



Vicuña and guanaco fibres for luxury textiles:



Issues in achieving sustainable use and fair trade in wildlife products from the Andes



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Towards sustainable management of wild South American camelids

A community in north-west Argentina is now offering for sale its first 50kg of high quality textile fibre harvested from the vicuñas that live in and around the sparse fields of grazing land for their llamas and sheep. Arriving at this point is a breakthrough for the village of Cieneguillas, as they are finally about to see a reward for the many years of protection that they have offered to the vicuñas. Their patience and foresight is now paying off. The village is now the first in Argentina to establish a community wildlife management program for the sustainable use of wild vicuñas, and the initiative looks poised to generate a significant additional cash income. The fibre, which will be offered at international auction, is likely to achieve between \$US300 and \$US500 /kg. This innovative project is one of a series of activities supported by EU-supported research within the INCO-DEV programme. Proyecto MACS has been working to establish standards of good practice in management of vicuñas and their relative, the guanaco. A collaborative team of European and South American researchers has used this Argentine community as a test-bed to establish many fundamental guidelines for sustainable use that will be used to guide other communities in the area, and in the wider Andean region where wild vicuñas are found.

Applied research is necessary at this time because strict wildlife protection policies introduced some 30 years ago to address the grave threat of extinction are now progressively being relaxed to allow regulated commercial exploitation. There are now an estimated 250,000 vicuñas in the four countries of the Andean altiplano – Peru, Bolivia, Argentina and Chile. The new opportunities to manage vicuñas have given rise to a number of different management models, ranging from live capture and release, as in Cieneguillas, through extensive, enclosed, ranching systems, to captive, farmed systems on paddocks. The MACS project aims to inform the development of conservation policy of the implications of different management systems, in terms of their economic viability, practicality, environmental impact, conservation genetics and the consequences for animal welfare.

Being a luxury product, it is seen as essential that the nascent vicuña production industry safeguards its natural image by promoting high standards of animal welfare, and minimises ecological impacts. Vicuñas are the only truly wild species that can be captured, sheared and re-released on a commercial basis. However, their very uniqueness creates special welfare issues. Using a combination of animal behaviour and physiological studies, the team has built up a picture of the main factors which exacerbate the stress experienced by a vicuña during handling, and the degree to which such experiences impact on animal health and fitness. Advanced techniques have been developed, such as the leucocyte challenge test to evaluate physiological impacts of stress, and a novel system for remote collection of blood samples from free-running animals. A potential impact of the new management systems is on fertility. Though relatively straightforward to monitor in farm animals, pregnancy is rather more difficult to assess in free-living wild animals. The MACS project has been developing a novel system to detect pregnancy using oestrogen metabolites in faeces

that will have wide application, not only for the study of vicuñas, but also in the study of reproductive biology of many wild species.

Fortunately, the experience gained within Proyecto MACS suggests that the least invasive production systems are also those which return the most benefit for Andean communities. Such low-impact systems, based on the annual or biennial capture and release of wild vicuñas, also have minimal ecological impact, and are most compatible with other development initiatives in the region, such as ecotourism.

It is strongly in the interests of the new generation of European vicuña textile producers that the management policies in the producer countries encourage high standards within a sustainable development framework. As with any of the other textiles, market-led development of production quality standards is essential. Shearing techniques, grading and cleaning are important elements of product quality, requiring buyer feedback to maintain high standards. In the case of the vicuña, these quality parameters extend to the production system, and its management. The signs from the industry are that the “clean green” image of a natural product harvested in an environmentally sensitive way is a valuable element of the fibre’s marketing approach. Both the vicuña, which is little known outside South America, and its habitat appear exotic, exciting and photogenic. It is likely that in the future, marketing strategies will seek to exploit these qualities. It is equally probable that this top-of-the-range material will be vulnerable to negative publicity from inadequate standards of, for example, animal welfare or exploitation of indigenous peoples. Market feedback could play an important role in ensuring that the development course for vicuña management, safeguarding both product image and the sustainable development ethos.

The MACS project has generated an important baseline of information on some of the alternative management scenarios for vicuñas and guanacos. It is clear that the use of the fibre from these iconic species can make a genuinely positive contribution to sustainable rural development, including indigenous peoples, as well as providing an economic incentive for wildlife, and indeed ecosystem, conservation. It is also clear that changing the management paradigm from protection to commercial use opens up many opportunities for exploitation, poaching, and inappropriate management practices that could jeopardise this initiative.

This seminar explores these issues in the context of developing a dialogue between producers, the textile industry, and wildlife conservation organizations that will facilitate the integration of market forces and appropriate resource management practice. Contributors from both Latin America and Europe present some results of recent research on production systems and the implications for conservation and animal welfare; camelid fibre quality, processing and trade; the vicuña as agent of Andean rural development; and the outlook for the coming years in international conservation policy.

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Introduction to vicuña and guanaco, and current issues in their use for luxury textiles.

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The vicuña has been one of the few success stories of wildlife conservation. Increasing populations are, however, raising new challenges for effective management as emphasis shifts from protection to allow sustainable use. Internationally, policy development has followed the community-based conservation paradigm, which holds that economic benefits from wildlife management practices bring greater commitment on the part of local communities to protect both the species and its habitat. However, sustainability is not guaranteed by sustainable use, and that both education and regulation are required to prevent the proliferation of unsustainable practices. Community wildlife management does not replace conservation, but it does fundamentally alter the nature of the task that conservation agencies face.

The vicuña (*Vicugna vicugna*) is, with the guanaco, one of 2 species of wild South American camelid, which roams the high-altitude steppes of the Andes. It is a highly social species with males defending small family groups of females and their young (*cria*) all year round. The vicuña's highly-prized fleece has been both its greatest asset, and its biggest downfall. Four centuries of overexploitation led to the species' near extinction in the 1960s. As a consequence of effective conservation measures by both international and national legislation over the past 40 years, the vicuña has recovered to population levels that have allowed some regional populations to be moved from CITES (Convention on International Trade in Endangered Species) Appendix I to Appendix II, to allow local communities to exploit the fibre from live-shorn animals. The different countries in the main range of the vicuña (Argentina, Bolivia, Chile, & Peru) have adopted different approaches to the exploitation of the species, ranging from captive management under farm conditions in Argentina, ranching systems in fenced areas in Peru and Chile and the capture and release of wild populations in Bolivia, Peru and Chile. These different management systems reflect local limitations and aspirations, but each has a different outcome both for the degree to which local communities benefit from the exploitation of the fibre, and for the contribution that such management makes to conservation of the vicuña and its habitat.

Though the main reason for hunting guanacos (*Lama guanicoe*) in Patagonia has been to reduce competition for grazing with sheep, this species also bears a high quality fleece.. Though coarser than vicuña fibre, the two are difficult to distinguish. Guanaco populations have seen a recovery in southern Argentina and Chile, and the harvesting of their fibre, predominantly from management in extensive ranches, is increasing. This fibre less well-known in the textile industry and tends to attract a lower price. It does however offer considerable potential for environmentally appropriate diversification of livestock production activities in the Patagonian region,

The recovery of camelid populations in the wild provides the European quality textile industry with a unique opportunity to develop new top-of-the-range products based on environmentally sound wildlife management and fair trade with developing countries. Such a scenario, however, also presents many challenges – many

unresolved issues still remain in the development of appropriate management systems, animal welfare, and distribution of benefits among producers.

Vicuñas and fair trade: opportunities and pitfalls for market development, conservation and product image.

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Introduction

The social and environmental responsibility of private companies has been an issue in international debate at least since the United Nations Commission on Environment and Development (UNCED) in 1992.

Most recently this has been manifested in the concept of Corporate Social Responsibility (CSR), and the 'triple bottom line' - whereby firms are urged to take account not only of profits, but also the social and environmental consequences of their activities.

With regard to social issues, the concept of fair trade has become important in relation to the export of natural resources from poorer countries of the world. The intention is that local people, who depend on the resource concerned, or are involved in its production for export, should derive a fair share of the benefits.

With regard to environmental issues, and more specifically biodiversity, the concept of 'sustainable use' has been developed. This involves a compromise between the imperatives of conservation and those of economic growth and poverty reduction. The intention is that these two, sometimes conflicting, objectives be balanced by appropriate policies.

In this presentation, about the vicuña, I will be concerned not with prescribing what should be done – by private companies or policy-makers – but simply analyzing what is likely to happen in the coming years as a result of market forces; operating within a system of national and international law.

Background: the vicuña

Vicuña management in the Andes is one of the few success stories of international wildlife conservation. Vicuna population recovered from 10,000 to 250,000 animals in the period 1965 to 2000. This recovery was achieved through an effective international policy framework, which shifted during the period from strict protection to sustainable use. The population is now at a level where the fibre can once again be harvested.

The main issues

Three main social and environmental issues may be identified with regard to the production of vicuña fibre which may be relevant in market terms:

1. Wildlife biodiversity
2. Wildlife animal welfare
3. Well-being of local people.

The first of these three was the key factor that brought about the legislation necessary to protect the vicuña. In this are included both broad concerns for biodiversity in the Andes and globally, and more specific concern for the vicuña in particular.

The second relates to the system of management adopted, whether wild or captive. The welfare of individual animals is affected both by how they move (wild or in ranches) and how they are handled when captured for shearing.

The third relates to whether and to what extent the local people benefit from the exploitation of the vicuña on their traditional lands.

The market

The question simply put is: what market signals are likely with regard to these three issues. Or, more specifically, to what extent will consumers be concerned about these issues so as to have a significant influence on their willingness to buy vicuña products? (Note: the analysis here refers to the international market for high quality, high price goods. There will be also be a local market for locally fabricated goods for tourists. This will, probably, be small by comparison).

I propose the following two hypotheses, which I hope those present at this workshop will comment upon and, if necessary, correct.

Hypothesis 1.

Consumers will be most concerned with issue 1 (wildlife biodiversity) and least concerned about issue 3 (well-being of local people).

Issue 1 will be most important because of the widespread interest in exotic species (such as the vicuña), and the success of the conservation programme.

Issue 3 will be least important, because although there is increasing concern internationally for poverty reduction and social justice, there are considerably more 'newsworthy' causes in the world when it comes to the well-being of poor people: child labour, low wages for coffee pickers etc. (An exception may be if the issue is seen more specifically as concerning indigenous people; the rights of these groups are increasingly the focus of international attention).

Hypothesis II.

For those who are marketing vicuña products, the threat of negative market effects will be more powerful than the hope of positive market effects (though both can be significant).

If it appears that vicuña are again at risk of being exterminated, or that animals are suffering (whether through inappropriate handling while being sheared, or, more likely, by being kept on ranches under unsuitable conditions), this could have a very negative impact on consumers. Consumers can be encouraged to purchase vicuña products in part because they are 'environmentally friendly'; but they can even more easily be discouraged from doing so if they are seen as 'environmentally unfriendly'

This raises the crucial question of information.

Information

It is important to bear in mind that these are very expensive products.¹ Consumers will be very concerned about the quality of the product – and not least its image. They will therefore be susceptible to public opinion, both positive and negative, although they may not be very well informed as to the reliability of these opinions.

Those selling vicuña products will no doubt use some or all of the three issues above to help in selling their goods; vicuña products will be marketed as environmentally and (perhaps) socially 'friendly'. Others - most notably NGOs - will no doubt be on the alert for any shortcomings. Both will provide information which will be available to consumers. The former will be positive, the latter (most likely) negative.

The law

Legislation, both national and international, has been very effective in achieving a total ban on the exploitation of the vicuña. The current stage, of 'sustainable use', is much more difficult – both to legislate and to enforce. The danger of poaching is very much greater. This could have a significant effect on the market situation; but it is difficult to forecast until more evidence is available of the extent of poaching.

A possible win-win situation?

In a sector such as this, the relationship between private companies and NGOs (and to some extent also government) is often seen as conflictual. But it could be in the interest of responsible firms to collaborate with NGOs and government. They may market their product as socially and environmentally responsible – and enlist government and NGOs as independent guarantors. And governments and NGOs may see merit in collaborating – providing this is on equal terms. There may thus be a real potential for partnership.

¹ This note assumes that although the volume of sales will increase substantially in the near future, it will not be so high as to significantly affect the price. Vicuña will remain a very expensive luxury product.

Conservation of the vicuña, population trends, distribution, and relationship with fibre harvesting.

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There is widespread belief that sustainable use of vicuña for its fleece through appropriate management has great potential to contribute both to the long-term conservation of the species and to the economic development of Andean communities sharing the same land (Sumar 1988; Torres 1992; IUCN 1996). This principle is formalised in the 1978 Vicuña Convention, though it was not until 1996 that capture and shearing on a legal commercial basis began. Exploitation of the vicuña is now practised to a greater or lesser extent in all four altiplano countries, though the results in terms of development have been mixed (Lichtenstein *et al.* 2002). Management practices vary between (and within) the countries, apparently as a result of cultural, political and land tenure differences (Galaz 1998; Lichtenstein *et al.* 2002).

As many of the indigenous communities involved give religious and cultural importance to the vicuña, there is an extra sociological dimension to the dynamics of vicuña ecology (Bernhardson 1986). The future of vicuña conservation is inextricably linked to future economic and social change in the altiplano. Vicuña may increase in numbers and colonise new areas only if left to do so by local communities. Tolerance, or the lack of it - the trade-off between culturally reinforced positive attitudes towards vicuña and practical concern for their direct impact on forage availability for livestock - may be a highly significant factor influencing vicuña distribution (Cueto *et al.* 1985). In any case, it is clear that the conservation of vicunas has in general been successful. Table I shows the development of populations in the signatory countries to the Vicuña Convention since protection measures were enforced, and Figure I shows the distribution of the vicuña in the altiplano, based on censuses performed in the 1990s.

Table I.

Change in the estimated vicuña populations in the 5 signatory countries to the Vicuña Convention since protection measures were introduced.

	1969	1981	1997	2001	2003
Peru	10,000	61,900	102,800	118,700	149,500
Bolivia	3,000	4,500	33,800	56,400	57,905
Argentina	1,000	8,200	22,100	33,500	33,500
Chile	500	8,000	19,800	16,900	14,705
Ecuador	0	0	1,600	2,000	2,058
Total	14,500	82,600	180,100	227,500	257,668

(Anon. 1993; Muspratt, Vaysse *et al.* 1996; CONACS 1997; D.G.B. 1997; Canedi and Virgili 2000)

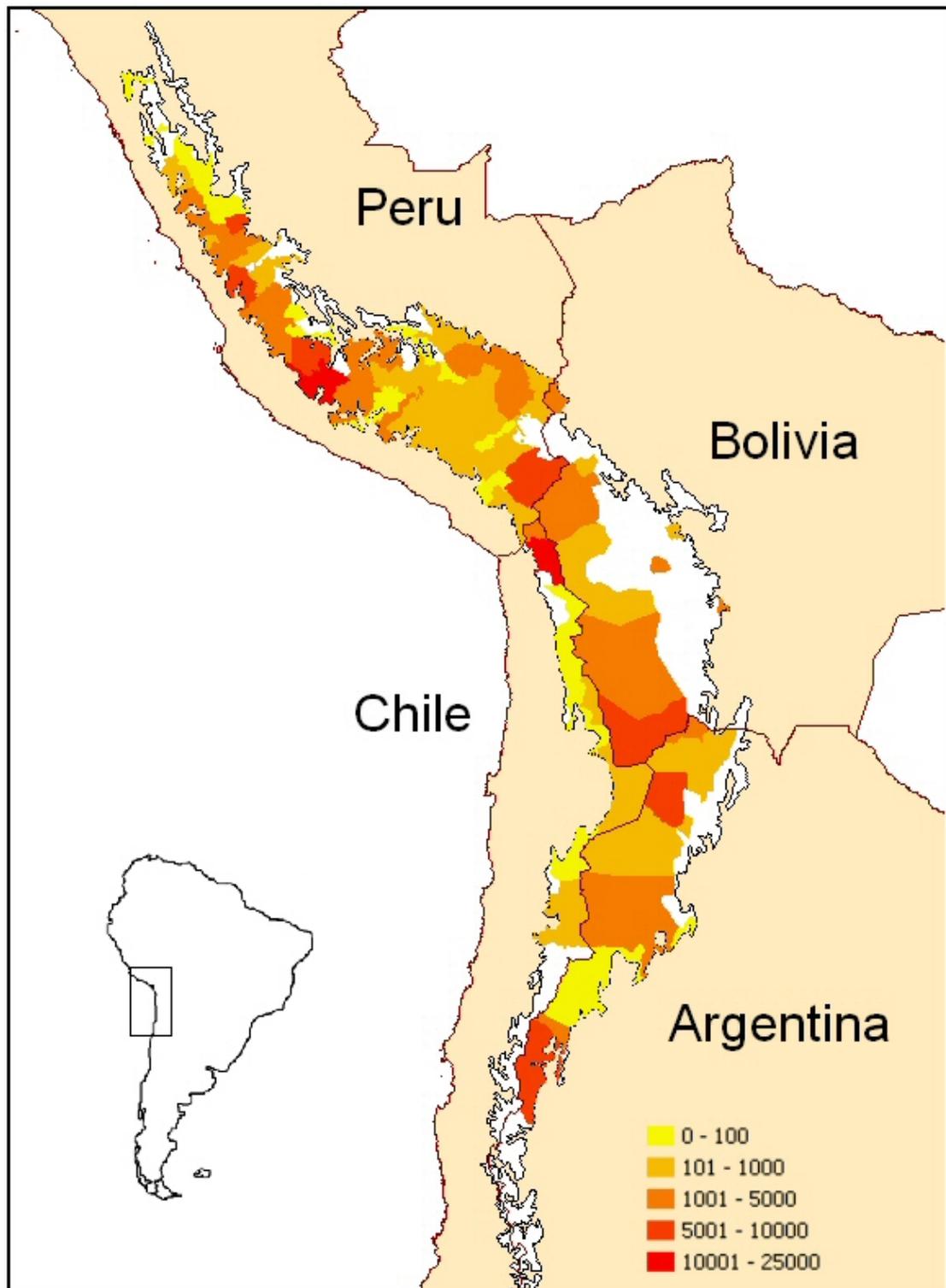


Figure 1. Distribution and population (per administrative region) of the vicuña in the altiplano (contour marked at 3500m).

Conservation activities for vicuña were first developed in Pampa Galeras in Perú. In 1972, the reserve received support from the German Federal Government to conduct research, build infrastructure and establish a security system through armed guards patrolling the 6,500 hectare core management zone. The programme proved

highly successful. Removal of hunting pressure resulted in initial recruitment rates of 21% per year (Eltringham & Jordan 1981). However, by the mid 1970's a negative population growth of 11.3% was detected, possibly caused by prolonged droughts and overgrazing (Brack *et al.* 1981). In response, a cull was carried out in 1977 (120 head) and 1978 (400 head). This decision involved not only the Peruvian authorities, but also international conservation agencies – IUCN and the World Wildlife Fund – and caused huge controversy at the time (Otte & Hoffmann 1981). The issue brought into stark focus the differences between conservationists on the one hand and wildlife managers on the other.

In 1980, the National Plan for the Rational Utilization of the Vicuña was introduced in response to the culling controversy. It was recognised that local communities should see some return for their investment in wildlife protection (Brack *et al.* 1981), and that their involvement in conservation would help to reduce the level of poaching.

The project established a new set of principles for future management of the species by:

- Local community participation
- Technology transfer to the Andean *campesino* for effective management of the vicuña
- Generation and organisation of legal markets for vicuña wool (based on live shearing of vicuña)
- Implementation of housing, health and education programs in the *campesino* communities involved in the project.

Revenue generated by the legal commercialisation of the vicuña wool would, it was hoped, generate additional productive activities for the well-being of the population.

The principles established in Perú have underpinned subsequent policy development for vicuña sustainable use throughout the altiplano. In 1991, the law was changed to shift the emphasis of vicuña management from protection to sustainable use (*Ley de promoción de las inversiones en el sector agrario, Decreto Legislativo No. 653*), by transferring the custody of the vicuña to local communities as well as transferring technology and methods for the rational use of vicuña wool as a means of local socio-economic development. At this time, international trade was still heavily restricted under CITES (Convention on International Trade in Endangered Species of Wild Flora and Fauna). The trade ban for cloth made from Peruvian fibre was lifted in 1995.

In the same year, the government of Perú approved a law granting communities the right to manage the land used by the vicuña, and penalizing illegal game practices (Cueto *et al.* 1985). Local communities began by exporting 2,000 kg of vicuña fibre (produced between 1987 and 1993). The following year, 3,000 kg (produced from 1994 to 1995) were exported. In 1998 the total export was 2,500 kg.

The commercial harvest of vicuña was pushed harder in Perú than in the other three countries because of strong political pressure from local communities to be allowed access to a potentially valuable resource.

In Bolivia, which has the second highest population of vicuña, the approach has been more cautious. There has been a strong emphasis on conservation since the establishment of national parks in 1969. Unlike in Perú, however, a legislative framework for vicuña sustainable use was not introduced until 1997 (*Reglamento para la Conservación y Manejo de la Vicuña* - D.S. 24.529). Vicuña retain their national heritage status – they belong to the state - and as such may not be kept in enclosures. Rights of use are, however, passed to local altiplano communities who have official approval to undertake vicuña management (Rendon-Burgos 2000). Three pilot centres were established: Ulla Ulla, Mauri Desaguadero and Sud Lipez, and a programme of capacity building was initiated by the Ministry of Biodiversity and Sustainable Development (DGB) to establish a system of wild capture for the benefit of indigenous communities. The objective of the Bolivian project was clearly stated to involve these communities in decision-making, though unlike in Perú, the government has sought to maintain the conservation of the vicuña as the ultimate objective of management.

In Chile, a conservation programme was initiated in 1970, at which time the national population was estimated at 500 individuals (Cattan & Glade 1989). Protected areas were established in Region I (Lauca, Tarapaca). The main priority was to stop poaching and illegal traffic of fibre and to apply the recently agreed Vicuña Convention (Miller 1980; Torres 1992). With the installation of park guards, annual census counts began to rise as the population recovered with the easing of hunting pressure (Rodriguez & Nunez 1987). By the 1980s, the pressure was beginning to build for sustainable use to be authorised. Several studies were carried out to evaluate fibre quality and ways to distribute benefits of fibre sales (Fernandez & Luxmoore 1995) and a strategy for the sustainable use of the vicuña was developed (CONAF 1991). It was expected that in the early 1990s, the vicuña should be in use by local communities (Torres 1992). However, the sustainable use by indigenous communities has to date never been realised principally because of problems with agreeing a framework for distribution of benefits.

With the successful population recovery in Chile, the reality on the ground is that conservation has to move forward into a sustainable use phase (Bonacic *et al.* 2002). Both the wild capture and the captive breeding models are being developed simultaneously. A pilot programme for breeding vicuña in enclosures within their habitat was established at Ancara, near the Peruvian border, in 1999, and, following relaxation of the CITES regulations in 2002, further captive management modules have been established at a number of sites in the region (Urrutia, 2004, Muñoz, 2004). Production from captive systems remains low compared to the wild capture modules. For example in 2003, the corrals produced 17 kg fibre, compared to 57kg sheared from captured wild vicunas.

Argentina has a population of around 23,000 vicunas (Torres 1992). The pattern of land use and ownership in the Argentine altiplano is quite distinct from the situation in neighbouring Bolivia. The area is extensively settled by owner-occupier ranchers, with herds of sheep and llamas.

Vicuña distribution in Argentina includes portions of the north-western provinces of Jujuy, the main focus, with vicuña present in Salta, Catamarca, La Rioja and San Juan.

The lack of a national census and the scarcity of surveys make it impossible to have reliable data on total vicuna numbers. However most of the researchers in the country agree that some populations have increased their numbers in the last years while others maintained their size (SSN 2002). Populations from areas that suffered local extinction in the past are slowly repopulating. The distribution of the species is patchy. The attitudes of the local population and the frequency of patrols by wildlife guards appear to be important influences on this, with local abundance of vicuña being associated with communities which have a positive attitude to their presence (Vila 2002).

Commercial management of wild vicunas is currently permitted by CITES in Jujuy, however, to date this has been limited to one pilot project managed under the MACS INCO-DEV research programme. Vicuña utilisation in Argentina takes place on farms. The system is promoted by the agricultural extension organisation, the National Institute of Agriculture and Cattle Technology (INTA) Abrapampa, Jujuy. This station donates groups of 12, 24 or 36 vicuñas from their captive herd to individual producers. Young vicuñas plus 10% of their offspring produced under captive conditions have to be returned to INTA station as a compensation for the initial vicuña donation.

Argentine vicuña production created some controversy at the 2002 COP-12 CITES meeting in Chile. The US Fish and Wildlife Service had proposed not to allow Argentine fibre to be imported to the US. Their objection was based in their concerns about the relation between the enclosures and the conservation of the wild populations and the genetic fitness associated with the small of animals in the enclosures. Trade from all producer countries was in the end authorised, on the basis that it would be practically impossible to differentiate traded fibre from different provenance. However, the issue underlines the sensitivity of a major market for the fibre to ethical questions related to animal welfare and conservation.

Sustainable use

The international conservation efforts brought back the species from the brink of extinction. As a consequence of its success, the vicuña conservation programme became one of the most symbolic projects in Latin America. It is a heartening demonstration that governments, international agencies and local communities can work together to stop species population decline.

As an example of live harvesting of wildlife products, the vicuña is probably unique. As an example of the farming of wildlife for the harvesting of commercially valuable products, the vicuña joins a number of other notable examples worldwide. Farm systems have been established within the last century for the production of other wildlife products, such as bear bile and musk. These predominantly Chinese farms have attracted international criticism on animal welfare grounds. The combination of luxury products with animal abuse is not only ethically questionable, but also disastrous for product image. Both the bear and the deer farms have been the subject of hard-hitting animal rights campaigns (Shrestha 1998; Homes 1999). Sustainable use of wildlife is likewise under the spotlight of international concern for both animal welfare and environmental impact (Roe *et al.* 2002).

It is essential that vicuña producers do not establish production systems that could one day attract such criticism from the animal welfare lobby. The nature of fibre as a product, ensures that its provenance is far more obvious to buyers than for example bile or musk. Consumers are already sensitised to environmental concerns about quality textiles following extensive publicity about shahtoosh fibre, the fine undercoat of the Tibetan antelope or *chiru* (Traffic 1999). The campaign to increase public awareness of the plight of the *chiru* has had a significant impact on demand from the US, and should alert vicuña producers to the need to produce fibre within internationally recognised standards of “sustainability”.

On the other hand, it is also obvious that harvesting systems must be at the same time profitable and practical. With problems being encountered with achieving expected levels of wealth creation, the initial aims of sustainable use defined during the seventies are now being reconsidered. There is still no consensus whether the vicuña should be managed communally as a wild animal or be privatised to be farmed by local communities, or indeed other farmers outwith the altiplano. In Chile (Galaz 1998), a series of wild capture-release trials were conducted during the last ten years. In 2000, a programme was initiated of breeding in enclosures on the bofedal habitat of the wild vicunas. In Perú, which embarked on an ambitious programme of enclosure building in the late 90s, opinion amongst the *campesinos* appears to be swinging away from fencing towards wild management, as cases of psoroptic mange begin to increase in frequency. Clearly there is a case for improving international collaboration in systems development.

Work within the MACS project (Lichtenstein & d’Arc, 2003) suggests that in Argentina and Bolivia, neither the intensive or extensive management options have so far achieved conservation or local development goals. Management in captivity in Argentina does not provide an incentive towards conservation of vicuñas outside corrals, and the economic benefits are limited. The lack of progress in commercialising vicuña fibre in Bolivia has prevented *campesinos* from realizing economic benefits, and incentives for conservation of vicuñas by local communities remain elusive. However, it does seem clear that while the wild management model does have the potential to bring development benefits, the farm model appears to have neither the capacity to promote conservation of wild vicuña populations outside corrals, or to enhance local livelihoods.

Conclusions

The management of wild vicuñas has genuine potential to augment rural incomes in the Andes, and this potential is being realised in a number of locations where wild vicuña abundance is high, and effective property rights agreements have been reached. Community involvement will probably ensure protection of wild vicuña numbers, at least where such exploitation is seen to bring real economic or community benefits.

However, conservation is more than maintaining populations. The concept includes protection of landscape, animal welfare, genetic diversity, and indeed “wildness”. It is important that these secondary benefits of wildlife conservation remain an integral part of the development of commercial exploitation. Farming of vicuñas is not sustainable use. Now that wild vicunas are out of immediate threat of extinction, the

breeding of vicunas in captivity makes no positive contribution to the conservation of vicunas in the wild. Enclosures on a larger scale, by restriction of free movement of vicuñas over extended periods have reduced conservation value and create a duty of care for animal health and nutrition, the cost of which has to be met by improved productivity.

The extraction of valuable fleece can be part of an integrated management system for these wild places, enhancing people's lives by sustaining the protection of wild landscapes and traditional culture. The principles for this are already central to international conservation policy but the realisation of such ideals as a recognisable model for vicuna management has yet to be achieved.

References

- Bernhardson W. (1986) Campesinos and Conservation in the Central Andes - Indigenous Herding and Conservation of the Vicuña. *Environ. Conserv.*, 13, 311-318
- Bonacic C., Macdonald D.W., Galaz J. & Sibly R.M. (2002) Density dependence in the camelid *Vicugna vicugna*: the recovery of a protected population in Chile. 36, 118-125.
- Brack E., Hoces D. & Sotelo J. (1981) Situación actual de la vicuña en el Perú y acciones a ejecutarse para su manejo durante el año 1981. In, p. 71pp. PEURV.
- Canedi, A. A. and R. P. Virgili (2000). Censo de vicuñas-informe final. Buenos Aires, Argentina, Consejo Federal de Inversiones-Provincia de Catamarca.
- Cattan P.E. & Glade A.A. (1989) Management of the Vicuña *Vicugna vicugna* in Chile - Use of a Matrix Model to Assess Harvest Rates. *Biol. Conserv.*, 49, 131-140.
- CONACS (1997). Censo Nacional de Vicuñas, 1997, Ministerio de Agricultura, Perú.: 132.
- Conaf (1991) Estudio de factibilidad técnico - económica para el manejo y aprovechamiento de la Vicuña en Chile. Corporación Nacional Forestal. Ministerio de Agricultura. 98 p.
- Cueto L., Ponce C., Cardiac E. & Rios M. (1985) Management of vicuña: its contribution to rural development in the high Andes of Peru. In, p. 38pp. Food and Agriculture Organisation (FAO), Rome.
- D.G.B. (1997). Censo Nacional de la Vicuña en Bolivia. La Paz, Bolivia, Dirección Nacional de Conservación de la Biodiversidad, Unidad de Vida Silvestre: 60pp.
- Eltringham S. & Jordan W. (1981) The vicuña in Pampa Galeras National Reserve-the conservation issue. In: *Problems in management of locally available wild animals*. Academic Press, London.
- Fernandez C. & Luxmoore R. (1995) Commercial utilization of vicuña in Chile and Peru. World Conservation Monitoring Centre, Cambridge
- Galaz J. (1998) El manejo de la vicuña en Chile. In: *La conservación de la fauna nativa chilena: logros y perspectivas* (ed. Valverde V), p. 178. Corporación Nacional Forestal, Santiago, Chile.
- Homes V. (1999) On the scent: conserving musk deer - the uses of musk and Europe's role in its trade. TRAFFIC Europe.
- IUCN (1996) The red list of threatened animals. In. International Union for the Conservation of Nature
- IUCN (2001). Analytic framework for assessing factors that influence sustainability of uses of wild living natural resources. IUCN Sustainable Use Specialist Group.
- Lichtenstein G., Oribe F., Greig-Gran M. & Mazzuchelli S. (2002) Manejo comunitario de vicuñas en Perú: Estudio de caso del manejo comunitario de vida silvestre. In: *PIE Series No.2 - Evaluating Eden*. IIED, London.
- Lichtenstein G & Renaudeau d'Arc, N.(2003) Vicuña use by Andean communities: a risk or an opportunity? In: *The Commons in an Age of Global Transition: Challenges, Risks and Opportunities*. Tenth Biennial Conference of the International Association for the Study of Common Property (IASCP), Oaxaca, Mexico, August 9 – 13, 2004. http://www.iascp2004.org.mx/index_eng.html
- Miller S. (1980) Human influences on the distribution and abundance of wild Chilean mammals: prehistoric-present. In. University of Washington, Seattle.
- Muñoz, E. (2004). Aplicación de manejo en cautiverio en la vicuña en la provincia de Parí. Wild Camelid Management. Vol II. www.macs.puc.cl.

- Muspratt, J., D. Vaysse, et al. (1996). Informe definitivo del censo de vicuñas, 1996, en la reserva Laguna Diamante y Sierra Calalaste. Argentina, Gobierno de Catamarca, Servicio de Ganadería y Fauna.
- Otte K. & Hoffmann R. (1981) The debate about the vicuña population in Pampa Galeras reserve. In: *Problems in management of locally available wild animals* (ed. Hart D), pp. 259-275. Academic Press, London
- Rendon-Burgos O. (2000) Experiencia Boliviana en el manejo communal de la vicuña. In: *Manejo sustentable de la vicuña y guanaco* (ed. Iriarte I). SAG - PUC - FIA, Santiago, Chile.
- Rodriguez R. & Nunez E. (1987) El censo de la población de vicuñas. In: *Técnicas para el manejo de la vicuña* (ed. IUCN), pp. 33-57.
- Roe D., Mulliken T., Milledge S., Mremi J., Mosha S. & Greig-Gran M. (2002) Making a living or making a killing? Wildlife trade, trade controls and rural livelihoods. In. TRAFFIC/ IIED.
- Shrestha M.N. (1998) Animal welfare in the musk deer. *Applied Animal Behaviour Science*, 59, 245-250.
- SSN (2002) Vicuña conservation in Argentina. In. Species Survival Network. Information for COP-12 CITES.
- Sumar J. (1988) Present and potential role of South American camelids in the high Andes. *Outlook on Agriculture*, 17, 23-29.
- Torres H. (1992) Camelidos Silvestres Sudamericanos. Un plan de Acción para su Conservación. In, p. 58pp. IUCN/ CSE South American Camelid Specialist Group.
- Traffic (1999) Fashion statement spells death for Tibetan antelope. In: *IUCN*.
- Urrutia, J.L. (2004). Proyecto Vicuña FIA-CONAF. Wild Camelid Management. Vol II. www.macs.puc.cl.
- Vila, B. L. (2002). "La silvestría de las vicuñas, una característica esencial para su conservación y manejo.W." *Ecología Austral* 12: 79-82.

Farms, ranches and open hills - the many faces of modern vicuna management, and their implications in a nascent marketplace.

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INAPL/CONICET

The dramatic decline of the vicuña from some 2 million individuals at the time of the Spanish conquest, to possibly 10,000 in the 1960s, came about as a consequence of the development of commercial trade links with Europe, in the absence of any regulatory mechanism to control the intensity of exploitation.

The Vicuna Convention committed the four countries with wild stocks of vicunas to regulate trade in order to stop vicuna commercialization and promote its conservation. These efforts were reinforced by international policies: all populations of vicuña were included in the Appendix I of CITES and also listed as endangered under the U.S. Endangered Species Act prohibiting international trade.

International and local conservation efforts turned vicunas into one of the few success stories of international wildlife conservation and the population recovered to 250,000 animals in less than 30 years. This population increase enabled governments to change their policies from strict protection to sustainable use.

In 1979 a new Convention for the Conservation and Management of the Vicuña was signed, and Andean communities, who had been paying the cost for vicuña conservation, were established as the main beneficiaries of vicuña use. Government authorities had realised by then that it was impossible to police an area the size of the altiplano, and that the communities on whose land the vicuña lived had to receive benefits if they were to have an interest in vicuña conservation. Considering that vicunas live in a resource poor area with very few economic alternatives for local people, the possibility of generating income from the proceeds of the sale of vicuña fibre created great economic expectations.

The rationale behind vicuna use projects is that allowing commercial utilisation of fibre obtained from live-shorn vicuñas will encourage a positive attitude locally towards vicuña conservation. With local people having an economic interest in vicuñas, poaching will decrease, the density of domestic livestock (e.g. sheep and cows) by vicuñas, an increase in tolerance for vicuñas in community lands, and support of conservation measures. Therefore, the two general outcomes are expected from these projects: conservation of the species and improved social and economic well being of the local communities.

In most of the countries, the commitments signed in the Vicuna Convention relating to vicuna conservation are embraced under various national laws and regulations relating to conservation of wild resources. The commitment of securing benefits from vicuna use to Andean people is not contemplated in the legislation of Argentina and Chile. In Bolivia and Peru there are special laws that allocate exclusive rights to

local people such as custodianship and ownership in Peru, but an unfavourable policy environment limits their application.

In official documents of the different countries, the *Andean community* is named as the main beneficiary of the projects, but the target populations vary from individual producers in the case of Argentina, to families in Chile, and indigenous communities in the case of Peru and Bolivia, usually represented by a group of families possessing rights over shared territories (with official recognition of these rights by the State). While these targeted populations usually imply low-income rural indigenous people, the lack of a clear definition of what and who the community is, and the status of beneficiaries enables different sets of producers to take part in the project.

Different models for vicuña management have been adopted by Andean countries according to the country-specific social organization systems, idiosyncrasies, livelihoods, and national and local laws pertaining to resource and land tenure. Although the first management systems, developed by Peru and Chile, consisted of vicunas managed in the wild by local communities, in the 90' there was a trend towards managing vicunas in captivity either by single producers, families or communities. Vicuna ranching started in Argentina and was followed by Peru and Chile.

At present, captive management is being revised. Several studies developed by the MACS team and others suggest that management of vicunas in the wild is preferable to captive management from an ecological, social and economic perspective. Whereas wild management has the potential to create economic incentives for the conservation of vicuna and its habitat, the link between captive management and conservation is more dubious. Enclosing vicunas has a detrimental effect on the behaviour, genetics and growth of vicuna populations. From the economic viewpoint, captive management involves a significant up-front investment with small returns. In this system, not only it is difficult for local people to generate sufficient returns to cover the investment, but the advantages of captive management in technical terms (e.g. capture efficiency) have not been demonstrated. For an activity so vulnerable to the vagaries of the international market, involving local communities with limited resources, a less capital intensive approach seems more suitable.

The term “sustainable use” is so little specific that it has been used to describe any economic activity based in the exploitation of a renewable resource. However, the case for use being a conservation tool is not proven. The challenge to link vicuna use that promote its conservation with significant benefits for local people is still open.

Key Policy recommendations

- 1) The current distribution of ownership right where communities lack secure tenure rights over land and wildlife provides more incentives to own domestic livestock (e.g. sheep) than to favour

vicunas. Property rights should be secured in order to provide incentives for local people to conserve vicunas.

- 2) Most of the Andean countries lack National Vicuna Management plans. This is a threat to effective vicuna conservation. Without standardized and verifiable criteria for conservation and management of the vicuna, multiple management plans for implementation may be approved without any reference to minimum sustainability criteria for conservation.
- 3) The conservation effectiveness of wildlife utilization depends on the form of use involved. It is fundamentally important that a critical analysis be applied to any proposed use before it is exercised in the cause of conservation. The current trend towards encouraging captive breeding in the name of conservation should be revised.
- 4) Given that different management plans have different biological and socio-economic implications, buyers should be informed of the origin of the fibre in order to promote sustainable use.
- 5) A market for legal fibre should be established and information such as prices, potential buyers, producers, biddings, should be transparent and available to producers, buyers and government agencies in charge.
- 6) Poaching should be addressed not only in the producer countries but also tight controls are needed in the importing countries.
- 7) Fair trade should be encouraged
- 8) Argentina, Bolivia and Peru have an important tradition on weaving vicuna and producing handcrafts. Local handcraft production should be encouraged and embraced under legal trade in order to keep an important tradition and source of income while securing the origin of the fibre.
- 9) Most community participation in vicuna management reflects rhetoric more than substance and is characterised by some continuation of central government control and management over natural resources rather than a genuine shift in authority to local people.

- 10) Local people are still not realising significant economic benefits derived from legal vicuna use. The distribution of costs and benefits between and within different stakeholder groups should be revised and made more equitable.
- 11) Stronger local organization capacity and political capital would enhance outcomes for local people and vicuna conservation.
- 12) It is necessary to reach a clear definition of what type of participation projects are aiming for, and who the beneficiary community is. The wording of policies needs to be reviewed so that they more accurately reflect the alignment of agendas between governments and those of local people most affected by vicuna management decisions.

Further reading:

- 1) Lichtenstein, G., Oribe, F., Grieg-Gran, M, y S. Mazzucchelli. 2002. Manejo comunitario de vicuñas en Perú. **PIE Series** No 2, IIED Environment and Economics Programme.
- 2) Lichtenstein, G., Renaudeau d' Arc, N. 2005. A response to Meerburg's and de Young (2003) Vicunas in Bolivia: An opportunity for their sustainable use. **Outlook on Agriculture** Vol 34 (2) pp 121-122.
- 3) Lichtenstein, G., Renaudeau d'Arc, N. 2004. Vicuna use by Andean communities, a risk or an opportunity? **Tenth biennial conference of the International association for the study of common property (IASCP)**. The commons in an age of global transition: challenges, risks and opportunities. http://www.iascp2004.org.mx/index_eng.html.
- 4) Lichtenstein, G. Vila, B. M. 2003. Vicuna use by Andean communities: an overview. **Mountain Research and Development**, Vol 23 (2) pp198-202.
- 5) McNeill, D., Lichtenstein, G. 2003. *Local conflicts and international compromises: The sustainable use of vicuña in Argentina*. **Journal of International Wildlife Law and Policy**, Vol 6, pp 233-253.