over the medium term, but should not depend on expertise or funding from outsiders over the long term.
- **Ensure long-term demand.** The product chosen should be one where demand is likely to grow over the long term.

- **Don't put all your eggs in one basket.** The initiative should be based on a range of products and markets: that way, it is not a disaster if one product fails to sell or one customer refuses to buy.

CONCLUSIONS

Niche marketing can provide opportunities for sustainable production in marginal areas and can improve the livelihoods of livestock keepers and people involved in the processing and trade of products. It may especially benefit women and the poor. It can also be a tool for conserving breeds.

Efforts to promote niche marketing may help local people connect to markets for the first time, giving them skills that they can use in exploring other markets and developing other enterprises.

Niche markets may allow actors early in the value chain – livestock keepers and small-scale processors – to capture a greater share of the end-value than in a mass market. This will make it attractive for these actors to continue and expand their businesses.

Niche marketing is by nature relatively small-scale. For large numbers of producers, it cannot replace the need to produce products for a wider, mass market. But for local breeds, it may be possible to find a match between the qualities of the breed, the features of a particular product, and the demands of a specific market. Making this match will help conserve the breed as well as provide a livelihood for people involved in the value chain.

Introduction

Ilse Köhler-Rollefson and Paul Mundy

Livestock production is booming. It already accounts for 40% of the world's agricultural gross domestic product, and livestock production is the fastest-growing sub-sector of agriculture (FAO 2009). Global meat and milk production are expected to double in the first half of the 21st century.

Much of this growth has been through large-scale production systems, often managed by large companies and raising thousands of animals (millions in the case of poultry) under intensive, controlled conditions. But such "factory farms" and large-scale ranches bring with them a catalogue of food-security and environmental problems. Growing animal feed takes about a third of the globe's arable area, using land that could be used to grow crops for human consumption. Keeping large numbers of genetically similar animals together facilitates disease outbreaks and encourages farmers to use more and more antibiotics. Overgrazing results in soil erosion and biodiversity loss. Effluent from huge feedlots pollutes streams and groundwater. Cows belch out greenhouse gases that warm the planet (Steinfeld *et al.* 2006).

SMALL-SCALE LIVESTOCK PRODUCERS AND PASTORALISTS

Small-scale producers and pastoralists offer an alternative. They produce a range of food (meat, milk, eggs), products (hides, wool, dung), and services (transport, land preparation), often in a more environmentally friendly way than large-scale operations. They raise many of their animals on land that cannot be used to grow crops: along roadsides and field boundaries, on fallow land, and in areas that are too dry or wet, too cold or hot, or too steep and rocky for cropping. The animals live off natural vegetation or crop by-products and do not compete with humans for cereals. They recycle waste products such as crop residues and kitchen scraps, fertilize arable soil for the next season's crop, and produce dung that millions use as cooking fuel.

These livestock produce greenhouse gases, to be sure, but most of these gases would result anyway even without grazing: after all, wild herbivores, termites and other decomposers also convert vegetation into carbon dioxide, without producing the meat and milk that people need.

Small-scale livestock production and pastoralism are economically important. The livelihoods of about one billion poor people depend on livestock. About 70% of the world's 880 million rural poor people who live on less than US \$1 per day are at least partially dependent on livestock for their livelihoods. For more than 200 million smallholder farmers in Asia, Africa and Latin America, livestock are the main source of income, and for about 120 million pastoralists worldwide, livestock production is the principal source of livelihood.

Many of these producers raise animals mainly for subsistence. Many others, however, sell all or part of their livestock produce. But they face enormous hurdles in doing so. Many

live in remote areas, devoid of infrastructure such as electricity, roads and cooling facilities, and far from services such as extension advice, markets and veterinary care. Support systems are typically geared to large-scale producers or intensive production. Dairies say it is too costly to collect small amounts of milk from small-scale producers, or complain it is impossible to ensure the quality of their milk. Abattoirs may automatically grade pastoralists' animals lower than equivalent animals raised under intensive conditions. Livestock keepers themselves are often poorly organized. For pastoralists, unpredictable rainfall, scattered grazing, a mobile lifestyle, and cultural values favouring large herds make it hard for them to supply a market on a reliable basis.

Efforts to ensure that poor and marginalized livestock keepers benefit from the enormous potential of livestock have had a depressing record. Most attempts to enable livestock keepers to participate in the market have focused on raising their production by introducing "superior germplasm", i.e. replacing or upgrading existing, locally adapted breeds with high-yielding, exotic animals. But these exotic animals are demanding: without intensive care, ample supplies of good feed and regular veterinary attention, they fail to grow, produce milk or lay eggs. Many farmers cannot afford to provide such ideal conditions. Many animals sicken and die, leaving their owners poorer.

At the same time, increases in production lead to lower prices for livestock products, squeezing out small, uncompetitive livestock keepers. Only ever-larger farmers can stay in business. This has been called the "treadmill phenomenon" (Röling 2009). In North America and Europe, livestock production has become highly concentrated in a few hands. If developing countries follow this trend, this will have dire consequences for the poor. Small-scale livestock keepers and pastoralists in these countries need ways to remain competitive if they are to stay in business.

LOCAL BREEDS AND SPECIES

Many of the animals kept by small-scale livestock keepers and pastoralists are local breeds. These are vital to food security and livelihoods. Under better conditions, they may not produce as much as their high-yielding relatives, but in the harsh environments where they developed, they can produce under conditions where other breeds cannot survive. They are less prone to fall prey to diseases, and are a low-risk proposition for livestock keepers. Many have unique traits, such as disease resistance and drought tolerance, and represent an important source of genetic diversity that animal breeders can use in responding to pest and disease outbreaks and climate change. They are also integral parts of their environment that help sustain biodiversity. Many play a central role in the cultures of the people who keep them.

Since livestock were first domesticated 12 000 years ago, more than 7 000 breeds of livestock have been developed (FAO 2007b, p. 7). Many of these breeds are local: they have been adapted to a specific habitat and shaped, often over centuries, by the cultural preferences of a particular community or ethnic group. Examples are the Boran cattle (raised by the Borana people of northern Kenya and southern Ethiopia), the Garut sheep (raised in the mountains of West Java and used for fighting), and the Nari cattle raised by pastoralists in India.

Local breeds contrast with "international" or exotic, high-performing breeds, which

were produced through intensive selection for very specific traits, often with the use of biotechnology. Examples of such breeds are black-and-white Holstein-Friesian dairy cattle, Large White pigs, and Rhode Island Red chickens.

An alarming trend is the disappearance of large numbers of local livestock breeds. An estimated 209 breeds of cattle, 180 breeds of sheep, and 40 breeds of chickens have become extinct. In all, some 11% of mammalian breeds and 2% of avian breeds are thought to be extinct. The loss of such breeds continues: some 210 cattle breeds and 179 sheep breeds are classified as “critical” or “endangered” (FAO 2007b, p. 39).

There are many reasons for this loss of breeds. Breeds that produce less meat, milk or eggs are being replaced by higher-yielding types (FAO 2007b). Stockholders who maintain traditional, local breeds cannot compete, so either switch to the exotic breeds or give up production altogether. In developing countries, governments, development projects and private companies try to persuade farmers to keep exotic breeds or promote cross-breeding to “improve” the local breeds. Other factors include increasing mechanization and specialization of farming, land-use changes, and policy failures (Box 1).

Governments are sufficiently concerned about this erosion of livestock breeds to issue a *Global Plan of Action for Animal Genetic Resources* (FAO 2007a). This contains recommendations on monitoring the loss of breeds, their sustainable use and development, their conservation, and policies, institutions and capacity building to manage animal genetic resources.

Many of the problems associated with local breeds also face “minor” livestock species, other than the “big five” of cattle, sheep, goats, pigs and chickens. Such minor species include dromedaries and Bactrian camels, donkeys and yaks. Like local breeds, they continue to produce under difficult conditions, but they are being pushed aside by the “big five”, which receive far more attention from policymakers, donors, researchers, extension

BOX 1

Erosion of animal genetic resources

“This erosion has many causes, including changes in production systems, mechanization, the loss of rangeland grazing resources, natural calamities, disease outbreaks, inappropriate breeding policies and practices, inappropriate introduction of exotic breeds, loss of animal keepers’ security of tenure on land and access to other natural resources, changing cultural practices, the erosion of customary institutions and social relations, the influence of population growth and urbanization, and the failure to assess the impact of practices in terms of sustainability, and develop adequate policies and economic measures. Erosion of animal genetic resources threatens the ability of farmers and livestock keepers to respond to environmental and socio-economic changes, including changing diets and consumer preferences.”

Source: *Global Plan of Action for Animal Genetic Resources* (FAO 2007a, p. 5)

BOX 2

Global Plan of Action for Animal Genetic Resources

Strategic Priority 6: Support indigenous and local production systems and associated knowledge systems of importance to the maintenance and sustainable use of animal genetic resources.

- **Action 2:** Support indigenous and local livestock systems of importance to animal genetic resources, including through the removal of factors contributing to genetic erosion. Support may include... **appropriate access to... the market... and adding value to their specialist products.**
- **Action 4:** Promote the **development of niche markets for products derived from indigenous and local species and breeds**, and strengthen processes to add value to their primary products.

Source: FAO (2007a, p. 20), emphasis added

personnel and veterinary staff. They also often perform specific economic roles that may be replaced easily as technology changes.

HOW TO MAINTAIN LOCAL BREEDS?

The erosion of local livestock breeds and minor species is a complex problem, with no single solution: FAO's *Global Plan of Action* contains no less than 23 strategic priorities, each specifying several associated actions.

This book focuses on one approach – promoting the use of niche markets for the products of local livestock breeds and minor species. A series of international agreements support this approach. Under Strategic Priority 6 of the *Global Plan of Action* two action points call on governments to promote the marketing of products based on local breeds and species (Box 2).

Supporting livestock keepers to add value to their traditional breeds also contributes to achieving two of the eight Millennium Development Goals (Box 3).

The Convention on Biological Diversity (Box 4) obliges governments to support traditional lifestyles, biological diversity and cultural practices – of which local breeds and species are an integral part.

WHAT IS NICHE MARKETING?

Niche marketing provides a product or service to a fairly small segment of a market. It can be contrasted with a **mass market**: one that serves the large majority of consumers. Mass-market products in the same category are generally hard to distinguish from one another and compete largely on price. Many such products are traded in bulk on commodity exchanges before they are processed and packaged to be sold to consumers.

For livestock, examples of mass-market products are the beef, chicken or milk sold in supermarkets or butcher's shops, and the wool that goes into the vast majority of woollen



BOX 3

Millennium Development Goals**Goal 1: Eradicate extreme poverty and hunger**

- **Target 1a:** Reduce by half the proportion of people living on less than a dollar a day.
- **Target 1b:** Achieve full and productive employment and decent work for all, including women and young people.

Goal 7: Ensure environmental sustainability

- **Target 7a:** Integrate the principles of sustainable development into country policies and programmes; reverse loss of environmental resources.
- **Target 7b:** Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss.

Source: UNDP (2000)

BOX 4

Convention on Biological Diversity**Article 8. *In situ* conservation**

- **Article 8(j):** ... respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices.

Article 10. Sustainable use of components of biological diversity

- **Article 10(c):** Protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements.

Source: CBD (1992).

clothes. Consumers do not generally care where the meat, milk or wool comes from or how it has been produced, and manufacturers make no attempt to tell them.

A **niche market**, by contrast, serves only a small segment of the market, or a specific group of consumers. Products are distinguished from the mass market by special qualities

or labelling. A market niche can be a specific geographical area, a specialty industry, an ethnic group, an age group, or a particular group of people (such as diabetics or people with an allergy). Because they are special, niche products may command higher prices than mass products.

For livestock, examples of niche products are cheeses such as Gruyère and Wensleydale, specialty sausages and hams, ultra-fine cashmere, and craft items made of wool or leather. Consumers buy these products for their special flavour or other qualities (for example, because the animals were raised locally or the items are associated with a specific culture). Manufacturers take care to inform consumers about these special qualities – for example, on packaging or labels, by selling them through certain shops, or by having sales staff tell customers about the product's characteristics. They use stringent controls to ensure their product has the required quality, and may seek to protect it legally (for example, through a protected designation of origin) to prevent other suppliers from passing off another product as a niche item.

There is no hard line between a mass market and a niche market. Indeed, manufacturers of mass products often try to differentiate their products from the competition in some way, for example by claiming the product has certain characteristics (such as low-fat yoghurt containing whole fruit) or through distinctive packaging or branding. In this way they try to carve out a niche for themselves into an otherwise mass market.

WHY NICHE MARKETS?

Should a group of producers, a development project or entrepreneur supply their product to the mass market, or consider developing a niche market? For small enterprises, niche markets offer several advantages over mass marketing:

- The initial costs are lower, since it is not necessary to produce large amounts of the product, invest heavily in equipment, or advertise it widely.
- It enables the enterprise to focus on its strengths: it can develop products that it is good at producing and marketing. That may give them a real advantage over potential competitors.
- The niche may be currently unserved, and the competition may ignore it, either because they are unaware of it or because they think it is too small to worry about.

Nevertheless, niche marketing has disadvantages:

- A niche market can disappear quickly as economic conditions and fashions change.
- Larger companies may target the niche as it grows in value or size and thus becomes more attractive. A small enterprise may not be able to deal with such competition.
- Niches are not always neat and easy to define. They may be scattered geographically, and targeting and promotion may be difficult or expensive.

LOCAL BREEDS AND NICHE MARKETS

Producers and processors of local breeds may be forced to enter niche markets because of necessity. Local breeds usually cost less to maintain than intensively raised exotic animals, but they tend to produce less meat or milk. That means their production costs per unit output may be higher. Small-scale livestock keepers who raise local breeds may not be able to compete with large-scale producers with exotic animals, or with cheap, imported products.



The small-scale producers need to differentiate their product in order to make a living. That means developing a niche market.

Fortunately, many local breeds and species have a large but often unrecognized potential to produce items that customers appreciate and demand:

- **They have unique characteristics.** Many local breeds produce items with particular qualities: coloured wool, patterned hides, super-fine fibre, meat that is especially tasty, or milk that has special qualities. Many of these traits (such as coloured wool) are undesirable in the mass market, but are ideal for certain market segments – if only they can be marketed in the right way.
- **Products of local breeds are often processed in traditional ways.** Many local handicraft traditions have grown up using the products from a local breed. Coloured wool, for example, is woven to make traditional garments with specific patterns. The need to conserve milk or meat without refrigeration has led to the development of unique sausages and cheeses.
- **They have strong local ties.** Many local breeds and species have strong ties with a particular area, ethnic group or way of life. These local ties can become an important selling point for the product: in buying a poncho or pashmina, a cheese or a rib-chop, tourists feel they can buy a little piece of the local area or can associate with or support the people who produced the item.

The value of local breeds as sources of culinary delicacies is well established in parts of the developed world. In Europe, and especially in the Mediterranean countries (Italy, France, Spain), many specialty cheeses and meats are associated with particular breeds. In Germany, meat from such breeds as the Heidschnucke sheep and Schwäbisch-Hallische pig are at a premium in gourmet restaurants. In North America, too, there are efforts to market the meat and wool from heritage breeds. In these countries, the marketing of cheeses, sausages, wool and other specialty products has contributed to the conservation of indigenous breeds, enhanced regional identities and stimulated rural economies. From developing countries, however, examples of this approach are rare.

BENEFITS OF NICHE MARKETS

Experience in developed countries suggests that developing niche markets for products based on local breeds and species offers several potential benefits.

- **Employment and income.** Local breeds and species are often produced in rural areas with surplus labour and a lack of employment opportunities. Developing a market for their products could generate employment and income for livestock keepers, their families, and others in livestock raising, food processing, handicrafts and trade.
- **Local breed conservation.** Developing a market for the products of a local breed or species makes it more attractive for livestock keepers to continue raising such animals. Conserving a breed *in situ*, in the conditions in which it was originally developed, is likely to be far cheaper than the alternative: *ex situ* conservation of live animals on breeding farms, or the preservation of deep-frozen semen and embryos. Niche marketing offers a way to make *in situ* conservation profitable, without relying on government subsidies.
- **Environmental conservation.** In conserving a breed, it is also necessary to conserve

the ecosystem where it is maintained. Maintaining a breed in itself may help maintain an ecosystem – for example where grazing suppresses the development of bush and maintains an open grassland. Niche marketing may also encourage local people to maintain an ecosystem and prevent its conversion to other uses. Indeed, many niche livestock products may require that the animals are grazed in a particular way rather than being stall-fed.

- **Gender.** Promoting niche markets has the potential to enable women to gain skills and earn money, and to raise their status in traditional societies. Women and men may play specific roles in raising livestock (women often care for sheep, goats and chickens and are responsible for raising calves, while men tend the adult cattle), or in processing and trading products (men often shear sheep, while women spin and weave the wool).
- **Conserving cultural values.** The culture of many livestock-keeping communities is closely intertwined with particular breeds. By providing the economic incentive to maintain the breed, niche marketing also contributes to conserving the culture. Many niche products are explicitly linked to the livestock keepers' culture: they draw on traditional handicrafts, or rely on the specific roles that men and women play in livestock production, product processing and trade.

FINDING A NICHE

Various challenges face attempts to develop niche markets for local breeds and species. Many of these challenges are common to attempts to market any type of product produced by small-scale producers and pastoralists, or by producers in remote areas: a lack of infrastructure and services, a bias against small-scale production, a mobile lifestyle, etc. (see *Small-scale livestock producers and pastoralists* above).

Added to this are special problems relating to creating a niche market. Those aiming to do this will have to:

- Identify existing products (or create new ones) that will attract a premium price.
- Identify a market where these products can be sold.
- Organize producers to produce and deliver products at an agreed price in a reliable manner.
- Get producers to agree on quality criteria and to ensure that products attain these standards.
- Create a value chain to link the producers with the market, in ways that the producers benefit (so they have an interest in continuing to raise their particular breed).

Box 5 gives an example of an organization in India that is seeking niche markets for camel products: milk, wool and dung.

WHAT IS IN THIS BOOK

Can the niche marketing approach be used in developing countries? Under what circumstances does it work in these countries, is it economically sustainable, and does it really benefit the livestock keepers? What are the problems and hurdles of realizing and teasing out the potential of niche products from local breeds and species?

This book assembles eight case studies from around the world (three from Africa, two

BOX 5

Exploring the promise of niche markets: Camels in Rajasthan

"If a camel dairy is set up, we can earn income of some 500–1 000 rupees per day and we will no longer be poor."

Mool Singh Sodha

Mool Singh is owner of over 100 female camels in a remote corner of Rajasthan's Thar Desert, in western India. His camels are his only asset. He used to earn a good income from selling young male animals to the Border Security Force, which used camels to patrol the open border with Pakistan. But when a fence and an asphalt road were constructed to mark the border, the Border Security Force no longer required camels, except for ceremonial purposes. Farmers too had switched to tractors, so the demand for draft camels fizzled out.

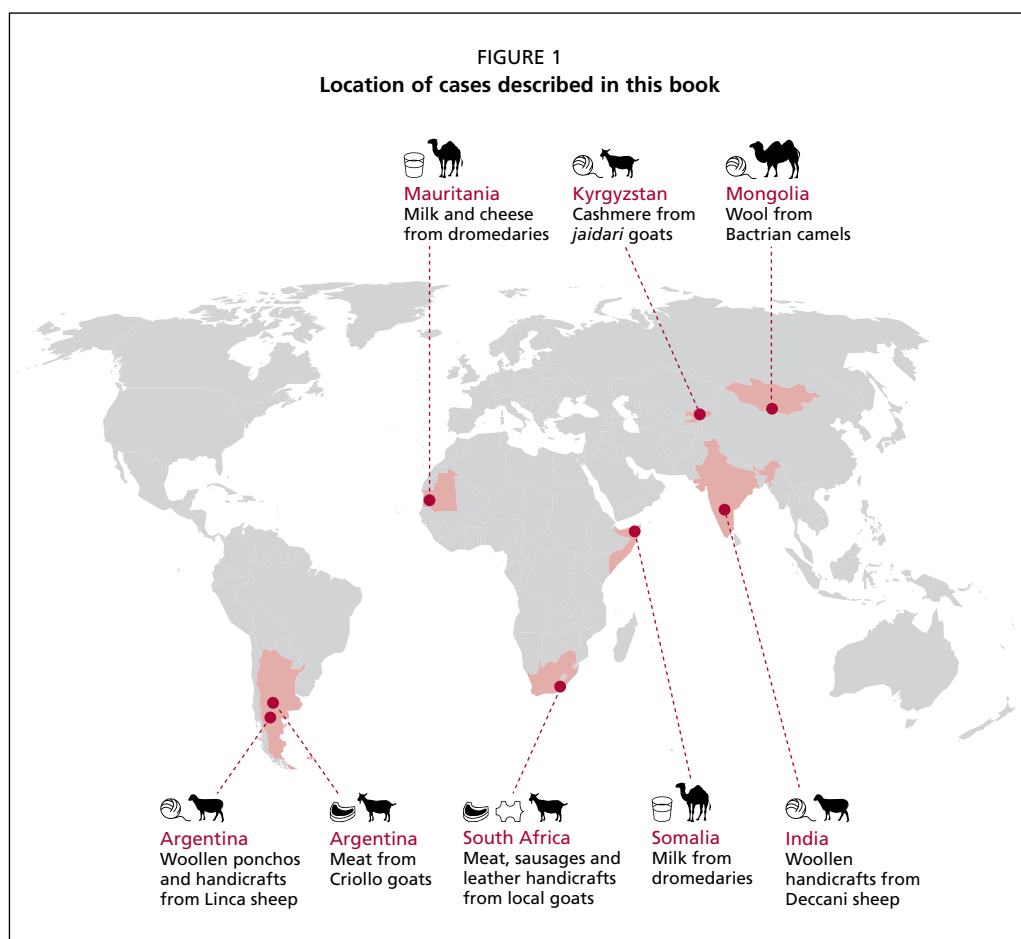
As a result, in the early 2000s, the prices for camels dipped to an all-time low: they sold for not more than a sheep or a goat. Seeing no future in their profession, many camel breeders – in circumvention of Hindu beliefs against using camels for meat – began to sell their female camels for slaughter. The camel population dipped by 50% within 10 years.

In 2006, Lokhit Pashu-Palak Sansthan, a local NGO, started to investigate new ways of creating income from camels, beyond the traditional use that was limited to transportation. It promoted the milk as a treatment for diabetes, experimented with making ice cream from camel milk, had the wool tested for its marketability, developed paper made from camel dung, and organized the camel breeders into savings groups. This is still very much a work in progress, since certain interventions, such as setting up a dairy, require major investments by the government or private entrepreneurs.

But seeing the variety of new products from their animals has changed the camel breeders' attitudes. They had lost faith in what they were doing; now their eyes sparkle with excitement when asked about their camels. The women – traditionally cloistered inside the home – have gone on exposure tours to cow-milk dairies and are impatient to start selling camel milk. Prices for female camels have multiplied within the span of a couple of years because of their perceived potential as milk animals.

Independently of LPPS's efforts, the market for camels as draft animals has picked up again because of the rise in oil prices, and there seems to be increasing appreciation for the camel as a means of adaptation to climate change.

This story shows that animal genetic resources that have gone out of fashion can make a rapid comeback. And it also demonstrates the potential of niche marketing for conserving animal genetic resources.



from Asia and two from Latin America) about niche marketing of specialty products (wool, cashmere, hides, meat and milk) from goats, sheep, Bactrian camels and dromedaries. Some sell existing products; others have developed new products from their traditional breeds. Some sell their products in nearby areas; others tap high-value export markets. All have found ways to create markets for their products through innovative marketing, branding and product design, and by improving organization, production, processing and distribution.

These studies identify some of the important ingredients for successful niche-marketing initiatives with indigenous breeds: the need for an outside agent (a company, an NGO, donor-funded project or the government) to raise awareness about market potential and bring in technical expertise to realize it, the need for investment to develop infrastructure, the need for targeted applied research, the importance of design, the significance of training (including in business skills) and organizational development, the necessity of creating multi-stakeholder platforms between producers, support actors, processors, business people and consumers.



These initiatives were established with different motivations: mainly to increase the incomes of livestock keepers and other local people, or to establish a profitable business. Only in a minority of cases was the conservation of the breed itself a major driving concern.

HOW THIS BOOK WAS PRODUCED

In 2008, the League for Pastoral Peoples and Endogenous Livestock Development (LPP) put out a call for papers on niche marketing for local breeds and minor species. Fourteen suggestions for topics were received – a number that perhaps reflects the small number of relevant experiences in this field worldwide. The eight most appropriate were selected and the authors were invited to submit full manuscripts, following a specific structure. The authors were then invited to a 3-day “writeshop”, which took place in Kalk Bay, Cape Town, South Africa, on 4–6 December 2008.

During the writeshop, the authors presented their manuscripts in turn. The other participants commented on and critiqued each manuscript. One of the team of three editors then assisted the author to revise the manuscript, and commissioned artwork from the artist who was present. These presentations took one-and-a-half days. The resulting manuscripts form the basis of Chapters 1 to 8 in this book.

During the second half of the writeshop, the participants analysed each of the manuscripts in terms of questions on the problem to be addressed, the risk or opportunity for the breed or species involved, the nature of the niche product, implementation and activities, actors and target audiences, successes, challenges, opportunities and potentials, gender, institution and policy, impact on the environment, and sustainability of the niche marketing effort. They then summarized the answers to these questions. Their discussions and outputs form the basis of Part 4 in this book.

REFERENCES

- CBD.** 1992. Convention on biological diversity. www.cbd.int/convention/convention.shtml
- FAO.** 2006. *Livestock's long shadow: Environmental issues and options*. Food and Agriculture Organization of the United Nations: Rome. (also available at: www.fao.org/docrep/010/a0701e/a0701e00.htm)
- FAO.** 2007a. *Global Plan of Action for Animal Genetic Resources and the Interlaken Declaration*. Food and Agriculture Organization of the United Nations: Rome. (also available at: www.fao.org/docrep/010/a1404e/a1404e00.htm)
- FAO.** 2007b. *The state of the world's animal genetic resources for food and agriculture*. Food and Agriculture Organization of the United Nations: Rome. (also available at: www.fao.org/docrep/010/a1250e/a1250e00.htm)
- FAO.** 2009. *Contributions of smallholder farmers and pastoralists to the development, use and conservation of animal genetic resources*. CGRFA, ITWG-AnGR, 28–30 January 2009. (also available at: www.fao.org/ag/againfo/programmes/en/genetics/documents/CGRFA_WG_AnGR_5_09_Inf_4.pdf)
- Köhler-Rollefson, I., H.S. Rathore, and E. Mathias.** 2008. *Local breeds, livelihoods and livestock keepers' rights in South Asia*. Tropical Animal Health and Production 41(7): 1061–70.



Röling, N. 2009. Conceptual and methodological developments in innovation. Pp. 9–34 in Sanginga, P., A. Waters-Bayer, S. Kaaria, J. Njui and C. Wezzasinha. *Innovation Africa: Enriching farmers' livelihoods*. Earthscan: London and Sterling, VA.

UNDP. 2000. *Millennium development goals*. United Nations Development Programme. www.undp.org/mdg/

PART 1

Wool and cashmere



Introduction

Despite the boom in demand for livestock products in general, wool production has fallen by one-third since it peaked in 1990 (FAOSTAT 2009), as production of cotton and other natural and artificial fibres has risen. This creates particular problems for small-scale producers of wool and cashmere: they must find ways to market their product in competition not only with larger-scale, more efficient producers, but also compete with other fibres.

This section contains four cases that describe how producers' associations and development organizations have attempted to overcome these problems:

- Marketing wool from an endangered sheep breed in the Deccan Plateau of **India**
- Cashmere from the Pamirs: Helping mountain farmers in **Kyrgyzstan**
- Spinning a value chain from the Gobi: Camel wool in **Mongolia**
- Marketing of handicrafts made from Linca sheep wool in Patagonia, **Argentina**.

The Indian case describes how an NGO has organized shepherds and processors to produce high-value handicrafts from a seemingly unpromising product – coarse, brown wool. It shows how a combination of community organizing, product design and entrepreneurial marketing can not only reduce poverty, but also halt the decline of a threatened breed.

The case from Kyrgyzstan looks at the other end of the spectrum in terms of fibre quality: super-fine cashmere. It looks at efforts to help goat raisers in remote mountain areas produce a higher-value product by introducing a cheap, simple technology (combs, which cost a mere \$7 each) and to link producers with cashmere buyers in Europe and Japan. That way the goat raisers can earn more than by selling unsorted shorn fleeces at low prices to local traders, and they have an incentive to maintain the local goat breed that produces the finest cashmere.

Camel wool has many properties that make it attractive to hobbyists in the United States. The case from Mongolia tells how a development project and NGO are developing a value chain to link women in southern Mongolia who spin camel wool into yarn with American knitting enthusiasts.

Like the Indian case, finished handicrafts are the focus of the final case in this section. Women in the Andes foothills in Argentina weave coloured wool from a local sheep breed and make ponchos and other traditional items. They sell them to tourists through a community-run sales outlet. This not only earns them money; it also encourages them to maintain the breed that produces the wool.

The value of wool and cashmere depend largely on three characteristics:

- **Fibre diameter**, measured in microns or μm (thousandths of a millimetre). The thicker the fibre, the coarser and heavier the cloth woven from it will be. Thick fibres may cause an itching sensation on the skin; they are used for carpets, bags and insulation. Intermediate fibres are suitable for garments such as sweaters that are not worn next to the skin, while fine fibres are good for garments that are worn next to the skin. Not surprisingly, the finest fibres are most valuable.

TABLE 1
Fibre characteristics

Breed/species	Guard hair		Fibre diameter Intermediate		Down		Staple length cm	Fleece weight g
	μm	%	μm	%	μm	%		
Deccani sheep, India	53	75			25	22	5	250
Cashmere goat, Kyrgyzstan	80	74			14	26	5	120
Bactrian camel, Mongolia	60	1.7	35	4.8	18	95.5	3	3 500
Linca sheep, Argentina	?	64			27	46	9	4 000
Merino sheep					21	60	5	4 000

- **Staple length** refers to the length of each fibre. Short fibres are difficult to spin; longer fibres are more highly prized.
- **Fleece weight.** This is a measure of the amount of fibre per animal. Other things being equal, the heavier the fleece, the more the owner can earn.

Table 1 summarizes these characteristics for the four cases in this section, plus Merino, the wool of a major breed of sheep.

REFERENCES

FAOSTAT. 2009. <http://faostat.fao.org> Food and Agriculture Organization of the United Nations: Rome.

Marketing wool from an endangered sheep breed in the Deccan Plateau of India

Gopi Krishna, PR Sheshagiri Rao, and Kamal Kishore

The hilly Deccan of south-central India stretches away into the heat haze. Patches of trees are interspersed with scattered shrubs. Dry, brown grass alternates with bare, rocky soil. Down in the valleys it is possible to grow crops, and that is where most of the population live. Up on the plateau, local people have long ago learned that planting crops is pointless: the monsoon rains do not last long enough, and the soils are too poor.

The best way to use this semi-arid land is by raising sheep. Enough grass grows in the short rainy season to use as grazing, and the long dry season means that there are few parasites or diseases.

Over centuries, a nomadic system has emerged, with a native sheep breed, known as the Deccani, Dekhani or Deshi, well adapted to the sparse fodder and hot, dry environment. These sheep convert the grass – a resource that would otherwise be unused – into protein and wool. With Hindus forbidden to eat beef, sheep are a major source of meat in India. The sheep also produce a coarse wool that used to be prized as highly as their meat, especially in the cooler, higher parts of the Deccan, but its value has recently declined as textile products from outside have flooded the local market.

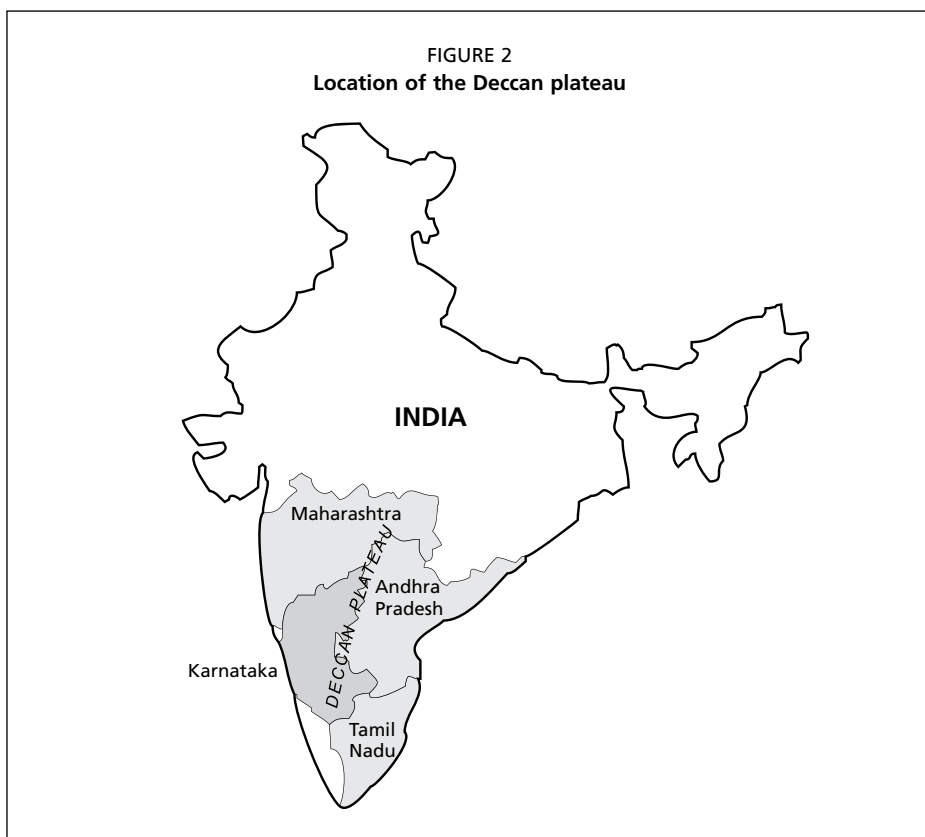
The Deccani breed is a distinctive animal. It is small and hardy, with a Roman nose, drooping ears, thin neck, narrow chest, and prominent spine. It is not a good meat type: it has flat ribs and produces a poor leg of mutton. Most animals are black, but some are grey or roan (with a mix of white and coloured wool). Shepherds recognize various types in different areas of the Deccan.

THE KURUBAS

Some 750 000 families all over the Deccan depend on raising sheep. They belong to various ethnic groups: Gollas, Kurmas, Lambadas and Dalits in Andhra Pradesh; Kurubas, Kadugollas, Lamanis, Bedars, Gollas and Dalits in Karnataka; Dhanghars, Kurubas and Dalits in Maharashtra; and Kurubas in Tamil Nadu. Some of these groups are traditional sheep rearers; others have taken up sheep-raising more recently. Many of the sheep rearers are members of cooperative societies; over 5 000 such societies exist throughout the area.

The Kurubas are the traditional sheep keepers in the districts of Belgaum, Bagalkot, Koppal, Dharwar and Haveri, in northern Karnataka. One of the oldest communities in India, they are semi-nomadic, moving with their flocks for between 3 and 9 months a year. They also lease some land for part of the year to grow crops such as sorghum, wheat, maize, oil seeds, minor millets and cotton.

FIGURE 2
Location of the Deccan plateau



The Kurubas have a strong sense of community: they maintain strong bonds to their relatives and their ethnic group, and have traditional community forums where they discuss issues and make decisions as a group. Their temples are not only a place of worship, but also a place to meet to discuss their social, cultural and economic activities. In common with other Hindus, the Kurubas worship various gods, but they also worship the sheep itself.

The Kurubas manage their sheep collectively: they share the tasks of grazing, penning and protecting the sheep, managing diseases and so on. The men take care of the grazing, while the women look after the young lambs, and handle and process the wool. They also accompany the men on the seasonal migrations.

There are three main types of sheep rearing in the area:

- **Stationary flocks** (10–50 animals) reared on crop residues and village pastures within a radius of 3–10 km of the village.
- **Semi-nomadic flocks** (50–1 000 animals) reared on crop residues and village pastures within a radius of 50–100 km of a group of 25–50 villages.
- **Nomadic flocks** (1 000–3 000 animals), which migrate over distances of 200–400 km.

The larger the flock, the more mobile it must be in order to take advantage of the sparse grazing in the dry season.

The sheep are shorn twice a year – usually before monsoon in June, and after the rainy season in November. Most shepherds shear their own animals using scissors, though some contract shearing is done.

SHEEP PRODUCTS AND SERVICES

The sheep of the Deccan produce a range of products and services.

- **Manure and tillage.** Farmers welcome shepherds and their flocks onto their fields during the fallow period, as the sheep eat weeds and other vegetation, and leave behind manure that fertilizes the soil. The animals' hooves break up clods of earth and help prepare the soil for planting. The farmers pay the shepherds Rs 1.50–2.00 (\$0.03–0.04) per animal per night (or the equivalent in grain, sugar and tea) for keeping their sheep on their fields. This is the main source of sustainable income for the shepherds. During the monsoon from July to September, the shepherds move their animals to an area with lower rainfall and pen them in fields, where they collect manure to sell. A tractorload of manure sells for Rs 1 600 (\$34), while a cartload sells for Rs 400 (\$8.50).
- **Live animals for slaughter.** The shepherds sell male lambs aged 3–6 months at a weight of 10–18 kg to butchers, traders or other sheep rearers in weekly livestock markets. Some buyers purchase animals directly from the herders. An animal may cost Rs 1 600–2 500 (\$34–53), depending on the weight and build of the animal, or Rs 80–100 (\$1.70–2.10) per kg live weight. After 8–9 lambings, the shepherds sell the females to butchers or traders. A sheep weighing 20–25 kg fetches Rs 2 500–3 000 (\$53–64).
- **Wool.** The shepherds shear the animals twice a year, before winter (in October or November) and before the monsoon (in April or May). A sheep may produce 250–500 g of coarse, hairy wool. The shearing is done by members of a group known as Katri-gars. Women sort and grade the wool into three colours and two grades: lamb wool and adult wool. The average fibre diameter varies widely: one fleece may average 35 μm , while another is much coarser – up to 70 μm . The overall average is 53 μm . About one-quarter of the fleece is fine, good quality wool, with fibres around 24 μm in diameter. This fibre is suitable for spinning. Another quarter of the fleece is very coarse and hairy, with fibre diameters around 58 μm .
- **Milk.** The shepherds milk their animals and make buttermilk and butter, but selling these products is considered taboo.

CRISIS OF THE DECCANI SHEEP

Demand for meat in India is rising rapidly. That is causing changes in the sheep production system in the Deccan. The government is promoting breeds, such as the Red Nellore in Andhra Pradesh, Yelgu in northern Karnataka, and Madgiyal in Maharashtra, which produce meat rather than wool. Shepherds cross-breed their Deccani animals with these other breeds, even though imported animals and crossbreds are less hardy than the indigenous Deccani sheep.

In addition, the Indian police and army have shifted away from providing locally made woollen blankets to their officers and soldiers. A large number of weavers, especially women, have lost their jobs as a result, and demand for wool has plummeted.

As a result of these trends, the purebred Deccani has been in decline, and the breed has become marginalized in its home range.

A FOCUS ON WOOL

How best to conserve this breed, along with its favourable genetic traits? And how to promote the development of sustainable livelihood among the Kurubas of northern Karnataka, but at the same time help them conserve their distinctive way of life?

The Deccani has one feature that the newcomers do not: it produces wool; the Red Nellore and other breeds produce worthless hair. That was recognized by Shramik Abhivruddhi Sangh (SAS), an NGO that has been working in the area since the mid-1990s. An SAS project that began in 1996 helped local women produce and market bags and other handicrafts made of jute and cotton fibre. This project resulted in the women forming self-help groups, and eventually a federation of such groups, known as Shramik Kala. The women are the owners of this federation, which they plan to register as a production company. Shramik Kala took over responsibility for production activities from SAS, which continued to provide management support, marketing services, working capital and the salaries of core staff.

In 2005, SAS decided to explore the possibility of expanding this project to include woollen products. A team composed of SAS and CALPI (Capitalization of Livestock Programme Experiences India, a project supported by the Swiss Agency for Development and Cooperation) first studied various aspects of wool production, processing, product design and marketing. Over a period of 6 months, it reviewed earlier studies and documents, and met with spinners, weavers, handicraft artisans and cooperative societies in northern Karnataka who work with wool and create wool products. It looked into the spinning, weaving and product-making technology, the quality of the yarn, and the range of potential products. It had wool samples laboratory-tested for fibre diameter and length, regional variations, and qualities for spinning and felting. The team also discussed with shepherds and with cooperatives and other organizations in northern India to learn from their experience in wool production and marketing. Out of this research, it developed a pilot project to help Kuruba women in Belgaum district in Karnataka make and sell products made from the wool of the Deccani sheep.

Many of the women were already skilled in making items out of wool. But producing items for a wider market would mean many changes: organizing the workers into groups, grading and sorting the wool, developing new product designs, introducing new production techniques, and marketing the products in new ways.

Organizing into groups

The project helped the women organize themselves into self-help groups, and trained them how to make various products. There are now 16 such groups, with 20 members per group, in eight villages in the district. Each group elects a committee and officers to manage its activities.

The women sort, grade, card, spin and weave wool to make woven products such as bags and cushion covers, and make felt into non-woven products such as mats and slippers. They can come together to work as a team, or they can work in their own houses.

That gives them flexibility to work in ways and at times they find convenient. A craftsperson can make one bag per day.

Grading and sorting the wool

The Shramik Kala federation buys wool and leather from cooperatives or local traders. The traders buy raw, mixed wool from shepherds at Rs 4–6 (\$0.08–0.13) per kilogram. Shramik Kala has an informal agreement with the cooperatives and traders to buy sorted and graded wool for Rs 25/kg (\$0.53) – sorting and grading is easier and cheaper if done at shearing-time, before wool from different animals has been mixed up. It also buys unsorted wool direct from the shepherds at a remunerative price. Shepherds and local traders have mobile phones, making it much easier than before to source raw materials.

Shramik Kala buys 10 tons of wool each season, worth Rs 250 000 (\$5 250). The federation's wool supervisor and the self-help group committees are responsible for checking the quality of the wool.

Part of the charm, and hence the value, of products made from Deccani wool is its range of natural colours, which can be woven into attractive stripes, zigzags and chequers in products such as cushion covers and rugs. That means sorting the raw wool into seven different colours, from a pale cream, through mid-brown to nearly black, instead of the traditional three shades. The project trained two self-help groups in Huvnoor village to do this sorting, as well as separating the wool into two grades: finer wool from lambs, and coarser wool from adult animals.

New products and designs

Product design has been a central focus of the project. Since design schools do not typically teach designers to work with coarse raw materials and traditional crafts and designs, the project avoided using experts from such schools. Instead it has worked with designers who are experienced with wool products and community-based production. These designers developed designs for various products that the market research showed would be in demand, such as cushion covers, rugs and mats, bags and oven gloves. Spun wool and felt are the main constituents of these items; they also may include sheep leather (for handles) and other natural materials such as jute and banana fibre.

Deccani wool is relatively coarse, so is not suitable for clothing. But it is ideal for home furnishings and products such as bags. The designers developed a range of products that could take advantage of the wool's natural colours and short staple length, as well as local peoples' craft skills. Items such as blankets were dropped from the product range because they required too much capital and the market was already saturated.

Deccani wool is also a tough fibre and naturally fire-retardant, which presents new product opportunities for home furnishings, or even as building material. The amount of wool produced each year provides enough raw materials to expand the range and output of products significantly.

New production techniques

The products are hand-made – which gives them a special character – using traditional techniques, but with some modifications. For example, the project introduced improved

pedal-driven spinning wheels to spin the wool into yarn. Most existing equipment is designed for finer wool, so the project had to adapt it for working with the coarse Deccani fibre.

To prevent infestation by moths, the wool is treated with a traditional method using an extract made of roots. Multicoloured yarn is produced in two ways: by spinning wool of various colours, or tie-dying yarn spun from a single-colour fibre. Additional techniques include making knotted carpets using a flat frame, moulded felting, and hand-knotting or macramé using hand-felted yarns.

Training has been a major part of the project. The project organized two types of hands-on training: for 3 000 shepherds in shearing, sorting and grading of wool, and for 100 women on spinning, weaving, bag making and felting. The trainees were selected by local cooperatives which short-listed potential participants, and by master craftsmen who assessed their aptitude to craftwork, motivation and skills. Most of the spinners and weavers had some previous experience of making yarn with spindles and weaving on traditional looms. The master craftsmen and a group of resource persons from shepherds' cooperatives conducted the training courses proper. The training taught them how to spin yarn using a pedal-driven spinning wheel, and how to weave using a frame loom.

The training has been highly effective. Before the training, the women could spin 200–250 g of wool a day; afterwards, they could spin 300–500 g. Some 95% of the trainees now earn their living using the skills they have learned. Some of the trainees have themselves become trainers and have conducted training workshops for other groups.

Marketing products

How to market these new products? In 2007, the project management team set up a company to handle various functions: marketing, capacity building, design, technology and networking. This was necessary to enable the business to expand and diversify. The company, Mitan Handicrafts Development Pvt Ltd., now manages these functions for Shramik Kala. Mitan is jointly owned by Shramik Kala and a partnership of scientists, development professionals, designers and marketing experts, and uses capital raised by its professional supporters. Currently approximately 85% of Shramik Kala's sales are through Mitan.

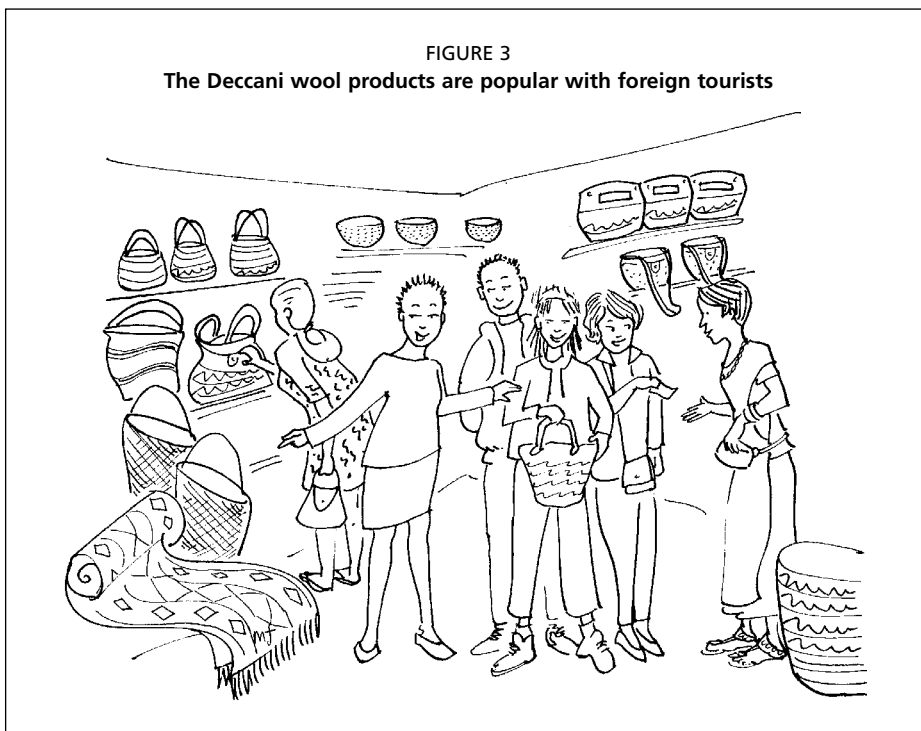
Nearly three-quarters (74%) of Shramik Kala's revenues come from export sales, mainly to Europe (45%) followed by Japan (28%) and the United States (25%). It also showcases its products at national and international fairs; one fair in 2005 resulted in over Rs 50 million worth of orders.

Shramik Kala also sells its products in India, through Fabindia (a retailer and distributor focusing on products made by artisans), as well as through other wholesalers, retailers and support organizations, such as 95 Parklane, SETU The Bridge To Artisans, and the All India Artisans and Craftworkers Welfare Association (AIACA). It also promotes the sale of wool to felt-makers in Maharashtra, the state to Karnataka's north.

Both Shramik Kala and Mitan are beginning to market the products via email and through the internet via the websites www.shramik.org and www.mitan.in.

Shramik Kala does not brand its products. The product identity comes from the design of the product range, rather than from a particular label. The federation also produces a range of other products made from jute, leather and banana fibre marketed with the

FIGURE 3
The Deccani wool products are popular with foreign tourists



"Craftmark" logo, a label for handicrafts supported by AIACA. It is planning to get a "woolmark" certification for its woollen products.

Once the marketing channels are established, markets are not a problem. For handicrafts, demand always exceeds supply, and the market is increasing and diversifying. There is demand for these products because health- and environmentally conscious consumers, especially in Europe, appreciate natural colours and hand-made products. Customers include both young and middle-aged people. Shramik Kala can sell as much as it can produce, and cannot keep up with rising demand. It accepts orders from buyers, then allocates the orders to the self-help groups to produce the required number of items. An order of, say, 100 bags, needs a lead time of 30 days to fulfil. Larger orders take longer: a consignment of 1 000 bags takes 120 days to produce. Shramik used to produce items without a prior order, but no longer has to do this because of the level of demand.

The unique qualities of Deccani wool offer additional opportunities for product development. Shramik Kala and Mitran have started strategic collaboration with wool and felt traders from Nepal, who are big players in the European market. These traders can provide white wool, but they do not have access to black wool of the type produced by Deccani sheep.

Credit and support

Four self-help groups from the villages of Kadoli and Huvnoor have acquired land and are constructing buildings to use for producing handicrafts. They are using their savings, government grants and subsidized loans to pay for this construction and to use as work-

TABLE 2
Initial investment by SAS in marketing of Deccani wool

	1 000 Rs
Formation of federation of self-help groups (awareness raising, training, support and registration)	1 000
Consultants	1 000
Hands-on training	500
Exposure visits	300
Product design and development	200
Technology development	300
Market development	300
Documentation, printing	400
Production equipment (spinning wheels, rope-twisting machines)	40
Total	4 040

ing capital. The two groups in the village of Kadoli now have net assets of Rs 1 000 000 (\$21 000).

The self-help groups can get a limited amount of credit from the banks. But this is not enough because of the constant need for working capital. New foreign donors are showing interest in supporting the initiative. Shramik Kala is also seeking support from government bodies such as the Wool and Textiles Department and the Karnataka Sheep and Wool Development Board.

Investments

How much does setting up a production and marketing effort cost? Table 2 shows that production equipment was a very minor expense. The largest part of the costs were for forming the Shramik Kala federation, consultancy expenses, training, and exposure visits. In all, the project cost about Rs 4 million (\$85 000), Rs 3 million of which was funded by a grant from the Swiss Agency for Development and Cooperation.

In addition, Shramik Kala has rented a building for Rs 15 000 (\$320) per year for its main office. It also uses a community hall in one village and has rented a building in another.

For working capital, the enterprise obtained a loan of Rs 250 000 (\$5 300) a year for 3 years from a local bank under a central government scheme. SAS has provided an additional loan of Rs 1 000 000 (\$21 000). This working capital is used buy raw materials and to pay the spinners, felt-makers and bag-makers for producing the items.

ANALYSIS OF COSTS AND REVENUES

Table 3 shows the prices at which the various actors sell the wool and wool products.

SCALING UP

From small beginnings, the production of woollen items has grown remarkably. In 2005 sales totalled Rs 21 000 (\$440); by 2008 they had risen to over Rs 1 000 000 (around \$22 000) (Table 4).

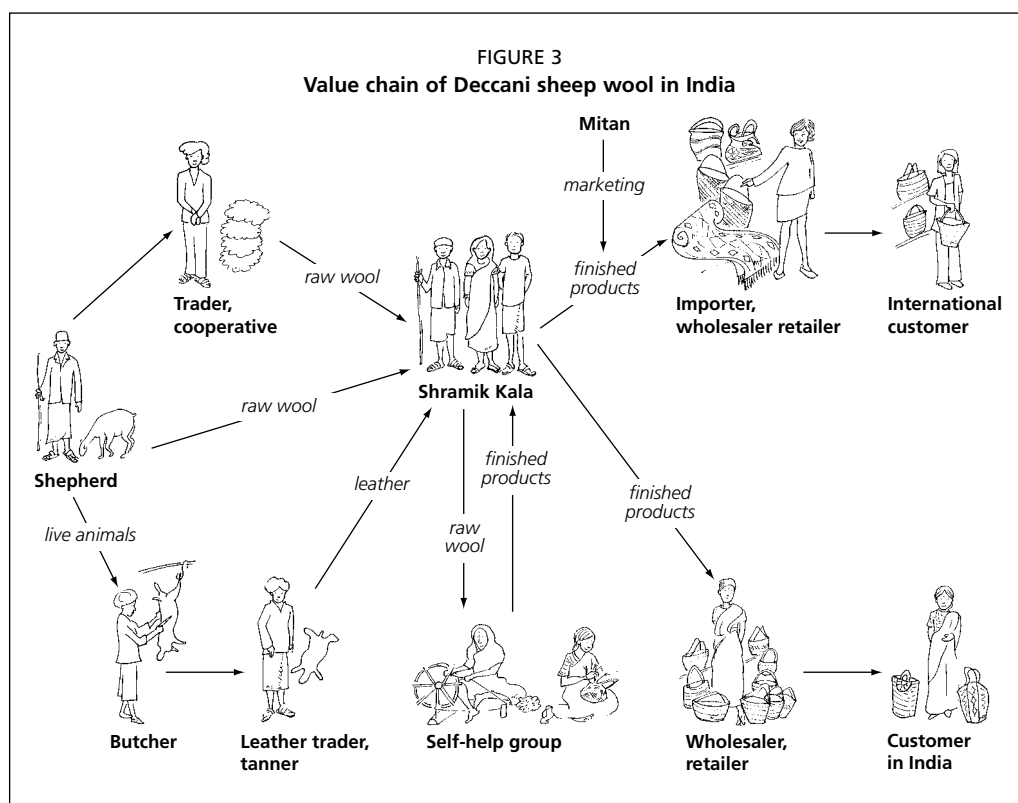


TABLE 3
Selling price of wool and wool products

	Selling price (Rs/kg)
Shepherd	5–7
Trader	9–10
Wool processor	24
Yarn spinner	69
Yarn exporter	110
Bag maker/felter (self-help group members)	175
Shramik Kala (accessories, finishing, packing)	350
Buyer/Importer	1 500
Retailer	4 500

In 2006, the self-help groups had 265 members producing various items: just 95 were working on woollen items; the remainder made jute items. Each worker earned an average of Rs 5 400 (about \$114) in that year. By 2008, the number of workers had risen to around 500 producing both woollen and jute items.

TABLE 4
Value of wool exports

Year	Value of wool exports (Rs)
2005	21 000
2006	281 000
2007	555 000
2008	1 040 000

The big increase in the amount of items ordered and sold in 2008 was possible because of Shramik Kala's and Mitani's marketing efforts. Over half of the total earnings from exports were paid to the artisans for their work.

It is typical of the craft sector to vertically integrate design, material procurement, production, marketing and quality control to a small group of individuals. This offers several advantages, but is suitable only for low levels of production. As the scale increases these tasks have to be specialized and defined carefully to improve efficiency and ensure smooth functioning. This was the reason Shramik Kala span off the marketing function to Mitani, making possible the leap in sales and production in 2008.

Shramik Kala is trying to increase production by establishing more self-help groups rather than expanding existing ones. Its efforts to scale up production are driven by the community as well as the market. Interest among pastoralist communities in nearby parts of Maharashtra and Andhra Pradesh has spurred Shramik Kala to facilitate the spread of the technologies and marketing efforts to these areas. In Solapur district, Maharashtra, an NGO called Mata Balak Pratisthan has started two groups of 40 people to do weaving and spinning. In Sangli district, also in Maharashtra, Verla Projects has started three groups with 60 women to make woollen bags. In Medak district, in Andhra Pradesh, Anthra, another NGO, has started a group with about 20 women.

BENEFITS

Shramik Kala's wool production and marketing programme not only provides livelihoods for 100 women and their families. It also benefits 100 shepherds who raise the sheep that produce the wool, and who now have a ready market for their fleeces. A large number of shepherds are now starting to keep the Deccani breed again, and shepherds from neighbouring Andhra Pradesh are buying breeding rams from northern Karnataka.

The enterprise has shown how to protect the Deccani sheep breed by finding a high-value niche market for a previously low-value product: coarse, coloured wool. The woollen products have achieved remarkable and rapid success in both international and domestic markets. This has been achieved through a social enterprise consisting of self-help groups of poor women, and nurtured by a team of development activists, craft persons and marketing experts.

PROBLEMS IN MARKETING

The enterprise has encountered various bottlenecks in production and marketing:

- **Investment for export.** Historically, most of the infrastructure and investments made in the sector have been geared to the domestic Indian market, not to exports. Fresh investment is needed to create facilities for processing the wool and to develop new product ranges that cater to exports. Such investment could contribute significantly to reviving the wool sector.
- **Eco-friendly packing materials.** Shramik Kala and Mitan Handicrafts would like to use eco-friendly packaging for their products, but buyers demand, and export regulations dictate, what types of material can be used for packaging. Packaging materials must be able to withstand different conditions and protect the product from fungus attacks when the humidity is high.
- **Variable shades.** Leather tanned with organic dyes may be different shades at first, but matures to a classical leather shade over a period of time. This is poorly understood: buyers sometimes think that the product is the wrong colour.

LESSONS FOR ENTERPRISE DEVELOPMENT

Factors in the successful development of the product range based on the Deccani wool include:

- **An entrepreneurial approach backed by social investment.** The project involved extensive dialogue with market participants: shepherds, traders, cooperatives, technical experts, product designers. The task force included a multifunctional team to ensure that a range of viewpoints and approaches were taken into account when developing the product and enterprise. The process was driven by a potential market opportunity. Social investment enabled all phases of the initial pilot: the exploratory study, the design and development of products, training, and market development and product launch
- **Extensive research to identify and exploit the qualities of the raw material.** Laboratory analysis identified the unique properties of the Deccani wool. Field research with players in the wool market, from suppliers to buyers, focused the product design and development to create a competitive range of products.
- **Building on existing skill sets and organizational capabilities.** Developing the woollen products took advantage of existing skills and organizational capabilities. It built on an established federation of women's groups. Relationships with the community of shepherds and their families were already established, and the operational and organizational framework was already in place.
- **Leveraging established relationships with other stakeholders.** The new product lines also built on established relationships with traders, producers, buyers, international and government funders, designers and technical consultants. The groundwork had been laid in the earlier project which developed the production of jute bags and established Shramik Kala. The team developing the enterprise had a track record with each set of stakeholders.

- **Building stakeholder commitment to the enterprise.** Expanding the enterprise model of Shramik Kala was possible because of careful assessment and development in the pilot programme. All the stakeholders were involved in the enterprise from the initial phases of the pilot to its evaluation.
- **Communication with all stakeholders** through progress reports, meetings and workshops continues their participation and commitment to the enterprise. Periodic meetings, workshops and discussions are part of the culture of the self-help groups. Several of the Shramik Kala team live at the federation's processing centre and are a part of the production process.

LESSONS FOR POLICY MAKERS

Most of the world's sheep are white. The international policy environment supports fine, white wools, and is oriented to production by large mills. Policymakers and the industry have ignored the potential of breeds such as the Deccani that produce coarse, coloured wool, as well as production by pastoralists and artisans. Black and brown wool tends to be coarser, but there is considerable potential demand for these shades.

In India, the decision to switch from local wool to imported yarns to make blankets for the army and police destroyed the livelihood of many shepherds. Large amounts of investment, subsidies, and infrastructure in the wool sector have been wasted due to faulty policies. Subsidies have encouraged actors to keep fraudulent books that show higher-than-actual production. These wasted millions have failed to raise demand for wool or benefit the shepherds.

As Shramik Kala has shown, the pastoralist wool sector can be returned to productivity. Coarse wool-based livelihoods have immense potential in semi-arid parts of the Deccan plateau if they are appropriately organized. There is potential to revive and revitalize the defunct cooperatives formed by the government over the last 25 years.

Policy decisions that would help the wool sector should also include the shepherds and wool-related artisans. Recommendations include:

- Involve shepherds in policy decisions.
- Promote research on and breeding of Deccani sheep for its adaptation to semi-arid areas and its ability to handle a changing climate.
- Build on the growing interest in traditional veterinary treatments and animal management methods.
- Persuade sheep raisers to grow a few acres of fodder crops to provide additional feed for animals and so overcome shortages when grazing is scarce.
- Develop markets for lamb meat.
- Empower local people through local government.

MORE INFORMATION

Shramik Abhivrudhi Sangh: www.shramik.org

Mitan Handicrafts: www.mitan.in

Cashmere from the Pamirs: Helping mountain farmers in Kyrgyzstan

Carol Kerven and Sabyr Toigonbaev

It's a long way from the towering Pamir range of central Asia to the catwalks and boutiques of the rich world. And not just in terms of kilometres: the pastoralists who herd their flocks on the remote mountains could not be more different from the wealthy elite of Paris, London, New York, Moscow and Tokyo.

But high mountains do have something in common with high fashion: the goats traditionally raised on pastures in the Pamirs. To survive the harsh winters, these goats have evolved a soft, downy undercoat, concealed beneath an outer layer of coarse hair. This undercoat has a name that evokes images of warmth and quality: cashmere.

But even though the herders sell cashmere, they gain little from producing such a valuable product: in fact, most are not aware of how valuable their cashmere is.

That is beginning to change, thanks to initiatives by the British-based Odessa Centre and the Kyrgyz Cashmere Producers' Association, supported by the Aga Khan Foundation.

A SPECIAL FIBRE FROM A DISAPPEARING BREED

Cashmere is an ultra-fine fibre – with a diameter of up to 18 microns (thousandths of a millimetre), it is finer even than the finest Merino wool. That makes it ideal for high-end fabrics and garments. Colour and fineness of diameter make a huge difference in price: over the past 10 years on average, a large British cashmere importer has paid from \$18/kg for coloured, 17-micron cashmere, and up to \$70/kg for white cashmere of 15-micron diameter.

Kyrgyzstan is one of the places where goats were domesticated, so is home to a major genetic resource of cashmere goats. Indeed, some of the finest cashmere in the world comes from a local breed of goats in southern Kyrgyzstan.

These goats may be black, white, red, or with black-and-white marks on the body. They come in various sizes; 90–95% have horns. The long, rough, coarse outer fibre has a strong shine, and is very different from the short undercoat of down. The outer hair has a diameter of 70–90 microns and grows evenly all year round, reaching a length of 15–17 cm. The inner down coat, or cashmere, grows in autumn and winter. It has a diameter of 13–16 microns and reaches a length of 4–5 cm.

Scientific studies show that Kyrgyz goats produce 24–27% down and 73–76% outer hair. One goat gives about 120–150 grams of combed cashmere (though research by the Odessa Centre and its partners show some goats produce more than this). The productivity of the goats is good, with a kidding rate of 125–150 from 100 adult females.

FIGURE 5
Combing out the fine cashmere produces better-quality fibre than shearing



THE MARKET FOR CASHMERE

In the springtime, the goats naturally moult their warm inner winter coats. Before this happens, their owners shear them and sell the fleeces to local town traders. The fleece contains a lot of rough guard hair, which has no market value. The buyers buy fleeces by weight, in recent years paying a pre-set uniform price of \$5–25 per kilogram regardless of quality, with no extra for ultra-fine or white fibre. These traders then sell the unsorted fleeces to mainly Chinese wholesalers, who hand-sort them into quality lots, each with a different price, before selling them on to factories in China, Turkey or elsewhere for processing. Neither the producers nor the local traders are aware of the market value of what they are selling to the wholesalers. These have come to dominate the market, so the pastoralists and local traders currently have few options but to sell to them at the prices they set.

During the Soviet era, the mountain farmers and transhumant pastoralists of southern Kyrgyzstan used to work for state livestock collective farms that mainly produced fine-wooled sheep. In the mid-1990s the state farms were dissolved, and their former employees had to create their own enterprises. Many now keep livestock. The better-off raise sheep, cattle or yaks, which are regarded as more prestigious animals, while poorer families keep goats, which are cheaper to buy and manage, and produce more offspring.

With no incentive to produce better-quality fibre, many livestock keepers have cross-bred their local animals with Pridon and Angora goats, which were introduced to collective farms in the north of the country during the Soviet era. They produce more fibre, but of a lower quality: it is coarser, and the Pridon fibre is dark. It sold well in the old Soviet Union, but is less prized in the international market, where it is not regarded as true cashmere. The reputation of Kyrgyzstan goat fibre is poor, as the few European buyers who trade in northern and central Kyrgyzstan are increasingly offered coarse, low-quality “cashgora” from the Pridon crosses.

The breed that produce the ultra-fine cashmere is known as *jaidari*, which simply means “local”. As the crossbred goats become more common in Kyrgyzstan, the *jaidari* goats are in danger of disappearing altogether. That would mean the loss of a valuable genetic resource, since ultra-fine cashmere is rare. And it would mean a missed opportunity for

pastoralists to gain better prices for their cashmere. If the local breed dies out altogether, they will have lost this chance forever.

But a chance still exists. Introduced to the north of the country, the imported breeds have not yet reached the high Pamirs in the south. The *jaidari* goats in these areas could be used to rejuvenate cashmere production in Kyrgyzstan.

A LACK OF SUPPORT

The trade in cashmere is new in Kyrgyzstan, and indeed in the rest of former Soviet Central Asia. It was only in the late 1990s that the buyers from China and other countries started coming every spring to buy cashmere from farmers and pastoralists in Kyrgyzstan. At first they bought cashmere from northern and central Kyrgyzstan, and they reached the Pamirs only around 2003.

As a result there are no government programmes or skills among research or extension organizations to support rural people in this new activity. Nor is there any official information about the amount of fibre and cashmere production, sales or export from Kyrgyzstan: no government department has taken responsibility for collecting this information. Donor organizations and NGOs have been reluctant to embark on cashmere projects, perhaps due to lack of interest among national decision-makers, and inexperience in taking on a new and somewhat technical development activity.

This is in sharp contrast to the situation in the two principal cashmere-producing countries, China and Mongolia. In Mongolia, cashmere has long been known as a major component of many pastoralists' incomes, and there have been numerous efforts by donors, NGOs and the government to improve research, provide market information and training for producers, and regulate the markets. China leads the world in improved cashmere breeds and has a highly organized system of marketing, processing and manufacturing cashmere. In 2008, pastoralists in western China sold their raw cashmere to local traders for \$32 per kg – way above the prices paid in Kyrgyzstan.

The best quality cashmere – fine, white, and of the appropriate length and style – is rare and difficult to source. World demand for cashmere garments is growing as incomes rise in the Russian Federation and the Far East. China, the source of the majority of the world's cashmere goats and garments, is unable to satisfy this demand. This is why Chinese buyers have so enthusiastically sought raw cashmere from Kyrgyzstan and other Central Asian countries in the last few years.

PROJECT INTERVENTIONS

Finding ways for producers and other local people to benefit from this unique resource is the aim of Odessa Centre Ltd. and the Kyrgyz Cashmere Producers' Association, initially supported by the Aga Khan Foundation (Box 6). In 2004, Odessa Centre was commissioned by the Aga Khan Foundation's Mountain Societies Development Support Programme (MSDSP) to investigate the potential for livestock development to benefit farmers in Kyrgyzstan's Osh province. It identified cashmere marketing as a new and very active commercial activity, and recommended that the MSDSP develop cashmere training and information packages for farmers and small-scale local traders to increase their sales margins.

In 2008, another Aga Khan Foundation grant enabled the Odessa Centre to trial-run a

BOX 6

Collaborating organizations

- **Cashmere Producers' Association.** Based in Osh, Kyrgyzstan, this NGO focuses on breeding cashmere goats and marketing their fibre. It is run by Sabyr Toigonbaev, the only local professional expert on cashmere goat selection and breeding.
- **Odessa Centre Ltd.** A British research and consultancy company focusing on extensive pastoral livestock production and marketing.
- **The Aga Khan Foundation's Mountain Societies Development Support Programme.** A programme to support community organizations introduce improved technologies and establish small enterprises.

cashmere marketing project in several regions of southern Kyrgyzstan. The project aimed to find a market for cashmere produced by the poorest villagers. Efforts have included:

- Studies on the production and marketing of cashmere
- Research on the characteristics of cashmere in remote districts
- Training pastoralists on producing high-quality fibre
- Reviving the local *jaidari* breed of goats
- Promoting marketing links with buyers from Europe.

These following sections describe these activities.

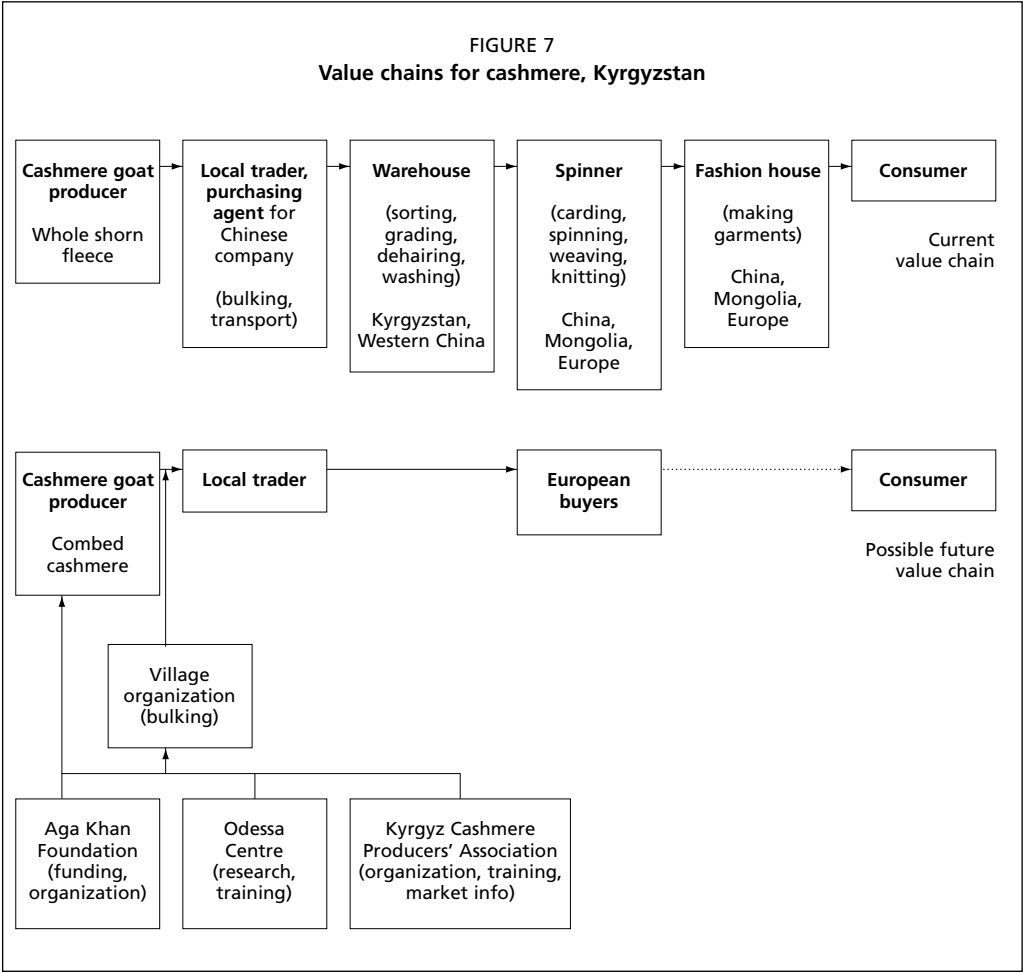
FIGURE 6
Location of Alay and Chong Alay districts, Kyrgyzstan



STUDIES ON THE PRODUCTION AND MARKETING OF CASHMERE

The study focused on Alay and Chong Alay, in Osh province along the southern border with Tajikistan. The villages in these two districts lie at high altitudes, from 1 500 to over 3 200 metres, while the Chong Alay range rises to the highest mountain in Kyrgyzstan, Peak Lenin. Crop farming is limited by the long, cold winters and a lack of irrigation. Livestock are the mainstay of people’s livelihoods.

In Alay district, the buying season starts in March, when goats at the warmer lower altitudes start moulting. By June, when the buying season ends, goats in villages at the highest altitudes over 2 500 metres in southern Alay and Chong Alay districts are moulting. There are 15–20 traders in Alay district, which has 58 villages, and about six traders in Chong Alay district, which has 18 villages. During the season, Kyrgyz traders from the main rural towns go to the villages and collect fibre house-to-house from farmers. When they get enough, they bring it to Osh city. Only a few producers bring fibre directly to warehouses in the city, and sell it for a higher price.



For the past 5 years, Chinese companies have been buying raw cashmere sourced from Kyrgyz farmers in the southern regions of Osh province, through local Kyrgyz purchasing agents. The combed down, goat skins and sheared goat fibre (whole fleece) are collected at warehouses in the two main cities, Osh and Bishkek (the national capital). There are about ten such warehouses in Osh, where Chinese citizens collect cashmere and sheep wool and sort the fibre into grades.

There are well-established contacts between the Chinese buyers and local traders. Some of them work on a formal agreement basis, and others just by verbal agreement. On the basis of long-term cooperation, the Chinese buyers trust some of the traders. At the beginning of each season, they advance money to the traders to buy raw fibre.

The cashmere is then sent to factories to remove the coarse hair, leaving the fine cashmere to be “carded” (combed so all the fibres lie in the same direction), spun into yarn, and woven or knitted into fabrics and garments. Much of this processing is done outside Kyrgyzstan: in China, Mongolia, Kazakhstan, Uzbekistan and Europe.

For washing and to remove the coarse outer hair, the fleeces (and a small amount of combed cashmere) are either taken to one of the few enterprises in Kyrgyzstan that can do this, or they are trucked directly to China. Chinese factories then spin, weave and manufacture the cashmere into garments, or they export processed cashmere to Europe for manufacture by luxury designer companies, mainly in the United Kingdom and Italy.

To comb or to shear?

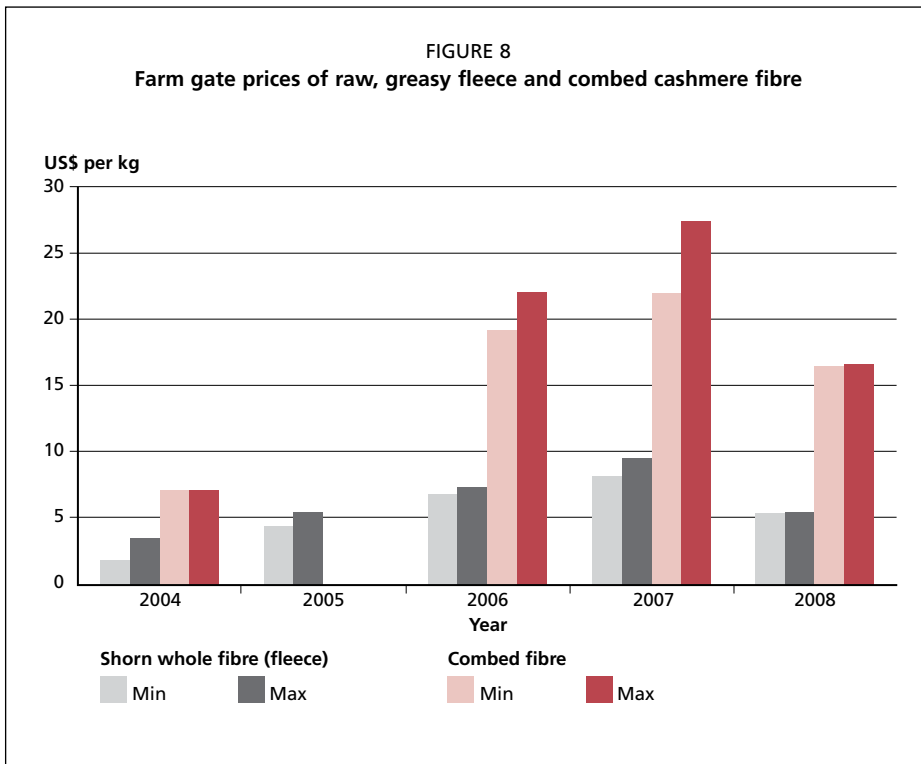
International market prices for cashmere are highly sensitive to quality. However, in southern Kyrgyzstan, Chinese buyers do not encourage livestock keepers to sort their raw cashmere and do not offer any price differentials for different qualities. Producers thus lose a lot of the value of sorting raw cashmere into fineness grades and colours, which attract different prices on the international markets.

It is possible to produce a product that is of much higher value by combing the goats when they begin to moult, rather than shearing them. A generation ago, some village women used to do this to make yarn for knitting into garments for their families. But most Osh traders have stopped accepting combed cashmere, so the villagers stopped combing and now mostly sell shorn whole fibre.

Shearing has several disadvantages:

- Fearing that a cold spell could kill shorn animals, many livestock keepers shear their goats late in the spring season – often after the animals have started moulting and left some of the valuable cashmere caught on bushes when they browse.
- In common with other Central Asian goats, Kyrgyz *jaidari* goats have rather short cashmere, while the international market requires fibres at least 4 cm long. Shearing does not cut the fibre next to the skin, so it can reduce the fibre length by 1 cm or more. That reduces the market value accordingly.
- Because they sell unsorted, whole fleeces, the livestock keepers do not benefit from the high-quality fibre they produce, and they have no incentive to produce the best quality or maintain the local breed. The buyers prefer whole fleeces, which they have sorted in China, where labour costs less than in Kyrgyzstan.

Despite these disadvantages, the herders have no incentive to laboriously comb the valuable cashmere from their goats, since buyers usually accept only the fleeces.



The price of cashmere

Figure 8 shows that the farm-gate prices of untreated fleeces and combed cashmere for Kyrgyz producers rose from 2004 to 2007, but dropped in 2008 due to the world economic downturn and a decline in demand for luxury goods, which affected cashmere prices all over Asia. Combed fibre fetched three times the price of the unsorted whole fleece.

The project team found that when their cashmere was combed out, a few goats produced up to 350 g of fibre fine enough for commercial use. Those were the best producers; on average, goats in Chong Alay district produced 168 g of cashmere, while animals in Alay produced 198 g. At the prices prevailing in late May 2008, this would mean an income of \$2.80–3.30 per animal. Typical villagers have 7–8 goats, so could have earned \$21–25 by selling cashmere.

Cashmere is a secondary income source for the villagers, whose main source of income is selling live animals. A young goat sells for about \$25, but a typical villager with 8 goats cannot afford to sell more than one or two animals a year. In Gansu province in western China, by contrast, goat keepers earn their main cash income from selling cashmere because the cashmere prices are much higher there.

Herders in Mongolia, Ladakh (in India) or China earn higher prices for their cashmere because they have learned how to sort their cashmere by quality and colour, and sometimes have created marketing cooperatives. Kyrgyz producers, on the other hand, do not have such cooperatives, and they do not sort their raw cashmere on-farm or in the village at present.

How much cashmere is available?

Official livestock production statistics appear to be gross underestimates. The provincial government levies a head tax on livestock, which discourages villagers from declaring all their animals to tax collectors. This applies particularly to goats, which the authorities consider are ecologically damaging, so a higher tax is levied on goats than on sheep. Villagers, NGOs and junior government officials all say that the official numbers are too low, and unofficial head counts seem to confirm this. Actual goat numbers in Alay are perhaps three times the official statistics, and in Chong Alay five times. That means that Alay district could produce up to 22 tonnes of combed cashmere, worth some \$350 000, or around \$6 000 per village in 2007. Chong Alay could produce up to 7.8 tonnes, worth \$125 000, or more than \$7 000 per village. The livestock keepers could earn even more if they sorted the cashmere into colour and grade classes.

RESEARCH ON THE CHARACTERISTICS OF CASHMERE IN REMOTE DISTRICTS

The project team collected cashmere from over 1 000 goats from 156 livestock keepers' flocks in 51 villages in Alay and Chong Alay districts, as well as three districts in Naryn province, in central Kyrgyzstan. It sent the samples to a commercial laboratory in Denver, USA. Here is a summary of the findings.

Remote districts have the finest cashmere. Some indigenous goats in remote Alay and Chong Alay districts produce very high-quality cashmere, comparable to the best in China and Mongolia. Some 38% of the samples from Chong Alay district had fibre diameters of less than 15 microns, while 27% of the samples in neighbouring Alay district did so. Only 4–5% of the samples from these two districts were more than 18 microns in diameter, which would not classed as true cashmere.

Though some fine cashmere was present in the samples from Naryn province, interbreeding with the introduced non-cashmere breeds (Pridon and Angora) has lowered the fibre quality of many goats there. Some 10–18% of the samples from this province were thicker than 18 microns. Kyrgyz traders in Osh corroborate these findings: they say that fibre from mountainous areas is always more expensive than from valley areas.

Some animals have ultra-fine cashmere. Some livestock keepers' goats had very fine cashmere of 13 microns in diameter. Such fine fibre is extremely rare and forms an important genetic base for breeding goats with fine cashmere.

Flocks are mixed. Some other goats had coarse down, up to 22 microns in diameter, well above the standard accepted as cashmere. Within individual flocks, there were differences of up to 6.5 microns in the mean fibre diameter of different animals. That would have a major impact on the commercial value of their cashmere.

Remote districts have white or cream fibres. In Alay and Chong Alay districts, 29% of the cashmere was white, compared to only 14% in Naryn, where black goats predominate (79% of samples). Furthermore, 14% of the Osh districts' cashmere was light yellow or cream, also appreciated in the processing industry as white and lighter colours can be more easily dyed.

Finer cashmere is wavy. The study confirmed that coarse fibres are straighter than fine cashmere. Buyers have long known this: they use the waviness to class cashmere into lots for sale, so avoid having to send samples to a laboratory for testing.

Overall, the tests show that some livestock keepers, villages and districts have better cashmere goats than others. But because the goats are variable, the fibre is not uniform, even within a single flock. Mixed lots of variable cashmere are less attractive for commercial buyers who seek the best quality and are willing to pay more for this.

TRAINING PASTORALISTS ON PRODUCING HIGH-QUALITY FIBRE

The project responded to the villagers' request for training by conducting six workshops in five districts. The 113 participants included village organizations, district agricultural officers, and village-based cashmere traders, and Aga Khan Foundation staff. The training covered cashmere goat identification, combing, sorting the fibre, village bulk marketing, international standards and demands.

Participants complained about the lack of cashmere buyers, leaving the Chinese as an effective monopoly buyer. The livestock keepers said they did not have enough information about world markets, price and demand. Many livestock keepers confused Angora fibre (mohair) with cashmere. Most participants felt their goats were suitable only for meat rather than for producing cashmere. They also said that they did not have special tools and skills needed to comb the down.

The trainers advised the livestock keepers that the cashmere they produced did not always fulfil international standards for cashmere, which discouraged Western buyers from Kyrgyzstan. Crossing *jaidari* goats with Angora or Pridon breeds lowers the quality of cashmere produced. The trainers showed samples of Chinese, Mongolian and Afghani cashmere so they could see what the world standard is like. The livestock keepers noted that some of their own goats produced cashmere that was just as fine as these samples.

Advice was also given on feeding goats for better nutrition. There were practical demonstrations of how to comb goats, and how to identify and sort cashmere according to main quality characteristics.

Several hundred cashmere combs were distributed to villages, for sale at \$7 each. Some village organizations sold them on credit to their members, while other combs were sold at markets and at the training workshops. The demand for combs far outstripped the supply. A comb can last a lifetime, so is a good investment.

The participants were encouraged to form marketing groups to sell cashmere in bulk, and to decide how to get veterinary treatment, produce feed, and sort and process cashmere.

Following these workshops, Aga Khan Foundation staff livestock staff also advised villagers on cashmere production and handling.

REVIVING THE LOCAL BREED OF GOATS

In 2008, the Odessa Centre, the Kyrgyz Cashmere Producers' Association, together with an Australian cashmere researcher, joined a local livestock keeper in Alay district to form a group called QuodPod Cashmere to buy and breed 30 of the best cashmere goats, identified through the laboratory tests. QuodPod aims to use these animals to create an elite *jaidari* breeding flock. After several years of breeding, it should be possible to sell animals to local livestock keepers who wish to upgrade the quality of their flocks.

PROMOTING MARKETING LINKS WITH BUYERS FROM EUROPE

The project team supports villagers by creating linkages with companies in Germany, Italy, Poland, the United Kingdom, Japan and other countries that seek high-quality cashmere. Demand for the best quality cashmere remains strong in high-end fashion houses in Italy, Japan and the United Kingdom. These companies are willing to pay livestock keepers a premium for high-quality fibre which is bulked and sorted.

The laboratory tests in 2008 were the first technical assessment of the quality of cashmere goats in Kyrgyzstan. They were important because international cashmere processors express interest in buying only after they have seen independent tests of the cashmere available. Once they know where the good and poor quality cashmere is located, they will pay more for better quality.

As a result of the project's promotion efforts, a large-scale buyer from Germany visited remote villages of Alay and Chong Alay in June 2008, hosted by the Aga Khan Foundation. This buyer agreed to buy fibre through village organizations in 2009, the following season. This company has been buying cashmere from northern Kyrgyzstan since 2000. Company representatives noted that the quality of down had decreased in Naryn province in the previous 3 years, due to the livestock keepers bringing in Pridon goats to cross with their *jaidari* goats. Several other buyers from Poland and the United Kingdom are also establishing buying points in Osh City, with assistance from the Cashmere Producers' Association. Cashmere companies in India, the United States and New Zealand have also contacted the Odessa Centre about buying cashmere from Kyrgyzstan.

WAYS TO IMPROVE CASHMERE MARKETING

How do the villagers think marketing could be improved? The chairmen of village organizations formed with the support of the Aga Khan Foundation had three main requests:

- **Establish cashmere collection points.** Older villagers remembered the Soviet centralized marketing system, where state organizations regularly collected products such as wool and milk from each large collective farm. Nowadays, private traders come to villages and buy with cash from individual households. Some villagers think they could earn more by pooling their cashmere at one place in the village, and then sell it in large lots to bigger buyers.
- **Train livestock keepers on selecting breeding animals.** Livestock keepers need training on how to select breeding bucks and does to improve the value of the cashmere they produce. They should avoid using males with coarse cashmere for breeding, and should avoid crossing cashmere goats with Angora or Pridon animals. They should sell or slaughter goats that produce the coarsest cashmere, the least amount of fibre, and the fewest kids. They should learn to identify the animals with the best cashmere: the down is wavy rather than straight.
- **Train livestock keepers on improved production practices.** Producers should comb the fine cashmere out of the goats' fleeces before shearing them, and should separate the coarse and fine cashmere from the main bulk of the fibre. They should avoid combining Angora or Pridon fibre with *jaidari* goats' cashmere.

How else to improve the market value of cashmere for Kyrgyz producers? Here are some ideas.

- **Provide better bucks for breeding.** Kyrgyz goats produce only about one-third of the cashmere produced by improved goats bred in China – so there is a lot of scope for improvement. QuodPod Cashmere's efforts to establish an elite herd should be continued and replicated.
- **Invest in Kyrgyzstan's cashmere production.** Investment by donors, local foundations and the private sector is needed to increase the number of good-quality goats and help the poorer livestock keepers and goat-breeders, especially in remote mountainous regions where goats have been traditionally bred.
- **Inform producers about cashmere prices.** Reliable information on prices for different quality grades of cashmere would motivate livestock keepers to improve their flocks.
- **Improve extension services on goat and cashmere production.** NGO staff and government development workers need accurate information on different qualities, current international prices for cashmere, conditions of keeping and combing goats, and so on, so they can advise producers through practical training, demonstrations and exhibitions in the villages. Producers and development agents could learn much by visiting neighbouring countries where cashmere production and processing are more developed.
- **Market cashmere in bulk.** The village organizations established by the Aga Khan Foundation should create collection points to bulk and sort cashmere for sale to traders. This would bring better prices for livestock keepers and encourage them to make decisions collectively.
- **Promote handicrafts from cashmere.** Products made of cashmere are in great demand. Training village women to knit or weave cashmere products would establish local industries and create employment.
- **Provide tools and equipment.** Local blacksmiths can make the combs needed to produce high-quality cashmere. Larger investments are needed for equipment to process down to make a semi-finished product with higher value.

MORE INFORMATION

Odessa Centre Ltd.: www.odessacentre.co.uk

Kyrgyz Cashmere Producers' Association: sabyr7508@rambler.ru

Aga Khan Foundation: www.akdn.org/kyrgyz_republic_social.asp

Spinning a value chain from the Gobi: Camel wool in Mongolia

Sabine Schmidt, Altanchimeg Chimiddorj, Nancy Shand and Dean Officer

It is minus 40°C outside, and the wind is howling across the flat, snow-covered landscape. Outside the *ger*, the felted tent that many Mongols call home, the cold does not bother the family's twin-humped, Bactrian camels: they grow thick layers of insulating wool that protects them during the harsh winters in the Gobi desert. Inside the round tent is a single room, heated by a stove in the centre. A woman sits with a hand-spindle, spinning the last of the light-brown wool shorn in previous spring. She winds the finished yarn into a skein – a loose coil of wool weighing 100 grams.

Camel wool is soft and does not stretch or “pill” when knitted (it does not form little balls of fuzz on its surface). Unlike sheep's wool, it does not cause allergies. It keeps the wearer warm when the weather is cold, and pleasantly cool when it is warm. It has a range of earthy natural colours, from white, cream, beige, brown to black, and is ideal for dyeing. Those are attractive properties, not only in Mongolia but also in the United States, where the winters are perhaps not quite as cold as in the Gobi, but where knitted scarves and warm socks still find eager customers.

How, then, to bring this wool from the poor, rural Mongolian women who spin it, to customers in affluent America? The answer was to build a value chain from scratch. A group of poor rural women who own few or no livestock themselves now earn 50–80% of their family's annual income by hand-spinning yarn. This chapter describes how wool is produced in the Gobi, and how it is beginning to reach customers in the USA.

CAMELS IN MONGOLIA

Bactrian camels are highly adapted to the desert environment. In the summer the coats is short and thin, and in the winter it grows thick and long, protecting them from the cold. Animals can be 3 m tall and weigh up to 700 kg. They can live as long as 40 years. They are important for herders as a source of milk, wool and transport – both for riding and to carry heavy loads when the herder family moves camp. Camels are the only large animals suited for sustainable livestock husbandry in the southern Gobi.

A decline in camel numbers in Mongolia has been halted only in the last few years. In Gurvantes district, in the far south of the country, there were only just over 4 000 camels at the end of 2007, compared to 15 000 in 1975. Nationwide, the number of camels has decreased from around 900 000 in the 1950s to about 320 000 in 2000 and about 250 000 in 2002. Eating camel meat used to be taboo, but began during the socialist period when each household was allowed only a limited number of private livestock. It became more common in the 1990s when rural households were short of food and money, and when the price for camel meat increased.

Camels also play a vital role in the management of the Gobi. They forage especially on a type of shrub called saxaul (*Haloxylon ammodendron*), especially in the winter, and help maintain saxaul forests by spreading their seeds. Intact saxaul forests protect the soil from erosion, shelter other plant species from the biting wind, and retain moisture in the soil and air. However, saxaul wood is also a major source of fuel for pastoralists as well as for urban residents. Protecting and restoring saxaul forest is an important strategy to combat desertification.

Today, government policy seeks to increase camel numbers by rewarding herders for larger herds and supporting exhibitions of camel products. The Guvants district government pays herders MNT 1 000 (about \$0.70) for each newborn camel calf. The national government also has launched a programme to promote camel wool – though this does not provide any financing.

“MALE” AND “FEMALE” WOOL

The quality of camel wool is determined by the age and sex of the camel. Mongolian herders distinguish “male” and “female” wool from camels more than 3 years old (despite the names, male and female camels have both types of wool, Figure 9). The “male” wool is made up of longer, coarser hair; it comes from the mane, the front of the neck, the knee and the tops of the humps. It is used to make ropes and animal halters. The long neck hairs are used to make thread, and hair from the mane is used to make bags and as insulation in traditional quilted pants and jackets. A camel yields about 1.5 kg of “male” wool a year.

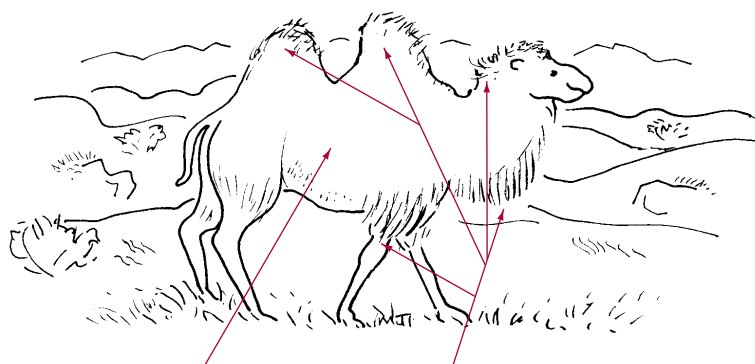
The finer, “female”, wool is from the rest of the body. The fibre that comes from the camel’s sides is best for spinning yarn. A camel yields about 3.5 kg of the “female” wool a year. The finest, most valuable, very high quality “female” fibre is called *torom* wool; it comes from baby camels less than 3 years old. All of the wool from a 2-year-old animal (the age that it is first shorn), including from the head, neck, hump and front legs, is rated as *torom* wool. The older a camel gets, the less “female” fibre it has. Some 80% of the wool from an adult camel is fine grade hair with a diameter of 17–20 microns.

Women who do not have their own camels may buy a batch of “female” wool direct from herders or from traders. They separate out the finest fibres to spin, and perhaps sell the remainder. They use hand-spindles for spinning and they knit garments by hand; today, some also use small knitting machines. They make items either for household use or for sale locally and in shops in Ulaanbaatar.

Shearing of the camels starts after Tsagaan Sar, the Mongolian lunar new year, and takes place in several steps. Depending on the weather and the camel’s condition, the shearing of the “male” wool will be finished between middle and the end of spring. If the camel is weak, the shearing of the last “male” wool may be postponed until the end of spring. At the end of spring, the wool on the feet, neck, groin, armpits and tail is shorn. Shearing of the body (the “female” wool) should be finished by end of June. Ideally, females should have given birth by the end of spring, so that calving does not coincide with shearing time.

A typical herder household with 46 camels earns about 12% of its annual income from selling raw camel wool. Other income sources include cashmere (about 50%), dairy products (about 1%), livestock skins (about 2%), as well as government support (pensions and family allowances, about 35%).

FIGURE 9
Different types of hair and wool on a Bactrian camel



The "female" hair used for spinning yarn is from the flank of the camel.

The "male" wool, used by herders to make ropes and halters, is from the top of the humps, knees, mane and neck.

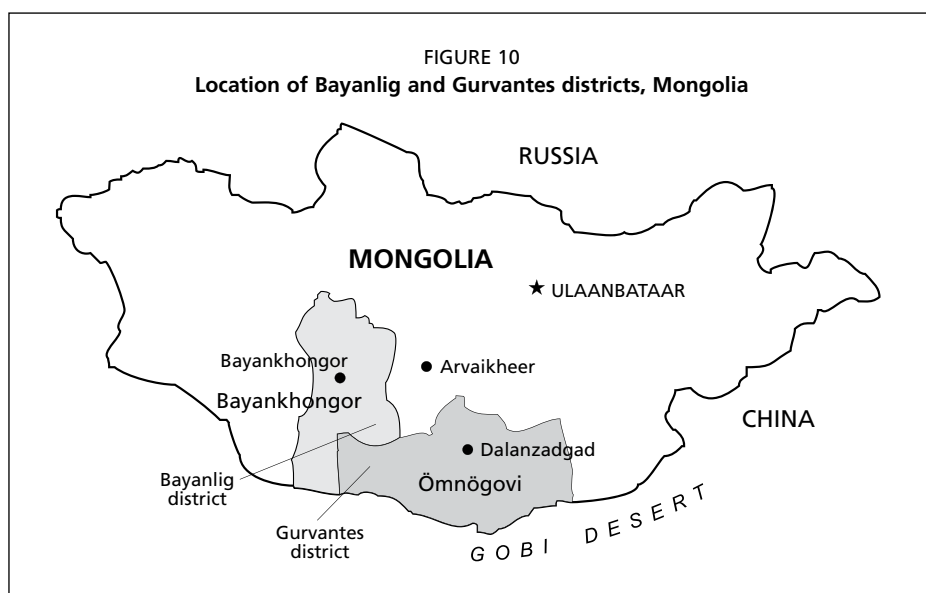
PROBLEMS FACED BY HERDERS

Nomadic camel husbandry is an ancient way of life for herders in the Gobi, the desert and semi-desert pasturelands that form Mongolia's south and west. But the herders face many challenges:

- **Climate change** is affecting pasture and water resources.
- **Herd structure.** Market mechanisms encourage herders to keep cashmere goats rather than camels.
- **Policy.** Laws and policies for managing pastureland are lacking.
- **Inequality.** Livestock are becoming concentrated in the hands of fewer, very wealthy households or absentee owners, creating a class of herding labourers who are potentially very vulnerable.
- **Remoteness.** Long distances, a lack of roads, and high fuel and transport prices mean it is difficult for herders to reach the market.
- **Dependence on traders.** Many are dependent on traders who come to them. These traders dictate prices, or provide consumer goods on credit and demand payment in wool or cashmere when prices are high, or in cash when prices are low.

A WOOL SURPLUS

Mongolia produces more camel wool than it can use. In the 1970s, 3 000 tons of raw wool accumulated each year without being processed. Since the 1980s, an industry to process this wool has developed, so more wool is used than before. It produces high-quality knitwear to compete in the international and domestic markets. Other products are blankets and mattresses, the latter made from the coarser components of the wool. While advances have been made to separate the different components of the wool and to extract the fine fibres suitable for making high-quality products, this process remains lengthy and expensive.



There is still a wool surplus, especially in districts far from the factories in Ulaanbaatar and the Chinese border. Mongolia has over 200 000 adult camels, producing an estimated 700 tons of “female” wool suitable for yarns and garments a year. The three biggest companies in Ulaanbaatar together process less than half of this – about 310 tons a year. It appears that up to half of the raw wool suitable for making yarn and garments is not processed in Mongolia; it is either stored indefinitely or is smuggled over the border to factories in China (exporting raw wool is illegal, so accurate data are hard to come by).

District data support this supposition. For example, the 12 400 camels in Bayanlig, a district in Bayankhongor province that has the highest camel numbers in the country, produce about 62 tons of wool a year. Two companies in Ulaanbaatar each buy about 10% of this output. Another 20–30% is sold to traders, while a further 20% is used locally to make ropes and local handicrafts. That leaves nearly a third unaccounted for. In neighbouring Gurvantes district, approximately 20 tons of wool are produced annually, of which only 400–500 kg are processed locally.

Many of the traders come from China. They grade the raw wool, and sell the clean portion (which is free of earth, plant materials and dirt) to Mongolian processors, and transport the remainder to China. There, the inferior fibre is used for insulation in quilted garments. Also, camel hides are sold at the border, and the camel wool is cut from the hide, processed and sold back to Mongolia.

KNITTING TOGETHER A CHAIN

Building a value chain to link Mongolian spinners with American knitters took a combination of development projects, NGO activities and initiatives by committed individuals.

In the late 1990s and the 2000s, German Technical Cooperation (GTZ) supported two successive projects focusing on nature conservation and sustainable resource management in the Gobi. These projects emphasized community organization, sustainable livelihoods,

and working with mobile pastoralists and local governments. They saw an opportunity in camel wool: a high-quality but under-used product that could be used to raise local people’s incomes and alleviate poverty. The idea was to make camel wool more valuable, so enhancing the value of the camels and creating an incentive for camel husbandry. That would ultimately generate important ecological benefits.

These projects provided various forms of support:

- Training in processing and spinning of camel wool
- Locally made carding and spinning machines
- Training to produce yarn to specifications
- Training in small enterprise skills and cooperative training.
- Workshops with the women spinners to identify problems, challenges and successes, and to plan the way forward.
- Support for women to participate in exhibitions and fairs.

Initially, product development was for the local and national market, and the projects presented the product in trade shows and fairs in district centres, the provincial capitals of Arvaikheer, Bayankhongor and Dalanzadgad in south-central Mongolia, and in Ulaanbaatar, the national capital.

Production

At the local level, community organizers working with the project coordinated efforts, provided information to the spinners, organized training and collected samples and products to be sent to Ulaanbaatar.

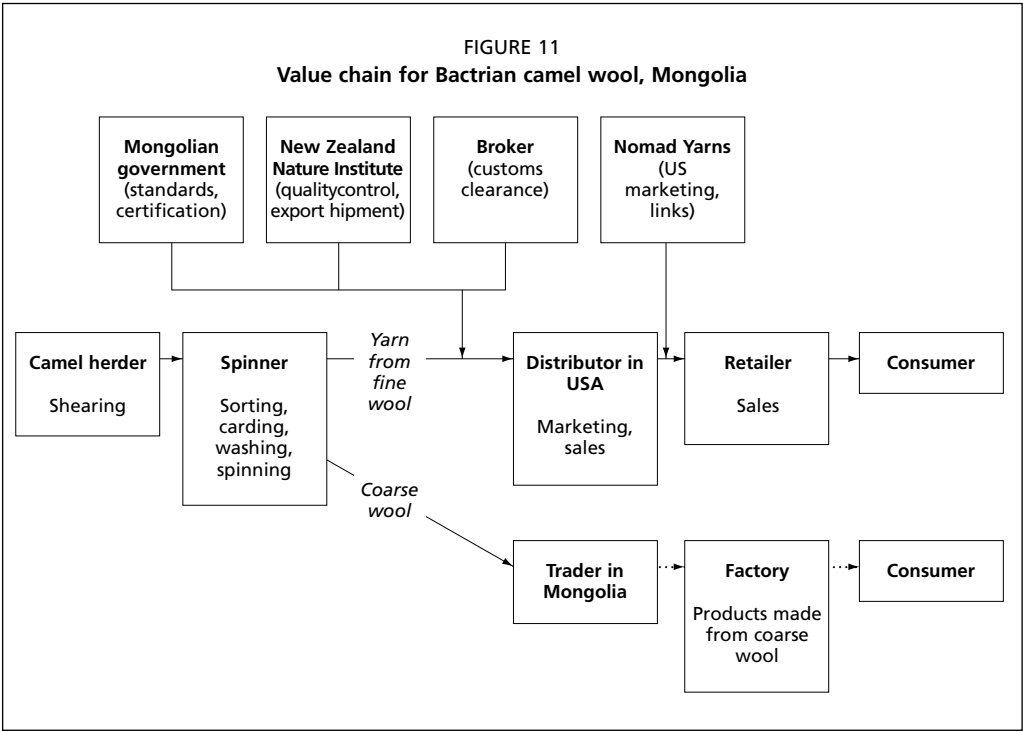
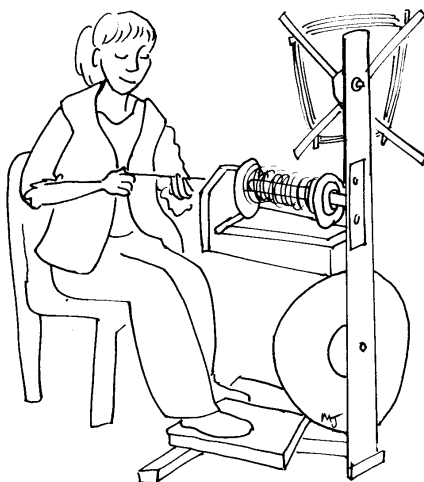


FIGURE 12
A part-time spinner produces about 1 kg of wool a month



While a large number of spinners in several districts were provided with initial training and equipment, only 40–50 spinners in Gurvantes district currently produce yarn for the targeted niche market, using wool from the indigenous Nutgiin Mongol breed. Currently, about 35 women are spinning regularly. They are all able to produce to the required standard, and some have excellent abilities.

One spinner produces approximately 10 skeins (loose coils of wool), or approximately 1 kg of fine yarn, per month. The spinners do not work full-time, but in between housework or paid jobs. Most prefer to work at home so they can look after their children and do other tasks at their own convenience. They say that under current conditions (all the preparation done by hand and the spinning done with wheels) they could increase the average output to 15 skeins a month.

Most of the spinners are women from non-herding households in rural centres, or from herder households with few camels. Members of herder households with many camels are less likely to do spinning: they live in remoter areas, move around with their animals, have many herding tasks, and are relatively well-off from their income from herding and selling raw products. For spinners with few or no livestock, selling yarn can be a significant source of income, and often their main one.

Marketing

At the other end of the chain, the international marketing process was largely carried forward by Nancy Shand, an American anthropologist who brought the yarn to the USA and introduced it to potential buyers. A support initiative, “Nomad Yarns”, was set up in the USA. For several years, Nancy Shand continued to support the effort by enlisting a volunteering expert to provide guidance on product development to the required specifications, covered the costs of transport and customs, made contacts with distributors, displayed the



yarn at trade shows, developed brochures and other information material, and set up a website. Raising the quality of the product and developing consistency of properties of the yarn has been an important input.

A large international distributor has taken on camel wool yarn for marketing in North America and Europe. If these initial efforts prove successful, they could evolve into a viable market. The potential to develop and market other products based on camel wool is largely untapped.

Linking producers and markets

The link between the spinners in Mongolia and the marketing efforts in the USA was for several years maintained through the efforts of Altanchimeg Chimiddorj, a local consultant with the office of the New Zealand Nature Institute in Mongolia. She introduced tools and standards for skeins with Nomad Yarns, organized training, and oversaw quality control and the paperwork requirements for certification and for shipment to the USA.

The spinners in the Gobi needed support in handling the paperwork for export and in organizing transport. Several certifications are needed: for quality (from the Mongolian Agency for Standardization and Metrology), origin (by the Chamber of Commerce), and laboratory testing (the Mongolian Textile Institute, Mongolian University of Science and Technology).

The effort of developing the product and developing a market has been a constant balancing act. For a wholesaler or distributor to take on the product, it needs a steady, assured supply of the product. On the other hand, the spinners put considerable work into production, so need to know that their efforts will be worthwhile.

All this effort has established a marketing chain:

1. The spinners buy wool from herders (some spinners also own camels).
2. They separate out the high-quality fibre and sell the remainder to traders.
3. They remove the grass, wood, dirt and hair from the fibre, wash and dry it, fluff it by hand or using a hand carder, and comb it. They weigh it into lots of 100 g each, and then spin each lot into skeins. They wash the skein with shampoo, rinse and dry it, then label it with the individual spinner's name before giving the skein a final quality check.
4. The finished yarn is taken to Ulaanbaatar, where it is again checked for quality.
5. The wool is certified by a laboratory for customs, origin, and quality.
6. It is shipped to the USA. On arrival, it is cleared through customs by a broker.
7. It is shipped to the distributor, which in turn ships it to retailers.

This chain is still in the trial stage. If successful, it can be scaled up at both ends, with more spinners producing more wool, and a wider distribution network in the USA.

PRICES

A spinner buys 100 g of raw, fine wool for about \$0.50 and sells it as a spun skein for about \$4.00. The costs of shipping, certifications and export permits from Mongolia and import into the USA, advertising and marketing are partially covered by the NGO in Mongolia and supporters in USA. Even so, the distributor pays \$12 for a skein, and sells it for \$20 to retailers, who sell it on to customers after adding their own margin.

SECRETS OF SUCCESS

What makes camel yarn attractive to customers in the United States? The qualities of the yarn itself are a major selling point. Its exotic origin, the ecological significance of the camel, and the benefits to women of the Gobi all add appeal. They also generate a lot of interest and commitment among key players involved in the value chain, from supportive customs officials who admit the product into the USA under an existing code, to the end-customers who are prepared to pay premium prices when they know about the ecological values and livelihoods their purchases can enhance. A key staff member at the distributor has developed a personal interest in the story and has facilitated trial marketing efforts that have the potential to reach thousands of retailers.

UNRAVELLING THE KNOTS

Various problems and challenges face the spinners:

- **Cost of raw wool.** Because most of the spinners have no or few camels of their own, they have to buy the raw wool. That greatly reduces their profit margin.
- **Processing efficiency.** The spinners de-hair the raw wool and prepare it for spinning by hand at a very small scale. This takes a long time.
- **Lack of organization.** Several attempts have been made, by local individuals themselves and through project support, to establish and strengthen a cooperative of spinners, but they have not yet been successful. Barriers are the nomadic lifestyle, long distances, high costs of travel and communication, a lack of infrastructure, as well as limited understanding of cooperation mechanisms, and insufficient trust among members. So the spinners are essentially an informal network of women connected to the marketing effort.
- **Lack of export skills.** Even if they had a more formal organization to manage production, the spinners would still lack the knowledge, skills and resources to maintain the market links. They rely on the NGO to handle this aspect of the work.
- **Maintaining a steady supply of wool.** Raw wool is available only after the spring shearing, so workloads are seasonal. Long distances and remoteness are major challenges to maintain the steady supply of wool that is a precondition for successful marketing.
- **Lack of regular buyer.** If the women had a regular order they could decide how much wool to buy, and would be able to manage their work more easily. They could even consider applying for credit to buy wool.
- **Lack of capital and credit.** Despite various rural microfinance programmes, it is still difficult for poor and remote households (and for groups) to access credit. Collateral requirements, short repayment terms and high interest rates are major barriers. Credit would enable spinners to buy sufficient amounts of raw wool when it is cheap, and to acquire a machine to de-hair and clean the raw wool.

POTENTIAL AND OPPORTUNITIES

Various opportunities exist to expand production and marketing of the wool.

- **Increasing production.** Many more women are interested in spinning. Production could be increased significantly if they were trained and could get credit to buy equip-

ment and raw materials. Based on the number of non-herding households and the volume of camel wool available, it is fair to assume that in Gurbantoe and two neighbouring districts, several hundred women would be interested in spinning yarn. A larger number of producers would make it easier to produce a regular supply of yarn.

- **Mechanizing laborious processes.** Production could be increased further if the laborious cleaning and de-hairing process were mechanized. The women could continue to hand-spin at home. Feasibility studies are needed to calculate the production potential if groups of women had such equipment, or if a processing and production facility were established to employ spinners.
- **Ensuring socially responsible investment.** Investment in the processing of wool should ensure good working conditions, child care, social insurance, continued training and fair wages and prices. The New Zealand Nature Institute is exploring ways to create a viable venture by building on the unique qualities of the wool, creating fairer trading conditions, and linking current initiatives to sources of expertise, funding or investment.
- **Geographical indication.** With assistance from the European Union, the Mongolian government has established “Gobi desert camel wool” as a “geographical indication” – a kind of trademark that guarantees the origin of the wool. This certification requires that all processing steps are done in Mongolia. Registered producers can use the geographical indication logo as well as their own trademarks.
- **Expanding the international market.** Although about 50 retailers in the USA and Europe carry the camel wool, re-orders are still rare. A major distributor has taken on the yarn since September 2008 and is undertaking a major marketing effort at trade shows and through its links. The next 6 months will be crucial to gauge demand and potential, and to determine whether larger regular orders could be placed with the spinners in Mongolia.
- **Developing a long term strategy.** The outcome of this marketing effort will feed into a long term strategy, targeting more efficient production, further defining and refining the product, and determining the most viable option for production and marketing. Choices to be studied for feasibility include (a) an informal network of spinners (as now) linked to a fair trade initiative, (b) a larger cooperative with its own capacity to ensure regular supplies, quality control and marketing, (c) a local factory, run by a small business venture. The first two options may involve some mechanization.

MORE INFORMATION

Nomad Yarns from Mongolia: www.nomadyarns.com

New Zealand Nature Institute: www.nzni.org.mn

Berenguer, L. 2006. Report on the product specifications for the Mongolian geographical indications: The Gobi desert camel wool GI case. ITC/DTCC/06/2816. 20 March 2006 (also available at <http://tinyurl.com/kp2bo2>).

Yondonsambuu, G., and D. Altantsetseg. 2003. Survey on production and manufacturing of the wool, cashmere, and camel hair. Mongolian Wool and Cashmere Association/Mongolian-German Project on “International Trade Policy/WTO”, Ulaanbaatar (also available at <http://tinyurl.com/ndq4uk>).

Marketing of handicrafts made from Linca sheep wool in Patagonia, Argentina

Luciana Cardinaletti, Julieta von Thüngen and María Rosa Lanari

Tourists have many reasons to visit Bariloche. This town in Argentina's Rio Negro province is nestled in the foothills of the Andes and is surrounded by scenic lakes. In winter it attracts skiers, while in summer people fleeing sultry Buenos Aires come to enjoy the lakes' beaches, fish for trout, trek through the mountains and climb local peaks.

Many of the tourists buy local handicrafts as a souvenir of their visits: leather belts and bags, silver rings and pendants; liqueurs, jams, chutney and honey; ceramics and carvings. Wool is also a speciality: ponchos, shawls, bags, sweaters, hats, socks, gloves, girdles, wallets: there is a vast range of types, using traditional designs from the area.

Perhaps the best place to pick up a souvenir is in Dina Huapi, a small town about 20 km northeast of Bariloche, on the road towards the Siete Lagos (Seven Lakes). On a crossroads here is the Mercado de la Estepa "Quimey Piuke" (which means Market of the Steppes "Good Heart" in Spanish and Mapuche), a shop filled with all kinds of traditional handicrafts. Visitors who browse through the shop rarely come away without a colourful woven bag or a jar of *dulce de leche*, a sweet syrup made of milk.

The pride of the Mercado sellers is the ponchos: traditional woollen garments worn by the region's farmers. The ponchos are warm in winter, waterproof in the rain, and multifunctional, serving as a coat, cushion and blanket. There are many designs: stripes and patterns made of different naturally coloured wools: cream, light brown, ochre, dark brown and nearly black. The ponchos are not cheap – one may cost upwards of 2 500 pesos (about \$660). But these are beautiful, hand-woven, individual items that take hundreds of hours to make on a traditional loom. With their traditional designs and natural colours, they encapsulate the region's identity.

LINCA SHEEP

Sheep raising is the main economic activity in this dry, windswept steppe. There are around 1 500 sheep raisers, who also keep cattle, horses, chickens and goats. Most of the sheep are Merinos – a breed that produces white, fine wool. About 30% of the sheep raisers are large-scale producers who keep flock of 2 000 or so Merinos on big farms averaging 8 500 ha each. They sell large amounts of wool to exporters.

The remaining 70% of producers operate at a smaller scale: they each have an average of 800 ha of land and about 200 animals. These producers live in remote villages, with poor roads that are impassable in winter. They sell wool to large companies at low prices: with only 800 kg of wool a year, individual producers do not produce enough to sell in bulk, and buyers have to incur higher costs to obtain their wool.

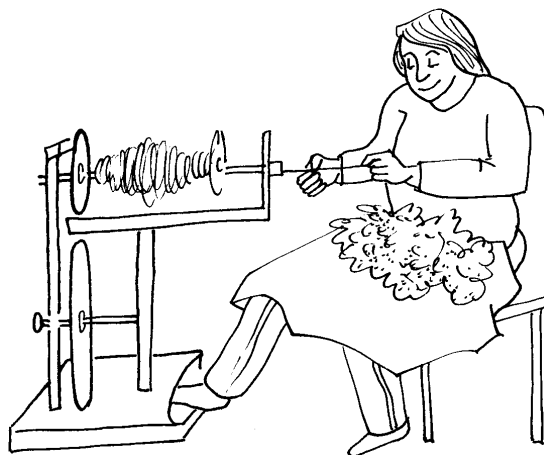


The wool in the ponchos comes from a particular breed of sheep called the Linca, or Pampa. These sheep have been in the area since the late 17th century, but the breed's origin is not known: it is thought to be descended from Lincoln animals from England. Linca sheep are variable in colour, ranging from light brown to very dark brown. Local craftswomen prize the wool: they say it is soft and has the right fibre length, so is good to weave with. Some 46% of the fleece is a fine down with an average fibre diameter of approximately 22.7 μm and length of 9 cm. The average guard hair staple length is 18.5 cm. The down is ideal in terms of length, softness and variety of colours for making ponchos and other products.

But the Linca is in danger. Stocks have been declining sharply recently through cross-breeding with Merinos, and because the major buyers do not want the coloured wool the Linca produces. A small number of small-scale producers, generally women, keep a few Linca sheep – perhaps 30 animals – among their Merino flock. There are very few purebred Linca flocks, and even fewer rams: an ongoing study has found only four producers with fewer than 200 animals in all, though there may be other flocks elsewhere in the region.

Many of the small-scale producers have roots in the indigenous Mapuche community. The men in these small farms rear Merino animals and sell small amounts of wool at low prices to local dealers. The women's role is to care for the home and children, to rear the Linca sheep. They spin and weave the wool of their own sheep (plus perhaps some wool

FIGURE 14
Many Mapuche women spin wool to make traditional garments



bought from outside) to make traditional products such as ponchos and other garments, mainly for family use.

The women also sell wool, or woven items, to a few local traders who go from house to house; some also take their products to sell in town. But few traders come to the isolated villages, and local people rarely have a chance to travel, so have few chances to sell their products. Potential markets are too far away for individual farmers to reach. Sales are not high enough to encourage farmers to keep more Linca animals. And the farmers did not have the skills or connections to sell their products.

MERCADO DE LA ESTEPA

The solution was to organize as a network to overcome the physical and cultural distances. This network has small towns as nodes where members can meet and discuss news, prices and techniques. The Mercado de la Estepa is the central hub, where every member can sell the products that she and other members have made. Today, the network it involves over 260 families from various parts of southern Rio Negro province. Nine-tenths of the members are women.

How did this network emerge? The organization that eventually became the Mercado de la Estepa was formed in 1999, when Surcos Patagónicos, a NGO promoting development of rural communities in Río Negro province started a weekend trade fair in Dina Huapi. This was a time of economic crisis in Argentina, and people had very little cash. Local people came to the fair to barter goods: they exchanged wool, handicrafts, meat, fruit, vegetables and other products.

The first fairs were held out of doors. But winters in the area are cold, so in 2000 the fair moved indoors, and in 2001 the Mayor of Dina Huapi granted Surcos Patagónicos a piece of land to use for 10 years. Surcos Patagónicos collected donations and funds from government and private sources, and began constructing the building where the shop is now located. The building was opened in December 2003.

Meanwhile, Surcos Patagónicos, the Programa Social Agropecuario (agricultural social programme) of the Ministry of Social Development and the Instituto Nacional de Tecnología Agropecuaria (National Institute of Agricultural Technology, INTA) agreed to work together to support the sheep raisers and craftswomen. These three organizations aim to better the livelihoods of rural people.

This team began by studying the production and marketing system and local people's situation and needs. Then, during 2002 and 2003, they helped organize groups of local people in the Department of Pilcaniyeu, in western Rio Negro, near the city of Bariloche, and raise their awareness of their products and potential markets. Through a series of participatory workshops, the market Mercado de la Estepa was established, and a set of rules were drafted by the community to govern it.

The team and Mercado members took part in various local and regional trade fairs and exhibitions, and from 2004 on held several training courses on economics, organization and technical aspects of producing wool and leather handicrafts. In 2005 and 2006, new members joined the existing groups. New groups of producers in Pilcaniyeu and other departments had heard about the Mercado and negotiated to join it.

In 2007, the team helped the Mercado open a shop in downtown Buenos Aires, in collaboration with two other organizations (Silataj Foundation and Civic Association Niwok) working on indigenous fair-trade handicrafts from northern Argentina. This shop sells Patagonian products to consumers who do not have a chance to visit the Mercado itself in Dina Huapi.

GOVERNING THE MERCADO

The Mercado has its own constitution, and an assembly of representatives meets four times a year. The members are organized in zones, and each of the nine nodes elects two representatives. Assemblies are held in each node in rotation. The assembly elects a president, a vice-president, two committee members, a treasurer, and an auditor to manage the Mercado.

Someone can become a member of the Mercado in one of two ways. One is to apply for a guest membership, which allows her to sell items in the shop for 6 months. After this period, the organizing committee may approve her application for full membership. The other way is to be invited to join the Mercado by a permanent member. In both cases, the new member's products must be approved by the organizing committee. The new member must also agree to serve as a salesperson in the Mercado to sell all members' items.

The Mercado started out as a project of Surcos Patagónicos. In 2008 it was formally registered as an independent non-government organization.

FROM SHEEP TO PONCHO

The process of making a poncho involves several steps.



Shearing. This is done by hand with shears in summer, from October to late January. Each sheep produces around 4 kg of fleece. The fleece may be packaged and stored until it is sold or processed.



Washing. The fleeces are washed by hand using mild soap and warm water to remove the grease and dirt. After drying, the fleece weighs about 60% of its original weight.



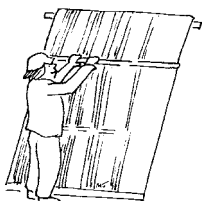
Carding. This means combing the fleece to remove impurities in the wool and to align the fibres so they can be spun. When done by hand this task takes about 9 hours per fleece; with hand-operated drum carders, it takes about 3 hours.



Spinning. This uses a spindle or spinning wheel to convert the carded wool into yarn. Spindles are the traditional equipment: they are light and can be taken everywhere, but using them takes a long time and requires a great deal of skill. Using a spinning wheel speeds up the process, but not all the craftswomen have one. Spinning takes a long time: 20–30 hours for 1 kg of yarn, depending on the type of wool (thin, double, or thick). Making enough wool for a poncho may take perhaps 120 hours.



Dyeing. This uses natural dyestuffs such as grasses, roots, bark and onion peels, plus vinegar or salt to fix the colour.



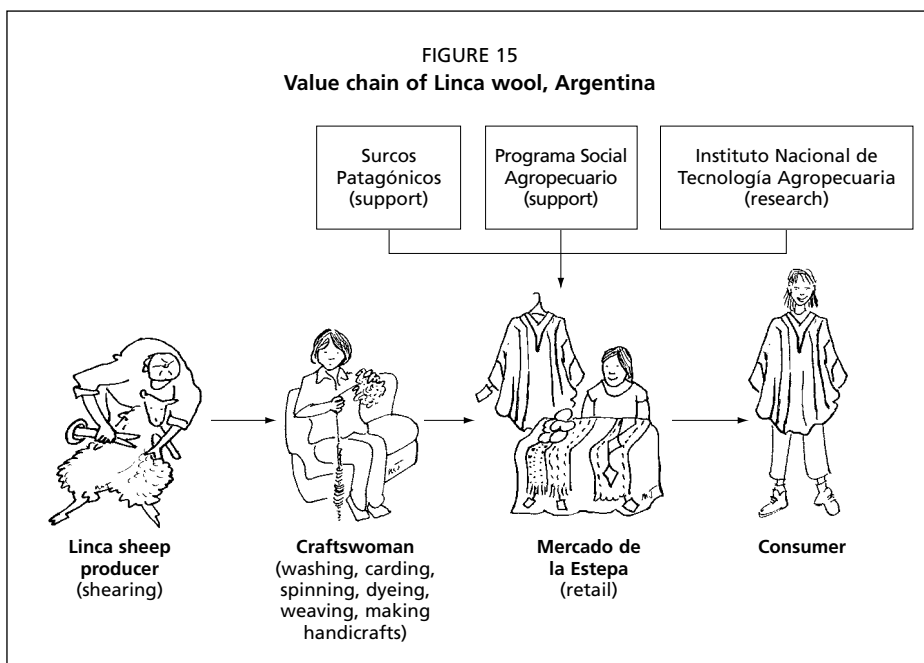
Weaving. The women use a simple, traditional vertical loom. Weaving a large poncho takes 200 hours of work and 4 kg of yarn. The ponchos may be plain or patterned with traditional Mapuche designs.

From unshorn sheep to finished poncho takes 350 hours in all. Different people may do different steps, or the same family may do them all. Women handle all of the steps, except the shearing, which is generally done by men.

SELLING HANDICRAFTS

The craftswomen act as salespersons in the Dina Huapi store. On weekdays, it is the women from Dina Huapi itself who do the selling. At weekends, two or three members from outlying villages come into the town to act as sales staff. They sleep in a dormitory on the second floor of the shop, and spend the day serving customers and maintaining and cleaning the store. They sell the products of all the Mercado members, not just their own. Most of the buyers are Argentinean and Chilean tourists looking for crafts typical from Patagonia, though increasing numbers of foreign visitors have started visiting the Mercado.

This interaction is enriching for both craftswomen and customers. The craftswomen learn their customers' tastes and become familiar with the market demand. They also gain



in skills and confidence, and learn to appreciate their traditional culture because they see that outsiders value it. The customers in turn appreciate meeting the people who have actually made the things they are buying.

Most of the Mercado's products are sold in the shop. The craftswomen themselves set the prices for the items they have made. Each item is labelled with the maker's name so she can be paid when it is sold. When setting the price, some check similar products that are for sale in the shop, while others calculate their costs and the amount of time it has taken to produce the item. The time and effort can be considerable: 6.5 kg of fleece worth 50 pesos converts into 4 kg of wool (worth 360 pesos), which in turn becomes a poncho that sells for 2 500 pesos. The Mercado keeps 10% of the sale price to cover its expenses.

PROMOTION

There has been very little promotion of the shop or its products, except through word of mouth in Dina Huapi and Bariloche. This was a deliberate strategy to begin with because only a few items were available and the craftswomen were afraid they would not be able to supply a big demand. More recently, however, volumes have grown as more craftswomen have joined the Mercado and the range of products has increased. The Mercado has printed publicity flyers and brochures and created a website (www.mercadodelaestepa.com.ar) to advertise the products. The Mercado also participates in fairs and other local, regional and national exhibitions in order to promote the products and to even out sales, which fluctuate seasonally along with the numbers of tourists in Dina Huapi. As a result, sales have risen steadily, by 30–40% a year.

Several other shops sell ponchos and other handicrafts, but they are not the same as those sold in the Mercado. The Mercado stress the origin of its products, their quality and the links with their makers, and its operation on fair-trade principles.

THE WOOL BANK

Very few Linca animals but increasing sales: that meant a shortage of wool for the crafts-women to turn into ponchos and other products. At the same time, some producers could not sell their Linca wool, as mainstream buyers want only fine, white Merino wool. Naturally coloured, coarse wool fetched low prices from such buyers.

So in 2005, the Mercado created a “wool bank” where craftswomen could buy Linca wool. They could pay for this raw material in cash, or in kind by returning spun wool or finished goods to the Mercado for sale. The wool bank also lent out spinning wheels and drum carders to craftswomen: they could take turns in borrowing this equipment. Demand has been high: the wool bank does not have enough equipment to supply everyone’s needs.

As part of the process of forming the wool bank, the team held training workshops so craftswomen could identify which types of fleece were best for the products. Many complained it was hard to find the pure Linca wool their ancestors had used. So Surcos Patagónicos and INTA have begun to search for purebred animals and analyse their genetics in order to identify them more reliably.

INSTITUTIONAL SUPPORT

In addition to the team of INTA, the Programa Social Agropecuario and Surcos Patagónicos, various other organizations have contributed to the development of the Mercado. The Ministry of Social Development and the Ashoka, AVINA and Nuria foundations have provided financial support. Support from the local authority in Dina Huapi and various local municipalities where Mercado members live has also been vital.

BENEFITS AND CHALLENGES

The Mercado has substantially increased the income of its members’ families. They have benefited in many other ways too: they are coming to value their own culture, relearn forgotten skills and develop new ones, and learn how to work together in a collaborative networking effort. They have gained visibility and respect in society for their families and their culture.

However, incomes are still low and sales are uneven throughout the year, as they are concentrated in the tourist season.

In terms of production, there are several constraints. One is a lack of equipment; this is being gradually overcome through projects that buy spinning wheels and drum carders. The main bottleneck is the lack of Linca wool. The wool bank has made a major positive impact: producers who would otherwise throw worthless fleeces away can now sell them to the wool bank for around 50 pesos each.

In the longer term, the only way to increase the supply of wool is to expand the numbers of Linca sheep. Thanks to the presence of a profitable market, this is now a possibility. Developing a market for handicrafts based on the local culture has created an opportunity to rescue and conserve the Linca breed.

MORE INFORMATION

Surcos Patagónicos: www.mercadodelaestepa.com.ar

PART 2

Meat and hides



Introduction

As incomes rise, so does demand for meat. In developing countries, rising purchasing power, increasing urbanization and changing consumer preferences are all creating greater demand for meat; FAO predicts that per capita meat consumption in the developing world will rise by 1.2% per year between 1991 and 2030 – a rise of nearly 45% in all. Meat production will rise faster, by 1.7% a year, more than doubling by 2030 (FAO 2007, p. 141–5).

But much of this demand is supplied by large-scale producers who raise genetically uniform animals under intensive conditions, often indoors. How can small-scale producers with a few animals compete?

One possibility is to differentiate their product in terms of quality. This section describes two initiatives that attempt to do this:

- Umzimvubu Goats: Adding value to an under-utilized indigenous resource in **South Africa**
- Marketing Criollo goat meat under a Protected Designation of Origin seal in **Argentina**.

The South Africa case describes a government-led initiative to generate income for farmers in a disadvantaged part of the country. It involved a major investment in infrastructure (an abattoir, tannery and restaurant), research, training, extension activities and institutional development, as well as developing new products (leather handicrafts, meat cuts and sausages) and market linkages.

The Argentina case required much less investment as the basic infrastructure (an abattoir) already existed. The focus has instead been on obtaining a protected designation of origin seal for an existing product (goat meat) to differentiate it in the market and enable producers and processors to charge higher prices.

Hides are a natural by-product of meat production. They can be tanned and made into a wide variety of products. Many local breeds have hides with attractive or unusual colours and patterns, making them ideal for the production of distinctive leather handicrafts.

Both of these cases refer to goats. While this species is relatively unimportant in the developed world, it is one of the “big five” livestock species worldwide (the others are cattle, sheep, pigs and chickens). Goats are especially important for small-scale livestock keepers and pastoralists because they are hardy, can thrive on a variety of vegetation, produce both meat and milk, and can be quickly turned into cash: if a livestock keeper needs to pay school fees, it is easier to sell a goat or two to pay for school fees than to part with a cow or camel.

REFERENCES

FAO. 2007. *The state of the world's animal genetic resources for food and agriculture*. Food and Agriculture Organization of the United Nations: Rome. (also available at: www.fao.org/docrep/010/a1250e/a1250e00.htm)

Umzimvubu Goats: Adding value to an under-utilized indigenous resource in South Africa

Merida Roets, Zama Mandisi Madikizela and Mpho Mazubane

Alfred Nzo district certainly is beautiful. Unlike much of arid South Africa, ample rainfall means it is green. Rivers that rise in the dramatic escarpment of the Drakensberg mountains to the north carve deep valleys as they flow down to the Indian Ocean. Indigenous aloes grow 3 metres tall, with heads of spiny leaves and spiked crowns of bright orange flowers.

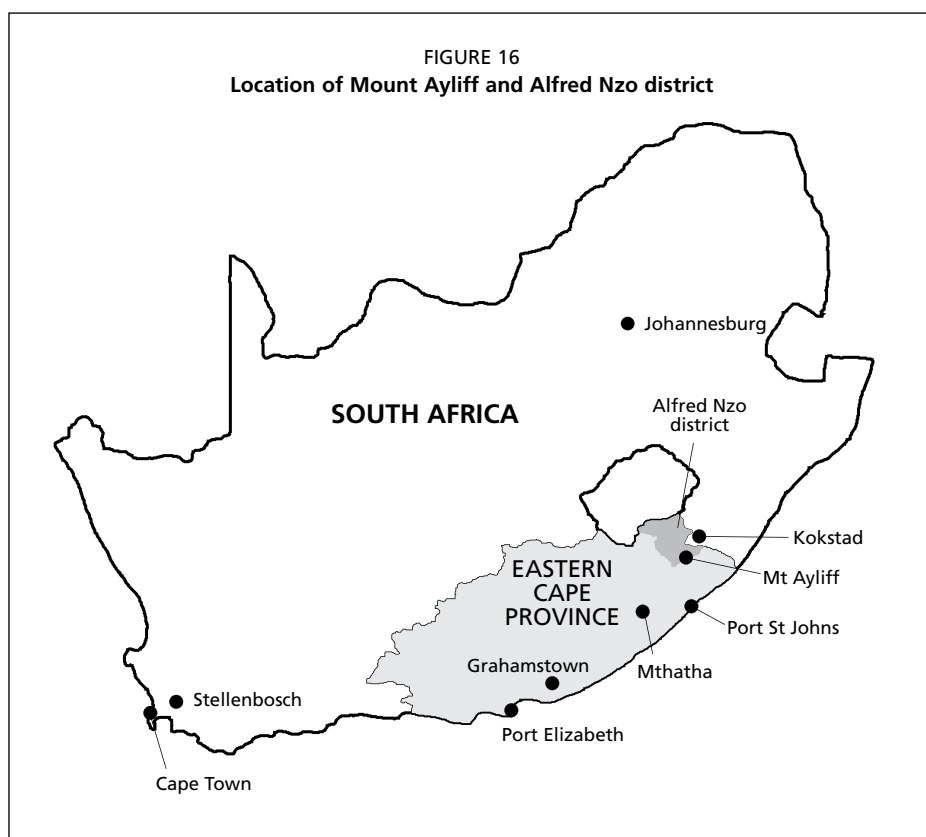
Surrounded by this beauty it is easy to forget that Alfred Nzo is one of the poorest districts in the Eastern Cape province, and this province is among the poorest in South Africa. Part of the independent Bantustan of Transkei, the district was neglected by the central government until reunification with the rest of South Africa in 1994. There is little employment except in subsistence agriculture, so many of the districts' men have left to work in South Africa's cities and mines, leaving women and children to run the farms. Many residents depend on remittances from the men and on government support.

So is the district doomed to remain picturesque but poor? Not if it can take advantage of one of its key resources – its local breed of goats. Alfred Nzo district is home to some 300 000 indigenous goats, the largest such population in South Africa. A typical local household keeps perhaps 15–20 goats, along with 10 cattle, 10 sheep and 20 chickens. The goats are medium-sized and multicoloured (more of that later). Most land in the district is under the custodianship of tribal authorities and is grazed communally.

CHEVON AND CUSHIONS

“Chevon” is goat meat, just as “beef” is cow meat, and “pork” comes from pigs. It is a speciality of the restaurant for visitors at Umzimvubu Goats, a production and processing facility in the town of Mount Ayliff, the capital of the Alfred Nzo district. When they have finished their meal, visitors can stroll through the leather crafting workshop and buy attractive cushions in the adjoining shop. The cushions come in natural brown and white hair-off or hair-on leather, or are dyed various colours: bright blue, green or red. The craft shop has a range of other goat-leather products too: handbags, purses, sandals, shoes, key chains, belts and wall hangings.

The process of turning a goat into steaks, salami and sandals begins with the goat-breeders. Over 3 000 breeders in the surrounding area, organized into six regional cooperatives, raise goats under contract with Umzimvubu Goats. A typical producer with 20 goats can sell perhaps 15 kids a year to Umzimvubu Goats. The producer delivers the animals to the regional cooperative, where a vehicle picks them up according to a predetermined



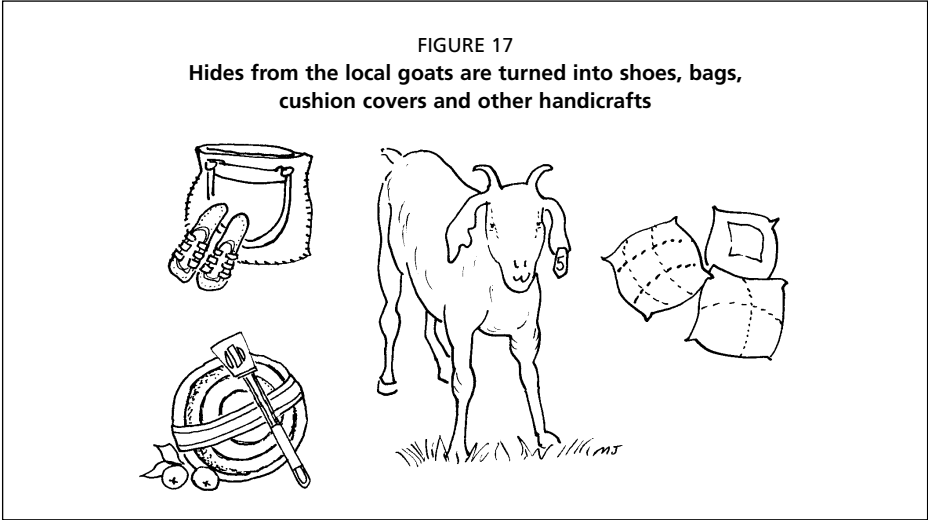
collection schedule. They are offloaded at the processing plant, weighed and recorded. The breeder is then paid directly into his or her bank account, and the regional cooperative is paid a percentage of the price as a handling fee.

The processing plant keeps enough goats in the feedlot on site for 2 weeks' worth of production. From there, they go into the abattoir, which can handle up to 40 animals a day. The goats are slaughtered using certified *halal* techniques: the biggest market is South Africa's large Muslim population.

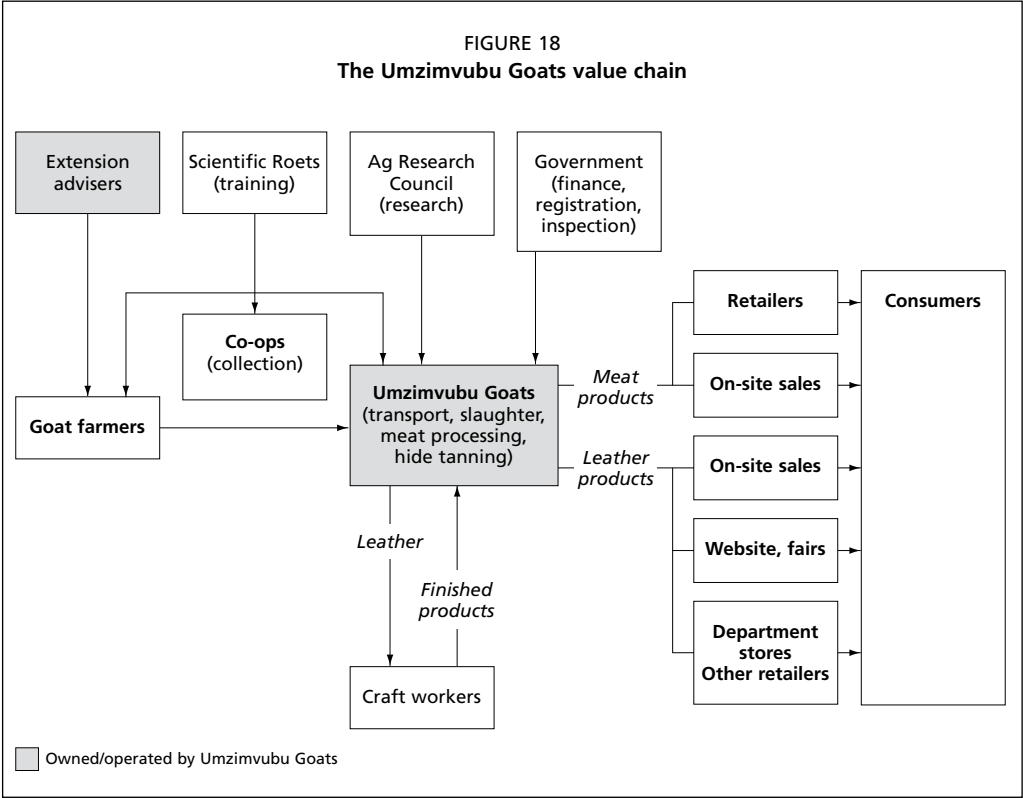
The carcasses go into a meat processing plant where various cuts, as well as ground (minced) meat, patties (burgers), sausages and salami are prepared, spiced, vacuum packed and labelled. The meat is stored in a cold storage room until it can be taken to retailers or served to visitors in the on-site restaurant.

The hides go to a tannery next door, where they are processed into hair-on and hair-off leather. The tannery also buys skins of animals slaughtered elsewhere, and can handle the skins of small game animals on commission.

Eight cooperatives of local artisans, associated with the six regional goat-raising cooperatives, work the leather into cushion covers and many other products. These products can be bought from the leather-craft shop on-site, or through various craft outlets in Johannesburg, Port Elizabeth and Stellenbosch. Umzimvubu Goats products have also become a regular feature at the Grahamstown National Arts festival every year.



The value chain from farmers to consumers is supported by various service providers: public and private donors and funders; the district municipality; the extension and public health divisions of the Department of Agriculture; providers of feeds, pharmaceuticals, and training; bankers, and legal and business experts.



FROM IDEA TO OPERATION

The idea of developing Umzimvubu Goats came from an Agricultural Research Council exhibit at the South African Parliament in 1999. When he viewed the exhibit, Geoff Doidge, a Member of Parliament from nearby Kokstad, realized the potential for a goat processing industry in the Eastern Cape. His idea was to build a facility that would bring together small-scale farm cooperatives, slaughtering, processing and manufacturing in the Alfred Nzo district.

In 2000, a series of demonstrations of goat production and products was held at several villages in the area, organized by the local branch of the United Nations Office for Project Services (UNOPS). Numerous goat farmers in the area supported the idea of establishing a processing plant. Consultations by the district administration with local people also showed goats were a priority, so the district municipality quickly took ownership of the project concept and helped design a funding proposal to submit to the national government, which provided funding through its Integrated Sustainable Rural Development Programme. The district municipality managed disbursements through its Local Economic Development Programme. So the project was supported at three levels: grassroots, local government and national government.

The National Department of Agriculture also took up the idea. The Agricultural Research Council was commissioned to conduct research into how farmers can use their goats, and their knowledge about goat-raising, to generate income and develop the local economy. That was followed by a full market survey. Focus groups tasted chevon products and gave their opinions about various leather products. An in-depth study in the country's biggest cities tested consumer awareness of the products and introduced them to the public. The study found that a number of products could be developed from goats and the whole process could be commercialized.

Poultry, beef, mutton and pork are regarded as commodities in South Africa, and their prices can be followed in the agricultural media. But goat meat is not an established commodity, so does not follow such formalized marketing channels. That means that goat items can be successfully marketed only as niche products.

FOUR ELEMENTS

The research showed that there was indeed a potential market for chevon and for goat-leather products. It was time to develop the project in earnest. The project consisted of four elements: infrastructure development, institutional development, social facilitation, and technology transfer and training.

Infrastructure

Building the processing facility in Mount Ayliff began in 2003 and cost R10 million (around \$1.3 million). The construction was managed by the Consulting Engineering division of Scientific Roets, a private company based in Kokstad that specializes in development activities. That included the construction of holding pens, the abattoir, the processing plant, tannery, an administration building, the restaurant and retail outlet, craft production units, as well as an infirmary to deal with sick animals, stores for feed, equipment and medicines, an

effluent treatment plant, washing facilities and security housing. Craft production units, goat-handling facilities and training venues were also built in nearby villages. The processing plant was officially opened in 2005 by Mrs Thoko Didiza, Minister of Agriculture and Land Affairs.

Institutional development

All this infrastructure is designed for specific products and depends on a reliable supply of live goats to keep it running and profitable. Ensuring such a supply meant it was necessary to work closely with the area's goat producers. The solution was to organize a series of cooperatives, linked to Umzimvubu Goats through contracts specifying the responsibilities of each party. Scientific Roets set up these institutional arrangements.

The central institution is Umzimvubu Goats itself. This is a private company, 95% of which is owned by the district municipality and the remaining 5% by a central cooperative, which has the regional cooperatives as members. The company has two main functions: running the processing and marketing facility, and promoting goat farming in the area. It helps organize the regional cooperatives and will buy all the goats they produce that meet the required standards. It advises and trains the producers on how to manage, breed and care for goats to meet these standards. It provides these services to the regional cooperatives on payment of a membership fee. Umzimvubu Goats holds shares of its member regional cooperatives in trust. It pays them a dividend out of its profits, as well as an annual bonus if the member cooperatives reach their production targets.

The company employs 48 staff, including managers, extension officers, slaughterers, meat processors, leather tanners and restaurant personnel.

The central cooperative, as the implementing partner of the company, is managed by a board of nine directors representing each of the member regional cooperatives, plus the District Municipality, the Department of Agriculture, Veterinary Public Health and specialist expertise as required.

The six regional cooperatives coordinate the production of goats by their members. They plan when members will deliver animals to a collection point and arrange for the central cooperative to transport them to the abattoir. They ensure that the supply of animals is consistent and good quality, and that each animal can be traced back to its owner (this is done through a system of ear tags and branding).

Each regional cooperative is legally registered and has its own board of directors. Its members are farmers who live in the villages it serves: between 300 and 750 farmers per cooperative, from 7–15 villages. The individual members pay a fee to join the cooperative; this was introduced by the cooperatives themselves to ensure that the members are committed to the venture.

Each year, each individual producer has to estimate how many goats he or she will deliver, on which dates – and then actually deliver the number pledged. The goats must be of the quality specified in the contract-producers' manual, and the producer must keep adequate records for each animal.

The leather workers receive leather and leather-craft materials from the central facility and make the items to specifications. They return them to the central shop and are paid for their work on each item.

Social facilitation

How were these organizations established? The district municipality contracted Scientific Roets to facilitate the process, which followed 13 steps outlined in a manual developed by Scientific Roets (Roets, 2004a). This company organized campaigns at churches, youth groups and farmers' associations to raise awareness about goat production and marketing, and to start forming interest groups. It then trained the groups how to set up their own cooperative, design a constitution, draw up a business plan, elect leaders and eventually register the cooperative. Once they were registered, Umzimvubu Goats offered the cooperatives a contract growers' agreement. The new cooperatives had to open a bank account and register a branding mark for their members' animals before they could start producing goats under the contract agreement.

Technology transfer and training

What technologies should the various actors in the chain use: the goat-raisers, abattoir, meat processing plant, tannery, and the artisans who make the craft products? Several studies were conducted at the Agricultural Research Council on goat nutrition and management as well as the qualities and processability of chevon and goatskin. Meat and leather product ranges were developed based on the results of these analyses (Roets, 2004c), and their market potential was investigated.

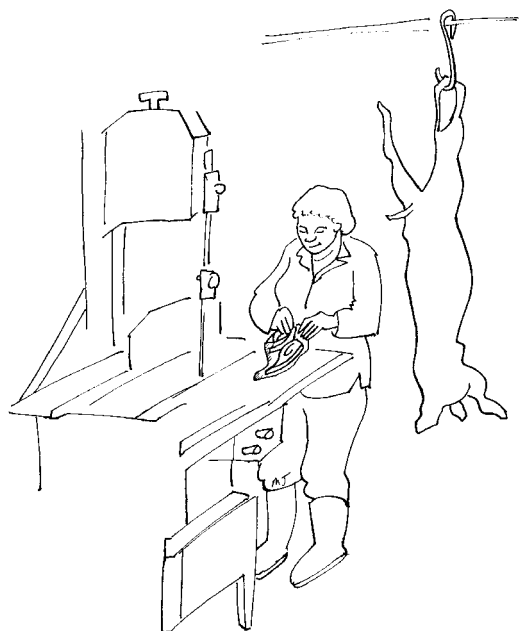
Selecting technologies is one thing: training people how to use them is another. Various groups had to be trained: the staff of the processing facility, extension workers, the cooperative boards, the leather crafters and the goat producers.

Company staff. Training in new technology was accompanied by upgrading the business skills of staff who work at the central facility, cooperative training and manual development. For example, 15 abattoir personnel were trained in animal slaughter and meat processing at the Meat Industry Centre of the Irene Animal Nutrition and Products Institute of the Agricultural Research Council. Three tannery staff were trained in tanning techniques at the International School of Tanning Technology in Grahamstown. The restaurant staff were trained in food preparation and handling.

Extension workers. The provincial Department of Agriculture initially pledged support from its extension officers to support the farmer training drive. Scientific Roets trained 25 of these staff in the project concept, goat management practices, value-adding opportunities, and farmer facilitation and cooperative development processes. However, a lack of vehicles, low levels of competence and poor supervision meant that these staff (with just two exceptions) were ineffective, so it was decided to train the farmers internally.

Goat producers. Scientific Roets had already trained the farmers how to set up their own cooperative (see above). For goat production skills, it developed a qualification (equivalent to a Grade 9 school certificate) on animal production aligned with the requirements of the South African Qualifications Authority (Roets 2003). This 10-month training programme teaches small-scale goat farmers the intricacies of goat contract growing to market specifications, with 25% theory and 75% practical assignments. Aside from giving the trainees a full understanding of goat farming, it also provides them with a formal tertiary qualification which learners can use to get a job in other sectors. Funding for this training was provided by the Agricultural Sector Education and Training Authority (AgriSETA)

FIGURE 19
The butchers and leather workers have received special training



and the Mineworkers Qualifications Authority (which draws many migrant labourers from this part of South Africa). A total of 162 farmers were trained on this programme, at a total cost of around R3 million (about \$400 000). Each member farmer receives a specially developed manual in Xhosa, the local language, which explains important goat management principles, goat specifications (weight and age), and how a farmer can become a grower for Umzimvubu Goats (contracting and delivery issues) (Roets, 2004b).

Leather crafters. Approximately 50 leather crafters were provided with in-depth leather crafting training of 3 weeks each. Follow up training was also provided after they had a few months of practical experience.

Cooperative boards. Scientific Roets also offered a 3-day training course on cooperative management to the boards of directors of the regional cooperatives that had signed contracts with Umzimvubu Goats. This course also informed the participants about goat management and how to handle contract growing.

BLACK DIAMONDS AND LEAN EATERS

The market for goat meat products includes various consumers:

- Muslims, who require meat that is *halaal*. Umzimvubu Goats' *halaal* certification means that this community is its largest market.
- The "New Black Diamonds", as they are called in South Africa: newly wealthy black people who are familiar with goat meat from the communities where they grew up.
- Health-conscious people: goat meat is leaner than other meats.

- The local Zulu and Xhosa consumers who buy meat at small butcher's or grocery shops in the region, including Kokstad, Mthatha and Port St John's.
- Tourists at the Mount Ayliff restaurant, which caters for the adventurous interested in tasting the local cuisine.

DO YOU HAVE A RED-AND-WHITE GOAT?

Ensuring a steady supply of goats is a challenge. Goat breeders see their animals as a ready source of income when required. Goats are sold to neighbours, traditional healers and speculators on an *ad hoc* basis. Every goat sold in this way means one fewer at the abattoir. Many producers fail to fulfil their delivery contracts for this reason.

Goats have always been used as a source of food and for traditional purposes in South Africa. They are slaughtered for various traditional celebrations, such as births or birthdays, or for religious rituals and dowries. The colour, age and sex of the goat are important, but their significance varies from tribe to tribe. Goats of different colours are slaughtered for different reasons. The Zulus, for example, believe black goats possess the most powerful magic, reddish-brown goats prevent conflict and bloodshed, and red-and-white goats are used in thanksgiving for the end of a conflict. Other colours are used by various tribes for wedding or circumcision ceremonies, by traditional healers to celebrate the end of their training period, to chase away bad luck, or to ask forgiveness.

This means that producers are sometimes reluctant to part with their animals: someone who needs to get rid of bad luck or celebrate a wedding may insist on buying goats with particular colours, and may be prepared to pay high prices to get the animals he or she wants. The owners hang on to their animals in the hope of getting good prices; because the animals are grazed on communal land, the cost of keeping a few extra animals is virtually zero. Those animals are older, so less valued as meat, when they arrive at the abattoir – if they ever make it there.

The management of Umzimvubu Goats wants to buy goats from outside the Alfred Nzo district, but the board has vetoed this idea: it says that commercial farmers outside will benefit more than local producers. But the limited supply of animals is stunting the growth of the company. If it cannot get goats from local farmers at the meat commodity price, and farmers who sell for the meat trade are not allowed to enter the business, Umzimvubu Goats will not be able to expand its operations.

BENEFITS TO PRODUCERS

So have the goat producers benefited? They can now get a regular income by selling their livestock to a consistent market each month. They can earn a bonus from profits generated by the facility, and because the entire system is owned by producers, they are empowered as business owners. The municipality is a "silent" partner and does not draw dividends from the proceeds. It basically owns the infrastructure and wants to see it properly used.

- A typical producer who owns 20 goats can sell perhaps five ageing goats a year through the traditional market, earning R900 per animal, or a total of R4 500. Because buyers want older goats or certain colours, the income is uncertain.
- By selling to Umzimvubu Goats, the same producer can sell 15 kids a year at around R580 each, bringing in an income of R8 700 a year. And the market is reliable: the

producer can sell at any time as long as the animals meet the minimum weight requirements.

Umzimvubu Goats pays R16.50 per kilogram live weight (kids weigh about 35 kg each). This price is fixed: varying prices according to demand would confuse and deter farmers from supplying animals.

Umzimvubu Goats can earn mark-ups ranging from 30% (for meat products) and 92% (for leather-craft). It earns more if it sells directly to buyers on-site or at festivals, fairs and shows; less if it markets through retail outlets that must earn their own margins. In fact, a deal to supply a chain of department stores with high-end cushions fell through because the stores could not sell the products at an attractive price without eating into their own profit margin.

The following calculation shows the value-adding potential of processing goat meat. By selling a 35-kg goat for R16.50/kg, a farmer can earn R577.50. Selling the goat's meat in an unprocessed form does not increase this value very much, and competes directly in price with other, more familiar meat types. Consumers are reluctant to pay extra for (relatively unfamiliar) goat meat when they can buy (more familiar) mutton or beef. Processing the goat meat increases its value: for example, making cabanossi (a type of sausage that is considered a delicacy) can earn R842 per animal. Obviously, the overhead, spices and other costs must then be covered by the profits generated.

ROLE OF POLICY ENVIRONMENT

Umzimvubu Goats is a government initiative – it would not have happened at all without the support and initiative of various government agencies and individuals. A Member of Parliament, Geoff Doidge, gave the initial impetus. The Department of Agriculture and the Agricultural Research Council provided vital support, and the national government provided funding through the Integrated Sustainable Rural Development Programme. The local authority, the Alfred Nzo district municipality, managed the project and owns the majority of the enterprise. The government's National Skills Development Act enabled the Agricultural Sector Education and Training Authority and the Mineworkers Qualifications Authority to fund the cost of training the farmers.

No policies limited or hindered the development of Umzimvubu Goats. The company did have to comply with various regulations, however. It had to register the abattoir with the Department of Agriculture's Public Health division, and had to employ a meat inspector. *Halaal* certification came with its own stringent rules and requirements (for example, the employment of a certified slaughterer and regular inspections by the Halaal Authority).

The cooperatives also have to comply with new legislation about branding: abattoirs may now slaughter only animals that have a registered brand or tattoo. This is to curb the high levels of stock theft in some parts of South Africa. This requirement meant informing farmers about the new law and getting them to brand their animals. At R150, registering a brand is too expensive for individual farmers, so a rule was introduced to allow cooperatives to register a single brand on behalf of their members. Umzimvubu Goats devised a system where the cooperative brand is applied as an ear-tattoo, while the farmer member number and animal number appear on the animal's ear-tag. In this way the animals are all legally branded and the farmer's individual animals can be identified.

FINANCE AND GOVERNANCE

As the majority owner and supporter of Umzimvubu Goats, the district municipality has subsidized the salaries of the staff-members of the enterprise since its founding. But this was never intended to be a permanent arrangement. The business is currently (2008) undergoing a critical management and procedural makeover to move it to greater independence from its major benefactor. This is proving to be a painful process with several problems now being exposed that have gone unnoticed due to the subsidy from the district municipality.

One such problem occurs in management decision-making. Business decisions made by the professional management team (the general manager and marketing manager) need to be approved by the Board of Directors, but they are largely uneducated in the field of business. This has created an almost hostile situation where, for example, the board vetoes purchases of necessary and legitimate items (such as spices or packaging) but approves its own transport and per diems.

To deal with this situation, a new constitution or set of rules is needed and must be accepted by all the members of Umzimvubu Goats. This should make it clear that the management is allowed to run the business, and that the Board of Directors is responsible for helping source supplies of the raw material from their cooperative farmer members. The district municipality has contracted a management consulting company to help sort out these issues.

OVERALL IMPACT

Umzimvubu Goats has had a substantial impact on the local economy. It provides a consistent, reliable market for local farmers, as many as 3 000 of whom have sold animals to the company since 2005. It has created an up-market product range from previously underused goat skins and meat, and sells these both locally and nationally. Building the facility created temporary employment for 300 local people, and permanent employment for 48, including animal handlers, abattoir personnel, crafters, management, restaurant and curio-shop personnel and administrators. It draws tourists to the Mount Ayliff area. Off-site, several groups turn leather into craft products. The company is starting to employ agents in the villages to source goats for the facility on commission.

REFERENCES

- Roets, M.** 2003. NQF 1: *Animal production learnership: Goat specialisation*. Registered with AgriSETA. Scientific Roets (PTY) Ltd.
- Roets, M.** 2004a. *Farmer facilitation and co-operative development process*. Scientific Roets (PTY) Ltd.
- Roets, M.** 2004b. *Umzimvubu Goats: Regional co-operatives, membership, goat production and delivery guidelines*. Scientific Roets (PTY) Ltd.
- Roets, M.** 2004c. *From folklore to feasibility: The commercialisation of South Africa's Indigenous Goats*. PhD Thesis. University of Pretoria.

MORE INFORMATION

Umzimvubu Goats: www.umzimvubugoats.com

Scientific Roets: www.scientificroets.com

Marketing Criollo goat meat under a protected designation of origin seal in Argentina

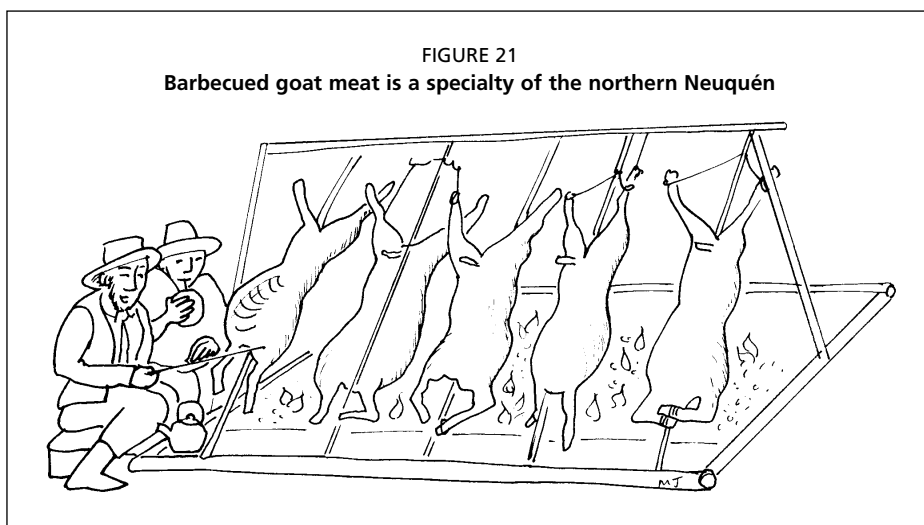
Facundo Lopez Raggi, Marcelo Perez Centeno, María Rosa Lanari, and Julieta von Thüngen

Christmas and New Year are barbecue time in Neuquén province, in the Andes Mountains of northern Patagonia. Local families get together to enjoy the festivities, and the area's beautiful scenery attracts many tourists. Barbecues in restaurants, gardens and parks are an important part of the celebrations.

The ribs and chops that sizzle on barbecues are special, too. Local people say the meat, from kids (young goats) of the local Criollo breed, tastes better than any other. Many visitors agree – and they are prepared to pay more for it. That opens an opportunity for local goat keepers to earn more from their animals.

FIGURE 20
Location of Neuquén





The locals and the visitors are right: the meat from young Criollo animals does in fact taste better than other types of meat sold in Neuquén. There are two main reasons that these goats are special:

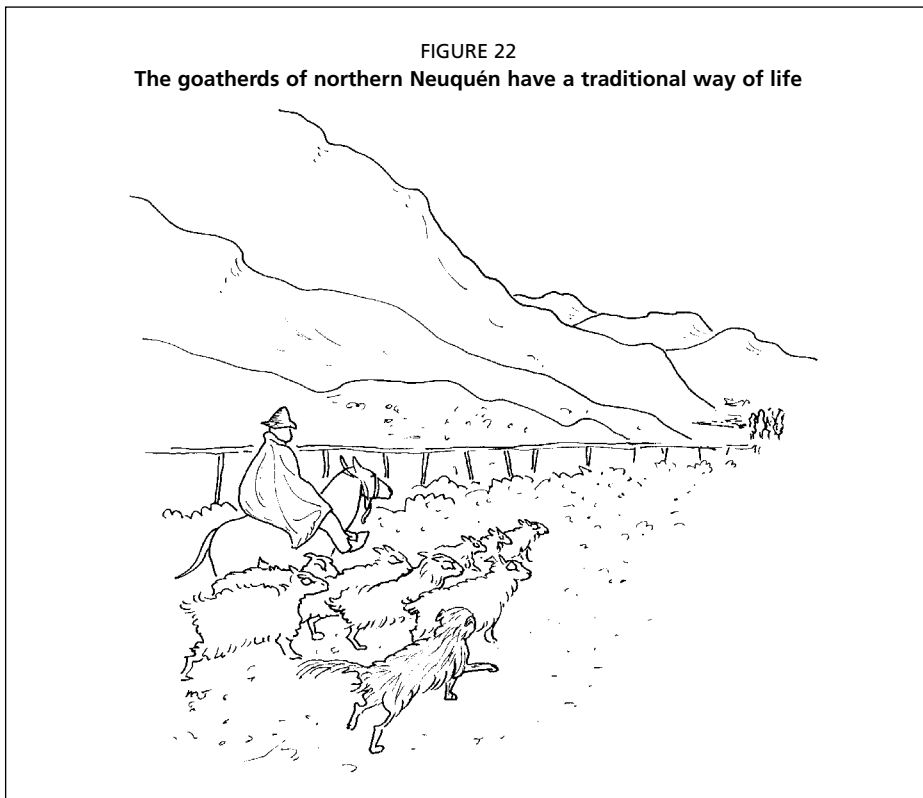
- **The breed itself.** Thought to have been introduced by the Spaniards in the 17th century, the Criollo goat was the dominant breed in the area until the beginning of the 20th century, when Angora and other goat breeds arrived in the region. The Criollo goat is hardy and prolific, and grows well in the harsh environment of the high rangelands of the Andes. This adaptation means that it is unlikely to be replaced completely by the more fastidious Angora and other exotic breeds.
- **The high rangelands.** The goats are raised by transhumant herders known as *crianceros*. Every summer, they drive their flocks to pastureland in the mountains, returning to the warmer valleys in the autumn. At lower altitudes, a thorny shrub known as neneo (*Mulinum spinosum*) is common; it imparts an unpleasant taste to the meat of animals that graze on it. But neneo does not grow at higher altitudes, so the meat of kids born and raised in the highlands do not have this taste.

RAISING THE KIDS

About 1 500 *criancero* families herd their goats in the Andean Cordillera and the front ranges of northern Neuquén province. The average *criancero* keeps a flock of 360 goats, plus some cattle and a few horses, and grows some vegetables on the side. Selling kids and goat skins is their main source of income, though many families also work part-time in the towns. These people have close ties to the land: traditional collective agreements determine where each owner may graze his or her flocks. The herders are almost all family members. The kids are born in the spring, before the flocks leave for the high pastures, and are ready for slaughter in November to January, the southern hemisphere summer. Northern Neuquén produces some 115 000 Criollo kids a year.

It is a hard life: the long seasonal migration, difficult living conditions and low incomes are unattractive for young people, who are increasingly moving to the cities, leaving an

FIGURE 22
The goatherds of northern Neuquén have a traditional way of life



aging cadre of herders and a shortage of labour to look after the animals. It is a long way to markets, and production is highly seasonal. Scattered on public land and in inaccessible areas, the *crianceros* are not well organized, despite their strong sense of identity. Winter ranges are being reduced by desertification, and transhumance routes to the summer foraging areas are being restricted by land-ownership changes and by competition from forestry, mining and development.

SEEKING A MARKET

How can the *crianceros* earn more from their goats? Two main ideas arose: barbecues and cultural identity.

- **Barbecues.** The *crianceros* know that meat from their goats is prime quality. It is especially tasty when barbecued, and barbecues are an important part of local and national celebrations.
- **Cultural identity.** Producing goats is part of the *crianceros'* identity, a major thread in their lives. Without goats, they cannot make a living where they live. In this environment, no other animals perform as well the Criollo goats.

The combination of these two ideas can be used to increase demand for the meat. That requires by marketing it under its own label, enabling consumers to recognize that it is special. Until recently, the meat was sold without such labelling, so the consumer had no way of distinguishing it from other types of goat meat. By applying a “designation of

origin" label, it should be possible to carve out a niche market for Criollo goat, enabling retailers, and ultimately producers, to get a higher price for the produce.

But applying a label is not as simple as it sounds. How can the *crianceros* be sure that a market for their goats actually exists? How to organize themselves to market their animals in the most effective way? What is to prevent other producers from outside the region using the same label? And how to organize the value chain so as to maximize benefits for the livestock keepers?

EXPLORING MARKETS

To explore the Criollo goat's potential and answer these questions, in 2004 a group of local institutions formed a collaborative forum. This forum has grown into a platform for local development based on upgrading and raising the value of the goats. It includes *crianceros*, traders, professional organizations, development officers and researchers from various disciplines. It agreed to develop a designation of origin for the goats to benefit the producers, the meat industry and consumers. A research and development project began in 2005, funded by the National Science and Technology Agency, the Municipality of Chos Malal (a town in northern Neuquén province), and Institute of National Agricultural Technology (INTA). This project aimed to:

- Organize the value chain for Criollo goat
- Determine the technical aspects of the product to be designated.

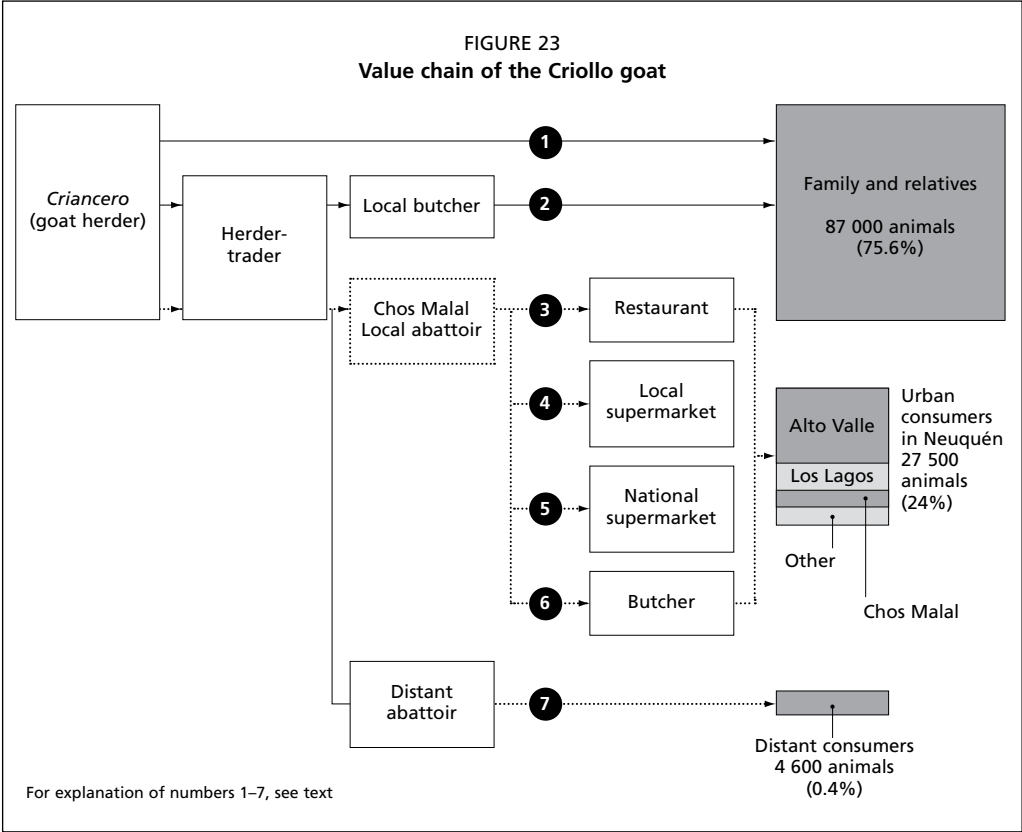
Organizing the value chain

Crianceros raise goats mainly to supply their families and other relatives with meat. If they have a surplus, they sell the kids to local traders, most of whom used to be (or still are) *crianceros* themselves. They know the area well, and the *crianceros* trust them. For the *crianceros* in their isolated homesteads, these traders are an important link to the outside world: they provide them with food, information, medicine and other items. The animals are slaughtered by local butchers and by the households themselves. These two channels (1 and 2 in Figure 23) account for about 87 000 (75.6%) of the 115 000 kids slaughtered each year.

Another 27 500 kids (24% of the total) are slaughtered at the area's main abattoir, in Chos Malal, in the centre of Neuquén province. This is run by the municipality, has a cold storage room and complies with all health regulations, enabling it to provide meat to local, national and even international markets. Most of the animals that pass through the abattoir are sold through local supermarkets and butcher's shops (channels 3 to 6 in Figure 23). These retailers specialize in Neuquén goat meat and use its origin as a selling point. They buy the meat directly in Chos Malal and have access to stocks that enable them to be the sole suppliers of the product out of season. Restaurants do not account for significant volumes, approximately 0.35%.

A small number of animals, less than half of one percent of the total, are slaughtered in other abattoirs further away (channel 7 in Figure 23). These slaughterhouses handle large volumes of meat from various sources. They supply small quantities of Criollo kid meat to restaurants, small supermarkets and butchers outside the region.

Of the animals slaughtered in the Chos Malal abattoir, 54% were destined for sale in



Alto Valle (around the city of Neuquén), and another 20% in Los Lagos (a tourist area in the south of Neuquén province, around the city of Bariloche). A further 12% were sold in Chos Malal itself (the destination of the remaining 13% was not specified).

Prices

The criancero generally sells live animals for \$26 each. The trader sells the animals for the same price, but takes the hide (worth \$1.30) in payment. The local butcher slaughters the animal and sells the meat for \$34. Butcher’s stores and supermarkets sell meat for \$71 (they have to pay for transport, which costs \$1.67 per animal). Restaurants may sell the same amount of cooked meat for \$150.

A survey of tourists conducted in 2008 found that 70% would be willing to pay a premium for meat certified as higher quality, and nearly half of those would be willing to pay 15% extra. This finding supported the idea to obtain a label to differentiate the Criollo meat from its competitors.

Protected Designation of Origin

After studying the value chain, the platform for local development decided that the best way to differentiate the Criollo meat was to apply for a Protected Designation of Origin for Criollo meat handled by the Chos Malal abattoir. There were several reasons for this decision:

- The Chos Malal abattoir has good facilities and all the certifications required.
- Centralizing the application at a single location would allow rigorous controls.
- The abattoir is publicly owned.
- It would enable four of the seven marketing channels to be covered by the designation: restaurants, local supermarkets, national supermarkets and butcher's shops (channels 3–6 in Figure 23). Some 11 500–20 000 animals that currently pass through the abattoir would qualify for the designation.

The designation would not cover the local markets represented by channels 1 and 2 in Figure 23, but granting a designation to those channels is not necessary since local consumers are aware of the origin of the product and its high quality. The designation would also not cover animals sold to distant abattoirs (channel 8).

The first step towards registering a Protected Designation of Origin was for the platform members to develop a common vision. INTA organized a series of stakeholder workshops to create a forum to discuss the proposed designation. These discussions led to an agreement to designate the “Northern Neuquén Criollo kid” based on three elements:

- **The breed:** the Neuquén Criollo goat, with its adaptation to the local climate and conditions, producing a meat with superior taste.
- **The production system:** natural rearing of animals involving transhumance, extensive husbandry, and a great deal of care.
- **A common identity** based on the pristine Andes mountains, their climate, vegetation and water, as well as local customs.

The designation of origin covers young Criollo animals raised in their original area of distribution – the area of northern Neuquén province where these three elements coincide. This covers the entire departments of Minas and Chos Malal in the far north of the province, and parts of the neighbouring departments of Pehuenches, Norquín, Añelo and Loncopue (Figure 24).

Successful marketing requires positioning the product in the market by communicating its outstanding characteristics in a consistent way. A strategy for each market segment is necessary to guide the actors in each of the channels and to create demand for the product.

To manage the designation of origin, a Protected Designation of Origin Board was formed, composed of representatives of nine producers and two traders. An Advisory Board was also formed to bring in expertise from technical and development institutions and to facilitate communication among the various actors. One aspect of this is to strengthen organizations of herders and improve their ties with other actors.

The Protected Designation of Origin Board prepared a report detailing the quality aspects of the Neuquén goat kid and submitted it to the National Secretariat for Agriculture, Livestock, Fishing and Food (known by its Spanish acronym SAGPyA) in December 2005. This application was the first formal request under the law that governs designations of origin in Argentina, and is expected to be the first to be approved under this law.

During the first year the designation of origin was implemented, the producers were able to get prices 10% higher by selling animals under the new seal.

The general policy environment for *crianceros* also seems to be improving. At the national level, SAGPyA has created a special secretariat for rural development and family

FIGURE 24
Area of Neuquén province covered by the designation of origin for
Northern Neuquén Criollo kid



agriculture to support small producers. The Protected Designation of Origin Board and the northern Neuquén goat producers are working closely with the Neuquén provincial Ministry of Territorial Development to develop policies. The Board and producers want the provincial government to promote local production and grant tax incentives for meat produced under the Protected Designation of Origin seal. The *crianceros* also want guaranteed access to public rangelands. They say the authorities should stop thinking they cause desertification, but see them rather as valuable managers of public land.

The work to develop a designation of origin has spin-offs for other fields too: it fits well with efforts to develop the region as a whole, foster the local culture and identity, attract tourists, and ensure the sustainability of the pastoralist system.

CHALLENGES

- A mechanism is needed to ensure that *crianceros* and traders benefit from the additional price earned from meat marketed under the Designation of Origin seal, through “fair trade” arrangement.
- A marketing strategy must be agreed by all commercial operators.
- A control system for products labelled with the Protected Designation of Origin is vital, and traders must be part of such a system. It is important to be able to ensure

that the meat is traceable back to the original flock. Only then can consumers be sure that the product they are buying really is what the label says it is.

- There are no infrastructure constraints to the current regional marketing effort. But to sell the meat in Buenos Aires or export markets, additional cold-storage and transport infrastructure, and perhaps new commercial operators, would be needed.
- It is necessary to expand the programme to cover more producers.

PART 3

Milk



Introduction

Demand for milk and other dairy products is rising even faster than the demand for meat. FAO estimates that per capita milk consumption in the developing world will increase by 1.3% a year between 1999 and 2030 (a 50% rise in 30 years), while production will grow by 2.5% a year, more than doubling output in this period (FAO 2007, p. 141–5).

In some countries, notably India, dairying is still dominated by smallholders, while in others, such as Brazil, the number of smallholders has fallen as production has increased (FAO 2007, p. 159–60). Locally produced milk must compete with imported powdered milk, often from subsidized producers in the developed world.

Because fresh milk is highly perishable, dairies normally have to be close to their suppliers to ensure that the milk can be pasteurized and chilled quickly. That normally excludes producers in remote areas with bad roads and no electricity: they are left with few customers except for their immediate neighbours. Pastoralists face additional constraints: forced to move in search of pasture, they cannot establish permanent collection points or delivery arrangements. In addition, many pastoralist groups have a cultural bias against selling milk: milk is something to be given away.

This section reports on two cases that run counter to this conventional wisdom:

- Tiviski: A dairy that sources milk from pastoralists in **Mauritania**
- The golden udder: Marketing milk from camels in Puntland, **Somalia**.

The Tiviski dairy in Mauritania is a commercial venture that has defied expert advice to collect milk from mobile pastoralists hundreds of kilometres away, produce a quality product, and sell it in a crowded market in competition with imports. Camel milk is a niche product in Mauritania because it caters to a particular segment of the market (people from the north of the country). The dairy has also attempted to export a truly niche product – camel cheese – to Europe, but has encountered bureaucratic barriers that still must be surmounted.

The Somalia case describes how informal networks of local women have established a functioning marketing system that brings untreated, uncooled milk, also from remote, mobile herders, to the growing city of Boosaso. This case is all the more remarkable given the restrictions of the clan system in Somalia, and the lack of a central government.

REFERENCES

FAO. 2007. *The state of the world's animal genetic resources for food and agriculture*. Food and Agriculture Organization of the United Nations: Rome. (also available at: www.fao.org/docrep/010/a1250e/a1250e00.htm)



Tiviski: A dairy that sources milk from pastoralists in Mauritania

Maryam Abeiderrahmane and Nancy Abeiderrahmane

It is still fairly cool when the milk collector arrives at the village to pick up the morning's milk. The animal owners help unload clean, empty aluminium cans from the vehicle, then heave cans full of fresh milk onto it. There is no time to lose: the milk must get to the collection centre on time so it can be weighed, tested, filtered and put into a bulk container for cooling. During the night, an insulated tanker lorry will haul it to the dairy, where it will be pasteurized and packaged into cartons, ready for sale.

Nothing unusual about this, you might think: after all, dairies throughout the world operate in much the same way. But wait: this is Mauritania, a vast, sparsely populated country on the southern fringes of the Sahara. The milk collector drives a donkey cart and must cross miles of roadless dunes to reach the "village", a dusty nomadic encampment. Some producers supply tiny quantities of milk. The collection centres are hundreds of kilometres from the dairy, in Nouakchott, the capital. And the animals that produce the day's milk are not familiar dairy cows: they are camels, local zebu cows, and goats.

SPRINGTIME IN THE DESERT

The dairy is called "Tiviski", the local word for springtime in the desert. Founded in 1987 by Nancy Abeiderrahmane, a British-born engineer who had settled in Mauritania, the dairy started operation in 1989, producing pasteurized camel milk in 1-litre and ½-litre gable-top cartons for sale in Nouakchott. A private enterprise, Tiviski has since branched out into cow and goat milk. It buys raw milk from pastoral producers, processes it into pasteurized milk, yoghurt and other dairy products, and sells them to retailers.

Tiviski runs a system that is basically simple, though it is fairly labour-intensive.

Milk producers. About 1 000 mobile herders supply milk twice a day from camels, cows and goats; some herders provide more than one type of milk, each in separate cans. Each supplier has one or more cans, identified with his or her number. (Producers often use this number to identify themselves on the telephone: "This is V127, Mokhtar".) Fifteen percent of the producers are women. Poorer herders bring very small quantities of milk (as little as half a litre); better-off producers may supply up to 300 litres a day. Tiviski pays the same price per litre, regardless of the amount delivered, even though dealing with small amounts is more costly because of the need to process paperwork and clean the cans.

Milk transporters. Twice a day, privately-owned, independent transporters collect the coded milk cans from herds, camps and villages. Their vehicles range from Land Cruisers to donkey carts, depending on distances, quantities, and the "roads", which include dirt tracks, compact level ground, and sandy dunes. These transporters do not buy the milk; they are not traders. They are paid to deliver the raw milk to the nearest collection centre.

FIGURE 25
Tiviski's milk suppliers are pastoralists who often move with their animals in search of pasture



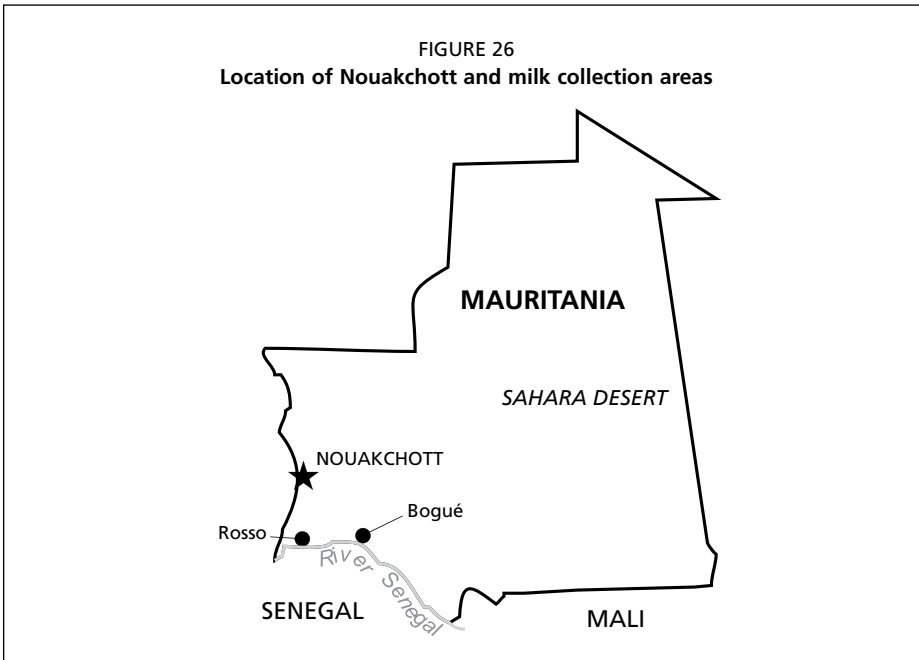
BOX 7 Livestock in Mauritania

Big and barren, Mauritania has more livestock than people: its 1.5 million cattle, 1 million dromedaries and 10–12 million goats and sheep outnumber the country's 3 million people. The climate is dry and grazing sparse, so almost all traditional livestock are kept in pastoral herds. In 1970, more than two-thirds of the population were nomadic, but now less than 15% are fully mobile. Camels and goats traditionally cover long distances – up to 1 000 km a year – particularly at the beginning and at the end of the short rainy season, which lasts from July to September. Herds of cattle also move around. Many herders take their animals across the borders to Mali (to the southeast) and Senegal (across the Senegal River to the south).

All the cattle are zebu. Animals kept by ethnic Fulani herders are mostly white with very long horns, while the (majority) Arabic-speaking people breed brown or black "Moorish" zebu, notable for their relatively good milk yield (an average of 3 litres/day). Tiviski buys milk from both sorts of cattle.

However, there appears to be a recent trend towards interbreeding, as herds have become visibly diverse. A few attempts have been made to introduce high-yielding cattle breeds, such as Holstein, "Pakistani", Jersey, but the environment is too harsh.

FIGURE 26
Location of Nouakchott and milk collection areas



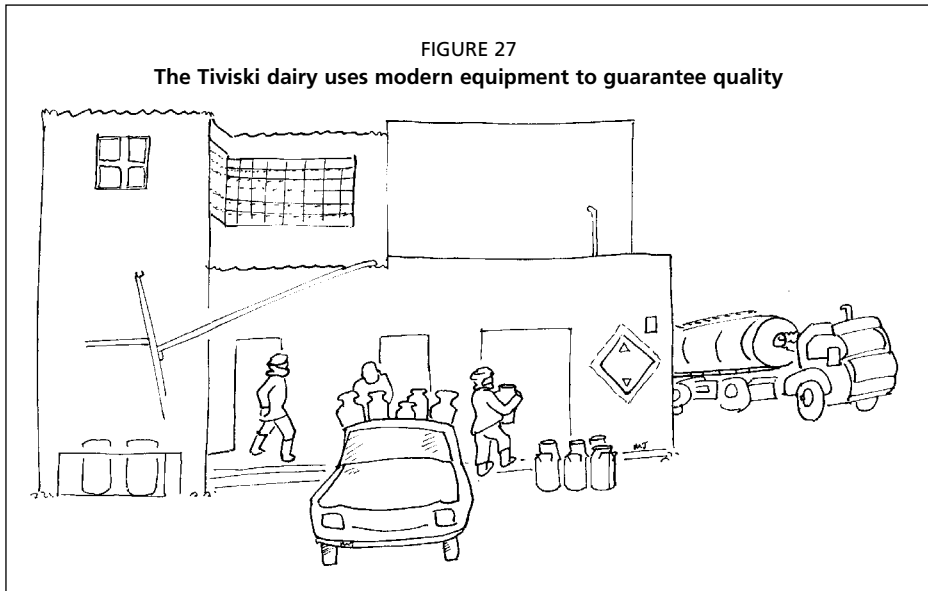
Collection centres. The herders are scattered over two areas roughly 90 x 90 km around two collection centres, located in the towns of Rosso (200 km from the dairy plant in Nouakchott), and Bogue, (320 km away). At the centre, staff check each can and reject it if the milk is acid, watered or visibly dirty. They then write out a voucher for each supplier, and either send it to the producer or keep it for him or her to collect at the centre. This voucher has a monetary value: suppliers can even use it to buy goods at local shops; the shopkeepers in turn can cash in the vouchers at the dairy.

Staff at the collection centres scrub the milk cans (around 1 000 cans, twice a day) before they are returned to the producers to be refilled with the next milking. The milk is filtered, chilled and stored in cooling tanks. At night, when it is cooler, insulated tanker trucks haul the chilled bulk milk to Nouakchott.

Dairy. The plant is a modern operation that can handle 30 000 litres of milk a day, though production is normally 12 000 to 18 000 litres (4 380–6 500 tonnes/year) and varies substantially with seasons and the overall economic situation. It uses modern, stainless-steel equipment and applies stringent quality controls to ensure consistent high quality.

The dairy processes the milk into about 20 different dairy products, including pasteurised milk, UHT (ultra-high temperature, sterilized) milk, sour milk, flavoured milk, cream, butter, yoghurt, cheese and ice cream, all packaged in attractive cartons or tubs. Cow milk accounts for the bulk of production and is made into the most products. Camel milk is made only into fresh pasteurized milk and cheese. The market decides on what can be produced: sour camel milk did not sell well, and was discontinued.

Retailers. Tiviski has 12 vehicles that deliver its products direct to 2 000 retail outlets (corner shops, wholesalers, groceries, supermarkets and hotels) in Nouakchott, as well as to other towns. UHT milk is sold all over the country, and even in neighbouring countries.



Tiviski attempts to keep retail prices as affordable as possible. Retailers are allowed 10% margin on all fresh products, and the company takes back unsold products to reduce retailers' risk. The strategy adopted is to have the best-quality product and to visit shops regularly so that the products are sold (or returned) before they go off.

ESTABLISHING A DAIRY

It was not always like this. Until 1989, Mauritania had no industrial-scale dairy outlet for local milk. There was not even any fresh pasteurized milk in the country. City-dwellers could buy imported sterilized or powdered milk, or they could keep their own animals. Two dairy plants (now closed) imported powdered milk and produced UHT milk and yoghurt.

During the 1980s, small dairy herds appeared around the main towns, selling raw milk. Camel milk was the first to be sold this way, at a very high price compared to imported sterilized cow milk.

Although camel milk may seem exotic, people from the north of the country prefer it (southerners prefer cow milk). However, according to a *hadith* (a tradition associated with the Prophet Muhammad), camels and their products are generally regarded as superior to others.

Nancy Abeiderrahmane decided to establish a dairy for three reasons:

- It seemed a good business – and development – idea to tap the country's unused milk potential, bridging the gap between remote producers and former pastoralists who had moved into the cities and were deprived of fresh milk, their staple food.
- She preferred pasteurized (vs. sterilized) milk.
- Along with many Mauritaniens, she liked the taste of camel milk.

The idea was to collect milk from producers (based on the belief that every part of the value chain should concentrate on its own task, do it well, and live from it) and sell it in the city as modern dairy products. However, this had not been done before in West Africa.



Technically, for milk to reach urban consumers in significant quantities, it must be packaged and able to last a few days. That means it has to be pasteurized (heated to above 70°C).

The original plant was a mini-dairy, designed to handle 600 litres/hour, and supposed to break even at 1 000 litres/day. The equipment was basic but state-of-the-art and all stainless steel, with continuous pasteurisation.

The initial investment was 1.5 million French francs (\$240 000), including a FF 1 million loan, from the Agence Française de Développement (French Development Agency), at 9% interest. This sum was used to buy a plot of land, build the plant, and buy the basic equipment and the first packaging. Optimistic planning, some contingencies such as a change of government policy and an unexpectedly costly power connection, and a lack of business experience led to a severe cash shortage for 5 years.

A border conflict with Senegal that began in 1989 forced Mauritanian refugees to return to their home country, bringing their cattle with them. That is how raw cow milk appeared in Nouakchott. Tiviski started processing some of this milk, and followed this with many more products based on cow milk. Nowadays 70% of Tiviski's output uses cow milk, 20% uses camel milk, and 10% goat milk.

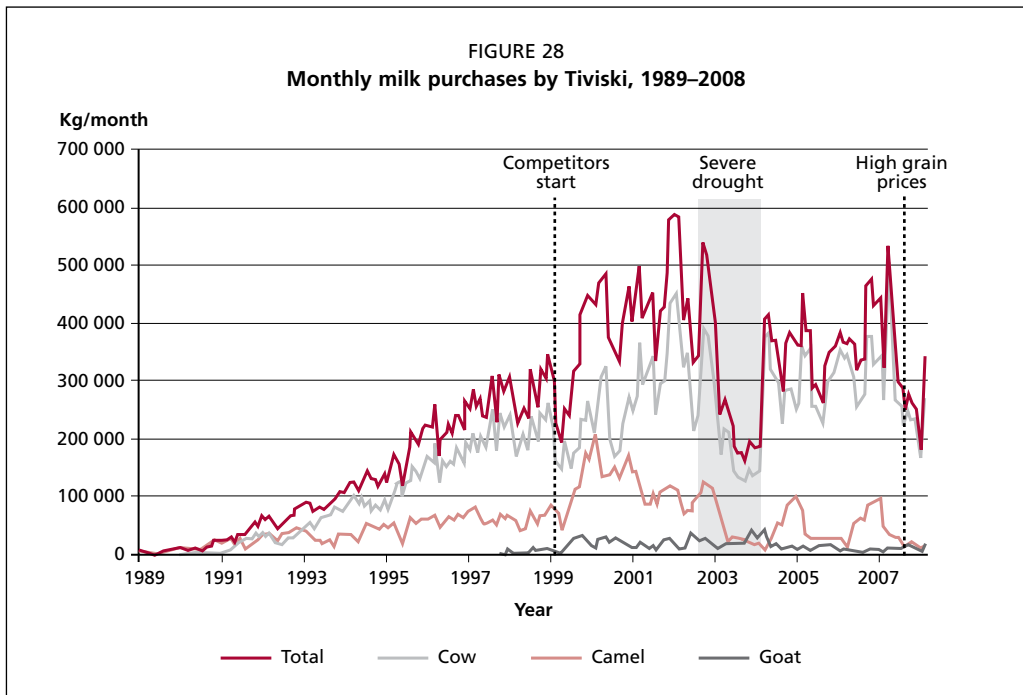
GROWING PROBLEMS

The first 5 years were very difficult. The most important problems faced by the young dairy were as follows.

- Although the original intention was to sell camel milk as an affordable product, the attempt to mobilize dedicated milk producers with contracts and fixed, reasonable prices failed. As a result Tiviski had to pay very high prices for raw milk, imposed by costly peri-urban production, the desert conditions, and consumers who were willing to pay higher prices for raw milk than for a pasteurized product.
- There is a deeply ingrained traditional prejudice against selling milk: doing so is seen as miserly and undignified. That made it very difficult to buy milk, especially after the first couple of years, when sales started to pick up. Tiviski had recognized this problem early on, but had underestimated its severity. To this day, social pressure is stronger than the perceived economic benefit, and only a fraction of the potential milk is delivered. Only people with no "honour" to lose were willing to sell milk to Tiviski, and these are not the most educated producers.
- Consumers assumed that anything made locally was automatically bad. This initial major hurdle has now been successfully overcome.

After a few years, sales improved, and so did the milk supply. As a result the company recorded steady growth. Figure 28 reflects some of the difficulties encountered, including seasonal fluctuations, droughts, competition, and global crises.

- The first substantial drop was caused by the onset of local competition in 1999, but the biggest challenge followed a severe drought that began in 2002. The food price crisis in 2007 also took its toll.
- Seasonal and annual variations, both in production and consumption, have always been a problem. Camel milk production dropped dramatically after 2002, though it has peaked every 2 years since. Production also varies seasonally, with a low period between September and November.



By 2000, business was good, but these seasonal variations called for a solution: the dairy needed a product with a longer shelf-life. Tiviski decided to set up an UHT plant for cow milk. Because it is sterilized, UHT milk can be stored unopened for a long time without refrigeration.

AIMING FOR THE NICHE

From a global perspective, packaged camel milk certainly is a niche product: it is rare, it tastes good, and scientific research is increasingly vindicating what camel breeders have known all along: that camel milk has many beneficial properties for humans.

So there is a big potential market for camel milk in the West. But Tiviski has not been able to take advantage of this, for several reasons:

- Fresh milk is highly perishable, and camels are always in remote areas, far from the main markets in Mauritania's cities, and even further from affluent Western markets that would be willing to pay more. Fresh milk has to be sold within 8 days after leaving the dairy. That requires a ready-developed distribution and marketing system; otherwise, the risk and losses are too high.
- Fresh milk is a relatively low value-per-weight product. The already relatively high price of camel milk would be more than doubled by the cost of airfreight, cold storage, middlemen, etc, so nobody was willing to try selling it in an untried market.
- Tiviski hoped that it would be possible to make UHT camel milk, so extending the shelf life and avoiding the need to keep the product chilled. But tests in the new UHT unit showed that camel milk cannot tolerate being heated above 100°C, as required for the UHT process.



Owing to all these problems, camel milk can only be sold on the local market, where it is viewed as a staple food, not a niche product, and has always had to compete with imported sterilized cow milk from all over the world. Therefore it has not benefited from any “niche”-based privilege.

However, Tiviski has not given up the hope of marketing camel milk in Europe. Research is continuing, and Tiviski hopes that one day it will be possible to make UHT camel milk.

CHECKING FOR CHEESE

Cheese made from camel milk is another possibility. In 1993–4, with help from FAO, Tiviski learned how to make the world’s first camel-milk cheese. This product was aimed at the European market, as Mauritians do not like or eat cheese, especially not the Camembert-flavoured soft cheese that results from camel milk. Neighbouring countries do not want products from camel milk. In Europe, it would be possible to position camel cheese as a rare, specialty product that would attract a high price, so covering the airfreight and marketing costs.

Unfortunately, while Tiviski was developing camel cheese, the European Union introduced regulations that excluded all Mauritanian animal products, including camel milk. Lengthy discussions have overcome some hurdles, but Mauritanian camel milk and cheese are not yet allowed into Europe.

The output of delicious (to European tastes) and unique camel cheese has hovered around 80 kg a month for the last 8 years, whereas the German market alone could have absorbed tonnes of it every week.

In 2008, an attempt to export to the USA failed because soaring global grain prices virtually halted the production of camel milk as herders trekked their animals to Senegal, where they could find pasture. Milk supplies have resumed recently, but in very small amounts.

DESIGN CHOICES

Quite a lot of thought went into the initial basic design of Tiviski. Some decisions were open-ended; others were imposed by circumstances. The main choices made were:

- Collecting **fresh milk** from livestock owners instead of using imported powdered milk.
- Making **high-quality products**, by processing the milk in a state-of-the-art dairy, albeit a small one instead of using low-tech approaches.
- Packaging milk in attractive gable-top **cartons** instead of cheap plastic pouches.
- Selling through existing **corner shops**, which all have refrigerators, instead of indirectly through middlemen or in specialized shops.

From the beginning, the whole operation seems to have strayed quite consistently from “expert wisdom”. Some examples include:

- For African markets, experts recommend low-tech/low-price products. This usually results in low-quality products in unattractive packaging.
- Experts claim that African milk is not profitable because of low milk yields from the animals. They recommend importing high-yielding breeds, regardless of the environment.

- The experts also say that African milk is too contaminated for industrial processing.

Tiviski has disproved these claims. There is certainly a market for low-quality products, but everyone likes higher quality, and if the raw material is expensive, it is wise to target higher market segments. Tiviski has found ways to collect milk from hundreds of individual small-scale producers. And in terms of quality, although it is not possible to attain present-day Western bacterial counts, Tiviski has proved that local farmers are able to supply milk within reasonable hygienic levels, comparable to those in Europe 30 or 40 years ago.

SERVICES TO SUPPLIERS

Buying milk directly from each supplier, with no intermediate trader, is the key to controlling raw milk quality. Tiviski pays the same price for all kinds of milk, at all times of year, to avoid renegotiating prices each season.

Every day, the lorries take a list of how much milk each producer has delivered to Nouakchott. There they are inputted into custom-designed software. From that moment, the producers can get paid whenever they want. To get paid, the producer hands over his or her delivery slips, and the computer checks the amount due, subtracting any loan reimbursements (see below). Although it would be more practical if payments were spread out, most producers want to be paid at the beginning of the month, putting stress on staff and cash flow. Such a system is possible only because it is computerized: the very large number of suppliers and customers generate a considerable volume of data to be processed each day.

The dairy provides the milk producers with various services, including supplying feed concentrate, milk cans and veterinary care (all on credit), as well as providing training in hygienic milking, advice on feeding, and cash loans. A Tiviski liaison officer maintains communication with the herders and develops such services. The producers are organized into groups, which are responsible for ensuring that loans to their members are repaid. If a member fails to repay a loan, Tiviski deducts what is owed from the group members' milk accounts. Social pressure and solidarity ensure that defaults are rare.

INVESTMENT

In the 19 years since its founding, Tiviski has invested a cumulative total of \$5.4 million in its operation and has made a cumulative profit of about \$5 million, or a return on capital of about 7.7% a year (though fluctuating exchange rates make such calculations rather uncertain). All the profit has been re-invested: although it is a limited partnership, Tiviski has never distributed any dividends.

The years 2000 and 2001 showed such a fine profit that a major investment decision was made: the UHT plant. Tiviski had to borrow a large amount to pay for this costly plant, but competition from milk importers meant it failed to increase revenue significantly. In 2008 this situation started to improve slowly, owing to various unrelated external market factors.

Tiviski is entirely self-sustaining. Revenue must not only cover costs, but leave enough profit to allow for expansion, equipment replacement, etc. Tiviski has bought much of its equipment second-hand, putting heavy demands on the technicians' very African genius to keep them running.



CHALLENGES

Tiviski's history has not been easy, and challenges have evolved over the years. Some have been overcome, others have subsided, and others still remain.

- **Milk collection.** Collecting milk is a commonplace notion, but it was not done yet in West Africa, and it is made more difficult by the fact that the herders move around. The physical difficulty of collecting milk was compounded by the deeply ingrained traditional prejudice against selling milk.
- **Seasonal supply and demand.** Milk production is seasonal everywhere, but in the Sahel seasonal fluctuations are extreme. There is always too much milk, or not enough. Plus, consumption also varies widely, but always in the opposite direction. This translates into recurring seasonal dissatisfaction, either among suppliers or among customers. The UHT milk plant was built to solve this problem.
- **Skilled labour.** The lack of skilled workers and vocational training in the country are a major hindrance for an industrial plant.
- **Input procurement.** Procuring packaging, spare parts, cleaning products and so on, is much more complicated and expensive than in developed countries. Access to foreign currency was a headache for many years.
- **Consumer awareness.** Consumers do not know about microbes, they do not understand what pasteurization and sterilization mean, and they do not know the difference between butter and margarine. Well-off urbanites are willing to pay more than \$2.00 for a litre of raw camel milk, but not for pasteurized camel milk, thus distorting suppliers' perception of what is a reasonable price.
- **Advertising.** Although Tiviski has made many efforts to advertise, it faces four main hurdles: the cost of advertising, a lack of suitable media, the lack of local skills to produce commercials, and the widespread belief that advertising reflects insufficient sales. Mauritians read little, so most never see advertisements in newspapers or magazines, and they do not actively read posters or packaging. Television is expensive, and viewers tend to watch foreign channels and zap the commercials. As a result, even when Tiviski has run adverts, there has been no detectable impact on sales.

Producers also face major challenges:

- **Physical environment.** The Sahelian environment is a challenge in itself: recurrent drought, irregular rainfall and extreme temperatures are not ideal for dairying.
- **Policy.** There is a total lack of government policy, interest, help or encouragement. There are few roads, no veterinary care, no support, no extension work, no education, and no assistance with technical know-how.
- **Fodder.** The rising price of fodder and the absence of local production (except for some concentrate made from imported raw materials) have discouraged many producers.

COMPETITION

At first, competition came only from sterilized milk imported from Europe. Tiviski's pasteurized milk was sold at higher prices than this imported milk until 1999, when higher production made it possible to squeeze Tiviski's price into the same bracket. Although the

dairy's fresh milk sales rose every time the imported milk was scarce, Tiviski's fresh milk did occupy its own market share.

However, in 1997, local competition started.

- A powerful businessman diversified from cement bagging, commerce and banking to start an identical operation, taking half of Tiviski's suppliers without seeking new ones.
- A banker imported Holstein cows, together with French staff and fodder, and aggressively marketed raw (non-pasteurized) milk in cartons. This enterprise failed after 2 years for two reasons: (a) the expensive cattle were not used to local conditions, so gave low yields of 10 litres a day; and (b) raw milk has a very short shelf life.
- This banker then sold the cows and equipment to a local entrepreneur, who sold raw Holstein milk in buckets and made cultured milk from powder. He recently started collecting milk of local breeds and selling it in cartons.
- More recently, an existing unit has also begun collecting fresh milk, pasteurizing it and selling it in cartons.

Three competitors in a very small market makes things difficult. Tiviski's peak production (a rare occurrence) is about 20 000 litres a day, but it can stagnate below 10 000 litres a day for months on end – way below any reasonable break-even point. Competitors operate on even smaller quantities, and yet the myth is that “the market is unlimited”.

The size of the market depends on how much people can spend. If the economy improves, sales increase, but conversely every crisis reduces sales.

THE VALUE CHAIN

Before Tiviski started operating, fresh milk was practically not marketed at all in Mauritania, except for a few thousand litres sold raw by herders who lived near the cities direct to consumers or to small-scale milk retailers (Figure 29). Most fresh milk was consumed by families who owned animals.

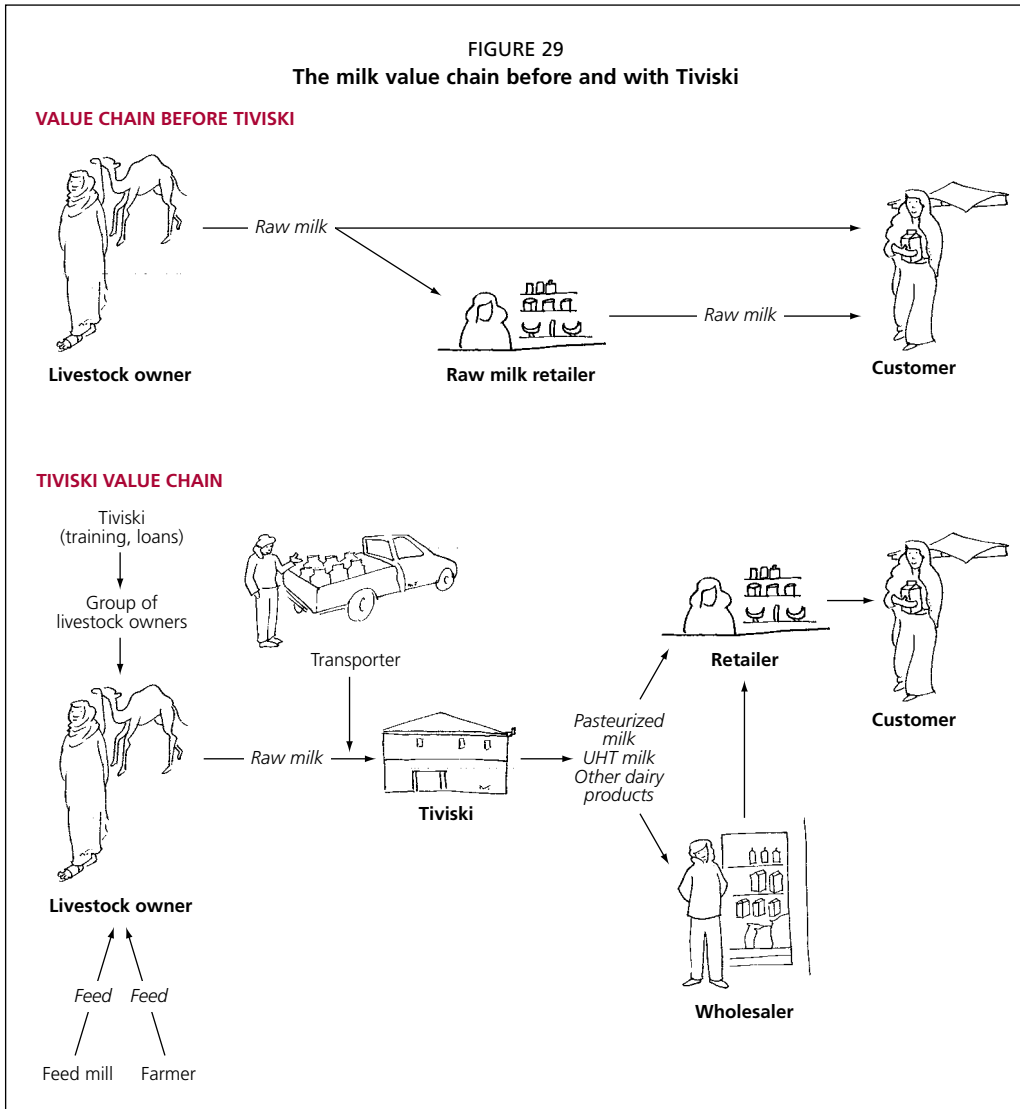
Now milk production and related enterprises are a significant economic activity in the supplying regions. The value chain extends upwards to animal feed suppliers, and down to consumers, including collectors, the processing plant and retailers.

THE POLICY ENVIRONMENT

The policy environment has been neutral or negative. The Mauritanian government has shown no interest in the industry and has not tried to protect it from cheap foreign imports. European Union regulations have prevented camel cheese from being exported to the nearest affluent, cheese-eating market.

RETURNS FOR PRODUCERS

Tiviski has to align its selling price as far as possible with foreign prices in order to compete with imported milk, so is squeezed between the high prices it has to pay for raw milk, and low prices for the milk it sells. The raw milk purchase price in Mauritania has always been extremely high by world standards: it was \$0.50 when it was \$0.32 in Europe and \$0.22 in New Zealand. Tiviski pays the herders around \$0.70 per litre of milk. The retail price of a litre carton of pasteurized milk is around \$1.50.



The price Tiviski pays producers depends on the need to keep producers in business, but also on the market. For example, in 2008, Tiviski raised the price it paid producers (as well as its retail price). But soaring fodder prices forced herders to take their animals into Senegal, leading to a sharp drop in production. Tiviski could not afford to raise retail prices further, and the camels were not yielding enough milk to pay for their feed.

In the dairy's 20 years' work, herders have practically never had to ask for a price rise, as the company has always forestalled their need. If times get difficult, meetings are held, difficulties are explained, undertakings are made. Tiviski's competitors seem to suffer more pressure from their suppliers. Mobile telephones have made communication even more direct, and frequent field visits by the dairy's liaison officer provide a day-to-day awareness of the producers' state of mind.

PRODUCER TRAINING

Tiviski has invested heavily in training the producers how to supply milk in a way a modern dairy plant needs: hygienically and on time. In 2001, a specialized unit was set up to provide training, veterinary care and fodder on credit.

In the long run, it appears that non-material incentives do not work. Suppliers now know all about hygienic milking, but may not take the trouble to do so as a matter of routine.

Historically – in other countries – material incentives usually consist of higher prices for better-quality milk. But such incentives are not necessarily applicable in the Mauritanian context. It was tried but later dropped for several reasons:

- The base price of milk was already so high that any increase could only be a small percentage of the price, so not worth the effort.
- The herd owners do not pass on the bonus to their employees who milk the animals by hand – so they have no incentive to improve hygiene.

In practice, the incentive goes mainly to larger suppliers for a variety of practical reasons. For example, lab tests to check the milk quality are costly, but they are impossible to apply to 1 000 producers who each supply tiny amounts.

No amount of persuasion can make delivery vehicles arrive early: herders take their time milking, and the vehicle owners also run many other errands for their customers, so they arrive as late as possible.

As a result, a sort of passive control system has proven effective and feasible: the milk is tasted and rejected if it is unsatisfactory. Tiviski staff are trained to detect acidity or watering in milk, and to tell the difference between camel, cow and goat milk. Problems can arise if competitors do not have such controls, but in the long run producers accept the correlation between proper milking procedures and milk acceptability.

Milk should be cooled as soon as possible after milking to maintain quality. The gates of the collecting centres are locked at 10:00 or 10:15 each morning and evening. But unfortunately all the vehicles arrive at the same time, in the last 10 minutes. That means a considerable wait before the milk can be cooled, but no amount of arguing or planning has yet convinced the drivers to space their arrivals so that every vehicle can be unloaded quickly.

Clean milk cans are also vital. Tiviski imports aluminium alloy milk cans from India and sells them at cost price, on credit, to the herders. The cans are scrubbed and disinfected by Tiviski staff at the collecting centres.

On the whole, milk quality is remarkably good compared to other similar settings, to the extent that it can be treated in an UHT plant, against all “expert” statements that this cannot be done with African milk.

ORGANIZING PRODUCERS

Tiviski has repeatedly encouraged producers to form some type of organization. This would help both the producers and the dairy: it would help practical coordination, and dairy cooperatives have worked well in Western countries. Plus, foreign donors do not offer aid to private companies, but many institutions would be ready to assist a herders’ organization. Indeed, Mauritania has hundreds of more-or-less fictitious organizations to harvest such aid.



But Tiviski's efforts to get the herders organized have met with little success. The main reason for this failure seems to be their pastoral, mobile lifestyle, which makes it extremely difficult for them to organize. "Mauritanians can only organize against someone," says one herder. Each time an organization was set up, it first concentrated the herders' frustrations against Tiviski – not for consistent or specific motives such as milk price, but essentially because Tiviski is their only interface with the outside world. Time will show herders that things can be done more profitably together.

One example of a positive trend appeared in the milk collection system. Most of the collection vehicles belong to private operators (some are themselves milk suppliers who also pick up the milk of relatives). The producers pay the vehicle owner at the end of the month. In several cases, Tiviski had to rent vehicles to collect milk from areas where transport was either not profitable or complicated because many unrelated smallholders were scattered over long distances. The dairy charged these suppliers for this service on a quantity/distance basis. Gradually, the suppliers involved were prompted first to choose a cheaper vehicle, then to rent it themselves, and finally to buy their own vehicle as a group. This type of process will eventually lead to practical organizations that are able to improve the herders' efficiency.

Pastoralist herders live and think on a day-to-day basis, and do not make financial calculations on an annual basis. Although for roughly half of the year they have practically no expenses, when they have to buy fodder in the remaining 6 months they compare their daily income and expenditure, and complain loudly. They do not calculate the returns from the herd growth rate, or the different values of a healthy cow or camel compared to a skinny one – or a dead one. They have a wealth of ancestral knowledge, but much of this no longer applies now since they shifted from being nomadic to semi-nomadic.

THE IMPACT OF A SMALL DAIRY

Although on a global scale Tiviski is a very small dairy, it has established itself as the undisputed leader in the local market and has gained the confidence of consumers, mainly thanks to its consistent focus on quality.

- **Jobs.** Tiviski now has some 230 staff (all local), who work in two shifts. It has directly and indirectly created about 3 000 jobs for livestock owners, their employees, milk transporters, fodder suppliers and so on – a significant number in a country of only 3 million people. The livestock are fed with agricultural by-products, helping to develop farming.
- **Local economy.** In the milk-producing areas, suppliers use their milk-delivery slips to pay for goods at local shops. The milk vouchers are almost used as a local currency: at the end of the month, many shop keepers or fodder suppliers bring in milk vouchers to convert to cash.
- **Producers.** Over the years, the producers have increased their herd sizes, and fewer animals fall ill or die. The herders now have a regular monetary income (without having to sell stock), which they use to feed and look after their herds, and to improve their standard of living. The livestock are safeguarded against drought: in the dry season, the producers supply more milk to the dairy so they can buy fodder; in tough years, the revenue from milk feeds the whole herd, not only the females and calves.

- **Consumers.** Fresh milk is good for city-dwellers: pasteurized milk has fewer germs than raw milk and more vitamins than imported sterilized milk.
- **Foreign exchange.** Producing milk locally instead of importing it saves foreign currency at a national level.
- **International recognition.** Tiviski has become known throughout the world for its work in developing a local dairy and promoting camel milk. In 1993, Tiviski's founder Nancy Abeiderrahmane received a prestigious Rolex Award for Enterprise in recognition of her work.

MORE INFORMATION

Tiviski: www.tiviski.com



The golden Udder: Marketing milk from camels in Puntland, Somalia

Michele Nori

WIIL IYO CAANO!

“Sons and milk” are what Somalis wish someone they have not seen for some time. And when parting for a long period, they wish each other “*nabad iyo caano*”, or “peace and milk”.

Milk is important in Somali culture. Much comes from dromedaries, of which Somalia has more than 6 million – almost half the world’s total. They are raised almost exclusively for their milk, and camel milk is staple food for much of the country’s human population.

Like in some other areas of the Horn of Africa, buying and selling camel milk used to be taboo: Somali families drank the milk from their own camels, or gave it to friends and relatives. But the growth of cities has created a strong demand for milk among urban residents who have no camels of their own. In Puntland in northeastern Somalia, an elaborate system of trading the milk has emerged since the early 1990s. An interesting feature of this system is that milk and its marketing are managed mainly by women, even though men own the camels and are responsible for managing, milking and selling them.

The information in this chapter is drawn largely from a food security programme run by UNA (a consortium of Italian NGOs) and the Milking Drylands research initiative, both funded by the European Commission and implemented in 2001–7.

CAMELS IN SOMALIA

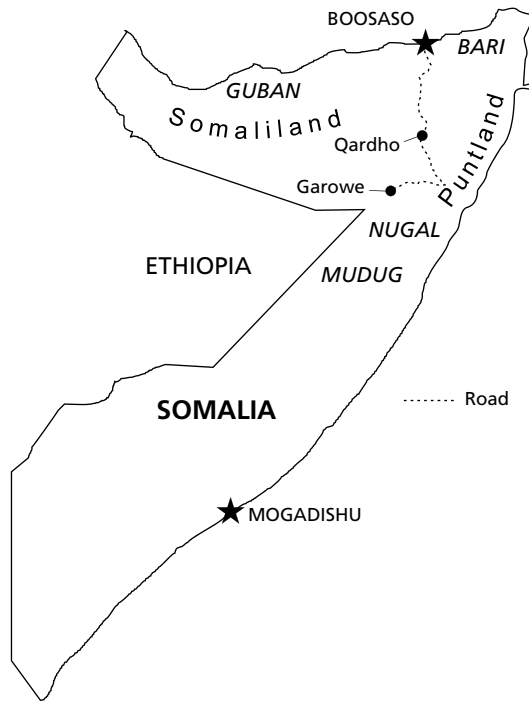
Pastoralism is the traditional backbone of the Somali economy. About 70% of the population are pastoralists, with camel herding prevalent in the north, cattle more common in the south, and large herds of sheep and goats all over the country.

Camels are ideal milk producers in the drylands of Puntland. They can go without water for long periods. They browse in loose groups, moving slowly through an area to feed on grasses and tree leaves. The browse is sparse, forcing the herd to be continually on the move.

Even in very dry conditions, camels produce milk continuously for 18 months before production drops. Fresh camel milk keeps better in hot weather than milk from other animals. Without refrigeration, it becomes slightly sour (forming a product known as *suusaac*) or very sour (*karuur*). For home use, this fermented milk is kept in traditional containers, which are smoked to reduce the number of bacteria.

According to one UNA survey, the average camel herd in Puntland has some 72 animals. Overall milk production depends on various factors. The main one is the number of animals

FIGURE 30
Location of Boosaso



in milk: about a quarter are lactating at any one time, though this number can be much lower if a drought prevents females from getting pregnant. Or it can be higher: in 2006, when herds were recovering after a drought, about 60% of the animals were in milk. It takes at least 2 years for production to recover after a lengthy drought. Other important factors are the season, access to pasture, the condition of the pasture, the stage of lactation, the calving rate and the health of the mother and calf.

At birthing, a female gives an average of 3.5–4 litres per day, falling to about a litre during the long dry season. The calf needs about one-third of the milk, leaving the remainder for human consumption or sale. The number of milkings depends on the stage of lactation and the season: the animals may be milked twice or even three times a day during the wet season, or just once during the morning at the peak of the dry season. A lactating camel gives milk only in presence of her calf. If this has died or been culled, the herders keep its skin to show to the mother to stimulate milk letdown.

There are three main breeds of camel: the Coastal or Bari, the Guban from the mountain plateau, and the Hawd from the Nugal and Mudug regions and nearby parts of Ethiopia (Figure 30).



MEN'S CAMELS, WOMEN'S MILK

Patchy, unpredictable rain makes pastoralist life a risky business. If rain falls on the other side of the valley, a herder family needs to be able to bring its animals there so they can graze, even if that area is controlled by another family or group. A complex set of social mechanisms, managed by the elders, governs who can use what resources at which time.

The Somali clan system is a traditional organizational structure that binds together people who are related. It runs through the male line: people are members of their father's and grandfather's clan. But men normally marry women from outside their clan, creating ties and alliances that cut across clans. Such cross-ties are important to allow people from one clan to use resources controlled by another.

In such a system, men are strongly attached to their clan, while women have a more ambiguous status: they are the natural interface between two groups, as a woman's father and brothers will belong to one clan, while her husband and sons to another. This dual status lets them move freely and means they are often involved in negotiations and managing conflicts between groups.

It is the men who are responsible for managing and milking the camels, which represent the family's wealth and prestige, and are its most reliable insurance against drought. But the ownership of camels is attached to the clan structure: they are considered a corporate asset of the clan. So if a man wants to sell a camel, he has to consult other men in the clan.

Women look after the house, care for children, and manage and milk the family's herd of sheep and goats. These small livestock are secondary assets: they can be sold if the family needs cash quickly. They are not seen as clan assets: a family can decide to sell a sheep or goat without consulting the clan.

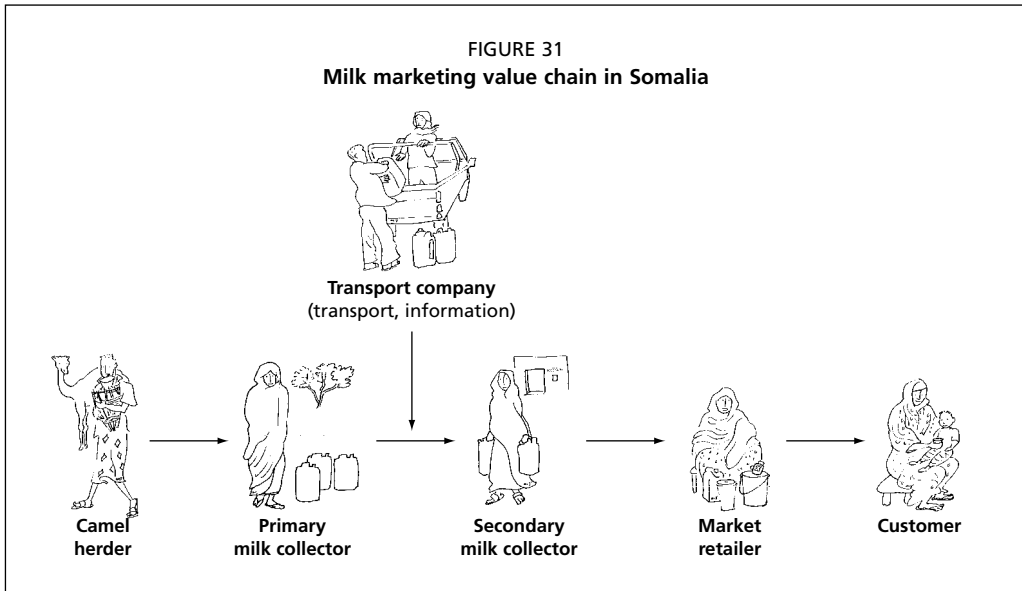
Marketing tasks are divided among men and women: the men sell livestock, while women are mainly responsible for selling milk. Men milk the camels, so decide how much milk goes for the calf and how much is left for family use. This is an important role, as it decides how much milk is used to reproduce the herd, and how much to maintain the household. But once the milk is extracted from the animal, the women take charge of it. They decide how much to give to children, how much to use for other needs, and recently, how much to sell.

MARKETING MILK

The civil strife that began in 1991 in Somalia has had little direct impact in the northeastern region, but has led to a massive increase in urban populations there as people have fled the conflict-torn south. Some women organized small but effective networks to collect, transport and sell milk to the cities in Puntland. Two things have helped them: the construction of a major tarmac road that cuts through the region, and the lack of a central government to control and tax them.

Little by little, the marketing of camel milk has expanded. Nowadays hundreds of litres of milk are traded every day from production areas inland to markets in cities over 100 km away.

The value chain involves five sets of actors, from the producers to the retailers who sell to consumers (Figure 31).



The herders milk the animals and store it in traditional containers, known as *haruub*, which are treated daily with charcoal to keep them hygienic. This practice gives a typically smoky taste to the milk. The herders walk an average of nearly 9 km each day to bring their morning milk to the primary collectors. They carry it in plastic jerry cans that originally held food oil.

The primary milk collectors (known as *kaameley* in Somali) are women in mobile camps who follow the herders as they migrate. They pour the milk into their own jerry cans, which they keep clean somehow with special stones and very small amounts of water, which is scarce in the bush. Most require their trading partners in the towns to clean the jerry cans before sending them back to them.

As a rule of thumb, each primary collector serves some 8–20 herding households, though in a good season one collector may serve up to 40 herders. Collectors have various types of ties with the herders they serve: the mobility of the herds and the collectors forces these ties to be loose and flexible.

The primary collectors exchange the milk for cash, basic staples or other items, so they earn not only from their mark-up on the milk, but also by selling goods. They order these goods from their trading partners in town, or direct from wholesalers. They also provide credit to the herders if needed, for example during a lengthy dry season or period of economic hardship. This petty trade and the capacity to buffer their clients' short-term financial difficulties is a vital livelihood support for many pastoralist households.

Transport companies are hired by women collectors to carry milk, related information and goods between rural and urban areas. Their Toyota pick-ups bring milk from the production areas to the urban markets, and carry commodities from urban stores and markets to rural communities. At least six companies operate from the town of Qardho, about 200 km south of Boosaso, the Puntland capital. During good rainy seasons, the numbers increase.

FIGURE 32
Market retailers buy milk from the secondary collectors to sell to consumers



The companies, which are run by men, typically have at least three vehicles, and each driver stays overnight in the bush for one or two nights. Each driver drives around different collection sites according to routes negotiated with the primary collectors, delivering water and goods and collecting milk. Each car serves 10–12 primary collectors. All three drivers meet at an agreed place and load their milk onto one of the pickups, which then heads to town. Bringing the milk from the herder to the market can take 9–10 hours or more.

The drivers are vital to ensure that the milk arrives on time and in good condition. With no refrigeration available, they have to drive fast over rough terrain to make sure the milk does not spoil in the heat. While partially fermented milk can still be consumed, it fetches a lower price.

Secondary milk collectors (*aanooley* in Somali) are based in markets in the towns of Qardho, Garowe and Boosaso. They receive the milk sent each day and sell it directly or distribute it to market retailers. The next day they send the empty jerry cans and a share of the money back to the primary collectors through the same route. Sometimes they also supply imported commodities to their primary collector partners. An average of 2.35 primary collectors supply milk to each secondary collector.

Market retailers take the milk from the secondary collectors and sell it to consumers in the market. They add their own mark-up to the price, and pay the secondary collectors at the end of each day.

RELATIONSHIPS IN THE CHAIN

Besides delivering milk, containers and money, the transport companies enable a continuous circulation of people and news about rain, pasture conditions, animal health, market prices and events. A majority of the drivers belong to the Midgaan, a minority group in the area.

If the transport companies are the lifeblood of the system, the women collectors' networks are its backbone. These networks hinge on the personal relations between the primary and the secondary milk collectors. These partnerships are fairly stable: they do not change from one season to another. The women are not necessarily related by blood or marriage; instead they talk about "friendship" or "business", and there are cases where "we only know each others' names though we don't know the faces". Family ties are often important for newcomers to the business, when sisters often form a partnership as primary and secondary collectors. But such ties become less important in the longer term.

Many women who head households are involved in milk marketing: in a survey, about 44% of the women said they were from such households, compared to an average of 35% for the region as a whole. On top of that, another 11% of secondary collectors said their husbands were out of work. This underlines the importance of the milk trade to vulnerable households.

In 2006 the **primary milk collectors** paid an average of 5 000 Somali shillings for a *galaan* (about \$0.20 for 0.75 litres) of milk. Prices may fall to a low of 4 000 shillings per *galaan* in the wet seasons (April–June and October–November) when camels produce more milk, rising as high as 7 000 shillings in the dry seasons. Other factors affecting price include transport problems and insecurity.

Transport costs about 1 200 shillings per *galaan*, though prices may vary markedly depending on distances and road conditions – which are highly related to seasonality.

The **secondary collectors** typically charge a standard rate of 600 to 1 000 shillings per *galaan*. The final retail price averages 7 200 shillings, varying from 6 500 shillings in the wet season to 11 000 in the dry.

IMPROVING THE SYSTEM?

This remarkable marketing system developed without any external support. But can it be improved? External interventions have been limited to a project by UNA, a consortium of Italian NGOs, through a project funded by the European Commission. This tried to contribute to improving milk quality in local markets. Its small-scale, low-budget community-based investments have shown a degree of success. For example, the project provided aluminium containers through a revolving fund to improve milk hygiene, strengthened local capacities of involved stakeholders, and built basic market facilities in Qardho where milk could be stored and sold in improved conditions.

But the project's effort to establish a big processing plant to prolong the shelf life of camel milk by pasteurizing and packaging it has faced a number of technological and institutional constraints. Notably, the ownership and control of such big investment, which came from external funding, created a number of problems, which have eventually made it of little relevance to local people. Nowadays it works during some seasons and shuts down or converts to packaging juice in others. Its main failure lies in its inability to establish links and obtain milk from the existing networks of women.

Other interventions, mainly by international NGOs, address animal health in the area. This is indeed a critical matter affecting milk production and the pastoral economy.



SUSTAINABILITY MATTERS

Marginal lands, an erratic and drought-prone climate, a scattered and very mobile population, no central government, widespread insecurity, minimal infrastructure and non-existent public services: these are not very promising conditions for sustainable development. Despite these factors, Somali pastoral society has developed a sustainable and expanding system for marketing milk, one that supplies the cities with a basic food, and supports the livelihoods of many people in both rural and urban areas.

Food security

For the herders, selling sheep and goats is a major income source. But animal sales follow seasonal patterns, and are disrupted by Arab countries' bans on livestock imports from Somalia. For many herders, the daily income from milk marketing is a vital complement to livestock sales, as well as enabling them to buy staple foods and other items. It also enables them to cope better with hazards such as drought, epidemics and conflict, due to the credit system that is attached to milk marketing. By exchanging milk for grain, the women can better feed their families. Milk marketing also serves the nutritional needs of urban residents, who are in dire need of animal proteins.

Milk sales are normally related to the need to earn money; when milk prices are low, many herders stop selling their milk and consume it themselves instead. That explains why in the dry season, 30% of the milk produced is sold, while in the rainy season, when more milk is available, only 27% is sold. It also explains why poorer households market a greater share of their milk: they are in more need of money. Exchanging milk for cereals is a good strategy in caloric terms; milk is rich in protein but low in calories: one kilogram of camel milk has only about 700 calories, while a kilo of rice or wheat has about 3 300–3 500 calories. Changes in terms of trade between these two products are critical, but are generally favourable to herders.

Environment

From an environmental perspective, the milk marketing system stimulates rather than constrains livestock mobility, which is vital to allow the natural vegetation to recover. The producers' herds are not tied to one location, but move in search of forage and water. The primary collectors follow them. In the long dry season, many camel herds are to be found along the eastern coast, far away from the main towns. Milk marketing remunerates productivity, and thus provides incentives to herd mobility.

A new pattern of herd management seems to have emerged. Previously, young herders would take milking camels far away from the hut, leaving flocks of sheep and goats to graze nearby. Now, the lactating camels are being split into two groups: one sent to distant pastures, and the other kept near the hut to produce milk for sale. In addition, herders are increasingly using cement-lined reservoirs to water sheep and goats, so these animals are less likely to be herded as far as the coastal belt.

Gender

The marketing system is also sustainable because it builds on and reinforces the social capital of Somali pastoral society. The clan system governs resource access, camel management,

stock trading and other important aspects of Somali pastoralism. Men, with their strong clan affiliation, cannot easily buy and sell milk from other clans' camels without detailed negotiations between the clans involved. This does happen, but only to a limited extent. Both men and camels are embedded in clan-related mechanisms, so arrangements for milk trading have to be continuously renegotiated between the clan leaders of the different herds grazing in an area. This would imply very high transaction costs.

Women, on the other hand, face none of these problems. Their affiliation to the clan system is weak: they do not belong to a clan, so do not embody its interests. They cannot be seen as "competitors" by members of other clans. The only arrangements they have to undertake with local pastoralists are purely commercial: the purchase price, the form of payment, and options for credit. For them, transaction costs are minimal.

We can thus see a clear dualism between production and marketing. Men manage camels, but women sell the milk. Women manage sheep and goats, but men buy and sell them. These complementary roles share power and responsibility within the household and give the system a series of checks and balances that are critical to ensure its sustainability.

MORE INFORMATION

Nori, M., M.B. Kenyanjui, M.A. Yusuf and F.H. Mohammed. 2006. Milking drylands: The marketing of camel milk in North-East Somalia. *Nomadic Peoples* 10.1. www.mbali.info/doc231.htm

PART 4

Analysis





Analysis

Paul Mundy, Evelyn Mathias and writeshop participants

This book describes eight cases – three each from Asia and Africa, and two from Latin America – where people in marginal areas produced specialty products from local breeds and minor species (Bactrian camels, dromedaries, goats and sheep). The raw products include wool, cashmere, meat, hides and milk.

This analysis draws on the cases and intensive discussions with the authors and other writeshop participants. For convenience we refer to each case by its country and animal species (e.g., India sheep), and occasionally to the product (e.g., wool).

SITUATION BEFORE THE NICHE MARKETING INITIATIVE

Table 5 summarizes the locations, breeds and production systems in the eight cases. The cases represent a range of production systems, from sedentary (South Africa), through transhumant (Kyrgyzstan and Argentina goats), to nomadic pastoralist (Somalia, Mongolia, Mauritania). In all cases the animals are kept under extensive management and with few external inputs.

In all eight cases, the livestock keepers raised their animals mainly or partly for subsistence: they or their family and neighbours consumed much of the meat and milk produced by the animals, and they wove the wool into various handicrafts and garments for home use. Most also produced an unprocessed, low-value product (unsorted, unwashed fleeces, hides, live animals, milk) for sale. These items competed with similar, often superior products from other breeds (white Merino wool) or locations (cashmere from China, imported milk from Europe). None of the livestock-keeping groups had tried to exploit the specific characteristics of their breeds commercially. For this and other reasons, many of the breeds were in decline.

Many of the animals were multi-purpose: they also produced various other products and services – milk, tillage, dung and transport. In several cases, the animals in question were not the main source of income or livelihood for the livestock keepers. The Linca sheep breeders in Argentina, for example, also keep larger flocks of Merino sheep; Somali herders keep cattle and other species besides their camels; and farmers in South Africa grow crops and raise other livestock apart from goats.

















ENTERING NICHE MARKETS

Product first, or market first?

In business ventures, it is common to identify a market opportunity first, then develop the products to supply it. This was the approach used by Tiviski in Mauritania. It first identified a promising market – camel milk consumers in Nouakchott – and then established a value chain to serve this market. This involved building infrastructure, identifying milk suppliers, and creating the links between them.



TABLE 5
Summary of cases: locations, breeds, production systems and products

Country	Species	Breed	Product	Production system	Previous products and services
India	Sheep 	Deccani	Wool 	Mixed	Fleeces, yarn, blankets, live animals, milk, dung, tillage
Kyrgyzstan	Goat 	<i>Jaidari</i> (= local)	Cashmere 	Transhumant	Shorn unsorted fleeces, live animals
Mongolia	Bactrian camel 	Nutgiin Mongol	Wool 	Pastoralist	Raw wool, handicrafts for own use, milk, transport
Argentina	Sheep 	Linca	Wool 	Sedentary	Bulk wool, handicrafts for own use
South Africa	Goat 	Local	Meat, hides 	Sedentary	Live animals, meat for own use
Argentina	Goat 	Criollo	Meat 	Transhumant	Live animals, meat, hides
Mauritania	Dromedary 	?	Milk 	Pastoralist	Milk for own use
Somalia	Dromedary 	Bari, Guban, Hawd	Milk 	Pastoralist	Milk for own use, transport









In development projects, however, it is usual to start off with a group of disadvantaged people (for example, poor farmers in a particular area) and try to find ways to help them improve their livelihoods. This often involves seeking markets for a product that they already happen to produce. This approach was indeed used in most of the cases in this book. For example, in Kyrgyzstan, the project is creating linkages with buyers for cashmere; in Mongolia, the project seeks marketing channels for camel wool; and in South Africa, Umzimvubu Goats buys animals from farmers who already raise them. This is likely to be the approach used by most initiatives to conserve local breeds through niche marketing.

Target markets

Seven of the eight cases describe a complete value chain, all the way from the producer who raises the animal, to the consumer who eats, drinks, wears, carries, knits or sits on the final product. One case, that of goats in Kyrgyzstan, describes an intermediate product, combed cashmere, which is further processed to produce the final product (garments) sold to consumers.

What markets are these products aimed at? Six of the cases serve genuinely niche markets: environment-conscious consumers, tourists, fashion houses, hobbyists, and barbecue party hosts. Three target export markets (India sheep wool, Kyrgyzstan cashmere, Mongolia camel wool); the remainder target markets in urban centres or visitors to the area. None focuses primarily on local rural consumers.

TABLE 6
Product/market matrix for eight cases

Market	Product	
	Existing	New
Existing	Market penetration <ul style="list-style-type: none">Argentina: goat meat 	Product development
	<i>Increasing risk</i>	
New	Market development <ul style="list-style-type: none">Kyrgyzstan: goat cashmere  <ul style="list-style-type: none">Mongolia: Bactrian camel wool  <ul style="list-style-type: none">Argentina: sheep wool  <ul style="list-style-type: none">Somalia: dromedary milk 	Diversification <ul style="list-style-type: none">India: sheep wool  <ul style="list-style-type: none">South Africa: goat meat and handicrafts  <ul style="list-style-type: none">Mauritania: dromedary milk 

One case serves more of a mass market: the camel milk in Somalia is sold to urban residents.

In the final case, the Tiviski dairy in Mauritania illustrates a combination of niche and mass-marketing strategies. It started out by serving a niche market – northerners in the city of Nouakchott who prefer camel to cow milk. But the dairy has experienced difficulties in getting reliable supplies of camel milk, so expanded into cow and goat milk. It sells to middle-class urban consumers and competes with other locally produced milk products as well as imported powdered and reconstituted milk. Tiviski has also developed a truly niche product, camel cheese, but efforts to market this have so far fallen foul of regulatory barriers.

MARKETING STRATEGIES

Enterprises can consider four alternative marketing strategies (Table 6). This table is known as the Ansoff matrix after the business specialist who developed it.

Market penetration

An enterprise can try to increase its sales of **existing products** in **existing markets** (those it already serves) – for example, by better marketing, advertising, repackaging, or cutting prices. This approach is called “market penetration”. It is generally seen as the safest marketing strategy, as the enterprise is already familiar with both the product and the market.

Only one case (Argentina goats) focused on market penetration. This initiative involved labelling an existing product (goat meat) without any major modifications to the product



itself, and selling it within existing markets. The labelling aimed to differentiate the Criollo meat from competing products, thus enable retailers to charge consumers a higher price, which they could pass on to the processor and producers.

Product development

The enterprise can develop **new products** to serve an **existing market**. For example, a company that already sells jackets to young men can expand its product range to include shirts and trousers. This approach is known as “product development”.

None of the cases report attempting (initially, at least) to develop new products for existing markets. This is surprising, as product development is a reasonably risk-free strategy. Product development did come into play at a later stage in several cases, though (see below).

Market development

Alternatively, the enterprise can sell an **existing product** to a **new market**. For example, the company could expand sales of its jackets to a new region of the country, or could target a different group of consumers. This approach is called “market development”.

Four cases (Kyrgyzstan, Mongolia, Argentina sheep, Somalia) sought new markets for an existing product. The initiatives in Kyrgyzstan and Mongolia targeted new markets in Europe or America, because they thought it would be too difficult to transform existing channels serving Chinese buyers. In order to serve the new markets, it was necessary to improve the quality of the product by introducing new processing techniques.

In the Argentina case, the product (ponchos and other handicrafts) already existed, but were made for home use rather than for sale. The Mercado de la Estepa was able to tap a new market (tourists) for these traditional products.

The Somalia case focused on market development (supplying urban consumers in Boosaso) for an existing product without any modification (camel milk). The product already existed, but producers had no way of selling it. The innovation here was to arrange the chain of milk collection, transport and trade to serve demand in the new market.

Diversification

The final approach is to develop a **new product** for a **new market**. The company that sells jackets to young men could start producing blouses to sell to women. This approach is known as “diversification”. It is the riskiest and most expensive strategy as it requires both developing a new product and stepping into an unknown market.

The three remaining cases (India, South Africa and Mauritania) created entirely new products (bags, sausages, leather goods, pasteurized dairy products) to serve new markets (foreign buyers, supermarkets, urban consumers). In India, demand for coarse, coloured wool from Deccani sheep was declining in the markets that shepherds traditionally supplied. The solution was to develop new products (specially designed bags) for new markets (foreign buyers).

In South Africa, local demand for goats was sporadic, so farmers had little interest in raising more animals. Existing customers would not be interested in other products from the goats, so it was necessary to find new markets. In order to supply these with items they



would buy, it was necessary to create new products (meat, sausages and handicrafts), and establish a processing facility to produce these.

In Mauritania, camel herders had a surplus of milk that they could not sell (because of lack of a buyer) or would not sell (because of cultural barriers). Tiviski's innovation was to identify a potential market for this product in faraway Nouakchott, and to create the facilities needed to bring the milk to the city, process it and deliver it to customers. It is trying to export camel cheese to Europe.

Shifting strategies

Once these enterprises had developed their new products and established themselves in the new markets, they were free to pursue lower-cost, less risky strategies to expand their sales. They have adopted both product-development and market-development strategies. Both Shramik Kala and Umzimvubu Goats are continually expanding their range of bags, rugs and handicrafts, and are seeking new buyers and retail outlets. Tiviski also has expanded its range of dairy products into various types of yoghurt and cheese made from milk from cows and goats as well as camels, and has invested in a UHT plant. It sells dairy products to cities other than Nouakchott, as well as to neighbouring countries.

THE FOUR Ps OF MARKETING

For a product to serve a niche market, it has to be differentiated in some way from other, competing products. This can be done in various ways, which we can conveniently classify under the four *Ps* of marketing: **product**, **price**, **place** and **promotion**. Table 7 summarizes the approaches for the eight cases.

Product









We look at two aspects of product: the features of the product itself that differentiate it from other items, and the characteristics of the breed that contribute to these product features.

Special features. To serve a market niche, a product has to have some distinctive quality. In all the cases except Somalia, the enterprises produced such products: attractive handicraft designs (India, South Africa and Argentina wool), unusually fine cashmere (Kyrgyzstan), hypoallergenic wool (Mongolia), distinctive taste (meat from South Africa and Argentina goats), and high quality and long shelf-life (Mauritania).

Breed characteristics. In six cases, the characteristics of the breed or species are key to these product features. In Kyrgyzstan, the goats' fine cashmere, evolved to cope with the harsh winters, is the most valuable part of the fleece. The coloured wool of the Indian Deccani and Argentine Linca sheep enables artisans to make handicrafts with distinctive designs. The softness and attractive natural colours are major features of Mongolian camel yarn. The multicoloured hides of the South African goats allow Umzimvubu Goats to make a range of attractive leather handicrafts. And the taste of Criollo goat meat – a result of the combination of breed and environment – is one of the bases of marketing Neuquén Criollo kid meat in Argentina.

In a seventh case, Mauritania, efforts to market a niche product (camel-milk cheese) have so far failed because of the lack of local demand and European import restrictions. If

TABLE 7
The four Ps of marketing

Case	Product	Price	Place	Promotion
India: Deccani sheep wool	Product design, coloured wool 	Competition with other handicraft producers	Exports, 3 rd party (handicraft retailers), bulk orders, website	Product features, local links (no branding)
Kyrgyzstan: goat cashmere	Fibre fineness 	Competition with other cashmere producers	Exports (foreign buyers)	Product features
Mongolia: Bactrian camel wool	Soft, hypoallergenic wool, natural colours 	Competition with other specialty wools	Exports (hobby shops)	Product features, labelling, geographical indication
Argentina: Linca sheep wool	Product type, design, coloured wool 	Competition among producers	Own sales outlets	Product features, local links
South Africa: Goat meat and hides	Product quality, coloured hides 	Upper end of market, competes with other types of meat	Own sales outlets, 3 rd party stores	Product features, branding
Argentina: Criollo goat meat	Product taste 	Upper end of market, competes with other types of meat	3 rd party (supermarkets, restaurants, butchers)	Product features, geographical indication
Mauritania: camel milk	Product quality, shelf life, cheese, taste of milk 	Upper end of market, competes with other suppliers and imports	3 rd party (corner shops, wholesalers, groceries, supermarkets, hotels)	Product features, branding, packaging
Somalia: camel milk	? 	?	3 rd party (market vendors)	Availability

these restrictions can be lifted, the Tiviski dairy is in a good position to take advantage of a potentially large and profitable market.

Price

None of the cases report trying to sell their products at prices lower than the competition. This is to be expected: a niche product is normally more expensive than the equivalent mass product.

Effects of price competition. Although they do not compete on price, that does not mean that the enterprises described in the eight cases can charge what they like for their products. They must all compete at some level with similar products. India has many self-help groups that make handicrafts, limiting the price that Shramik Kala can charge for its bags and rugs. The price for fine cashmere is set by the world market, and Kyrgyzstan's poor reputation in cashmere production and lack of market organization surely limit the number of buyers and the prices they are willing to pay. Mongolia's camel wool must com-



pete with other specialty wools for space in the American hobbyist's knitting bag. And if one Somali milk trader or Argentine poncho maker charged more than the rest, she would quickly find her product would fail to sell.

Market position. Some of the cases have deliberately positioned themselves at the upper end of the market. The Criollo goat meat in Argentina, for example, is designed to appeal to people willing to pay a little more for an extra-tasty barbecued rib. Tiviski's strategy in Mauritania emphasizes superior quality and good packaging. And Umzimvubu Goats processes much of its meat into sausages, which it can sell at a higher mark-up than regular cuts of meat.

Place

In marketing theory, "place" refers to the location where a product is sold – a stall, shop, supermarket, or website. The cases illustrate how the products are sold at various locations.

Own sales outlets. The point of sale is especially important for the wool products in Argentina: the Mercado de la Estepa and a retail store in Buenos Aires are the only places where it is possible to buy the ponchos and other handicrafts made by the Mercado members. This means that sales staff (local women who make the items for sale) can meet customers and tell them about how the products were made. Running its own sales outlets also allows an enterprise to capture a larger percentage of its products' value, since it is not necessary to give a wholesale discount to third-party retailers. But as the Mercado de la Estepa cooperative grows, this may prove too restricting, and it may have to seek new outlets for its products.

Third-party retailers. Three cases rely almost entirely on third-party retailers: the Criollo goats in Argentina are sold via supermarkets, butchers and restaurants, while Tiviski's dairy products are distributed through 2 000 retail outlets. The camel milk in Somalia is sold by a network of market retailers in the city.

Mixed outlets. Umzimvubu Goats in South Africa use a mixture of sales outlets: it has its own retail outlets (a restaurant and handicraft store) on site, but sells much of its produce through third-party outlets: the meat goes to nearby butchers and other small, local retailers, while the leather items are sold through craft retailers throughout the country. Shramik Kala also has a mix of outlets: it exports much of its output, sells much of the rest through third-party retailers, and has started marketing through its website.

Exports. Three cases focus on export markets. In India, the cooperative that manages production recognized that it lacks skills in marketing, so created a partly owned subsidiary to handle this aspect. Since then, its sales have boomed. In Kyrgyzstan, village organizations sell cashmere to foreign buyers. The Mongolian camel wool is sold through volunteers and an international distributor and can be bought in hobby shops in the United States. These two cases describe relatively new ventures, and they have not yet managed to establish stable marketing chains.

Promotion

Promotion refers to how the product is promoted and advertised. The cases illustrate various approaches to promotion.



Emphasizing product features. The special features of a niche product make them obvious selling points. Enterprises in each of the cases draw customers' attention to the natural colours of wool, the fineness of cashmere, the superior taste of meat or the quality of the milk. Even in Somalia, where a raw product is sold, fresh milk sells for a higher price than a product that has gone sour in the heat.

Branding and labelling. The majority of the cases describe this. The Mongolian camel wool is sold through the "Nomad Yarns" initiative in the United States; goat meat and leather handicrafts are sold in South Africa under the "Umzimvubu Goats" label, while in Mauritania, Tiviski sells its dairy products in attractive packaging under its own brand. It is not necessary to insist on a brand, however: in India, Shramik Kala does not brand its products, but instead relies on the design of its product range to carry its product identity.

Emphasizing local links. Basing the product on a distinctive local tradition ties it in the customers' minds to that area. That can be important, for example, for products aimed at tourists. An example of this approach is the ponchos and other handicrafts made from Linca sheep wool in Argentina. The Mercado de la Estepa emphasizes local links in various ways: the product itself (distinctive garments – ponchos – woven in ethnic designs), the label showing who made the item (creating an unseen link between the maker and the buyer), and through the sales staff (see below).

Geographical indications. Geographical indications are a special type of labelling that make local links explicit and allow producers to label their products in an exclusive way (Box 8). Two of the cases describe Protected Designations of Origin, a specific type of geographical indication: the "Northern Neuquén Criollo kid" designation in Argentina, and "Gobi desert camel wool" in Mongolia. As the Argentina case shows, the process for establishing a geographical indication is far from simple, and once it is established, a great deal of effort has to be put into marketing the product and ensuring that producers comply with the requirements. Geographical indications are relatively new to livestock marketing in the developing world, but offer much potential for marketing indigenous breeds.

PROJECT INTERVENTIONS

All eight cases discuss some kind of intervention in the production and marketing system by an NGO, donor organization, research organization, government or private company, or some combination of these. (The Somalia case mentions a food security programme and research initiative, but there is not enough information to allow us to draw many conclusions about these. In the discussion of the Somalia case below, we refer to the women traders' system, unless we explicitly mention the outside initiatives.)

In four of the cases (India, Kyrgyzstan, Mongolia and Somalia), foreign donors provided the bulk of the funding for the project. In three cases (South Africa and both the Argentina cases), the funding came primarily from national or local governments. In one case (Mauritania), funding came from commercial loans and private investment.

Motivation for intervention

The rationale behind producing this book, as described in the Introduction, is to elucidate ways to conserve breeds through niche marketing. However, only in four of the cases (all relating to wool and cashmere) was **breed conservation** a motivation for the initiatives



BOX 8 Geographical indications

According to Article 22 of the World Trade Organization's Agreement on Trade Related Aspects of Intellectual property (TRIPS), geographical indications are "indications which identify a good as originating in the territory of a Member, or a region or locality in that territory, where a given quality, reputation or other characteristic of the good is essentially attributable to its geographical origin."

Geographical indications serve as "collective brands" which indicate the reputation of a particular agricultural product. This reputation is a result of cultural attachment, peculiar climatic and ecological conditions and history that make a particular product distinguishable. A familiar example is champagne: only a certain type of sparkling wine produced in a certain region of France may be called "champagne".

Geographical indications help consumers identify a product and prevent producers from outside a region from passing off their goods as coming from that region. A geographical indication is a permanent property of the inhabitants of a particular region. It remains valid as long as the product it indicates continues to be identified with that particular locality. It encourages producers and processors to maintain the quality and reputation of their product.

More information: www.wto.org/english/tratop_e/trip_e/gi_e.htm

– and even in these cases it was not necessarily the major reason for the initiative (Table 8). Poverty alleviation or **economic development** were the main motivation for six of the eight cases, while establishing a profitable **business** was the motivation for the other two (Mauritania and Somalia). For one case (Mongolia camels), **nature conservation** was a partial motivation for the project, while for another (India sheep), preserving a **lifestyle** was a contributory factor.









Type of intervention

The projects focused on four different types of interventions (Table 8):

- **Animal production.** Several of the projects attempted to increase or improve production of the animals that produce the raw materials: by establishing breeding herds, increasing the number of animals with the desired traits, and improving animal management and health. However, in none of the cases was production of the raw material a major focus of the project. None of the projects focused on modifying animal production to achieve specific production standards (such as organic production) or other production-related goals (e.g., environmental and breed conservation, or enhanced animal welfare standards). But such goals were indirectly included in the Argentina goat project, the Mongolia camel case and the South African Umzimvubu Goats initiative.



TABLE 8
Project interventions

Case	Motivation					Intervention*			Champions	
	Breed conservation	Economic development	Environment conservation	Lifestyle conservation	Business opportunity	Production	Processing	Organizing		Value chain
India: Deccani sheep wool 	•	•		•			xxx	xxx	xxx	NGO
Kyrgyzstan: goat cashmere 	•	•				xx	xx	x	x	Donor, consultancy company, individuals
Mongolia: Bactrian camel wool 	•	•	•				xxx	x	x	NGO, individuals
Argentina: Linca sheep wool 	•	•					xx	xxx	xxx	NGO, government, research institute
South Africa: Goat meat and hides 	•					xx	xxx	xx	xxx	Member of parliament, consultancy company, research institute
Argentina: Criollo goat meat 		•						xx	xxx	Research institute
Mauritania: camel milk 					•	xx	xxx	x	xxx	Private company
Somalia: camel milk 		•			•		x	x	xxx	No

* xxx major emphasis; xx part of activity; x minor emphasis, new initiative or failure



- **Processing.** Improving the processing of the raw materials was a major focus in the majority of the cases. This meant establishing factories (in Mauritania and South Africa), designing new products (in India), introducing new techniques (in Mongolia and India), and improving sorting and grading (in Kyrgyzstan).
- **Organizing.** Organizing groups of producers and processors was key in several cases. This might mean organizing them in production cooperatives, employing them as staff, establishing formal companies, or subcontracting work out to processors. Organizing efforts are not always successful, however, as shown by the attempts to form groups of producers or processors in Kyrgyzstan, Mongolia and Mauritania (see the section on Institutions below).
- **Building a value chain.** All of the cases included efforts to identify markets and build a value chain. Without such a chain, producers and processors are left with products they cannot sell.

Champions

Seven of the eight cases involved a “champion” – a dedicated individual, group or organization from outside the community of livestock producers, but with intimate knowledge of the local area, who decided to change the situation. Some of these champions contributed to this book. Only in Somalia does the marketing effort go back to a local initiative: stimulated by the growing demand for milk from the rapidly growing cities, local women started to market camel milk. Here the project came in later, helping to improve an existing value chain.

Champions often play a vital role in development work. They provide impetus, seek funding, bring in information about marketing opportunities, technologies and business skills, and link local producers to the outside world. Their long-term commitment ensures that a solution will be found – if one exists. The lack of such champions is often a key reason that development projects fail. While it does not seem to have occurred in any of the eight cases, champions can also lead an enterprise off in the wrong direction, and the loss of a champion, for whatever reason, can mean the death of an initiative.

Champions may be from government (as in the South Africa case), an NGO or university (as in Mongolia), or the business world (as in Mauritania). In general, businesses work best when they are run by entrepreneurs who aim to make a profit. Sadly, many enterprises set up with the highest philanthropic motives run the risk of not having a profitable business model or lacking the skills to make money, leaving them unsustainable in the long run.

PROJECT INPUTS

Research

Research was a key ingredient in seven cases (there is insufficient information about the Somalia project). This research included three types:

- **Production research.** This studied the production process and the social and economic situation of the producers. It was necessary to discover (for example) what the producers’ needs were and whether they would be willing and able to supply the amounts required on time. This was often done through a combination of formal studies and informal, participatory research that involved producers.



- **Product research.** This focused on the product itself: the characteristics of the wool or cashmere fibre, breed genetics, milk characteristics and product development. This research required the services of specialist institutions, in some cases located abroad.
- **Market research.** This investigated the potential market for the product: the demand for different products, the potential buyers, quality requirements, prices, marketing arrangements, and so on. It was typically done by marketing organizations and consultants.

It is hard to overstate the importance of adequate research when planning interventions such as these. An understanding of the production system, product and market is vital to ensure that enterprises produce items that can be sold in a particular market. But even the most detailed research does not guarantee success: other factors, such as political changes (the European Union's ban on milk imports from Mauritania), macroeconomic trends (the long-term decline in demand for coarse wool) and unexpected events (the loss of a key staff member, the arrival of a competitor) may ruin an otherwise well-thought-out plan. Good research will anticipate many such hazards, but it cannot predict them all.

Technology

Adding value usually means introducing new technologies. The cheapest inputs in terms of technology were probably in Kyrgyzstan, where the project introduced low-cost combs for the goat herders to buy. The interventions in India, Argentina (sheep) and Mongolia also involved low-cost equipment to card and spin wool.

The cases in South Africa and Mauritania involved large-scale investments in factories, processing equipment and transport. These bigger ventures can potentially benefit larger numbers of people and have a bigger impact on the local economy. But they may also be riskier if the venture has to be handed over to local management (as in South Africa) or if the investments do not meet the need of the producers or markets change.

The latter risks are illustrated by the Somalia case, where low-cost, community-based interventions (providing containers and building basic market facilities) were more successful than the effort to establish a large-scale processing plant, probably because the former strengthened the local value chain rather than trying to modify it according to outsiders' ideas. The Somalia example also shows that value chains can develop without any chain-specific outside investment.

Training

Training and extension were a key element in many of the cases. At least four types of training were provided:

- **Increasing or improving production**, such as how to collect milk in a way that meets basic hygiene standards.
- **Processing to add value to products**, such as building skills in spinning, weaving, sorting and grading.
- **Organization**, such as group formation, leadership and cooperative management
- **Enterprise development**, including business and marketing skills.

Some of the training was formal: goat producers in South Africa received 10 months



of training and a formal qualification on animal production. Other courses were shorter, such as those given to the Kyrgyz and Mongol spinners. Some of the training was on-the-job, for example the experience gained by women who took turns to sell handicrafts in the Mercado de la Estepa in Argentina.

Training is particularly important for livestock keepers because many have little formal education. It may be necessary to teach basic literacy and numeracy as well as more specific skills.

Transport and communication

One reason livestock raisers have difficulty in marketing their products is because of where they live: scattered in sparsely populated, remote areas with poor infrastructure. Transport and communication were thus key elements in most of the cases.

Arranging transport from the producer to the processing centre or point of sale was vital for live animals or meat and milk, both of which are highly perishable. Umzimvubu Goats, the Tiviski dairy and the Somali milk traders arranged to collect the raw product from the livestock keepers, either using their own vehicles or by third parties. In Argentina, the infrastructure for transporting goats to the abattoir and meat to customers already existed, so no intervention was necessary. Wool and cashmere are not perishable, so transport from producer to processor was less important in these cases.

The problem of getting the processed product to the retailer or consumer also had to be addressed in several of the cases. Solutions included using their own transport (Tiviski has a fleet of vehicles to distribute its dairy products), using third-party transport companies (as in Somalia), or arranging shipments via export companies (India, Mongolia). At least two cases solved the problem by having buyers come to them: the Mercado de la Estepa caters to passing tourists, while in Kyrgyzstan, village organizations rely on visits by traders to buy their cashmere.

Adequate roads are vital for a functioning value chain. The milk marketing system in Somalia depended on a major infrastructure investment, the building of an asphalt road linking the source area with the market. The lack of roads in much of Mongolia, Mauritania and Somalia is a serious impediment to improving the value chain.

Long distances make good communications vital. Much of this communication occurs via established linkages, networks and cooperatives. Where such institutions exist and can be adapted for the new value chain, it is important to build on them rather than to try to create new linkages.

Where such linkages were lacking, the enterprises tried to create them, either by forming new organizations of producers and processors, or by creating strong ties between the producers and the central enterprise. Such attempts have been succeeded in some instances (Tiviski has links with each of its many milk suppliers), but have failed in others (witness the attempts in Mauritania and Mongolia to form producer groups). See the discussion below on institutions for more on this.

Two of the cases (India sheep and Mauritania camels) mention the increasing importance of mobile phones. Signal coverage is still sparse in many areas, especially in remote and mountainous areas, but mobile phones are becoming a vital link between raw material producers and the enterprise they supply.



The internet is important further down the chain. Email and websites link the enterprise with customers throughout the world: they enable enterprises to promote products, identify potential customers, negotiate deals, coordinate deliveries, and maintain trust.

Standards

All the cases involved some kind of standards for product quality. In some cases this was imposed by outsiders. Cashmere, for example, is traded according to recognized standards on the world market: fibres of a certain diameter and length fetch a particular price. Wool is also traded according to particular grades: producers must comply with these if they hope to sell their product. Government food safety regulations, certificates such as Protected Designations of Origin, and supermarkets' quality controls impose standards and rules that abattoirs must comply with.

In some other cases, the enterprises themselves imposed strict standards. In India, Shramik Kala set design criteria to guide the artisans who make the handicrafts and instituted controls to ensure they comply. The Tiviski dairy in Mauritania also emphasizes quality: it tests all incoming milk, ensures that its products are produced hygienically, and takes back unsold produce from retailers to ensure that customers do not purchase out-of-date inventory.

The Argentina sheep wool case does not mention quality standards. But two mechanisms may be at work here: the committees in the Mercado de la Estepa keep a careful eye on the products that members supply, and carefully vet and guide new members to make sure they conform to whatever guidelines exist. And individual members get paid only when the products they have made are sold. That encourages them to understand customer demands (which they can learn first-hand when they take turns to act as sales staff) and to produce items of a quality, and at a price, that the customers want.

Even in the Somalia case, where there is a weak government and no central organization to manage the value chain, a form of quality control has emerged. Milk that has gone sour because of the heat and bumpy roads fetches a lower price than fresh milk. The long-distance relationships between market retailers and the primary and secondary traders transmit these price signals back up the chain: one can expect a retailer who gets sour milk from a wholesaler to complain loudly, and for that message to be passed back to the milk suppliers. That is why the drivers who transport the product from the interior drive so fast.

Institutions

Building some form of institution featured in all eight cases, but the type of institution varied widely: a loose, spontaneous network (Somalia), production and marketing groups (Mongolia, Kyrgyzstan), coordination bodies (Argentina goats), large, formal cooperatives (Argentina sheep, India, South Africa), and a private company (Mauritania). Most of these institutions had specialist functions and were active only at the beginning of the chain (the shepherds' cooperatives in India), in the middle (the network of women milk traders in Somalia), or at the end (the organization that distributes Mongolian camel wool in the United States).

Several of the larger institutions had multiple functions and covered most or all of the



chain: the Tiviski dairy in Mauritania, Umzimvubu Goats in South Africa, and the Mercado de la Estepa in Argentina. They not only performed functions within the chain (processing, transport, quality control, etc.), but were also responsible for managing the chain as a whole.

But chain managers are not necessarily good at everything. Tiviski deliberately has not got into the business of producing milk – it leaves this to camel owners who are specialized in this task. Shramik Kala has handed responsibility for marketing to Mitán Handicrafts, a specialist company. And although Umzimvubu Goats runs its own retail outlet on site, it sells much of its output through third-party outlets that can reach customers much more effectively.

In Kyrgyzstan and Mongolia, NGOs have taken on the role of managing the chain, but they lack the range of skills required to perform all the necessary tasks. They have tried to stimulate the creation of new institutions to handle these – producers' cooperatives, marketing organizations, etc., but so far with limited success.

Building institutions. Efforts to benefit the poor are often started by development projects that involve government, donors, NGOs, consultancy companies and research institutes. Six of our eight cases fall into this category. But funds run out and projects come to an end, so it is necessary to create new institutions that carry on and expand the production and marketing effort as viable, self-sustaining economic concerns.

This institution building has been successful in three cases. In India and Argentina, cooperatives manage the production and marketing of wool products. Good product design, active marketing and buoyant demand result in profitable enterprises and rising incomes for members, and attract new members to join the cooperative. A democratic structure and clear rules encourage members' involvement in the cooperative's work. In South Africa, a community-controlled company manages production and marketing of goat meat and handicrafts, but governance problems need to be fixed if it is to function properly.

In three other cases, attempts at institution-building are still at an early stage, or initial attempts have failed. In Kyrgyzstan and the Argentina goats case, it is too early to tell whether attempts to institutionalize the marketing have been successful. In Mongolia, the NGO leading the project has tried to create producers' cooperatives to manage the production and marketing of camel wool. But cultural and logistical constraints make it difficult for artisans in widely scattered locations, some of whom are nomadic, to get organized. The NGO is thus left with the task of coordinating production and marketing itself.

The Mongolia case illustrates a dilemma that is typical of market-development projects: should efforts go first into building local institutions and then to helping them produce products and build links to the market? This approach runs the risk of local people losing interest because they do not see a quick return. Or should it seek first to match a product to a market, then build the local institutions, and transfer responsibility to them? This approach risks failure because it proves impossible to transfer the skills and responsibility adequately.

The Mauritania dairy case is different because no transfer of skills and responsibility was involved. Tiviski is a private company that established and manages the marketing chain. Its founder did not plan to hand over responsibility for managing the chain to another organization at some point in the future. She had to start from scratch and learn by herself



what works and what does not. Tiviski's owners have a deeper commitment, and need, to making the chain work than (say) the staff of an NGO, a development project or research institution. If the chain works, Tiviski prospers; if it fails, it will go bust. There is no outside donor ready to extend funding for another five years; if it wants to invest, Tiviski must apply for loans at commercial rates (though the dairy did receive an initial loan from a development agency early in its history).

The Mauritania case also illustrates how hard it is to build local-level institutions. Tiviski encourages its suppliers to form interest groups or cooperatives. Paradoxical though it may seem, this would be in Tiviski's interest: strong local groups of suppliers would be negotiating partners on subjects such as prices and quality, and would ease activities such as organizing, payments, quality control and extension work. But efforts to organize such groups have failed, for similar reasons to those in Mongolia: the independent, mobile lifestyle of the pastoralists.

In the eighth case, Somalia, the milk marketing system was established by local women without outside involvement. Like Tiviski, they have a built-in commitment to making the chain function. Outsiders have tried to improve the marketing system by building infrastructure and providing equipment. This had met with only limited success, however: a dairy established by outsiders operates only part-time because it is poorly integrated with the local system. Nevertheless, it is difficult to see how this admirable local system can be improved further without an injection of outside capital and expertise in appropriate ways.

Building pastoralist institutions. As mentioned above, it is particularly difficult to build viable institutions in pastoralist societies, home to many local livestock breeds. The obstacles are formidable: lack of infrastructure and communication facilities, an absence of support services, vast distances, sparse populations, limited education, restrictions on women, a mobile lifestyle, an independent existence, suspicion of outsiders.

Of course, pastoralists have their own organizational structures, often based on kinship ties, with rules that may be unique to particular societies. The Somalia case illustrates this: the dominant institutional structure is the clan, which restricts sales of milk. It is only the women, who are outside the clan structure, who are able to circumvent these rules and create the marketing system. We may conjecture that similar restrictions apply in other pastoralist societies. Any attempt to develop niche markets for pastoralists' products must take these characteristics into account.

EXTERNAL INFLUENCES

We now turn to two external influences on the eight cases: culture and government policy.

Culture

The livestock keepers' culture had an impact on the activities described in the cases.

- **Taboos** may hinder the marketing of selected products, as used to be the case with the sale of camel milk in Mauritania and Somalia. These taboos may be eroded either by the marketing effort (as in Mauritania) or by broader social changes (such as urbanization in Somalia and Mauritania).
- **Gender.** The division of labour between men and women may restrict the types of activities that each can perform (see above).



- **Caste.** In India, only certain castes normally keep sheep or are engaged in activities such as slaughtering and tanning.
- **Mobility.** Many livestock keepers have a pastoralist or transhumant lifestyle because their environment requires it: to feed their animals, they must take them where the grazing is, either up a mountain, or to a patch of land where it has rained recently. This mobility makes it difficult to organize various types of production and marketing activities.
- **Independence.** Perhaps because of this mobility, livestock keepers are often more independent than (say) crop farmers. Unlike farmers, they have the option of moving elsewhere if they do not feel they are benefiting from an activity. Often in conflict over scarce resources, they find it difficult to cooperate with people from rival clans. And after years of pressure from governments to settle down and grow crops, they are often justifiably suspicious of well-meaning outsiders.

Marketing efforts link communities to the outside world, so inevitably induce cultural changes. They may undermine the livestock keepers' culture, for example by empowering women (which outsiders usually see as a positive change), trivializing traditional products in order to please tourists, opening contacts with a consumer society, or encouraging mobile herders to settle in one place.

Sometimes the changes can reinforce the local culture, for example, by increasing the awareness and pride of local people and outsiders in their cultural values (including the local breeds), empowering local people to press for their interests, encouraging them to rediscover lost skills or reviving traditional handicrafts.

But perhaps the most important effect is to enable livestock keepers to generate a reliable income, allowing them to carry on their livelihoods. They are not forced to give up livestock keeping and move to the cities in search of employment.

Policy

In four of the eight cases, government policy was broadly supportive of the enterprise. In Mongolia, the government supported the camel wool initiative through research and export certification and by proposing a Protected Designation of Origin. In Argentina, the local and national governments supported both the sheep and goat projects in various ways: by providing a supportive policy framework, by granting land and funds, through research, and collaboration with a government-owned abattoir. In South Africa, the government originated and funded the Umzimvubu Goats project.

In India, government policy has had mixed effects. Inconsistent policy on value addition and the withdrawal of government contracts undermined the wool industry in the Deccan. On the positive side, the government has given grants to support the handicraft industry.

In three cases, government has had very little involvement in the enterprise. Tiviski in Mauritania complains of the lack of government support, while in Kyrgyzstan and Somalia there has been no government contribution to the marketing efforts. In Somalia, the lack of government interference has probably sustained rather than hindered the development of the chain. However, the value chains in Kyrgyzstan and Somalia probably need active government support if they are to develop further, for example by making it easier for the women to get credit. Without a suitable policy framework, initiatives can remain isolated,



stand-alone projects with limited national impact and no chance of being scaled up. Successful niche marketing projects need long-term policy understanding and support.

In none of the cases was the government actively hostile to the initiative. Value chains can and do prosper despite government hostility (the thriving international trade in illegal drugs is an example), but it is difficult to see how any of our cases could have survived without at least a neutral attitude on the part of the government.

Even if they are not hostile, governments can still disadvantage small-scale livestock keepers through neglect, or by promulgating policies that inherently favour large-scale operations. For example, it may be prohibitively expensive for small-scale herders to comply with rules on tagging individual animals to ensure traceability, or install the equipment needed to conform to hygiene standards.

International regulations can act as a severe impediment to the development of value chains. The clearest example of this is Tiviski, which has tried to export an innovative product (camel milk cheese) to Europe, only to run up against a ban on imports of dairy products from Mauritania. Other cases give similar examples: regulations do not allow Shramik Kala to use eco-friendly materials in its packaging, while Mongolian camel wool producers have had to negotiate a thicket of regulations in order to export yarn to the United States. They have had to rely on the services of volunteers and sympathetic officials in order to clear these hurdles.

Box 9 summarizes some of the more important regulations affecting the marketing of livestock products.

IMPACTS

Here we focus on five potential impacts of niche marketing: on the beneficiaries, pro-poor effects, local breeds, the environment and gender.

Beneficiaries

How many people benefit from the initiatives described in each case? The largest enterprises (Mauritania and South Africa) have the largest number of beneficiaries (over 3 000 families each, counting producers and employees). The amount of information on the other cases is limited, but it seems that numbers vary from about 50 (Mongolia) to 1 500 (Argentina goats).

Livestock keepers. In all cases, the livestock keepers benefited through higher, more stable prices, increased demand for their product, a more reliable market, or some combination of these.

Indeed, the rationale behind seven of the cases (all except the dairy in Mauritania, which was mainly a business venture) was to raise the price that livestock keepers or artisans get for their products. In Kyrgyzstan, for example, goat herders can earn more by producing combed cashmere rather than whole fleeces; in Mongolia, spinners can make more money by producing skeins of wool ready for foreign hobbyists to knit. In Somalia, a project attempted to raise producers' incomes by establishing a dairy (with limited success) and providing equipment (with more success). And although it is a private company, the Tiviski dairy in Mauritania is forced to pay high prices to its milk producers in order to maintain supplies.

But only in three cases were the livestock keepers themselves responsible for adding



BOX 9

Legal and policy regulations for marketing of livestock products

A host of international, national and local laws, regulations and policies affect the marketing of livestock products. The specific rules depend on the nature of the product. Here are some of the more important ones.

WTO Agreement on Sanitary and Phytosanitary Measures, 1994. The agreement gives countries the sovereign right to set their own food safety and animal and plant health standards as they may deem appropriate. Many countries regulate the importation of livestock and other products.

European Union regulations. There are many EU trade, health and sanitary regulations. For example regulation no. 1760/2000 of the European Parliament and of the Council covers the labelling of beef and beef products.

Other regional regulations. Bodies include the Economic Commission for West African States, (ECOWAS), the Central African Economic Commission (CEMAC), Mercosur, and the North American Free Trade Agreement (NAFTA).

National regulations may include:

- National laws on food safety and public health
- Environmental laws
- Natural resource laws governing access to land, water and other resources
- Livestock policies
- Veterinary and quarantine regulations (such as rules restricting the movement of animals or animal products)
- National economic policies of each country
- Laws regulating institutions such as cooperatives, non-government organizations, and companies
- Customs regulations.

Local laws regulate markets and transport in a particular area.

value to the product. In Kyrgyzstan, women goat keepers comb the fine cashmere from their animals' coats before shearing the fleece. In Argentina, it is the women sheep raisers who make the ponchos and handicrafts sold in the Mercado de la Estapa store. And in Mongolia, women pastoralists spin the camel wool that is shipped to the United States.

In the Argentine goats case, the value is added through labelling – in which the livestock keepers have no direct input – but at least some of the higher price accrues to them.

Processors. In four other cases, the livestock keepers benefit only indirectly through higher demand or a more reliable market. The value addition is done by others: artisan members of self-help groups affiliated with Shramik Kala in India, employees of Tiviski in Mauritania and Umzimvubu Goats in South Africa, and women traders Somalia.

Reasons for this include technology, skills and scale. Certain types of processing (card-



ing and spinning wool, making handicrafts) can be done by individual livestock keepers at home. Others (transporting over long distances, making sausages, supplying packaged items to supermarkets, cooling and pasteurizing milk, complying with supermarkets' hygiene requirements, producing large amounts of uniform products) cannot be done by individuals because they require special equipment and skills or involve quantities that a single household cannot handle.

Service and input providers. In all the cases, people other than livestock keepers and processors also benefit. They include transport companies, retailers, and suppliers of inputs and services at each stage in the value chain.

Pro-poor effects

As described above, niche marketing of products from local breeds has increased (or promises to increase) the incomes of various groups. It may have the fortuitous effect of being pro-poor. Indeed, that may be the main reason such projects are attractive for development agencies. There are two reasons for this:

- **Local breeds kept mainly by the poor.** In the Kyrgyzstan and the Argentinean sheep cases, only the poorer families still maintained the breeds that produce the desirable product (fine cashmere and coloured wool). In India, it was presumably the poorer shepherds who still maintained the Deccani sheep despite government exhortations to switch to "superior" breeds.
- **Self-selection by the poor.** The type of work or amount of income generated may make it unattractive for wealthier individuals. In Mongolia, for example, the larger-scale herders did not get involved in spinning wool: they were too busy managing their herds, and maybe did not need the small amount of additional income generated through spinning. Much of the spinning was therefore done by women in poorer households and rural centres.

Several of the cases show how enterprises can act in a pro-poor manner:

- In India, Shramik Kala (itself a federation of self-help groups) coordinates handicraft production by self-help groups of poor women. It is trying to scale up production, both by establishing more self-help groups and by facilitating other organizations to adopt its methods.
- In South Africa, the Umzimvubu Goats abattoir must balance its need to guarantee a reliable supply of animals with its corporate mission to provide a market for small-scale farmers.
- In Mauritania, Tiviski pays the same price per litre of milk, regardless of how much a camel owner delivers.

Such choices can be commercially painful. Dealing with a large number of small-scale producers is costly and presents challenges in quality control. Umzimvubu Goats is under pressure to buy animals from commercial farmers outside the district so it can guarantee the supplies it needs. And Tiviski knows that dealing with small amounts of milk from many suppliers is expensive.

The livestock keepers benefit in another, more intangible way. By becoming part of a value chain that increases their incomes without damaging the environment, they can gather government support. This is important in areas where governments tend to view



livestock keepers, especially itinerant ones, as a problem or threat, and try to get them to change their lifestyles, settle in permanent locations and start growing crops.

Breeds

The wool and cashmere cases generally report a positive stimulus on the breeds and species in question. Increased demand or higher prices encourage livestock keepers to keep more of the animals (as in the India and Argentina sheep cases), and prevent cross-breeding and establish elite breeding herds (as in Kyrgyzstan). A successful value chain can also convince governments that it is worth protecting and investing in a breed and in the things needed to support it – such as assuring access to public grazing land and providing veterinary care.

At least two of the cases (Mauritania and South Africa) experience problems in obtaining sufficient supplies of the raw product (camel milk and live goats), despite offering a reliable market and guaranteed prices. It appears that other factors – climate, availability of grazing, political factors, culture – influence the availability of the product, and perhaps the fate of these breeds. And without strong links between the product and the breed, enterprises may be tempted to use raw materials from other breeds or species or crossbreed to increase output (as in Kyrgyzstan).

Many animals produce more than one type of product, and these products may compete with one another. If a livestock raiser discovers it is more profitable to sell live animals or meat rather than milk or wool, the breed itself may be endangered – as was the case in Mongolia before the start of the camel wool project.

Environment

Two of the cases included environmental conservation as specific goals. The Mongolian camel project began as an environmental conservation initiative and was implemented by a conservation NGO. The Criollo goats initiative in Argentina includes environment in the criteria for its Protected Designation of Origin certification. In both of these cases, impacts on the environment of the niche marketing activities are indirect rather than explicit: the projects may have included specific measures to conserve the environment, but these are not described.

Linking livestock keepers to a value chain may have adverse effects on the environment. This may occur if the owners begin to keep more animals than the environment can sustain. In India, shepherds are increasing the size of their flocks, so Shramik Kala is trying to persuade them to grow fodder crops rather than overgrazing the pasture. Adverse effects may also occur if the mobility of pastoralists is constrained. In Mauritania, pastoralists have a choice: they can either stay in the vicinity of the milk collection points, or they can take their animals in search of better grazing but risk losing income from milk sales. Their choices are reflected in Tiviski's seasonal purchases of camel milk.

In Somalia, a more flexible system has emerged, where the milk collectors – themselves community members – follow the herds during the migrations. This enables and encourages mobility. Even here, though, some herders have begun to keep their lactating camels near their hut where they can milk them easily, while sending non-lactating animals further afield.



BOX 10

Milk in cans belongs to men

"In Peulh society, milk and its income belong to women, in exchange for their contribution to the family feeding. In some countries, when milk was been put in cans and sent to a dairy, the men kept the money. We guarded against that, warned the women, encouraged them to record the milk in their name. In some cases this led to a divorce (very rare in their society)!"

Nancy Abeiderrahmane, Tiviski, Mauritania

Broader trends may mask or accentuate the environmental effects of a marketing project. In most countries, rapid urbanization, population growth, changing lifestyles, the conversion of land to other uses, the decline of mobile pastoralism and climate change are much larger influences on the environment than the creation of a value chain for a particular product. In Mauritania, for example, it is unclear whether the tendency for pastoralists to settle in one location is because of Tiviski's milk purchases or part of a broader trend towards settlement and urbanization. While the causes for such changes lie outside its control, a marketing initiative can reinforce them, accept them as a fact of life, or try to counteract them.

Women

Niche marketing offers benefits for women, especially if the products are fibre- or milk-based. Women are directly involved in all the cases in various activities: production, processing and marketing. Women and men often play complementary roles in livestock raising: men typically manage the larger animals (cattle, camels), shear the wool and sell high-priced assets such as livestock. Women typically are responsible for smaller animals (sheep, goats) and calves, and handle activities such as spinning and weaving, and sell low-priced products such as milk and wool. This division of labour is most clearly shown in the Somalia case.

This distinction opens the possibility for value chains to empower women and benefit them economically. Women in our cases earned income, learned skills, and gained power and respect in their societies. They also invested significant amounts of time and effort in work that can be tedious (spinning), physically demanding (hauling heavy milk cans), or hazardous (travelling long distances). They are forced to balance this work against other demands on their time, such as childcare, household work and managing livestock. Their other commitments may limit their incomes from the niche marketing activities. More women might benefit if equipment could be introduced to reduce drudgery – though the introducing machinery sometimes means a shift in tasks and benefits to men.

Development efforts aimed at women frequently find that men become interested when they see an activity can earn money. They take over, leaving the women behind (Box 10).



SUSTAINABILITY

How sustainable are these niche marketing initiatives? Four appear to be sustainable. In India, Shramik Kala has a profitable business model, a growing pool of suppliers, and long-term relationships with its buyers. The Mercado de la Estepa in Argentina appears to be serving a niche, though it is unclear how large its potential market is and whether it can grow significantly. In Mauritania, Tiviski is the market leader in dairying; it has a long history of creating innovative products, and successfully competes with lower-priced rivals. The discovery that camel milk has therapeutic qualities is opening up a promising niche market of diabetic or health-conscious consumers. In Somalia, the women traders supply a rapidly growing urban market with a vital product.

That does not mean that these initiatives are secure. Foreigners' tastes for Indian handicrafts may change; a recession in Argentina may mean fewer tourists with less money to spend; subsidized imports from the European Union may ruin Tiviski's sales; civil war may disrupt the Somali milk traders, or a reinvigorated government may introduce taxes or hygiene and veterinary controls. But these are risks similar to those faced by many businesses, and not just in the livestock sector or in the developing world.

The future of the other four enterprises is more doubtful. The Kyrgyzstan goats initiative shows promise: it is based on an existing resource and is not capital-intensive. However, it depends on transferring knowledge and skills, establishing a reliable value chain, and building strong local institutions. It is also sensitive to the world price for cashmere and the activities of Chinese traders in country. Government support is needed to ensure that this chain can become better established.

In Mongolia, the camel wool initiative must make the difficult jump from a project-sponsored activity to a self-sustaining business venture. It is necessary to nurture local institutions that can coordinate the wool production and marketing. Without this, the enthusiasm of the donors and volunteers will eventually wane, and local people will be unable to take on their roles.

In South Africa, Umzimvubu Goats must overcome its governance problems and ensure a reliable supply of live animals so it can expand its operations. This will probably mean putting more emphasis on its commercial operations rather than its social responsibilities. This is a large project, so it is in the interests of the government, its main sponsor, to ensure that its money has been invested wisely.

The Criollo goats initiative in Argentina is too new to judge whether it will be a success. As the first application under the law that governs the country's Protected Designations of Origin, it is charting new territory. Much will depend on whether consumers can be persuaded to pay extra for a specialty product, whether the board that manages the designation of origin functions as hoped, and whether livestock keepers can benefit financially from the labelling. An additional risk is competition: if Argentina's many other meat producers see it as a successful marketing effort, they are likely to imitate it, driving down prices and eliminating any financial benefits for the Criollo goat keepers.

CHALLENGES AND OPPORTUNITIES

Niche marketing efforts for local breeds face a number of challenges and opportunities.



Challenges

- Local breeds often suffer from a lack of recognition of the value of their products. The products may currently have low quality or be available only in small quantities or during certain seasons.
- Local conditions are often demanding, with distance, drought, disease, and a lack of infrastructure and services all making production and marketing difficult to manage.
- Organizing producers and processors may be difficult, especially among mobile pastoralists.
- Livestock keepers may lack the capacity to manage a market-oriented business.
- Government policies and institutions may be unsupportive.
- It can be difficult to identify a suitable market for products and to establish reliable links with customers, especially in export markets.

Opportunities

Despite these challenges, this book has identified many opportunities for niche marketing of local breeds:

- Local breeds can produce unique products that can generate significant levels of demand and can help rescue a threatened breed from further decline or extinction.
- Exploiting a local breed is one of the few ways to increase employment and incomes in remote, marginal areas, allowing local residents to maintain their livelihoods.
- Basing an enterprise on a local breed can take advantage of livestock keepers' indigenous knowledge and local people's traditional culture, encouraging the conservation of both.
- Enterprises based on local breeds build on local resources and initiatives. They are likely to be cheaper and more sustainable than enterprises based on imported breeds and technologies.
- A value chain based on local breeds can generate new sources of income, such as tourism or handicrafts. This income benefits local people directly.
- An enterprise based on local breeds is likely to be pro-poor and pro-women, since it is normally the poorer livestock keepers and women who maintain the breeds or who have the skills to process the products.
- A value chain based on local breeds builds the skills of local people and empowers them in relation to the outside world.
- Livestock breeds can stimulate enthusiasm among their supporters like few other products. Such enthusiasm may be vital for marketing efforts to succeed.

From niche to mainstream?

Rising demand for a product stimulates the enterprise to increase production. As this happens, the product may move from niche to mainstream. This may have several effects:

- **Higher prices for producers.** As demand for the product rises, livestock keepers can charge higher prices for their products.
- **Increased competition.** Competitors may start to sell similar items to the same market, capturing customers and driving down prices. The enterprise must decide how to respond – by emphasizing quality, broadening its product range (both approaches used by Tiviski in Mauritania), competing on price, or some other strategy.



- **Overproduction.** High demand may stimulate livestock keepers to raise more and more animals, resulting in overgrazing and environmental damage. Speciality products often require the conservation of the traditional management approach. A shift to more intensive forms of production, such as stall-feeding, may diminish the desirable qualities – the taste of the meat, the therapeutic qualities of camel milk, the qualities of wool.
- **Dilution of special features.** If demand for the product exceeds the supply of the local breed, the enterprise (or its rivals) may decide to reduce the amount of the local breed in the product. Wool or cashmere can be blended with more plentiful fibres; camel milk can be mixed with cow's milk; sausages can be made with a mixture of meats. Pressure may arise for other breeds or a larger area to be admitted to a Protected Designation of Origin. Enterprises may cheat, passing off one product for another. None of these have yet occurred in any of the cases in this book, but they do happen elsewhere.
- **Adding mainstream products.** As a company gains strength and experience, it may add mainstream products to its output – as Tiviski did when it expanded its product range from camel milk to include cow and goat milk, butter and cheese.

RECOMMENDATIONS

What elements are needed for a niche marketing initiative based on local breeds to be successful and sustainable? Here are some suggestions:

- **Use existing resources.** The initiative should be based on existing resources: the livestock breed, natural resources and human resources, and use the environment in a sustainable way.
- **Identify a suitable entry point.** To conserve a breed or benefit livestock keepers, it may be better to focus on some aspect of the chain other than working directly with livestock keepers. For example, developing an urban-based processing industry to increase demand for the raw materials may be the best way to benefit livestock keepers (or conserve the breed).
- **Start small.** The initiative should invest first in human capital and at a small scale, rather than in costly infrastructure. If the activity works, it should then seek more capital investment.
- **Do the research.** It should be based on a thorough understanding of the production system, the product and the market. That means studying the breed and its characteristics, the livestock keepers and their production system, the range of potential products, and the potential customers for the products.
- **Identify special characteristics of the breed.** The initiative should seek ways to market products that reflect these characteristics: by creating new products, refining existing traditional products, or finding new markets for existing products.
- **Find a viable business model.** The initiative should generate income for all actors in the value chain.
- **Focus on quality.** It should emphasize the need to maintain quality. A niche product can command higher prices only if it is superior to alternative products.
- **Build capacity.** The initiative should stimulate the creation of strong local institutions and train people in technical and management skills.



- **Don't depend too much on outsiders.** The initiative may require significant support from outsiders over the medium term, but should not depend on expertise or funding from outsiders over the long term.
- **Ensure long-term demand.** The product chosen should be one where demand is likely to grow over the long term.
- **Don't put all your eggs in one basket.** The initiative should be based on a range of products and markets: that way, it is not a disaster if one product fails to sell or one customer refuses to buy.

CONCLUSIONS

Niche marketing can provide opportunities for sustainable production in marginal areas and can improve the livelihoods of livestock keepers and people involved in the processing and trade of products. It may especially benefit women and the poor. It can also be a tool for conserving breeds.

Efforts to promote niche marketing may help local people connect to markets for the first time, giving them skills that they can use in exploring other markets and developing other enterprises.

Niche markets may allow actors earlier in the value chain – livestock keepers and small-scale processors – to capture a greater share of the value of the end product than in a mass market. This will make it attractive for these actors to continue and expand their businesses.

Niche marketing is by nature relatively small-scale. For large numbers of producers, it cannot replace the need to produce products for a wider, mass market. But for local breeds, it may be possible to find a match between the qualities of the breed, the features of a particular product, and the demands of a specific market. Making this match will help conserve the breed as well as provide a livelihood for people involved in the value chain.

Participants' profiles





This section contains information about the participants in the writeshop at Kalk Bay, Cape Town, South Africa, that drafted this book. A full list of contributors (including those who did not attend the writeshop) is given in the *List of contributors* near the front of this book.

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- 7 Rev. 1 The environmental impact of tsetse control operations, 1980 (E F)
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- 20/2 Trypanotolerant livestock in West and Central Africa – Vol. 2. Country studies, 1980 (E F)
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- 21 Guideline for dairy accounting, 1980 (E)
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- 55 Small ruminants in the Near East – Vol. II. Selected articles from *World Animal Review* 1972-1986, 1987 (Ar E)
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Many local livestock breeds and minor species are in decline and may be lost because they cannot compete with high-yielding exotic breeds. Conserving these breeds is important: many have unique traits, such as hardiness and disease resistance, that are vital for future livestock production. One way to help ensure their survival may be to sell products from these breeds to high-value, specialist markets.

The *Global Plan of Action for Animal Genetic Resources* acknowledges the importance of market access to the sustainable use of livestock diversity and calls for development of markets for products derived from local species and breeds, and for strengthening processes that add value to their products.

This publication describes eight examples of marketing of livestock products (wool, cashmere, milk, meat and hides) from local breeds of Bactrian camels, dromedaries, goats and sheep in seven countries in Africa, Asia and Latin America. It shows how they have kept local breeds in use, while enabling the small-scale livestock keepers and pastoralists who raise them to improve their livelihoods.

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