

Mosqoy

Alpaca
Recuperation Project
**Sustainability
Plan**

Plan by Ashli Akins and Sarah Day
in collaboration with Emily Amburgey, Mia Glover,
Anshela Paravecino Kehuarucho, and Ana Romero

2021



SUSTAINABILITY PLAN

Alpaca Recuperation Project in Cancha Cancha, Peru

A collaboration between Mosqoy and the Illariy Ch'aska Weaving Association

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Credits

Written by Ashli Akins and Sarah Day

in collaboration with Emily Amburgey, Mia Glover, Anshela Paravecino Kehuarucho, and Ana Romero

with excerpts and diagrams from Ashli Akins' PhD dissertation.

Photo credits

Photos by Ashli Akins

Cover photo: Alpaquera Lucia herds her alpacas in the mountains above Cancha Cancha

Back cover photo: Alpaquera Dorotea with her son Elisban during the baseline registry project, with their alpaca "Ch'aska"

Background to Terms

- *alpaquera*: alpaca-herder
- *ayllu*: blood-ties and deeply ancestral extended-family ties; in Cancha Cancha, there are four ayllus that live in distinct annexes
- *campesinos*: rural agricultural subsistence communities
- *fair-trade*: the principles of a relationship in trading partnerships that is founded on fair compensation, respect, and equity; purchasers may choose to pursue a fair trade certification through the World Fair Trade Organization, which is very costly -- Mosqoy has chosen not to pursue certification but centers the needs of artisans
- *fast fashion*: an unsustainable business model that seeks to maximize profits by mass-producing goods and selling that at very low prices; this model relies on exploitation of people and the planet
- *hilandera*: A woman who spins yarn
- *icchu*: Andean straw. A grass native to Cancha Cancha and the surrounding mountains, which is the only traditional source of food for alpacas.
- *Indigenous local knowledge (ILK)*: Traditional processes, practices, and information that have been passed down - often orally - from generation to generation, and that are significant to maintain one's ancestral connection to land and culture
- *jornada wage*: the standard daily wage earned for jobs such as farm work
- *machista*: characteristic/belief in hyper-masculinity, and male dominance and control; extends beyond the individual to communities and systemic structures
- *macho*: male alpaca
- *pushka*: Traditional hand-spindle
- *skein*: A unit of yarn similar to a ball but with a shape that is more elongated and twisted
- *tui*: young alpaca

Purpose of Sustainability Plan

The purpose of this plan is to analyze the conditions under which the Alpaca Recuperation Project could be sustainable, based on the three holistic factors of sustainability: sociocultural, economic, and environmental.

This plan addresses how the globalized marketplace is not currently set up to support Quechua women's traditional identities as alpaca-herders, nor for a sustainable production cycle. It also addresses the environmental (e.g., climate change) and sociocultural (e.g., rural-urban emigration) changes that have occurred, which have caused the traditional alpaca-herding process to adapt.

In this Sustainability Plan, we look towards innovative, adaptive ways to revitalize the tradition while recognizing these shifts. We also address gaps, opportunities, and challenges in the current marketplace so that local artisans can compete on an international level, and provide recommendations for this project to be sustainable.

This plan is also meant to be a guide for those who will get involved in or support the project going forward, so they may understand the history, goals, and operational components behind the project.

Context and Problem Identification

Cancha Cancha is a community that sits at 3951 metres above sea level, located in a valley between two glaciers. The community comprises approximately 40 families living in four *ayllus* spread out across their traditional land, each approximately one-hour apart from each other. The *alpaqueras* of Cancha Cancha herd at an elevation of around 4600 metres, at the base of two glaciers. There are approximately 300 alpacas in Cancha Cancha; all are free-ranging and graze on the *icchu* rangelands.

Illariy Ch'aska (meaning “the first light of day” in Quechua) is the community’s weaving association in Cancha Cancha. The all-female members of the Illariy Ch’aska Women’s Cooperative identify as *alpaqueras* (alpaca-herders) and *hilanderas* (spinners). There are currently 13 members in the association. Proud of their identity, these women are some of the few remaining weavers who still raise, shear, and spin their own raw alpaca fibre. For *Cancha-Canchinas* (people from Cancha Cancha), being *alpaqueras* is foundational to their identity as women. Each *alpaquera* has approximately 10 alpacas in her herd.

Though now found across the world, alpacas are native to Peru. While different countries have their own standards of alpaca colours, there are approximately 22 distinct natural colours of their fibres. According to the *alpaqueras* of Cancha Cancha, in the 1980s the demand for white alpaca fibre dominated the global market, which resulted in *alpaquera* communities across the Cusco region of Peru to focus on breeding solely white alpacas. The *alpaqueras* selectively tried to eliminate all other colours, losing the knowledge to produce the wide array of alpaca colours that exist. Of the approximately 200 alpacas in the Illariy Ch’aska Weaving Association, only one is black (the rarest natural alpaca colour in Peru), and only 30 are other colours that are not white. Despite still having access to approximately half of the 22 colours of alpacas, the *alpaqueras* have lost the ILK to selectively breed them. Therefore, colours appear at random in their animals, and the *alpaqueras* have no control over the colour selection. The *alpaqueras* want to recuperate this herding tradition, including bringing back the spectrum of natural colours of alpaca in their herds, and have requested Mosqoy’s support to do so.

Revitalizing this tradition means maintaining the *alpaqueras’* cultural identity.

Cancha-Canchinas are facing pressures brought on by capitalism to leave their lands and migrate to places with more access to make an income, go to school, or go to markets. In order to continue the herding tradition, *alpaqueras* require that all of their time is dedicated to the tradition and that a deep relationship to and knowledge of the land is maintained. As such, mass-migration would result in broken relations with the land and the inability to continue the tradition, and - in the end - the loss of their *alpaquera* identity. They would also be unable to pass down the knowledge to present and future generations.

If the Quechua peoples are not on and in relations with their land over generations, they may lose their connection to it, their potential rights to their lands, and their deeply ingrained seasonal relationships with *Pachamama*. This lost connection is already occurring for the youth of Cancha Cancha, who were not raised on the land and who only visit for important ceremonies a few times a year. Many therefore do not know how to cultivate the land, raise alpacas, or speak the Quechua language. Most express that they wish they could (Akins 2022)¹, and all still identify as being from Cancha Cancha; they still feel connected ancestrally, but do not want to miss out on urban opportunities in order to stay on the land and immersed in their culture.

The *alpaqueras* are also facing environmental challenges, including the decline of *icchu*, the only source of feed and nutrition for alpacas in the harsh environment of the Andean páramo (moorlands). According to Vicentina, the president of the Illariy Ch'aska Weaving Association, *icchu* was last available beside the corrals in 1995. Around five years later, it had disappeared. As a result, the *alpaqueras* must herd their alpacas to increasingly higher elevations to access the *icchu*. The climate in Cancha Cancha ranges significantly and has shifted dramatically in recent years. *Alpaqueras* typically follow seasonal patterns of shearing and breeding that have been traditionally and ancestrally taught; following these patterns are important for the health of the alpaca. However, as the climate changes, it is becoming harder to navigate these seasonal processes, which are becoming more delayed each year.

XXXX add summary paragraph here - re language, etc. Linguistically, Quechua is a tangible, concrete language that is based in tangible, concrete examples, as opposed to theoretical or abstract concepts. *Alpaqueras* communicate orally, and not in writing.

¹ Ashli Akins (2022). PhD Dissertation Chapter 8: Plight of the Alpaquera: Navigating the tangled power imbalances that push small-scale producers out of the market and off their lands.

Geographical Context

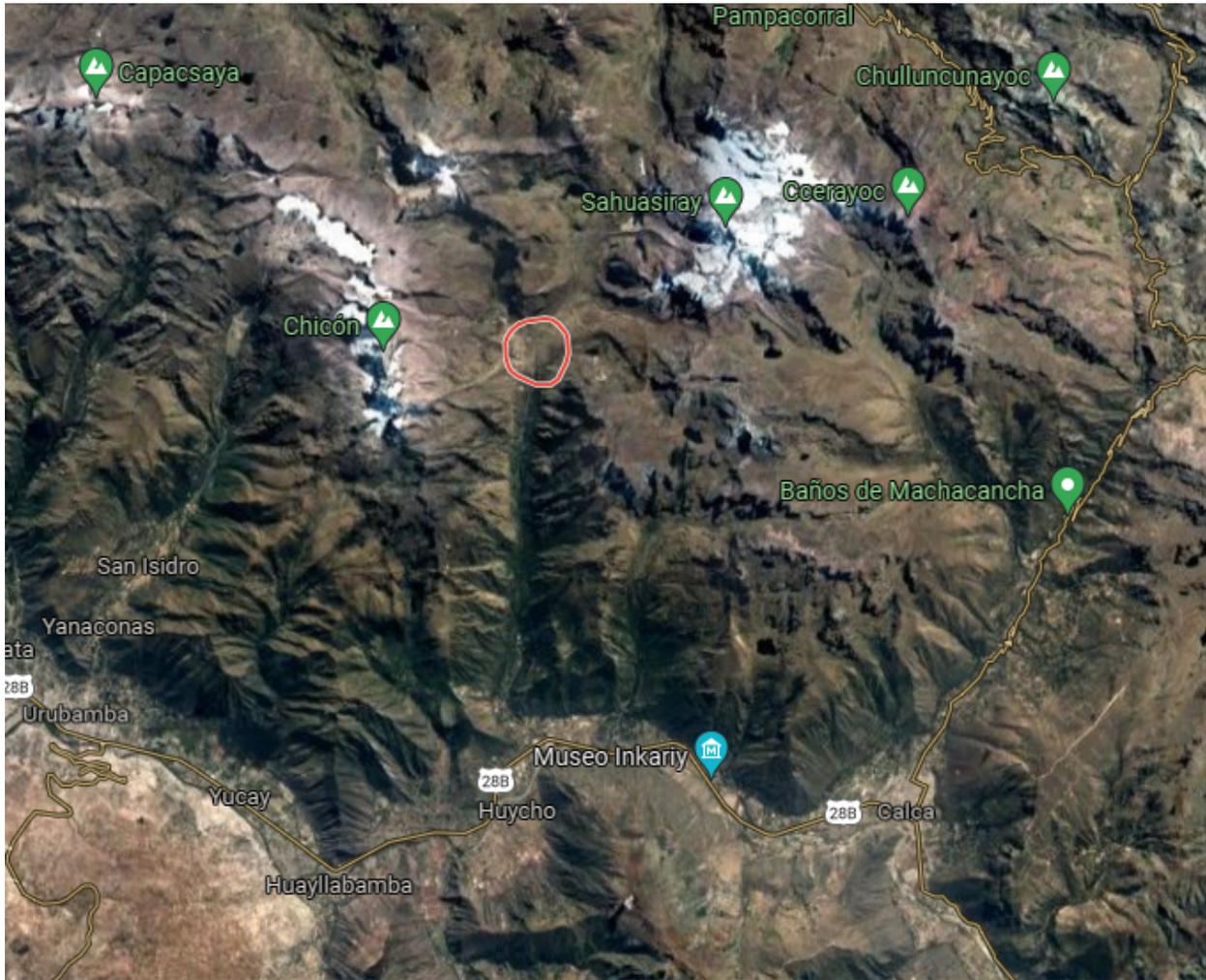


Figure 1. Map of the area where Cancha Cancha (circled in red) is located. The closest urban area is Calca.



Figure 2. Cancha Cancha (yellow marker) in relation to the Cusco region.

Vision

We envision that – by 2030 – at least half of all families in Cancha Cancha are connected to the Illariy Ch’aska Weaving Cooperative²; that there is healthy local production of at least half of the 22 natural alpaca colours; and that all women of the cooperative are able to be fully self-sufficient from the income of their diverse alpaca-herding products.

Quechua women are discriminated against in Peru, which results in their language and knowledge being seen as inferior and stigmatized, with shame being imposed on their identity. This project seeks to celebrate the *alpaqueras*’ identity and culture, recognize the value of their knowledge, and tell their story to others to dismantle biases.

Goals

Women’s empowerment

To foster pride, value, and self-worth in Quechua women through their identities and livelihoods as alpaca-herders, hand-spinners, and weavers.

Economic resilience

To generate financial security for Quechua women and remote highland communities of the Andes, and in doing so, foster options for them to stay on their land.

Intergenerational knowledge transfer

To connect elders’ ILK of alpaca-herding with youth, so they may carry on the knowledge to future generations before elders pass away.

² Legally called the “Asociación de Artesanos Illariq Chaska - Kancha Kancha - Huaran - Calca”

Objectives

This project honours shifting cultural needs, while connecting elders and youth with their traditions in a way that is both economically viable and environmentally sustainable. It supports the *alpaqueras'* goals of revitalizing their herding tradition.

Our main objective is **to create a sustainable circular commodity chain for the Quechua alpaca-fibre tradition, along all parts of its journey, from production to consumption**. Within this primary objective, we have created three specific objectives - one for each part of the project.

All of our objectives have been evaluated on the SMART scale (specific, measurable, assignable, realistic, time-bound).

1. **Recuperate Indigenous local knowledge of alpaca-rearing:** To recuperate the ILK of selective alpaca-breeding for increased natural colour diversity
2. **Pass down knowledge to youth:** To transfer ILK, registry tools, and skills of alpaca-rearing and hand-spinning to the younger generation before elders pass away
3. **Launch fibres line:** To create an internationally competitive fibres line that is made in highland communities with hand-sheared, hand-spun, organic, fair-trade, undyed 100% alpaca fibre

Values

Sustainability

We at Mosqoy strive to foster sociocultural, economic, and environmental sustainability across the Cusco region. This project has been designed in consideration of the equal and overlapping ingredients of sustainability: sociocultural, economic, and environmental sustainability. The *alpaqueras* are tangibly impacted by unsustainable systems established by colonialism and capitalism, including resource extraction, exploitation, devaluation of labour, and industrial production. The project has been assessed with these systems in mind, recognizing the interrelationships among the factors of sustainability. We seek to design project components to maintain a balance between environmental, sociocultural, and economic sustainability. When any of these factors are in conflict, the *alpaqueras* will provide leadership in decision-making priorities, and Mosqoy will not impose decisions on the *alpaqueras* to direct the project in a certain way.

Capacity

In all of its projects, Mosqoy doesn't provide a *hand-out*, but a *hand-up*. Our project includes training and capacity-building so that the weavers may become more independent and autonomous. Training and capacity-building have been woven into this project in order for the project management to eventually be completely independent from Mosqoy; with time, Mosqoy will work in partnership with Illariy Ch'aska as their retail partner, not as a project manager.

Capacity-building will primarily take the form of workshops, the intergenerational "buddy system", and apprenticeship training. Mosqoy also supports the *alpaqueras* in business needs, such as marketing. Training will be provided in skills required for the *alpaqueras* to be autonomous and independent, as both artisans and businesswomen.

Accessibility

The project is set up to meet the needs of its beneficiaries, which means it must be accessible for them; we have adapted working practices to ensure they are culturally relevant and break down access barriers. The *alpaqueras* communicate orally in Quechua, do not know Spanish, do not know how to read and write, and do not have digital access or digital literacy. Therefore, in order to facilitate access, we will prioritize:

- Bilingual translation (Quechua-Spanish) throughout the entire process
- Adaptive oral and visual versions of the Sustainability Plan and all elements of the project, to orally present to community members

- Adaptations of processes, documents, and experiments to be accessible and stewarded by the *alpaqueras* themselves (for example, in the baseline alpaca registry)

Quechua women face significant access barriers (including language, economy, and remoteness) when trying to sell their traditional products in the market at a fair price. Due to remoteness, Quechua women are also pressured to migrate to access the market and capitalist economy. Mosqoy plays a role as a bridge between the *alpaqueras* and the market, so that they do not have to leave their land to sell their products.

Quechua women face multiple discrimination, based on their race (Quechua), class (low), and gender (women). They get treated very poorly in Cusco city, and their knowledge is devalued; while Quechua men's ILK of farming is valued and considered a "job," alpaca-rearing does not receive the same respect as it is associated with women's work and therefore not considered a real "job." Because of this, Mosqoy works directly with the women themselves, rather than through the male leaders in the community, but requests the engagement of men as advocates and supporters.

Inclusion

We try to be inclusive of all those in the community who want to be a part of the project. Principally, this project considers the historical exclusion of Quechua women from capacity-building, and aims to center Quechua women and their ILK in all parts of the project. In the past, men have been centered in capacity-building initiatives related to alpaca-rearing, despite this being a traditional role of women in the community. We also hope to expand the membership of the cooperative to include all those in the community who want to participate; currently, however, the weaving cooperative is exclusive and small, due to competition for sales (and not enough sales). With this project, the intent is to create opportunities for more women, and more collaboration and less competition.

Innovation & adaptability

Understanding shifting needs (i.e. climate change and youth rural-urban emigration), we are finding new, innovative ways to transfer ILK and train youth. This project incorporates technology (including new media), and a collaboration between Indigenous local knowledge (ILK) and Western science, to adapt to the challenges of the time. Throughout all processes, ILK is respected and regarded as equal to (and not seen as inferior to) modern technology and Western science.

Additionally, if community members choose to adapt parts of their traditional process while keeping others, the project will support this, and will not force the *alpaqueras* to abide by certain traditional practices that may no longer feel relevant to them.

Ultimately, the *alpaqueras* are recuperating their herding tradition within a volatile, uncertain, complex, and ambiguous (VUCA) world (Stein 2021)³. The interplay among the three lenses of sustainability are intertwined and will undoubtedly shift and change throughout the course of this decades-long project. To remain sustainable, the project must be adaptable to change.

Interdisciplinarity

Complex world problems require equally complex solutions. There is no easy fix to the unequal, colonialist economic and social disparities that many populations face. Therefore, we at Mosqoy approach these complex issues head-on with a complex model and multi-pronged programming. It is only with plural perspectives and the inclusion of diverse viewpoints that we will collectively shift the paradigms that are causing such inequalities. The project objectives incorporate many different components, disciplines, and perspectives that will support the various goals of the community. Project components are interrelated and interdependent, coming together as one sustainable project.

³ Sharon Stein (2021): Reimagining global citizenship education for a volatile, uncertain, complex, and ambiguous (VUCA) world, *Globalisation, Societies and Education*, <https://doi.org/10.1080/14767724.2021.1904212>

History & Project to Date

Pilot study

When Ashli Akins was confirming the Illariy Ch'aska Weaving Cooperative's continued interest in her doctoral research, those present unanimously confirmed that they still wished to participate. However, Edil Fonzo, a community leader and husband of *alpaquera* Alejandrina, chimed in; he asked if, as part of their participation in the research, she could also help them recuperate their lost knowledge of traditional alpaca-herding. Ashli and her research assistant, Anshela Paravecino Kehuarucho, therefore went forward to co-design the project, in collaboration with Mosqoy and Illariy Ch'aska. The pilot study launched in late 2017.

Research and documentation

We have spent the past two years conducting interviews and environmental scanning to prepare for this long-term recuperation project. TEK - of herding, breeding, corralling, hand-shearing, and hand-spinning - was documented in photos and videos, and stories were shared among the community.

Creation of baseline registry

A registry was created, recording data for each of the 180 alpacas in the Illariy Ch'aska Weaving Cooperative. Data includes family trees, codification, names, and colours (see appendix for full registry).

A health assessment of the alpacas was also conducted. Fibre samples were taken from the chest, stomach, and leg of each alpaca and sent to the CITE lab, which used scientific tests to analyze the fibre quality. All of the fibre was determined to be of very high quality (see appendix for copy of assessment). The intent was to also analyze the colour diversity of the herd; however, the samples were not big enough to conduct this assessment.

Knowledge of maintaining the registry has been transferred to the *alpaqueras* of the Illariy Ch'aska Weaving Association, including adapting it to a mode that would work in the community. We created a hard-copy registry book for each weaver, with photos and information about each alpaca. Many more capacity-building workshops need to take place to fully capacitate the *alpaqueras* in managing their own registries, and we aim to include youth in these workshops to support the women in maintaining the registry.

Capacity-building workshops

A curriculum for capacity-building workshops and training programs was developed with participating *alpaqueras*, and the first set of workshops was conducted in both the communities

of Huarán and Cancha Cancha. The workshops that have been facilitated thus far include the following:

Alpaca-rearing Workshops (<i>crianza</i>)	Fibre Transformation Workshops (<i>transformación</i>)
<ul style="list-style-type: none">• Starting and keeping a registry• Corraling (for birth separation)• Understanding breeding for colour diversity	<ul style="list-style-type: none">• Hand-spinning (for consistent thickness)• Natural cleaning with plants (before and after spinning)

Fibre swatching and yarn prototyping (ongoing)

Ashli and Anshela created colour swatches of all of the accessible colours and tonalities (based on colour connotations in the Quechua language). They also worked with the *alpaqueras* to improve the consistency and quality of their hand-spinning, so that their yarn product would be ready to compete in the international fair-trade marketplace. They have yarn swatches and prototypes of 100-gram balls in different qualities, thicknesses, and colours from the years 2017-2021. The Illariy Ch'aska Weaving Cooperative continues to improve the yarn to create a product that is market-ready.

SWOT analysis

<p>Strengths</p> <ul style="list-style-type: none"> ● Established brand with customer base and sales avenues (website and retailers) through MPT ● Short commodity chain, which reduces costs and maximizes revenue for <i>alpaqueras</i>; also minimizes environmental footprint ● Established relationships with international fibre community for prototyping and feedback ● Yarn is natural (cleaned with plants/no chemicals), undyed, supports ILK and land stewardship, fair-trade, ethical labour conditions, with diverse colours; supports both animal welfare and Quechua women ● Established trust among <i>alpaqueras</i> for supporting the project ● Alpaca fibres are of high quality ● Illariy Ch'aska is legally registered and has been working for over 10 years with Mosqoy ● Team personnel (Ashli, Anshela, Cusi, the Illariy Ch'aska members) are invested and passionate) 	<p>Weaknesses</p> <ul style="list-style-type: none"> ● Yarn is currently inconsistent in thickness and colour, and not clean enough, based on international buyers' standards ● Lack of funding for start-up capital ● Lack of personnel time due to competing commitments ● Youth lack time to be in the community and to participate in knowledge exchanges ● Currently only have relationships with a few niche fibre retailers ● Alpaca herd is currently not colour-diverse (only one black alpaca) ● Small amount of yarn able to be produced per month ● Herding and breeding knowledge is held by Spanish-speaking males and not accessible to Quechua women ● President of Cancha Cancha has little capacity to invest in the project → yet we need his support to apply for funding ● Tense relationships among <i>ayllus</i> and lack of unity within the Cooperative ● Lack of interest from Cooperative members to invite others into Illariy Ch'aska (yet, with more members, we would have access to more colour-diverse alpacas; more knowledge-exchange opportunities; and ability to apply for community funding) ● Yarn needs to be priced high due to time and resources involved in production (70 soles min./ball from the weavers to Mosqoy)
<p>Opportunities</p> <ul style="list-style-type: none"> ● Growing market for sustainable, ethical, socially responsible products ● Potential to diversify <i>alpaqueras'</i> income by selling raw fibres and offering alpaca-rearing workshops ● International market opportunities through e-commerce ● Clients are increasingly more interested in slow fashion, local, and environmentally friendly products ● New collaborations (i.e. Pacamarca breeding program) ● Breeding by purchasing <i>machos</i> vs. using studs or sperm (potentially less expensive) ● Seed funding from municipality and other grants 	<p>Threats</p> <ul style="list-style-type: none"> ● Competition with other products of higher quality and lower price; may need to sell at a lower price (current market demand for consistency, efficiency, speed, fast production); however, this may not be a fair price ● Limited market for expensive yarn ● Consumers do not see the embedded value in a product that helps safeguard ILK ● Minimum order quantities for retailers may be large; order frequency and batch size could be environmentally/socially unsustainable ● Lack of supplementary income opportunities for <i>alpaqueras</i> while remaining on the land ● <i>Icchu</i> in decline; threat to alpaca health and resilience ● Limits of land to sustain the alpaca population needed to recuperate colour diversity ● Broader threats such as pandemics, climate change, and economic and political instability, could affect yarn sales and production ● Challenge to find suitable zootechnician

Project Components

Capacity-building workshops

There is a suite of 11 workshop modules in this project’s curriculum to be delivered over four years (refer to appendix for detailed project timeline). The workshops are divided into two categories: Alpaca-rearing and Fibre Transformation. The themes will be introduced, and then repeated several times (as is customary in Quechua oral practice) until they are solidified, with progressively more advanced lessons. Each workshop will be taught by a collection of facilitators with relevant expertise. All of the workshops will have two stages: theoretical and practical (on the land). Youth will also participate in several of the workshop themes, so that they can help the *alpaqueras* steward the project.

Alpaca-rearing Workshops	Fibre Transformation Workshops
<ul style="list-style-type: none">• Food and land• Birthing and raising• Health• Breeding and colour selection• Registry	<ul style="list-style-type: none">• Shearing• Pushka• Categorization• Classification• Carding• Yarn counting and measurement

Recuperation of alpaca colour diversity

Alpaca registry

The alpaca registry will continue to be used and updated as a means to document characteristics of the herd. This is especially important for colour diversity revitalization, as it tracks lineages within the herd; this will allow for tracing the colour genetics within these lineages. The registry should be updated at least annually, with health information recorded. Youth will play an important role in registry maintenance (explained in further detail in the next section).

There are currently around 20 alpacas in the association that need to be added to the registry. As well, since the first round of registration, some of the earrings with codes that match alpacas to the registry have fallen off. These alpacas will need to be identified and re-registered based on the names recorded in the registry.

The *nacimiento* registry (birth registry) will need to be created, which tracks alpaca births and their lineage, etc., and updated annually. The zootechnician will provide guidance and instruction to establish the *nacimiento* registry. This registry will be vital to keep updated for tracking the colour revitalization.

Role of the zootechnician

A zootechnician will be hired to provide scientific expertise on areas that are not currently understood by the women in Illariy Ch'aska, and which have been deemed by the *alpaqueras* as necessary and important pieces to the project. Such themes include:

- Teaching how to set up and maintain an **alpaca registry**, to better understand how to selectively breed
- Advising on how many **new machos** (and of which colours) need to be introduced to the herds, to recuperate the community's desired colours
- Advising on how to breed, separate, and corral for specific **colour selection**
- Advising on the administration of **alpaca medication** for parasite control and other health needs. Alpacas are typically administered medication twice per year - before the dry season and before the rainy season.
- Scoping out **pasture** (to zone out the areas of different food options for alpacas, and how many hectares have suitable soil, etc.)

Alpaca Fiesta Peru

Representatives from both Mosqoy and Illariy Ch'aska, plus the zootechnician and youth apprentice (four people total) will attend the Alpaca Fiesta in Arequipa in 2022 to meet breeders, to network, and to research prices for *machos*. The Alpaca Fiesta runs every two years; therefore, in 2024, the project team will return to purchase approximately five *machos* for the breeding program.

Breeding Information

The gestation period is 9-10 months; babies are born around November. Alpacas are first sheared at two years of age; shearing occurs only every two years in January and February. Samples of fibres from young alpacas (from three parts of their body) should be taken and sent to the CITE lab for fibre quality and colour assessment.

Colour diversity

To monitor the recuperation of the diversity of natural alpaca colours, a spectrum of grading colours can be used, based on the number of alpacas in the herd who carry the genetics required to pass down each colour. Ideally, there would be at least five alpacas (between ages 2-10) of each colour within Illariy Ch'aska.

Suggested grading system (based on linguistic revitalization programs):

Level	No. of alpacas
Locally extinct (sleeping)	0
Endangered	1-2
Vulnerable	3-4
Low-capacity	5-10
Thriving	>10

A number of questions remain for the breeding program:

- How will the *machos* be managed in the community? The alpacas are not currently collectively managed, and therefore, the new machos that the project purchases would be owned or cared for by an individual. We recommend rotating the *machos* so that the weaving association's president cares for and breeds him (for a duration of two years), and then rotates for the subsequent two years (and so on).
- How long will it take to recuperate colours, based on gene transmission? How many new *machos* will we need to purchase?

How many alpacas are needed in each colour to ensure a healthy stock of each colour in the community?

Youth training

As with any ILK, the only sustainable way that the alpaca-rearing tradition will survive is if it is passed down to future generations. Additionally, both the *alpaqueras* and the youth hold very different but important skill-sets; for example, *alpaqueras* hold the ILK of their land and tradition, while the youth speak Spanish, use a computer, and can read and write. Together, these skills can allow the community to autonomously manage the project.

Community youth apprentice

The Mosqoy Youth Program will collaborate in this project to fund a full scholarship for youth from Cancha Cancha to study zoology and apprentice with the project's hired zootechnician. Once the apprentice has graduated from their program, they will be hired as a full-time zootechnician for this project. A new student will be offered a scholarship every four years (as it is a four-year degree) and will begin their apprenticeship after the previous student, being mentored by the project's zootechnician.

Registry buddy system

Youth from Cancha Cancha who are current students in the Mosqoy Youth Program will actively contribute to the project by being paired with *alpaqueras*; the youth apprentice will help to maintain the (complex and scientific) alpaca registry by recording data and attending meetings. The youth will participate in the project on weekends, and will ideally come back to Cancha Cancha at least once a month.

Launch of fibres line

A Fibres Line, carrying raw materials (yarn) instead of transformed materials (textiles), will be sold through Mosqoy Peruvian Textiles (MPT; Mosqoy's fair-trade textile program). This will be one of the world's only organic, fair-trade, free-range, hand-sheared, hand-spun, unprocessed, undyed, 100% natural alpaca yarn that is offered in a variety of natural colours. We will sell products from the Fibres Line primarily on our online store and in fairs, as well as wholesale to small independent shops (both brick-and-mortar and e-commerce) that cater to this niche market.

Market research

We are currently undergoing a review of market research to accompany this Sustainability Plan, to inform project decisions related to market needs and demand. Research will include:

- Retailer needs (minimum order quantities, order frequency, pricing)
- Similar products that currently exist
- Competitors in the 'fast-fashion' industry and market relevance of fair-trade and handmade products
- Identification of consumer base

Consumer education

Through Mosqoy Peruvian Textiles (MPT), Mosqoy will promote the Fibres Line with information on the importance of this project, the value of the traditional alpaca-rearing process, and the

role of consumers in choosing more expensive, ethical products. Each ball of yarn will be packaged with a booklet of information about both the process and product. Emphasis will be on the story behind yarn, and the unique nature of hand-spun yarn, which has imperfections and inconsistencies that, instead of being a drawback, make it unique and show its soul. This information will also be present in the Fibre Line's branding, which can be showcased and promoted through MPT (e.g., social media, textile fairs).

Table 1. The main differences between industrially processed yarn and traditionally produced yarn, from multiple perspectives, including environmental, sociocultural, and economic sustainability; the animal welfare of the alpaca; and quality and colour of the yarn (Akins 2022).

Value	Industrially Processed Yarn*	Traditionally Produced Yarn**
Animal Welfare	Alpacas kept in small quarters	Alpacas roam free
	More access to Western medicine and technicians for alpacas	Less access to Western medicine; more knowledge about traditional medicine and care
	Alpacas are more susceptible to parasitic disease due to close quarters	Alpacas are more susceptible to disease and reproductive failure due to shortage of forage material
	Sheared annually (Schmid 2006) ⁴	Sheared once every two years
	Sheared with electric shears. In some cases, rough handling results in stress and injury.	Sheared traditionally using a knife; one person comforts the alpaca's head while the other shears.
	Alpacas have numbered codes.	Alpacas have names and individual owners.
Environmental sustainability	Can be organically certified (GOTS), which starts at processing stage	Usually not able to be organically certified, since small-scale producers do not have access to certification tools
	Cleaned using bleach, dye, and detergents (Schmid 2006), though some mills use more natural detergents	Cleaned using local plants and Indigenous local knowledge (r'oqe, quinoa)
	Does not require a lot of land	Requires space for land
	Does not keep people on their land or support land stewardship	Supports land stewardship, uses ancestral lands to rear and pasture
	Longer commodity chain; farmers receive less money due to the long commodity chain	Shorter commodity chain between producer and consumer; fewer intermediaries
Sociocultural sustainability	Does not support the recuperation of Indigenous local knowledge	Supports the recuperation of Indigenous local knowledge

⁴ Sarah Schmid (2006). The value chain of alpaca fiber in Peru, an economic analysis. Swiss Federal Institute of Technology. <https://core.ac.uk/download/pdf/48032051.pdf>

	Requires herders to adapt to Western quality standards and methods	Celebrates uniqueness and inconsistencies
	Spun on industrial machinery (Schmid)	Handspun on a <i>pushka</i>
	Carding and classification is completed manually (Schmid)	No carding or classification takes place
Economic sustainability	High quantity	Low quantity
	Fast production	Slow production
	Often poor and unfair working conditions. If not, can be fair-trade certified.	Often abide by fair-trade principles, though rarely with access to be fair-trade certified
	Less expensive for client to purchase	More expensive for client to purchase
Quality	Consistent composition	Inconsistent composition (with hair, earth)
	Consistent thickness	Inconsistent thickness
	Clean	Not always clean
	Exact measurements	Not exact measurements
Colour	Exact colour, usually undyed white or dyed synthetically	Diversity of (natural undyed) colours that may not be able to be exactly replicated

Documentation of knowledge

As a baseline part of the project, we are documenting traditional practices and pieces of knowledge, before a) it changes, or b) it disappears.

Knowledge and practices will be documented in photos and videos. The *alpaqueras* involved in the project will be interviewed about their experiences with alpaca-rearing, the knowledge they hold, and the knowledge that has been lost. The photos and videos will be made accessible to the community, potentially on a shared computer or a USB drive. Mosqoy will safely store a back-up copy of all files. The community will indicate which information is confidential, and which they would like to be shared publicly for initiatives such as consumer education. Mosqoy will then take the lead in disseminating information that is meant to be shared. Such documentation includes:

- Alpaca-herding
- Corralling
- Traditional shearing process
- Traditional hand-spinning process
- Ancestral information about how to best care for alpacas
- Ancestral information about seasons, weather, and land

Knowledge-sharing

Knowledge exchanges are important vehicles for the transmission of ILK. There are four key modes of knowledge exchanges: a) between ILK and Western science, b) between elders and youth, c) between different communities, and d) among members of the same community. Throughout these modes of exchanges within the project, in order to center the *alpaqueras* it is vital that knowledge is relayed in a Quechua way.

Between Indigenous local knowledge and Western science

Indigenous local knowledge is contextual and place-based; it possesses ancestral memory and local nuances that scientific data cannot ever see or know. Western science brings a meta-level perspective, with lessons from other case studies in other regions of the world. It goes wide. Both are extremely valuable for different but equal reasons – but only if both are respected as legitimate forms of knowledge, shared reciprocally.

This exchange will primarily occur through the collaboration among the *alpaqueras* and the hired zootechnician, along with the Community Youth Apprentice. The Registry is an example of these knowledges being intertwined -- this Western, written form of keeping knowledge is a tool to recuperate alpaca colour diversity, incorporating the alpacas' given names, which is then transmitted in the Quechua way to the *alpaqueras*.

Among members of the same community

Members of the same community hold knowledge that is not widely-known. In Cancha Cancha, it is often older women who hold knowledge of the alpaca-rearing tradition and the diversity of colours that once existed in the herd; others have particular expertise in *pushka*, alpaca care, etc. Knowledge between *alpaqueras* will primarily be shared ad-hoc and informally, such as through community dialogues and storytelling; this is the most conducive and culturally relevant way to share knowledge in Cancha Cancha, especially since the *alpaqueras* do not recognize one another as experts. When women from Cancha Cancha are positioned as experts to lead a formal workshop, they are often not listened to; therefore, fostering more informal sharing opportunities will hopefully break down this stigma and allow the women to share their knowledge in a less intimidating way.

Through a Calca municipal program the men in Cancha Cancha have been trained in the science side of alpaca rearing and could be invited to share this knowledge with the *alpaqueras*.

Between different communities

While knowledge in a particular area of expertise may be sleeping in a community, other communities may hold that knowledge. Sharing among communities is important for awakening this knowledge. For the workshop modules, knowledge-holders from other communities will be brought in as visiting experts. During the Pilot Study phase, a knowledge-holder from Amaru came to Cancha Cancha to teach natural fibre cleaning using plants.

The *alpaqueras* and other members of Cancha Cancha may also desire to share their knowledge with other communities, and support them in establishing similar projects.

Between elders and youth

Elder-youth knowledge-sharing is vital for the long-term stewardship of knowledge and tradition by passing these down to future generations. Youth also have knowledge and skills to offer through their formal education, including Spanish language and literacy. Elder-youth knowledge-sharing will primarily happen through the registry buddy system.

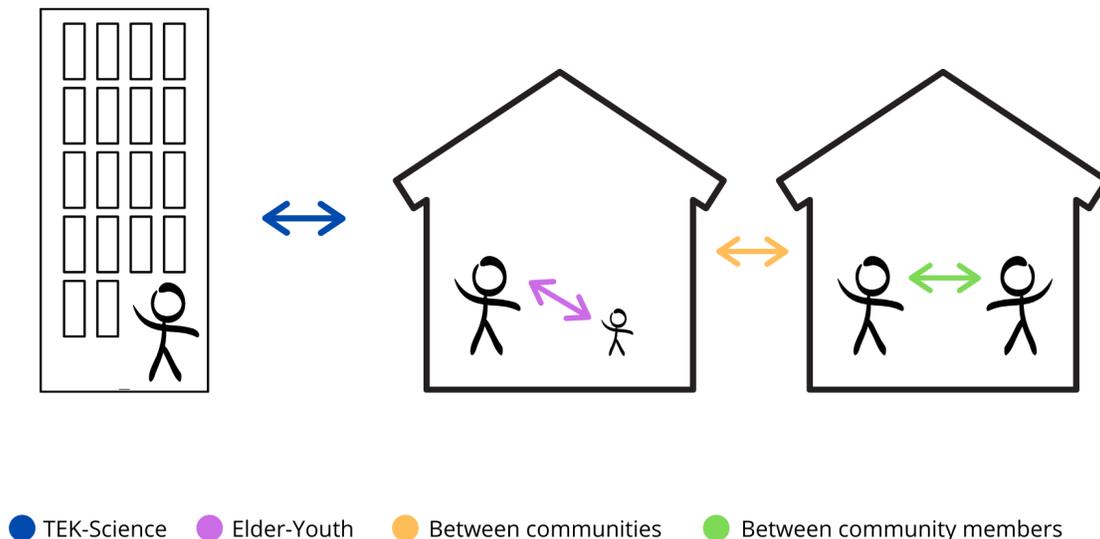


Figure 3. Knowledge exchanges are important vehicles for the transmission of ILK. There are four key modes of knowledge exchanges: a) between ILK and science, b) between elders and youth, c) between different communities, and d) among members of the same community.

“One day, when we were discussing natural alpaca colours, we asked if anyone in the room remembered a colour that no longer existed, and an alpaquera in her 50s did; she tried to describe it to the other women who looked at her in awe. She had never shared the story before. She described a sort of vibrant red, redder than the puka ch’umpi (reddish brown) that exists now” (Akins 2022).

Project Timeline

Four stages

This project will successfully transition from a pilot study to a long-term community-based initiative via four stages:

1. **Pilot Project | October 2017 - September 2021:** Ashli Akins’ doctoral research project (requested by the community of Cancha Cancha; conducted in collaboration with Mosqoy)
2. **Transition Year | October 2021 - September 2022:** During this year, we search for funding opportunities and operate with minimal capacity)
3. **Alpaca Recuperation Project | October 2022 - September 2026:** Mosqoy (in collaboration with the Illariy Ch’aska Weaving Cooperative) manages the project, and sets up its first stages so that it may be sustainable
4. **Self-Sufficient Community Project | October 2026 onwards:** Illariy Ch’aska Weaving Cooperative (autonomously, with youth leaders from their community) manages the project, and works with Mosqoy as its retail partner

Summary of timeline

Through both the raw materials (alpaca fibre) and transformed products (finished textiles), Mosqoy will have two local product lines from Cancha Cancha that are sustainable, and fairly and directly traded. **The sales generated from these products will be able to pay for the project itself while also supporting artisans, by the end of Year Four (October 2026).**

Key milestones per project phase include the following:

Year 0 (Oct 2021 - Sept 2022; transition year)
Purchase and sales of yarn (goal = one per every other woman per month / 7 100-gram balls per month)
Create and distribute Fibres Line catalogue ; secure regular wholesale and retail clients
Launch project publicly; market the project and story
Market research ; research necessary information about vendors and clients, to understand current niche market and plan accordingly
Fundraise ; find sponsors and backers to fund the four-year project

Recruit ; secure invested team members for the core positions
Capacity-building workshops ; continue bimonthly workshops with the Illariy Ch'aska alpaqueras, based on what was started during the pilot study
Monitoring & evaluation ; ensure continued and annual monitoring, and adaptation as necessary, in collaboration with the <i>alpaqueras'</i> changing needs

Years 1-2 (Oct 2022 - Sept 2024; Alpaca Recuperation Project)
Purchase and sales of yarn Year 1 goal = one per every other woman per month / 7 100-gram balls per month Year 2 goal = one per woman per month / 13 100-gram balls per month
Recruitment of five more members to Illariy Ch'aska (total of 17 members by Year 3)
Hire a zootechnician to be employed for two years
Set-up of long-term project logistics and planning
Training of core team members
Begin youth apprenticeship in Year 2; fundraise for scholarship in Year 1
Continue marketing the project and story and building relationships with retail clients and the yarn community
Capacity-building workshops ; continue bimonthly workshops with the Illariy Ch'aska alpaqueras
Monitoring & evaluation ; ensure continued and annual monitoring, and adaptation as necessary, in collaboration with the <i>alpaqueras'</i> changing needs

Years 1-2 (Oct 2022 - Sept 2024; Alpaca Recuperation Project)
Purchase and sales of yarn Year 1 goal = one per every other woman per month / 7 100-gram balls per month Year 2 goal = one per woman per month / 13 100-gram balls per month
Recruitment of five more members to Illariy Ch'aska (total of 17 members by Year 3)

Set-up of long-term project logistics and planning
Training of core team members
Begin youth apprenticeship in Year 2; fundraise for scholarship in Year 1
Continue marketing and building relationships with retailers and the yarn community
Capacity-building workshops ; continue bimonthly workshops with the Illariy Ch'aska alpaqueras
Monitoring & evaluation ; ensure continued and annual monitoring, and adaptation as necessary, in collaboration with the <i>alpaqueras'</i> changing needs

Years 3-4 (Oct 2024 - Sept 2026; Alpaca Recuperation Project)
Purchase and sales of yarn Year 3 goal = one per every other woman per month / 17 100-gram balls per month Year 4 goal = two per woman per month / 34 100-gram balls per month
Recruitment of five more members to Illariy Ch'aska (total of 22 members by Year 5)
Set-up of long-term project logistics and planning
Training of core team members
Completion of first youth apprenticeship in Year 4
Continue marketing
Capacity-building workshops ; final series
Monitoring & evaluation ; conduct a final evaluation of the project and facilitate the transition to a community-led project

Year 5 onward

Following the four-year project, the project will be led, sustained, and run by the community. Mosqoy will continue to support by being the community's retail partner, which will include marketing, creation and dissemination of catalogues, and international wholesale sales.

In essence, from Year 5 onwards, the Fibres Line will simply become another line of the Mosqoy Peruvian Textiles product, and we will work with Illariy Ch'aska to produce and sell this line in the same way that we currently do with the textile products. Mosqoy will continue to fund the zootechnician scholarship through the Mosqoy Youth Program.

Team Members & Collaborators

Ideal core team

Going forward, we have realized that a strong permanent core team is essential to the success of the project. It must be an interdisciplinary, multi-gender, multilingual team. For the first four years of the project, we propose the following roles (all paid):

Role	Person	Time commitment/week (hours)			Language(s) spoken	Responsibilities
		Year 0	Years 1-2	Years 3-4		
Project Coordinator	Currently Anshela Paravecino Kehuarucho	20	20	10	Spanish, Quechua	<ul style="list-style-type: none"> Leads project: coordinates logistics, budget, fundraising Liases with community Recruits and trains new team members Attends all workshops and meetings Translates between Quechua and Spanish Packages yarn as a sellable skein (counting and weighing, attaching tag); sends final packaged product to MPT Manager Knowledge documentation Monitoring and evaluation Assists Illariy Ch'aska with <i>tramites</i> (paperwork, legal, forms) Coordinates buddy system/youth visits
Mosqoy Peruvian	Currently Cusi Saco Chung	5	5	5	Spanish, English	<ul style="list-style-type: none"> Coordinates yarn orders and sales

Textiles (MPT) Manager						<ul style="list-style-type: none"> ● Conducts quality control in collaboration with project coordinator ● Finds retail opportunities ● Maintains vendor relationships ● Handles shipping, etc. ● Continues market research
Temporary Mosqoy Liaison	Currently Ashli Akins	20	0	0	Spanish, English	<ul style="list-style-type: none"> ● Seeks funding for start-up funding/capital ● Prepares templates for marketing, strategic planning, etc. ● Trains project coordinator and MPT Manager to take on project Y1 onwards ● Designs and adapts project
Zootechnician	TBD; employed by Mosqoy	0	20	20	Spanish, Quechua	<ul style="list-style-type: none"> ● Facilitates capacity-building workshops related to alpaca-rearing ● Provides expertise on selective breeding of alpacas ● Mentors the Youth Apprentice ● Scopes the pasture for zoning for crops ● Becomes trained in cultural understanding ● Maintains baseline alpaca registry and trains community to maintain registry Y2 onwards ● Purchases and breeds <i>machos</i> ● Conducts health assessments of alpacas ● Collaborates with CITE Lab to test fibre samples

<p>Alpaquera Lead</p>	<p>President of Illariy Ch’aska, female</p>	<p>5</p>	<p>5</p>	<p>5</p>	<p>Quechua</p>	<ul style="list-style-type: none"> ● This role rotates every two years, since the Illariy Ch’aska president also rotates every two years ● Provides leadership from the community perspective ● Leads internal quality control of yarn (monthly) ● Coordinates with Project Coordinator for all logistics and planning ● Delegates responsibilities within her community for record maintenance (budget, meetings, registry, etc.) ● Collaborates with Project Coordinator for Monitoring & Evaluation, ensuring Association’s needs are met ● Cares for Illariy Ch’aska’s <i>machos</i>
<p>Community Lead*</p>	<p>A male leader from the community (i.e. Community President)</p>	<p>5</p>	<p>5</p>	<p>5</p>	<p>Quechua, Spanish</p>	<ul style="list-style-type: none"> ● Attends monthly meetings and workshops ● Liaises with municipality to obtain funding ● Ensures association is abiding by requirements to qualify as a community, not a familial, group ● Helps president to expand the association, and to make it less divisive ● Assists Illariy Ch’aska with <i>tramites</i> (paperwork, legal, forms) <p>*The Community Lead will be recognized with a formal title.</p>

<p>Community Youth Apprentice</p>	<p>Mosqoy Youth Program Student from Cancha Cancha (TBD)</p>	<p>0</p>	<p>20</p>	<p>20</p>	<p>Spanish, Quechua</p>	<ul style="list-style-type: none"> ● Works with and learns from zootechnician ● Takes on leadership of the project from Y5 ● Attends all meetings and workshops ● Keeps registry updated, working with the <i>alpaqueras</i> in areas that require literacy and Spanish-language knowledge ● Acts as a support system for <i>alpaqueras</i> in areas of language, literacy, and digital technology ● Supports Project Coordinator to set up and maintain buddy system ● Collaborates with Project Coordinator on knowledge-documentation records
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Potential Collaborators & Competitors

The following is a list of leads for funding, product sales, networking, and other collaboration opportunities, as well as a few similar projects in the region.

Production and capacity-building

- **[Awamaki](#)**: Awamaki is both a Peruvian *asociación civil* and a U.S. 501(c)(3) non-profit organization working closely together to empower women's artisanal associations in the Ollantaytambo district. They were creating an alpaca-yarn line in 2016, though it appears that it may have not been carried through. They may be interested in collaborating with us on our Fibres Line in some capacity (though we have never discussed the topic).
- **CITE Textil Camelidos Cusco**: CITE is a lab in Cusco, operated with support from the Peruvian government's Ministry of Production. It has highly industrial machines, and several community capacity-building programs. We collaborated with CITE to test the quality of our alpaca fibre. The lab seems interested in collaborating with our alpaca project in the future (they just need a formal proposal); however, they may only be interested in collaborating if we are willing to adapt traditional handmade processes to more industrialized efficient methods.
- **[Clara Parkes](#)**: An American author and yarn/wool advocate who tells the stories behind yarn. She may have insights into how to market and promote ethical yarn, and may have suggestions for funding/collaboration opportunities. We have no prior connection with Clara.
- **[Fibra Emprendedora](#)**: This association brings together women from Antauta, Ajoyani, and Queracucho, *campesino* communities located more than 200 km from the city of Puno and over 4,500 meters high. Experts in the transformation of the fibre, these spinners produce alpaca yarns of great quality and in diversity of textures using traditional techniques with deep pre-Hispanic roots. We have a sample of their yarn, but do not have any prior connections. It would be interesting to learn their process and see especially how they clean and card the yarn, and guarantee a certain thickness.
- **[Maiwa](#)**: An organization/business that works with hundreds of artisans in India who create naturally-dyed textile products, including yarns (though their main expertise is in fabrics). They have a store in Vancouver; Dani was interviewed as part of our market research and indicated that she would be willing to answer any questions.

- **[Michell](#)**: Michell is the largest alpaca fibre company in Peru, operating at a very large scale; they are a competitor rather than a collaborator, but can be a baseline for understanding the fast-fashion alpaca fibre industry, practices, and pricing.
- **[Nicholene Solomon \(@woolenviolent on Instagram\)](#)**: Nicholene is a member of the knitting and weaving community and has a large following, and could be a resource for sales and networking. We have no prior connection with Nicholene.
- **[Nuñoa Project](#)**: US-based project working with the community of Nuñoa (Melgar Province, Peru) to improve fibre quality through breeding. We have no prior connection with this project.
- **[Pacomarca](#)**: *Pacomarca* is an experimental station for scientific research on the genetic improvement of alpacas and the transfer of technology and good-quality (valued) genetic material to the smallholders of the Peruvian Andes. It seeks to contribute to the sustainability of alpaca production through the improvement of fibre quality, which leads to higher prices in the market and the maintenance of community interest to continue raising alpacas. *Pacomarca* purchases fibres from farmers. We have no prior connection with *Pacomarca*.

Sales and funding

- **[Arms of Andes](#)**: Arms of Andes is an outdoor-apparel company that uses alpaca fibre for sustainable outdoor clothing (instead of merino wool). It is based in California (US) but with a connection in Cusco. They are interested in collaborating with and supporting Mosqoy.
- **[Knotty by Nature](#)**: A fibre shop in Victoria, BC, that runs the Fibrations Festival. They have contributed to this project through market research, and are (theoretically) interested in purchasing large batches of our yarn.
- **Municipality of Calca**: The Municipality of Calca previously conducted an alpaca-recuperation program in Cancha Cancha and surrounding communities. Because of this, we have copies of the alpaca-rearing manual, which is filled with informative details. However, the program was not a success, because it used written (not oral) methods (such as a book in Spanish), and was primarily for the men in the community (rather than the female *alpaqueras*). The current mayor of Calca is a zootechnician by trade, so he is passionate about the subject. The community can apply for funding from the municipality, if the project is deemed a “whole community” project.

- **Proyecto Alpaca:** A large project across the South of Peru, run by a collective of regional governments. It works on revitalization projects for alpacas, but with a focus on industrialized and efficient production. Ashli is in contact with Mauricio, who works for the project. We intend to pitch the plan to them for collaboration and funding; they have already expressed interest. However, we worry they may only be interested if we shift to more efficient processes, and let go of important parts of the *alpaqueras'* ILK.

Necessary collaborators

The key next step is to find funding collaborators; otherwise, this project is at a stand-still. We also need the long-term investment of key team members, including the zootechnician, youth apprentice, and *alpaqueras*. It would also be helpful to collaborate with other alpaca projects to learn about the gaps in our knowledge. Finally, we need to build strong relationships with several yarn retailers internationally to guarantee consistent wholesale orders.

The alpaca-fibre hubs in Peru are located in Arequipa and Puno (places that have lost much less alpaca-rearing knowledge than here in Cusco). Therefore, it may be helpful to make reconnaissance and learning trips to these provinces.

Challenges

Staffing

Recruitment and Retention

Finding and keeping a stable long-term team that is interdisciplinary and bridges the gap between cultural, ecological, biological, and economic ways of knowing is key to the sustainability of this project.

A key recruitment challenge is finding the perfect zootechnician with the ideal qualifications to meet the community's and project's needs. There are many knowledgeable and experienced zootechnicians locally; however, there are few who respect Quechua women's leadership and view ILK as equal to scientific knowledge. The collaboration and relationship between the zootechnician and the *alpaqueras* must be grounded in respect, and cannot recreate unequal power dynamics; this is a key focus in our recruitment.

Necessary qualifications for our project's zootechnician:

- Holds aligned values
- Speaks Quechua and Spanish
- Has sufficient time to commit to the project
- Wants to work rurally
- Is not *machista*
- Has experience working with *campesino* communities
- Respects ILK
- Willing to work part-time if there are budget constraints

Opportunities: Expanding the project's network by connecting with collaborators who can provide further connections to qualified and suitable zootechnicians.

Rural-urban emigration

Sustaining long-term involvement of community members, beyond Illariy Ch'aska, has shown to be a challenge. Most of the youth having emigrated to Huarán, Calca, and Cusco makes it challenging for them to be available for project activities, and slows the project considerably if we work around their weekend-only availability. Alpaca-herding can only be passed down orally generation to generation, so it is vital to have this elder-youth connection.

Opportunities: Develop alternative modes of knowledge transmission, such as video or audio recording, and "cool" apps, if possible. Integrate knowledge-transmission activities into Mosqoy Youth Program students' learning within their curriculum.

Community dynamics

Support from male leadership

Receiving support from the male leaders in Cancha Cancha (i.e. the community president, community Board of Directors, etc.) is required so that the project can be taken seriously as a community project. Typically, women are not allowed to attend community meetings; therefore, it is the male representative of families - and the elected male leaders - who make decisions about important projects, programs, and funding.

Edil Fonzo, husband of Alejandrina and current President of Cancha Cancha, holds a lot of wisdom about alpaca-rearing and supports the project; however, he has very little capacity due to his involvement in other community activities. This has become frustrating for Illariy Ch'aska, as he has grand ideas in the few meetings he attends, but little follow-up.

Opportunities: Honour Edil Fonzo's (and others') contributions by providing a small financial honorarium and by giving them an official title (which is important in Peruvian highland communities); this way, the role will be seen as equally important to other community-leadership positions.

Rifts in community relationships

There are tensions among the four very distinct *ayllus* within Cancha Cancha; each *ayllu* has a lot of historical bonds that glue it together, and equally deeply entrenched rifts that separate it from the other *ayllus*. This results in a lack of unity and challenges of trust, communication, knowledge-sharing, and collaboration when working together within the (multi-*ayllu*) cooperative. As a result, the yarn quality can be lower, and decision-making processes challenging. However, having more diverse members from different *ayllus* in the cooperative is important to be seen as a "community" association and qualify for regional funding opportunities.

Opportunities: Thus far in the project, building collective trust has been essential; we have continually strived to build trust by demonstrating the project results; having consistent and transparent communication; and working in collaboration with the *alpaqueras* to establish and meet the goals and milestones of key project activities (such as the alpaca registration). With this trust and understanding, *alpaqueras* have been more open to and interested in being a part of the project.

Funding and finances

Startup funding and long-term financial sustainability

A considerable amount of start-up investment (approximately 96,000 soles [30,000 CAD/24,000 USD] for Year 1) is required to launch the project (see appendix for complete project budget).

Costs include, among other line items, the following:

- fair salaries for all team members, including benefits
- investment in materials and tools for workshops and products
- purchase of prototypes for market readiness

Once launched, the Fibres Line will produce enough sales to eventually completely sustain the project, which also includes providing a fair and regular income for the *alpaqueras*.

Opportunity: Involve the international weaving community (weavers, knitters, guilds) to be active players in the project early-on to purchase early-stage prototypes at discounted rates, fund the project, and contribute feedback. Those who contribute feedback regarding how to improve the products will receive discounted yarn. The clients (or project contributors) will also commit to purchasing batches (large minimums), by paying 50% upfront and another 50% upon shipping, but will only receive pieces of their order incrementally throughout the year, month by month. In this way, the *alpaqueras* have guaranteed (but small-batch) orders that they can produce slowly throughout the year.

Market constraints

Illariy Ch'aska's yarn products will be competing with many other similar fibre products, which are priced very low in the current international market. Based on our calculations, to make enough revenue to cover the *alpaqueras'* minimum wage (a *jornada* wage), plus Mosqoy's minimum costs to get the product to market, a ball of yarn would need to be priced at over \$60 CAD (48 USD / 196 PEN)⁵ per ball, while the upper price limit in the market for a similar product is currently around \$55 CAD. A price reduction would require increased production of yarn (to reduce the fixed cost per ball) or wage cuts for the weavers and other staff, resulting in unfair labour conditions for those involved. With an expensive product, the quality will need to be very high; it currently does not meet such quality standards. If the women have regained their ILK, but cannot improve their product to be competitive in the fair-trade marketplace, they cannot be economically relevant, which is a key indicator of successful revitalization of their alpaca-rearing tradition.

⁵ Converted using Xe Currency Converter on September 30, 2021.

Opportunities: From our market research and discussions with alpaca-yarn retailers, we recommend the following steps:

- Selling yarn in a variety of forms:
 - in diverse colours and thicknesses
 - as individual balls as well as sets of colours
 - as part of kits that include a knitting pattern
 - miniature skeins (for small projects such as embroidery, and for yarn collectors who wish to collect all colours of the spectrum)
 - as a set of samples of all of the available colours (with the colour name in Quechua, Spanish, and English)
- Focus on “chunky”-weight yarn, which tends to sell better
- Consider selling transformed products as well, such as sweaters (perhaps in collaboration with another organization, such as HJK)
- Prioritize yarn softness; this is the quality of alpaca yarn that customers are mainly looking for, as alpaca is softer than other fibres (i.e. sheep’s wool)
- Prioritize cleanliness of yarn; weavers and knitters have already provided feedback to us that there is too much dirt and “earth” in the yarn for it to be easily workable
- Based on the *alpaqueras*’ needs, sell unique colours and thicknesses individually, rather than attempt to systematize entire lots and lines
- Seek out and target niche customers; natural fibres are a niche market, so success with sales requires finding how/where those customers shop and marketing the Fibres Line correctly

Mosqoy could also purchase the yarn from Illariy Ch’aska for its textile purchases in other communities; instead of purchasing yarn from Michell and InkaTops, weavers in our other partnering communities could use Cancha Cancha’s alpaca yarn for their products. The cost of the yarn would be deducted from the price that Mosqoy pays the weavers to purchase the textiles (since they would no longer have to purchase material).

Conflict of values between capitalism and tradition

Capitalist markets demand standardization, consistency, efficiency, and fast production. In contrast, a product based in traditional knowledge requires slow production and that 100% of the *alpaqueras*’ working time is dedicated to sustaining their long-term understanding and knowledge of the land, as well as their continued relationships with the land and with each other. The *alpaqueras* are currently faced with the dilemma of either sustaining their traditions on the land (which forces them into a life of poverty) or leaving the land for economic

opportunities to better provide for their families. This reality will remain a challenge until the larger global trade system that they are living in resets to a more sustainable and equitable working model; currently, the trade system prioritizes profit, not sustainability.

Opportunities: The revenue streams must be diversified, and all diverse streams should be based on the alpaca-rearing tradition, so that the *alpaqueras* can remain focused on their traditional process full-time, remain on the land, with the lifestyle they have chosen, but have many options for revenue despite fickle market demands and shifts. This recommendation is elaborated on - with a list of possible revenue streams - in the Sustainability Analysis section of this plan below.

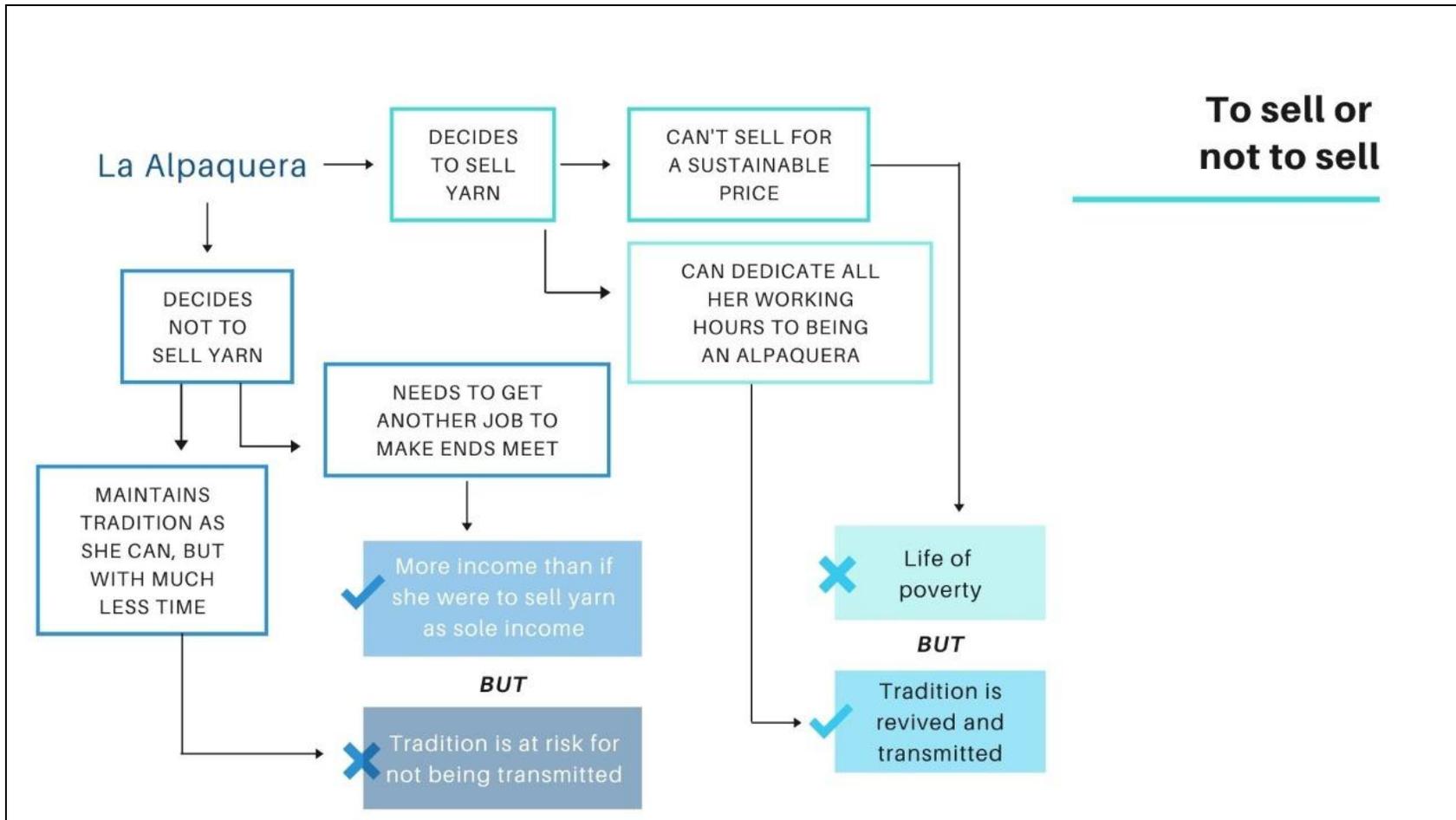


Figure 4. Two impossible options regarding selling traditional alpaca yarn in today’s capitalist market. Selling the yarn indicates a strong revived tradition, but an economically poor lifestyle; not selling the yarn indicates the need to find another job to make ends meet, thus risking the tradition, but living more comfortably economically (Akins 2022).

COVID-19 pandemic

The COVID-19 pandemic was a considerable interruption to the project. Natural alpaca cycles in Cancha Cancha are two-year cycles, with shearing occurring only every second January-February. Therefore, in the pilot study, we missed significant final-year milestones, including: a) adding approximately 30 alpacas to the baseline registry, b) documentation of the traditional shearing process, and c) the carding workshop.

Opportunities: Building community support will be important for resilience and patience during extraordinarily challenging circumstances like a pandemic. As well, Mosqoy will ideally budget to have available emergency funds to continue purchasing from the *alpaqueras* during economic downturns.

Climate change

Climate change is diminishing the available *icchu*, making herding much more strenuous and lessening available nutritious food for the alpacas. The shifting climate is also delaying the birthing and shearing seasons each year, pushing the most fragile times for the *tuis* into the coldest months. The glaciers are also important as the community's water sources, and the rapidly melting snow on the glaciers has been noticed by community members.

Opportunities: Members of Illariy Ch'aska may wish to explore options for climate adaptation tailored to the changes occurring in Cancha Cancha; this could come through capacity-building workshops with a climate expert.

Sustainability Analysis

The results of the Sustainability Plan have indicated that the project's viability looks very different, depending on if we look at it from the primary perspective of economic, environmental, or sociocultural sustainability.

In order to be viable, the project must be:

- **environmentally sustainable:** no exploitation of the land, including alpacas; the project should not be extractive but maintain a reciprocal, respectful relationship with the land
- **economically sustainable:** produce enough revenue to pay for project costs and fairly compensate the *alpaqueras* so they may maintain their desired lifestyle.
- **socioculturally sustainable:** honours ILK, key processes, shifting cultural values, and women's leadership of the project; ILK is transferred to youth

This section outlines some of the important considerations and factors that contribute to this project's sustainability.

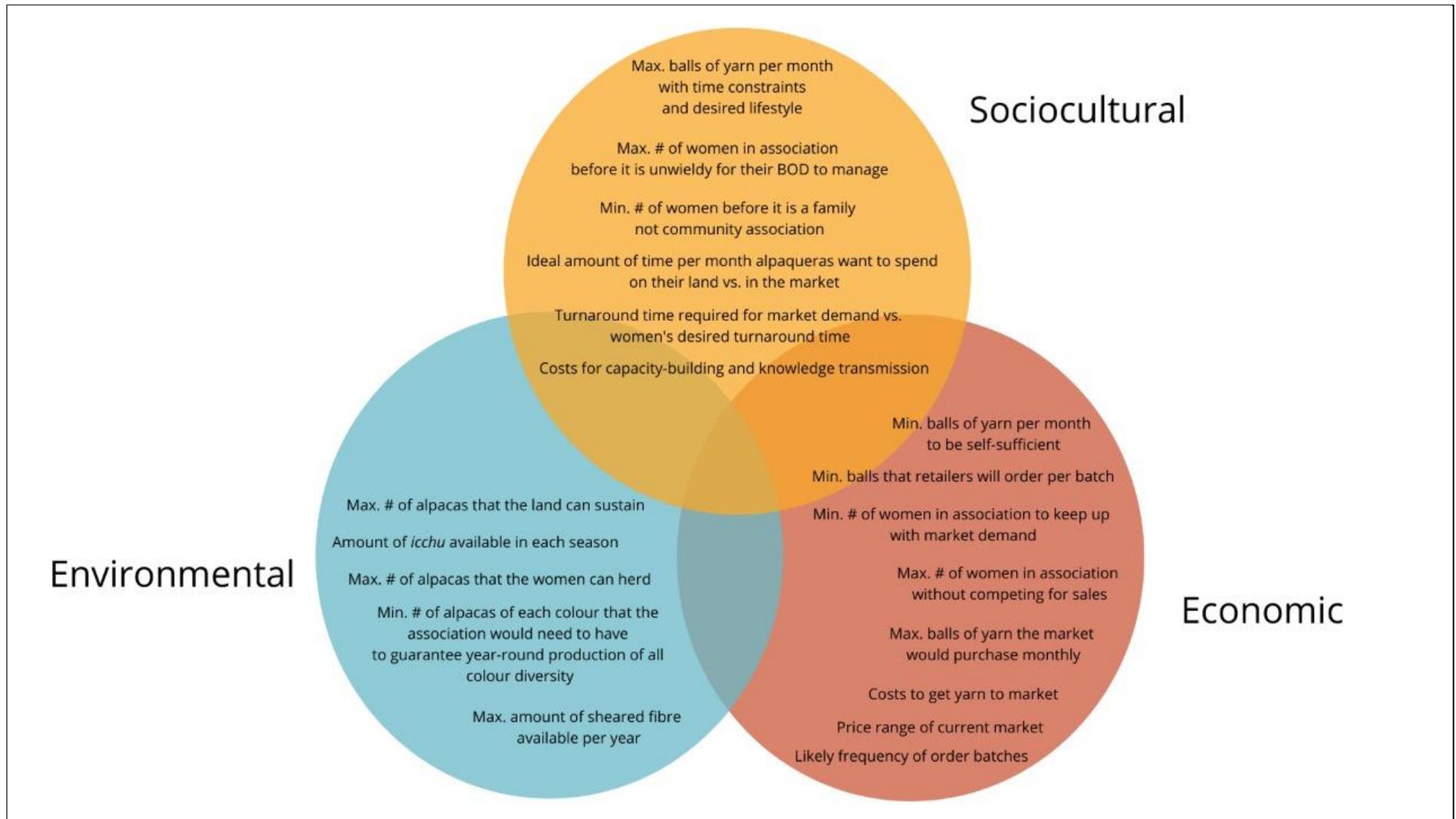


Figure 5. A few of the many intersectional and interconnected factors that need to be weighed against each other to assess the project's sustainability (Akins 2022).

Environmental sustainability

A sustainable herd

The number of alpacas should not exceed the carrying capacity of the land. A large herd (relative to carrying capacity) will impact the land through overgrazing, and would not sustain a food source for the herd over the long term. Currently, the amount of fibre produced annually (around 90-100 alpacas shorn each year) is enough to create the number of balls of yarn that is socially sustainable for the *alpaqueras* (the *alpaqueras* have indicated that they would like to make four balls per month; therefore, if 13 members in the association create four balls per month, totalling 624 balls per year). The amount of fibre, however, must also be sufficient for other commodities (textiles and raw-fibre sales).

The size of the herd may also need to be a certain size for successfully breeding for colour diversity. The size of the herd also needs to consider the amount of space needed for the alpacas' welfare, and the *alpaqueras'* capacity (e.g., time/resources) to herd; a larger herd may be too time- and resource-consuming for the *alpaqueras*. The specifics of all of these factors will be assessed by the zootechnician and weighed against the carrying capacity of the land.

Environmental factors to weigh

- carrying capacity of land
- amount of icchu available vs. amount of alpacas
- size of herd for the amount of fibre needed to produce (textiles, yarn, raw fibre)
- size of herd (of specific colours) for breeding for colour diversity
- sufficient space for alpacas' welfare
- *alpaqueras'* capacity (time & resources) to herd and care for their alpacas

Climate change

The *alpaqueras* have expressed that the increasingly harsh environment is contributing to the death of alpacas; adaptations may need to be made to ensure the alpacas' welfare in a changing climate. Due to climate change and the resulting decline of *icchu*, the *alpaqueras* may choose to incorporate some hay to supplement the alpacas' diet, though this may introduce additional costs if hay needs to be purchased. Cultivation of hay could be considered based on the results of the pasture-scoping and the *alpaqueras'* choices for their desired lifestyle. Hay would likely be transported up from the Sacred Valley on llamas.

Economic sustainability

Economic self-sufficiency

Mosqoy purchases the yarn from the association at the desired fair price (currently 70 soles, which may increase over time). The yarn is priced so that the project will be self-sufficient and all of the costs are covered by the yarn sales. The yarn costs are broadly in three categories:

- 1) *alpaqueras'* time, effort, and ancestral knowledge
- 2) cost of materials/supplies
- 3) Mosqoy's costs to bridge with the market (calculating weights and measurements, turning yarn into skeins, adding packaging and tags)

Because of the socially sustainable limit of balls (four balls maximum per month per *alpaquera*), the yarn would need to be priced very high in order to fully cover the *alpaqueras'* full monthly income; this is not possible. Instead, we need to estimate the amount of time to complete one ball (2 days) and calculate costs based on a *jornada* (daily wage on the farm and in *campesino* communities). Therefore, the only way for the *alpaqueras* to be economically sustainable through solely their alpaca-rearing tradition is to have a diversity of revenue streams that are directly related to the tradition. This way, they may continue their *alpaquera* tradition, while also being economically resilient.

Table 2. Potential revenue streams that the *alpaqueras* of Cancha Cancha could pursue, all of which are directly related to the alpaca-rearing tradition. They are each evaluated against all aspects of sustainability – economic, sociocultural, and environmental.

Commodities related to the <i>alpaquera</i> tradition	Economic Considerations	Sociocultural Considerations	Environmental Considerations	Already trying this activity	Recommended?
Raw alpaca fibre	More profit with less time investment	Does not invest in the recuperation of traditional knowledge	Focuses on land stewardship and caring for alpacas	Yes	Yes, but only for white alpacas; try to increase herd and fibre quality
Handsheared, handspun alpaca yarn	Very small amount of profit for the amount of time invested	Invests in process and traditional knowledge. Can do it flexibly while at home.	Focuses on land stewardship and caring for alpacas	Yes, but not enough	Yes, but only up to four balls of yarn per weaver per month, and primarily coloured (non-white) yarn; 70 soles per ball; try to increase herd and colour diversity
Handwoven textiles	More diversity of options than with yarn; both small and large items. Still not highly profitable for time investment.	Invests in traditional knowledge. Can do it flexibly while at home.	Can sell on their own during tourist season, and in multiple points, without leaving their land.	Yes, but not enough	Yes, 1 weaving per month per weaver sold by Mosqoy, plus passersby

			No environmental impact.		
Alpaca-husbandry workshops	Could be highly profitable, but only with good marketing (which would need support from Mosqoy or another source). Main clientele: Global North alpaca-farmers	Would increase pride in community, as experts and teachers of their own knowledge	Would need to be conscious of carrying capacity and sustainable travel considerations for guests on land	Yes, but not enough (both in-person and virtual)	Yes; focus on in-person workshops (in Cancha Cancha and Casa Mosqoy), and virtual (self-paced).
Alpaca sperm	Would be of high value to North American alpaca breeders and farmers. However, Cancha Cancha alpacas do not have a “brand” and may not be able to compete against others on the international alpaca market.	Does not align with the recuperation of traditional knowledge; would require considerable scientific capacity-building and international connections for transport, etc.	Would require considerable carbon footprint for fast shipment internationally	No	No

Resilience in extenuating circumstances

Alpaca fibre and products may be considered a luxury product on the market and therefore experience declines in demand during economic crises. However, retailers noted that, during the COVID-19 pandemic, yarn sales increased due to more people taking up hobbies. Ideally, Illariy Ch'aska would have some reserve "emergency" funds for times of economic downturn that affect sources of income, and for other emergencies such as alpaca illnesses. This could be initiated through the MPT community fund.

Working with retail partners

The *alpaqueras* would need to meet retailers' requirements for minimum order quantity (MOQ) and order frequency. If needed, Mosqoy will work with retail partners to adjust their expectations in order to help the project succeed, understanding that sustainability requires slow and small production.

Direct-to-consumer sales via Mosqoy's Etsy site could bypass the retailers' MOQ, though this will require strong marketing as Mosqoy is not currently known for selling yarn. The yarn also needs to remain competitive in a changing market by having consistently high quality.

Long-term economic sustainability

Mosqoy has already begun purchasing yarn from the *alpaqueras*, though small orders per month. The price of the yarn and fibre products will need to increase over time, due to inflation, in order to maintain the financial viability of the project for the *alpaqueras* and Mosqoy.

Environmental factors to weigh

- Fair cost of yarn that Mosqoy purchases from the *alpaqueras* versus cost of retail that is competitive in the market
- How much time it takes to make a ball of yarn, from start to finish
- How many balls of yarn and other sources of revenue the *alpaqueras* need to be economically sustainable versus the amount of yarn and textiles they can make per month
- Diversity of revenue streams
- Minimum order quantities (MOQ) of retailers
- Frequency of retailers' orders
- Turn-around requirement/request of retailers
- Consistently high quality of yarn needed to remain competitive in market
- Emergency or contingency funds for Illariy Ch'aska in economic downturns and in cases of alpaca illness
- Increase of yarn and fibre products over time due to inflation

Sociocultural sustainability

Alpaqueras maintaining their desired lifestyle

A goal of this project is that the *alpaqueras* are able to remain on the land and practice their herding tradition over the long-term, without sacrificing aspects of their tradition to the will of the capitalist market (for example, selectively breeding for white rather than for the natural colour diversity that they wish to recuperate). Sociocultural sustainability means that the *alpaqueras* are able to live their desired lifestyle, and that the project can adapt to their changing desires. The women have stated that they desire to create four balls of yarn each per month in order to maintain their desired lifestyle, as the alpaca-rearing and spinning alongside other parts of life require a lot of time and attention. In order to be socioculturally sustainable, the project must respect these limits.

Sociocultural factors to weigh

- Min. and max. amount of balls of yarn (and textiles) per woman per month
- Equal and respectful relationship between traditional knowledge and science
- Active implementation of key knowledge exchanges
- Min. and max. amount of members in Illariy Ch'aska
- Number of women needed (with certain numbers of alpacas in certain colours) to guarantee Fibres Line with at least half of the 22 colours
- Ratio of supply vs. demand
- Diversification of Illariy Ch'aska members to ensure all ayllus are represented

Knowledge transmission

The *alpaqueras'* knowledge needs to be seen as equal to Western science, with reciprocal knowledge exchange between the two forms of knowledge. If not, there is a risk of Western science usurping the *alpaqueras'* traditional knowledge. This highlights the importance of training at least one person (preferably a woman) from the community, with a background in Quechua local knowledge, to become an alpaca zootechnician.

Knowledge transmission needs to occur through the four key modes of reciprocal knowledge relationships: a) between traditional knowledge and science, b) between elders and youth, c) among community members within Cancha Cancha, and d) between Cancha Cancha community members who have lost parts of their local knowledge and experts from other nearby communities who still hold that knowledge. The youth need to be able to seek opportunities for income outside of the community while remaining connected to the community and the land in order to facilitate elder-youth knowledge relationships.

Dynamics within the association

The Illariy Ch'aska Weaving Cooperative would ideally have 25 women members, which will allow for inclusion of more women and production of larger quantities of yarn in diverse

colours, but is also small enough for both Mosqoy liaisons and the Illariy Ch'aska President to manage. This number can be adjusted based on outcomes of ongoing market research to balance the production of yarn with market demand, so that as many women as possible may be a part of the project without creating competition internally (i.e. supply does not exceed demand). Illariy Ch'aska should also include women from different families and *ayllus* so that it qualifies as a community association, not a family, which will open up more funding opportunities from the municipality and more collective support from the community. This is important both for sustainable income but also for unity and cooperation.

Budget summary

The following is a summary of the project budget. Refer to appendix for a detailed budget.

Main costs:

- Salaries
 - Mosqoy staff, zootechnician, and community youth apprentice
 - Honoraria for community partners
- Fibres Line
 - Purchase of *macho* alpacas
 - Purchase of yarn from *alpaqueras*
- Supplies
 - Equipment for knowledge documentation
 - Workshop materials

Funding plan for the four stages

This project will transition from a pilot (stage 1) to a long-term community-based initiative via three stages (stage 2-4)

1. **Year 0:** Fundraised through Mosqoy; fully through start-up capital
2. **Years 1-4:** Fundraised through Mosqoy, but more and more through yarn sales, with less start-up capital needed
3. **Years 5+:** Financially self-sufficient community-led project through yarn sales

Budget breakdown by year			
Year	PEN	CAD	USD
0	29,000	8,900	7,000
1	96,000	30,000	23,000
2	99,000	30,500	24,000
3	83,000	26,000	20,000
4	91,000	28,000	22,000
5+	86,000	26,500	21,000

*Amounts are rounded

Funding minimum

In the case that the project is not fully funded, the following costs should be prioritized:

- Half of Mosqoy Community Facilitator's salary
- Five workshops per year, delivered every other month March to November; focus on fibre transformation and improving the quality of yarn
- Purchasing the yarn (budget for 7 balls of yarn per month minimum)

The minimum funding needed to cover these costs is roughly \$9,500 CAD (\$7,500 USD / 31,000 PEN) for one year.

Long-term costs for the project

- **Balls of yarn**; both prototypes and market-ready skeins (purchased by Mosqoy from the *alpaqueras*)
- **Full-time zootechnician salary**
- **Materials and equipment** for planting feed crops and animal husbandry
- **Adaptations**, such as shelters for alpacas if climate becomes too harsh, and additional *machos* if desired or needed to recuperate the natural colour diversity
- **Emergency funds**
- **Scholarships** for zootechnician students in the Mosqoy Youth Program

Recommendations

Overall project sustainability

The *alpaqueras* are facing many obstacles and challenges in this project, which will shift over time. Because of this, adaptation and resilience need to be built into the project. This includes:

- Creating a diversity of income sources, including a diversity of alpaca-rearing products and services, and multiple outlets for sales;
- Involving many youth in knowledge transmission and exchange. Youth should be amplified in the project and see the value in their contributions to this tradition;
- Building community support around the project.

Meeting producer needs

Alpaca-rearing requires all of the women's time. Because of this, the products and services from the project need to be prioritized so that the *alpaqueras* can make an income without risking losing their tradition. Yarn alone will not sustain them as their sole income, so **other products and services should be incorporated into their income**, as well as continuing to sell textiles.

In order to compete in the market, **the yarn will need to be consistent and high-quality** (thickness, colour, and cleanliness) so that customers are willing to pay a fair price for the product and be return customers.

Consistent learning and practice of alpaca-rearing and fibre transformation is needed to establish the project. Alongside this, knowledge exchanges need to occur. Learning opportunities will be created as soon as possible, that center the women. These opportunities must be accessible for them and prioritize their capacity-building desires.

Youth in the community should be actively leading and engaging in the project. Over the long-term, having a youth become the resident zootechnician from the community would be ideal.

As the yarn will be a premium (high-priced) product, **Mosqoy needs to market and package the yarn well to tell the story and explain the process behind it.**

Meeting advocate/intermediary needs (including Mosqoy)

As a multi-pronged project, **Mosqoy will need to commit significant resources** to this project, including time, capacity, and funds. This will require long-term, committed funding partners and staff team. The sustainability of the project will rely on having a strong network that is committed to seeing it succeed. Mobilizing resources to build this network will be key in the

establishment of the project; project components that establish long-term resource capacity should be prioritized (e.g., building relationships with retail partners, establishing the brand and marketing presence).

While ensuring the sustainability of the Alpaca Recuperation Project, **Mosqoy will need to maintain our other programs** and commit the respective resources. This may require growth and redistribution of resources to meet the needs of all our programs.

Meeting market needs

Market values (both vendors and buyers) need to adapt to celebrate and honour handmade yarn, which costs more and may lack the standardization and efficiency that has become the norm through industrialized products. However, exploitation is core to much industrial production; therefore, this *fast-fashion* philosophy needs to change to a more *slow-fashion* market model. Consumer expectations (wholesale and retail vendors, as well as customers) need to shift to seeing the value and beauty in handmade products, and choose those over industrial yarn. This includes consumers being willing to pay the true cost of products, which will reflect fair-trade principles and ethical standards. This will primarily occur through education and relationship-building. Intermediaries and vendors like Mosqoy can support this transition (and it is, in fact, our responsibility) by telling the story behind the product, being transparent, and connecting the consumer to the producer as much as possible, through marketing and consumer education.

Monitoring and evaluation

Monitoring and evaluation will take place annually. This will be conducted by someone who is not deeply involved in the project but who has a cultural understanding. This person could be a Mosqoy employee or a hired external consultant.

Group meetings with all members of Illariy Ch'aska will take place bimonthly, from March to November each year; the first and last of these meetings will act as monitoring and evaluation opportunities, to reassess goals, objectives, progress, and expectations. These meetings will foster space for an open dialogue with the women, without individuals present who could prevent honest and open sharing (i.e. key decision-makers or leaders of the project). Individual interviews may also be conducted, but resources and capacity may prevent this, as they take a long time (approximately two interviews per day maximum, due to the cultural and geographical context).

Indicators

- **Increased alpaca colour diversity**
 - Number of different colours that are healthily produced in the alpaca herds, with at least 10 alpacas producing said colour (Baseline = 1 / Goal = 11)
 - Number of known colours and tonalities in the community (Baseline = 8 / Goal = 11)
 - Number of colours and tonalities that can be named in Quechua (Baseline = 8 / Goal = 11)
 - Number of people in the community who are able to name the colours and tonalities (Baseline = 13 / Goal = 30)
 - Number of identical colours able to be consistently reproduced in alpaca fibre on a monthly basis (Baseline = 3 / Goal = 11)
 - Number of *machos* purchased (Baseline = 0 / Goal = unknown)
- **Increased quality of yarn**
 - Consistent thickness each month, and able to spin yarn made-to-order at a certain thickness (Baseline = 10% of balls / Goal = 90% of balls)
 - Yarn has consistent composition, without knots, breaks, or earth or hairs in it (Baseline = 20% of balls / Goal = 90% of balls)
 - Yarn is clean and properly washed (Baseline = 10% of balls / Goal = 90% of balls)
 - Yarn can be produced repeatedly with the same colour; from the same part of the same animal (Baseline = 10% of balls / Goal = 90% of balls)
- **Increased and improved sales**
 - Mosqoy is able to purchase more yarn from Illariy Ch'aska on a monthly basis (Baseline = 4 balls of yarn per month / Goal = 100 balls of yarn per month)

- Mosqoy is able to purchase yarn from Illariy Ch'aska at a higher price (Baseline = 40 soles per 100-gram ball / Goal = 70 soles per 100-gram ball)
- Amount of consistent and interested wholesale vendors increases (Baseline = 2 / Goal = 10)
- Yarn sales from Mosqoy to wholesale vendors and direct sales increase (Baseline = 0 / Goal = 100)
- Yarn pricing in the marketplace increases (Baseline = \$20 CAD per 100-gram ball / Goal = \$60 CAD per 100-gram ball)
- Consistent and increasingly positive feedback from international weaving community and customers (Baseline = 0 feedback / Goal = 50% of customers give feedback, and 90% of the feedback is 4 out of 5 stars). Areas for feedback include:
 - Quality
 - Colour diversity
 - Thickness/weight
 - Story
 - Price
- **Consistent and effective capacity-building**
 - Number of people in the community who know how to rear alpacas to selectively breed for colour (Baseline = 1 / Goal = 30)
 - Updated registries for all alpacas that have been born or died within the past year (Baseline = 0 / Goal = All alpacas in Illariy Ch'aska)
 - Number of people in the community who can read, understand, and maintain an alpaca registry (Baseline = 0 / Goal = 30)
 - Number of people in the community who understand how to properly care for their alpacas' health (Baseline = 5 / Goal = 30)
 - Number of people in the community who understand how to count, measure, and calculate yarn thickness, weight, and length (Baseline = 0 / Goal = 30)
 - Number of workshops delivered (Baseline = 3 per year / Goal = 5 per year)
 - Number of different themes in the workshops (Baseline = 3 / Goal = 11)
 - Number of knowledge exchanges facilitated (Baseline = 1 per year / Goal = 5 per year)
- **Women's livelihoods**
 - Satisfaction with lifestyle and life's work
 - Pride in one's identity as an *alpaquera*
 - Pride and understanding of one's alpaca-rearing tradition
 - Feeling of autonomy and independence
 - Feeling of self-worth

- Feeling of security
- **Project participation**
 - Age range of people participating in the project (Baseline = 35 to 70 / Goal = 15 to 70)
 - Number of members in the Illariy Ch'aska Weaving Cooperative (Baseline = 13 / Goal = 25)
 - Consistency of attendance for all project components (Baseline = 80% / Goal = 90%)
 - Number of youth (under 25) who participate in the project (Baseline = 0 / Goal = 10)
- **Knowledge documentation**
 - Amount of processes and practices documented in photography, videography, or interviews (Baseline = 0 / After pilot study = 4 / Goal = 10)
 - Amount of community interviews conducted (Baseline = 3 / After pilot study = 13 / Goal = 25 per every other year)

“At the beginning of the project, one of the key values that the Illariy Ch’aska participants indicated was related to economic independence – to be able to make a living off of their yarn, to be able to earn some money independent from their husbands, and to be able to provide for their children.

However, when we checked in with them a year into the project, their favourite part of the whole year was ‘learning more about alpaca-herding.’ When we asked them to identify the goals and objectives of the project in their own words, the values seemingly had shifted to more intrinsic values centered around identity, culture, and the environment:

‘So that we can be proud of our identity.’

‘To recuperate our alpaca tradition.’

‘To learn more about how to raise alpacas.’”

(Akins 2022)

Appendix

- Budget
- Timeline
- Baseline registry
- Fibres catalogue
- CITE Lab fibre assessment results