

Origin and evolution of Camel family





Guanaco

Wild-Salka

(*Lama guanicoe*)

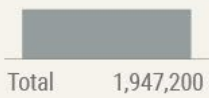
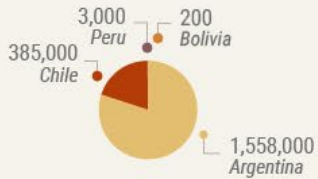
Two subspecies:

Lama guanicoe cacsilensis (north)

Lama guanicoe guanicoe (south)

Weight 100-120 kgs.

Height at the withers 120 cms.



Vicuña

Wild- Salka

(*Vicugna vicugna*)

Two subspecies:

Vicugna vicugna mensalis (north)

Vicugna vicugna vicugna (south)

Weight 45 kgs.

Height at the withers 90 cms.



Llama

Domestic-Uywa

(*Lama glama*)

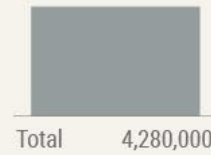
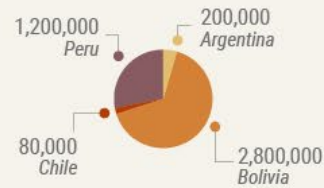
Two breeds:

Q´ara (tall and strong, short wooled)

Tampulli (hairly, long woled)

Weight 130 kgs.

Height at the withers 110 cms.



Alpaca

Domestic-Uywa

(*Vicugna pacos*)

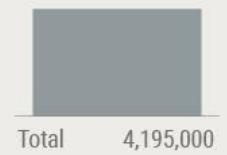
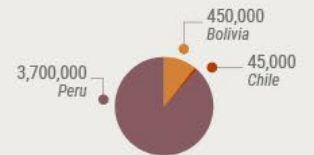
Two breeds:

Suri (long straight fiber)

Huacaya (wavy fiber)

Weight 60 kgs.

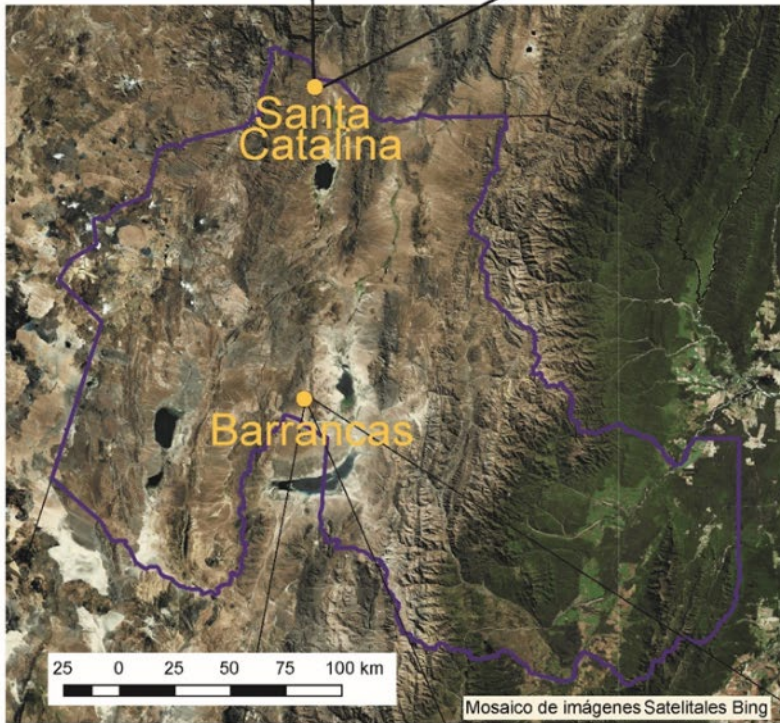
Height at the withers 90 cms.



SDM 2020: Conservation and sustainable use of camelids (vicuñas and llamas) to improve local livelihoods in the Andean Altiplano.

The project is linked with the themes to focus IPSI 9:

1. Knowledge: Recovering the ancestral method of vicuña capture, shearing, and release, and the traditional technologies for spinning and weaving vicuña and llama fiber.
2. Institutionalization : Collaboration with local institutions (indigenous community council), for locally producing camelids' fiber garments which can promote poverty alleviation. Co-organization of the Llama fiber spinning contest, Pushka Warmi in Santa Catalina
3. Ecosystem restoration and area-based conservation measures : Trying to protect vicuña from poaching. Increasing the number of camelids that are low-impact grazers in the high Andean grasslands.
4. Sustainable Value Chain Development: Detailed analysis of necessary skills, costs and time to weave vicuña garments from fiber obtained in local chakus.
5. Value: Promoting appreciation of the multiple values of the camelids and the surrounding biocultural heritage sites and the pastoralist way of life.



- Villages
- ▭ Jujuy Province
- ▭ International border



SDM 2020: We worked in two altiplano locations: Santa Catalina and Barrancas. Jujuy Province NW Argentina

We worked with two species: Vicuñas *Vicugna vicugna* and llamas *Lama glama*



The vicuña is the smallest species of the camel family.

It is wild and lives in the puna or altiplano, a high altitude landscape (more than 3500 m.a.s.l).

The vicuña has one of the finest (12 microns) and most prized (aprox 300 dollars per kilo) fibre in the world.

Killed for their skin, vicuñas were at risk of extinction in the mid-XX century.

Poaching is still a risk to the species



The recovery of vicuñas was a successful story with many actors.

- a) Convention for the Conservation of the Vicuna, signed by Argentina, Chile, Peru, Bolivia and Ecuador. *Article 1: The Signatory Governments agree that conservation of the vicuna provides an economic production alternative for the benefit of the Andean population and commit themselves to its gradual use under strict State control...*
- b) CITES classification appendix 1
- c) Vicuñas were classified as Vulnerable in 1982 in the IUCN red list of endangered species (Red List)
- d) Regional, national and provincial policies. *Commitment and work of the IPLCs (indigenous peoples and local communities) who were key actors in the territory.*



Iconic animal in the altiplano. Both in natural and social aspects.





With recovered populations we implemented *chakus* (wild vicuñas capture, live shearing, and release back to nature) which consist of ancestral techniques with animal welfare protocols.

1,2) Building a corral (enclosure pen)

3,4) Co-designing the capture with communities

5) Herding

6,7,8) Taking vicuñas into the corral

9) Handling, 10) Shearing

11,12) Scientific sampling

13,14) Shearing and collecting the fibre

15) Releasing

16) Post capture Research

Vicuñas garments could have an invaluable green market niche.

Communities faced difficulties and inequity in a global market

Market is oligopsony/monopsony (few or one buyers)

Fibre prices are variable (and currently decreasing below 300 dollars per kilogram)

The percentage earned by andean communities in the retail price of a garment is only 2-6%.



With this scenario, the alternative of producing high-quality handmade garments is a potential solution, if sufficiently regulated

From April 2021 to April 2022. Detailed analysis of necessary skills, costs and time to weave vicuña garments from fiber obtained in local chakus

It included the possibility to get stipends to cover the hours the Barconte family members dedicated to the activities, as none of the people involved had previous experience with vicuña fiber and we wanted to calculate costs.



SDM 2020

SATOYAMA
INITIATIVE





Observation of Llama fibre spinning quality



Delivery and weighing of raw fibre



Norma and America: Ceremonial smoking of the fibre



Clean fibre

Raw fibre

Yarn



Two colours: Vicuñas coats are darker in the back and lighter in the ventral zone



Preparing the loom.
Weaving
"partridge eye"
pattern.





ORIGINAL

Nº: 000084

Gobierno de JUJUY
Ministerio de Ambiente
Secretaría de Biodiversidad

Productos y/o Subproductos de Fauna Silvestre

CERTIFICADO DE TRAZABILIDAD Y TRANSFORMACIÓN PROVINCIA DE JUJUY

La autoridad que suscribe, CERTIFICA que: Dra. Bibiana Viló
DNI: 14.812.634

(firma o persona jurídica)

Particular/Presidente: Grupo VICAM

Inscrito en la Secretaría de Biodiversidad como: —

Es el tenedor legal de los productos y/o subproductos que se detallan a continuación: 1 Chalina
de 180cm x 52cm

Expt. N°: 1103-213-2018

Resolución N°: 088/18

Acta N°: 308

Fecha	Cantidad	Peso	Descripción	Firma del Fiscalizador
28-03-2022	1	444 gr.	Chalina de 180cm x 52cm	















Observaciones: Documento transitorio valido hasta la designación de nro.
de etiqueta definitiva

Expedido en S.S. de Jujuy

[Firma]
Ing. Dante Zagon
E.E. Buisson, P.B.

Firma y sello de funcionario autorizado
y/o jefe de oficina

El presente documento, sólo es válido dentro de los límites de esta provincia; para su traslado fuera de dichos límites es necesario contar con la correspondiente guía de tránsito de productos de la fauna silvestre.

	ACTIVITY	HOURS	COST in Arg. Pesos	COST in Dollar	WEIGHT in Grams	EFFICIENCY Percentage	PERCENTAGE OF TOTAL COST
1	Purchase of fiber 	-	55,319	582	1,294	-	 17,3%
2	Cleaning and dehairing 	573	200,550	1,744	-	-	 52%
3	Spinning 	225	78,750	685	550	42.5%	 20,3%
4	Yarn twist 	22	7,700	67	-	-	 2%
5	Loom weaving 	54	28,000	244	-	-	 7,2%
6	Wash and fringes 	16	5,600	49	-	-	 1,4%
	Shawl 	890	381,160	3,371	444	34%	 100%

RESEARCH

Open Access

Weaving a vicuña shawl

Bibiana Vilá^{1,2,3*} and Yanina Arzamendia^{1,4,5}















The weaving of a vicuña shawl is expensive.

Given our result, it would be interesting to:

- 1) Analyze the use of dehairing machines to avoid the costliest section in terms of time and money
- 2) Adopt a sales strategy to assure the access to potential buyers.

If chakus are 100% subsidized by government institutions, it is still convenient for community associations or cooperatives to sell raw fiber.

But...there are few companies that stock and regulate prices.

	NCP	Indicators	Values	30 -Years Trend	
REGULATION	 Habitat creation and maintenance	Grazing land integrity	I - M - R	⬇️	
		Vicugna population	I - M - R	⬆️	
		Suris population	I - M - R	⬇️	
	 Pollination and dispersal of seeds and other propagules	Pollinators Wind pollination and dispersal	I - M	●	
	 Regulation of climate and air quality	Grasslands Cryosphere	I	●	
	 Regulation of freshwater	Rock glaciers - vegas	I - R	⬇️	
	 Formation, protection of soils and sediments	Dungs quirquinchos / tojos	I - M - R	⬇️	
 Regulation of hazards and extreme events	Productivity / vegetation cover	I - R	⬇️		
REGULATION	 Regulation biological processes, pest, diseases	Predators	I - R	⬆️	
		Parasites	I - R	⬇️	
MATERIALS	 Food and feed	Llama: meat / charqui	I - M - R	⬇️	
		Sheep: meat	M - R	⬇️	
		Suris: eggs / feathers	I - M - R	⬆️	
		Quinoa	I - M - R	⬇️	
Wild vegetables		I - M - R	⬆️		
MATERIALS	 Materials and assistance	Fiber and clothes	M - R	⬇️	
		Dungs of llama	M	●	
		Crafts and domestic tools	M - R	⬆️	
Construction materials		M - R	⬇️		
 Medicinal, biochemical and genetic resources	Wild plants	I - M - R	⬇️		
 Energy	Firewood	I - M - R	⬇️		
NON MATERIALS	 Physical and psychological experience	Rituals of the Andean culture	R	⬆️	
		Supporting identities	Recreation and tourism	R	⬆️
		Learning and inspiration	Wildlife observation	R	⬆️

Llama fibre, is usually bartered for industrial food products (flour, sugar, pasta) at local fairs. Trucks arrive at the fairs with products. Local people arrive at the fair by llama caravans or by vehicle with fibre.



Institutionalization: SANTA CATALINA. "Pushka Warmi" Spinning Contest

The Community Council of the People of Santa Catalina, Jujuy, Argentina perceived cultural erosion in issues related to the herding and management of llamas and artisanal spinning and weaving of llama fiber. That is why we decided to co-organize with them a spinning contest. Known as Pushka Warmi.

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PUSHKA WARMI: CONCURSO DE HILADO EN SANTA CATALINA, JUJUY, ARGENTINA

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² CONICET: Consejo Nacional de Investigaciones Científicas y Técnicas de Argentina.

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⁴ INECOA: Instituto de Ecorregiones Andinas - CONICET- UNJu: Universidad Nacional de Jujuy. San Salvador de Jujuy, Argentina.

⁵ Consejo Comunitario del Pueblo de Santa Catalina, Santa Catalina, Jujuy, Argentina.

⁶ Comunidad Aborígen Aucapiña Chambí, Santa Catalina, Jujuy, Argentina.

⁷ Comunidad Aborígen Peña Colorada-Canchillas, Santa Catalina, Jujuy, Argentina.



Barrancas has a notable number of paintings and rock engravings, most of them camelids. Cave art, in addition to being ideological, also represents biodiversity and the contributions of nature to people (CNP).

We co-designed with the primary school authorities, a project on local biocultural heritage.

Children visited the cave, made rock art in pieces of rock at the school and they decided to make a sign to protect the cave.

Paper in revision.



LAS NIÑAS Y LOS NIÑOS DE LA ESCUELA PRIMARIA DE BARRANCAS DECIMOS QUE:

HAY QUE RESPETAR LA RIQUEZA ARQUEOLÓGICA Y NUESTRA HISTORIA

ENTRAR A LA CUEVA CON GUÍA

NO TOCAR NI DAÑAR LAS PINTURAS

NO TIRAR BASURA

NO ESCRIBIR EN LAS PAREDES

CUIDAR NUESTRO PATRIMONIO



Gracia





We are very grateful to Santa Catalina communities.
The Rondeau School in Santa Catalina
The Barconte family in Barrancas.
The Abdon Castro Tolay School in Barrancas
VICAM colleagues and friends

IPSi 9 to invite VICAM to this meeting
And specially to the SDM to have the opportunity and funds to develop
this project during pandemic times.

Thank you!

