



Lupin in the Hands of Women

Economic Contribution in the Value Chain

Case study: Community Agricultural Production Cooperative
“Granos Andinos” San Miguel de Chugchilán (Cotopaxi)





Biobusiness Ecuador

Sustainability of
native biodiversity



Lupin in the Hands of Women

Economic Contribution in the Value Chain

Case study: Community Agricultural Production Cooperative
“Granos Andinos” San Miguel de Chugchilán (Cotopaxi)

Lupin in the Hands of Women: Economic Contribution to the Value Chain
Case Study: Community Agricultural Production Cooperative
“Granos Andinos” San Miguel de Chugchilán (Cotopaxi)

Biobusiness Ecuador: Sustainability of Native Biodiversity Project

A publication of the Ministry of Environment and Energy, the Global Environment Facility (GEF), CAF Development Bank of Latin America and the Caribbean, and the Heifer Foundation Ecuador.

Minister of Environment and Energy

Juan Carlos Blum

CAF Representative in Ecuador

Diana Mejía

GEF-CAF Project Manager

Mauricio Velásquez

Director of the Heifer Foundation Ecuador

Rosa Rodríguez

Coordinator of the Biobusiness Ecuador Project

Karina Ron

Prepared by

Ana Poma (Biobusiness Project), Verónica Guaján (CAF)

Research

Diego Valencia

Specialist in Social Economy and Public Policy

Paulina Aulestia

Specialist in Rights and Gender Equality

Editing

Silvana González

Lorena Andrade

Photographs

Heifer Foundation Ecuador – Biobusiness Project Ecuador

Design and Layout

Nadía Hidalgo / Salem diseño

Quito - Ecuador, 2026

ISBN: 978-9942-824-10-3

Copyright shared between the Ministry of Environment and Energy, the Global Environment Facility (GEF), CAF Development Bank of Latin America and the Caribbean, and the Heifer Foundation Ecuador. Reproduction is authorized provided the source is cited.

HEIFER FOUNDATION ECUADOR

+593 2 250 1427 / 290 8985

www.heifer-ecuador.org



TABLE OF CONTENTS



1

Introduction

Pg. 6



2

Who
participated?

Pg. 9



3

What concepts
did we use?

Pg. 13



4

How did we
conduct
the work?

Pg. 14



5

What did
we find in
this assessment?

Pg. 15



6

What is the
economic
contribution of
women to the
lupin value chain?

Pg. 20



7

What are
the conclusions?

Pg. 22



8

Call to
action

Pg. 24



9

Literature

Pg. 25





1

Introduction

The Biobusinesses Ecuador project: Sustainability of Native Biodiversity is an initiative of the Ministry of Environment and Energy, implemented by the Heifer Ecuador Foundation and CAF - Development Bank of Latin America and the Caribbean - with funding from the Global Environment Facility (GEF). Together, we are working to ensure that Biobusinesses that protect and utilize our native biodiversity develop fairly and profitably, with women and communities as the true protagonists.

As part of this effort, and in collaboration with the Agricultural Production Cooperative “Granos Andinos” San Miguel de Chugchilán (COOPGRANACH) in the province of Cotopaxi, we present this booklet on the contributions of women to the lupin value chain.



What will you find here?

A simple, accessible booklet filled with the real voices of the women and men in the communities. We gathered their stories, their timelines, their efforts, and their dreams to show how much they contribute –both in the work that is seen and paid, and in the work that is unseen and unrecognized– to the harvesting of the nutritious lupin bean.

What will it do for you?

- To help you clearly see how work is divided between women and men and why women's work is often overlooked.
- To understand how traditional roles limit women's recognition and opportunities.

- To discover practical ideas that help women have a stronger voice, more decision-making power, and higher incomes in the biobusiness sector.

Why is it important?

When we understand reality, we can change it. This material is a tool for conversations within families, communities, organizations, and institutions. It helps us build more equitable paths together, where women's work is valued, compensated, and celebrated, and where we all find opportunities that protect nature and strengthen life in rural areas. This booklet is yours! Use it, share it, discuss it, and add your own ideas. Because change begins when we talk, reflect, and act together.

Biobusiness Ecuador:
Sustainability of
native biodiversity



Funded by: Global
Environment Facility (GEF)



Project implemented by:
Heifer Ecuador Foundation.
With the participation of
COOPGRANACH as a
demonstration chain.

Led by: Ministry
of Environment
and Energy



**Implementing
agency:** CAF -
Development Bank
of Latin America
and the Caribbean.

**Biobusiness
Ecuador**
Sustainability of
native biodiversity





What is the andean lupin?

The lupin, also known as *Lupinus mutabilis*, is an Andean grain that has been a staple food for communities since ancient times. Rich in protein and nutrients, it has been part of the traditional diet in countries like Ecuador, Peru, and Bolivia. It is cultivated on mountain slopes, where human labor is essential. Furthermore, it has a significant virtue: it helps improve the soil by fixing nitrogen, making it a crop that contributes to reducing the use of chemical fertilizers.

Its growing season runs from January to October, and it is cultivated by farming families who, with hard work and expertise, keep this agricultural tradition alive.



Who participated?

2



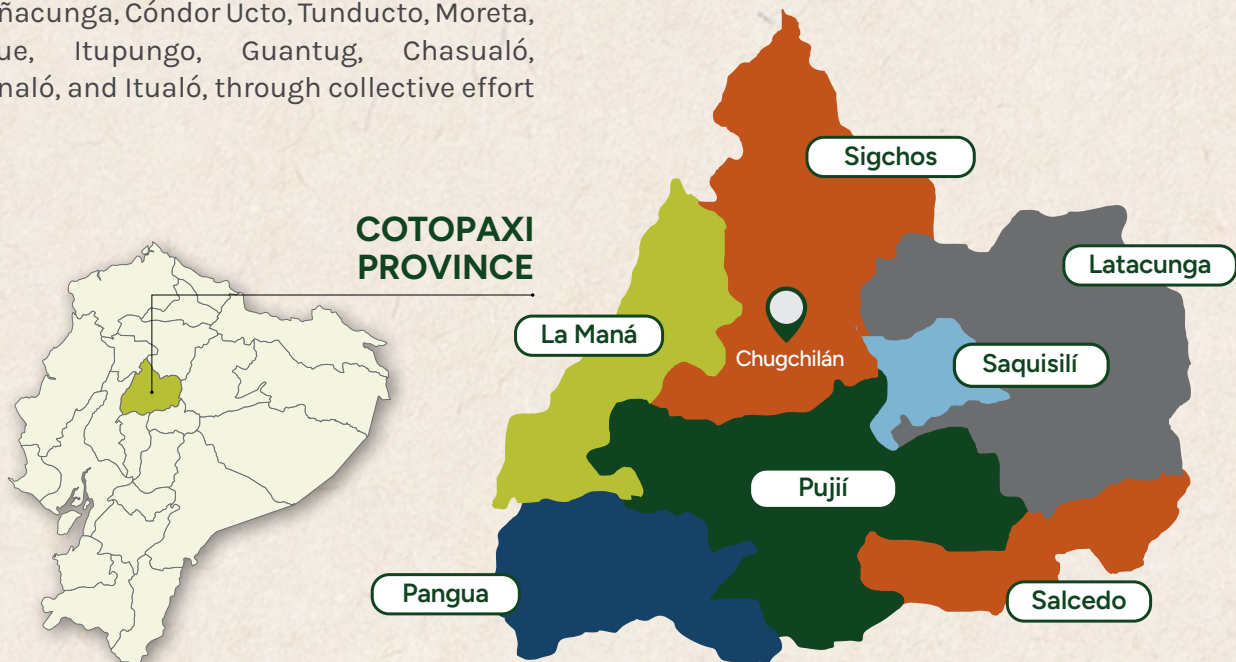
This work focused on the value chain of lupin, an ancestral crop that remains an essential part of life in the communities. For this study, we worked with the Community Agricultural Production Cooperative “Granos Andinos” San Miguel de Chugchilán (COOPGRANACH), which brings together 17 communities in the Chugchilán parish, in the Sigchos canton, Cotopaxi province.

Approximately 1,500 producers from the communities of Chaupi, Cuisana, Shiñacunga, Cóndor Ucto, Tunducto, Moreta, Sigüe, Itupungo, Guantug, Chasualó, Chinaló, and Itualó, through collective effort

and deep knowledge of the land, sustain this value chain that unites agriculture, culture, and food.

This study seeks to highlight the economic, social, and community contributions of women at each stage of the process: from planting to commercialization.

This study was conducted in the communities of the Sigchos canton, in Cotopaxi. The demographic data for the study area are presented below.



LUPIN IN THE
HANDS OF WOMEN

Sociodemographic data of **the Chugchilán rural parish,**
in the Sigchos canton, Cotopaxi province

COTOPAXI
PROVINCE

470.210
People

Men



48.4 %

Women



51.6 %

Indigenous



23.7 %

SIGCHOS
CANTON

18.460
People

Men



48.8 %

Women



51.2 %

Indigenous



42 %

CHUGCHILAN
COMMUNITY

6.075
People

Men



48 %

Women



52 %

Indigenous



95.4 %

ECONOMIC CONTRIBUTION IN THE VALUE CHAIN

Population of boys and girls (0-11 years) and adolescents (12-17 years)

COTOPAXI



31.5 %

SIGCHOS



35.4 %

CHUGCHILAN



42.4 %

Young populations (18-29) and adults (30-64)

COTOPAXI



59 %

SIGCHOS



51.7 %

CHUGCHILAN

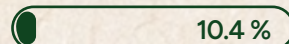


48.5 %



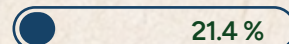
ILLITERACY RATE

COTOPAXI



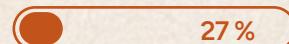
10.4 %

SIGCHOS



21.4 %

CHUGCHILAN



27 %

NET ATTENDANCE RATE IN BASIC EDUCATION

COTOPAXI



93.4 %

SIGCHOS



93.1 %

CHUGCHILAN



94.2 %

LUPIN IN THE
HANDS OF WOMEN



Chronic
Child Malnutrition
< 5 years old

COTOPAXI 26.5 %

Chronic Child
Malnutrition < 5
years old quintile 1

COTOPAXI 30.6 %



Poverty
as per income

COTOPAXI 26.3 %

Extreme Poverty
as per income

COTOPAXI 10.3 %



Women who have
experienced
gender-based
violence in the
last 12 months

COTOPAXI 25.8 %

Women who
have experienced
gender-based
violence in the last
12 months in the
workplace

COTOPAXI 5.6 %



Average Labor
Income (USD)

COTOPAXI \$381.8



What concepts did we use?

3



One of the methodological approaches that was used was the theory of change, which generated mechanisms to strengthen the empowerment of women, which seeks to strengthen family well-being determined by a transformation in the definition of roles and responsibilities at the family and community level that allows greater access to resources, benefits, opportunities, participation and decision-making for women (Heifer Ecuador, 2020).

For the Heifer Ecuador Foundation, the participation of women under equal conditions throughout the different links of the value chain is a determining factor for their economic empowerment and the strengthening of their agency. This agency is understood as the capacity to act and to resignify, from their own spaces and communities, the standards that produce inequalities, through daily, strategic and intercultural practices.

From the feminist economics approach, work is understood as a category that divides between paid (productive) and unpaid (reproductive) activity. The work

carried out through an activity carried out in the sphere of production and circulation receives a wage. At the same time, paid work is accompanied by unpaid work. The latter is an activity carried out mainly by women, due to social and cultural patterns established by patriarchal society, which consists of the reproduction of the workforce and its care, an economic activity whereby no wage is received (Girón, 2016).

In this regard, productive and reproductive work, paid and unpaid; that is, monetized or non-monetized respectively, which is essential to differentiate between production and reproduction, establishes a conceptual framework between the nature and role of social reproduction and the economic system (Benaria, 2006).





4

How did we conduct the work?

1

INTERVIEWS



To diagnose and understand women's contribution to the lupin value chain, qualitative and quantitative research methods were applied, including in-depth semi-structured interviews, participatory workshops, surveys, secondary data collection, and data analysis. This work was carried out between January and February 2024.

To calculate women's economic contribution, a survey was used to identify the number of hours per week dedicated to each activity. An hourly value was assigned to this time. The activities were grouped into four categories: paid productive work, unpaid productive work, reproductive work (such as household and family care), and community work. The hours were then added for each type of work, differentiating between women and men, to provide concrete data on the value of this time.

2

PARTICIPATORY WORKSHOPS



3

SURVEYS



4

SECONDARY INFORMATION



5

DATA ANALYSIS



What did we find in this assessment?

5



Women are present at every stage of the lupin value chain. From production - where they handle tasks such as fertilization, soil preparation, planting, pesticide sprays, and harvesting - to collection, which includes gathering the beans into sacks, storing them at home, threshing, bagging them, weighing them, and classifying them for sales. They also actively participate in sales, offering the product, negotiating prices, carrying heavy loads, and managing the money, as well as in processing, where they wash, sort, peel, pack, and sell the lupin beans; that is, this organization sells peeled and raw lupin beans. Their participation is especially strong in the marketing and processing stages, where they account for 55% and 54%, respectively. Men, on the other hand, have a greater presence in production and collection, with 53% and 64% participation.

These data show that women's work is constant and crucial at the points where the product becomes a source of income and opportunity.



LUPIN IN THE HANDS OF WOMEN

PLANTING



HARVEST



**WOMEN
ACTIVELY
PARTICIPATE**
in all steps
that make up
the lupin value
chain.

COLLECTION

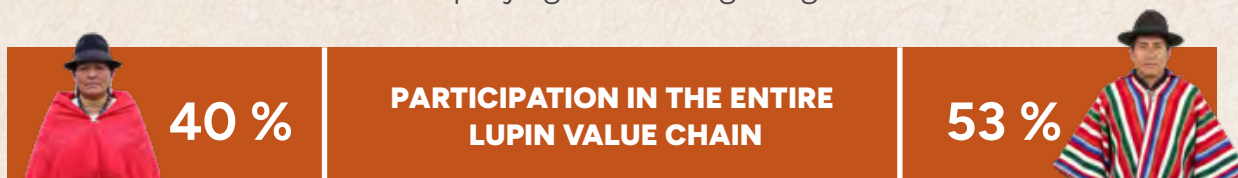


TRANSFORMATION



How do women participate in the lupin value chain?

Throughout the entire process, women participate at a rate of 40%, while men participate at a rate of 53%. The participation of girls, boys and young people is also observed at 7%, accompanying and learning alongside their families.



- In production, women contribute 37% of the work, men 53% and the remaining 10% is done by girls, boys and young people.
- In the collection process, women's contribution is 29%, while men's contribution reaches 64%. Girls, boys, and young people contribute 7%.
- In marketing, women lead with a 55% participation rate, compared to 45% for men.
- In the transformation of the lupin bean, women stand out with 54%, men contribute 35%, while boys, girls and young people contribute 11%.



These data show that women play a key role in the stages where the product is converted into income, and that their work sustains a large part of the process, even though it goes unrecognized. They also reveal the presence of child labor, prompting reflection on the need to protect the rights of girls and boys in rural areas.



LUPIN IN THE HANDS OF WOMEN

To understand how women participate in the lupin value chain from a gender perspective, it is necessary to discuss gender roles. These are neither natural nor fixed: they are social constructs that define what is expected of women and men in each culture, community, and historical moment. In other words, both women and men act according to what society has taught them about their gender roles (FAO, 2007).

The tasks that women perform in the lupin value chain are linked to these assigned roles and are usually considered “light” or require

no technical training, such as packaging or selecting the beans.

In contrast, men are responsible for tasks that demand physical strength, such as carrying sacks or washing lupin bundles.

This division of labor means that many women depend on the technical knowledge and strength of their male colleagues, which perpetuates gaps in access to training, decision-making, and advancement within the value chain.

Recognizing this reality is key to transforming productive spaces into fairer places.



Time Use in the Participation of Activities

Analyzing the time that women and men dedicate to different activities – productive, reproductive, care, and community-based – allows us to understand how economic and non-economic resources are generated in the countryside, and how power relations are configured from a gender perspective.

IN THIS CONTEXT

79% of the women in the study dedicate 5.88 hours to caregiving activities, compared to 2.11 hours for men.



In unpaid productive work within the farm, women spend 20% more time than men: 2.10 hours compared to 1.75 hours.

In reproductive care work, women are recognized as primarily responsible for the household. In this context, 17% of the women participating in the study perform caregiving tasks exclusively, while 83% receive support from other family members.



These data show that, although women's work is constant and diverse, many of their activities are not recognized as productive, which makes their contributions invisible and limits their access to opportunities. Making the use of time visible is key to moving towards a fairer distribution of work and rest.



6

What is the economic contribution of women in the lupin value chain?

To establish the economic contribution of women and men in the lupin value chain, the complete production cycle, which lasts approximately eight months, was considered.

The time they dedicate was also taken into account, comparing it to a standard 160-hour work month, and reference values were applied to calculate the economic contribution of their activities.

Economic Contribution by Gender in the Lupin Value Chain

Gender	PAID				UNPAID			Total Economic Contribution (h)=(d+e+f+g)
	 Productive			 Total Paid Productive (d)=(a+b+c)	 Unpaid Productive	 Reproductive	 Community	
	Labor	Lupin	Chakra		Chakra	Care		
	(a)	(b)	(c)		(e)	(f)	(g)	
 Women	-	58.25	49.31	107.55	121.18	337.81	30.28	596.82
 Men	311.20	91.76	31.53	434.48	100.98	121.39	33.60	690.45

Prepared by: Biobusiness Project Ecuador, based on the consulting work of Diego Valencia (2024).
Source: Participatory Workshop on the Lupin Value Chain (EPAEM, 2024) and Ministerial Agreement No. MDT-2023-180, published in Official Gazette No. 465, December 27, 2023

This allowed for the calculation of the total value of labor, including unpaid work that sustains the lives and well-being of families.

- Although women's total economic contribution (USD 596.82) is lower than men's (USD 690.45), their contribution in unpaid productive, reproductive, and community work is greater, at USD 489.27 compared to USD 255.97. Specifically, women's contribution in caregiving activities reaches USD 337.81, while men's contribution is USD 121.39.
- If the economic contribution of paid production work is considered alongside

unpaid production and care work, the monthly well-being of families in the lupin production chain depends 56% more on unpaid activities. To achieve this level of well-being, women contribute 2.06 times more than men.

- Women's economic contribution through unpaid productive, reproductive, and community work represents 82% of their total contribution to the lupin value chain. For men, this type of work represents only 37% of their total contribution. Therefore, women's economic contribution is 2.2 times greater than men's.

Results of the Lupin Value Chain

Women contribute 2.78 times more
to caregiving than men.

The monthly well-being of families depends
56% on caregiving activities.

If the value of reproductive and care work is translated
into monetary terms, women's economic contribution would
be 2.2 times greater than men's, representing USD 489.27.





7

What are the conclusions?

The diagnosis shows that, in the lupin value chain, monthly family well-being depends 56% on reproductive activities. To achieve this well-being, women contribute 2.06 times more than men, equivalent to USD 489.27, while men's contribution amounts to USD 255.97.

It is necessary to work on transforming gender stereotypes to promote equity and equal access to opportunities and decision-making. It is also key to foster positive expressions of masculinity that contribute to the progress and economic, social, and political empowerment of rural families.

Empowering women, through the recognition and visibility of their work, drives genuine transformation in local communities and strengthens the community fabric from its roots.





“This document technically reveals the economic contribution of women in representative biobusiness value chains in the country. The findings are intended to spark dialogue and collective reflection to promote changes that will lead to a fairer balance in recognizing the value of women’s work compared to men’s and a more equitable sharing of the benefits derived from biodiversity. The study is part of a larger exercise by the Biobusiness Ecuador project, which aims to gather lessons learned and experiences regarding the role of women in biodiversity-based businesses.”





8

A Call to Action



Including women at the heart of value chains is a matter of social justice and a smart strategy for ensuring sustainability, equity, and local development.



The time to act is now!



It's time to invest in equality that sows the seeds of a future. Let's recognize the invisible work of women in the lupin value chain and promote gender-sensitive policies so that, through their participation, they become drivers of sustainable development for local communities and economies.



Literature

9



- Benería, L.** (2006). *Productive/Reproductive Work, Poverty, and Work-Life Balance Policy*. Bogotá: Central University of Colombia.
- Cook J, S. C.** (2009). *Gender Stereotypes*. Pennsylvania: University of Pennsylvania.
- Digby, T.** (1998). *Men Doing Feminism*. New York: Routledge.
- Girón, A.** (2016). Unpaid and Reproductive Work: Who Should Pay for the Reproduction of a Nation's Workforce? Analysis / Institute of Economic Research of the National Autonomous University of Mexico, 65-80.
- Heifer Ecuador,** (2020). *Guide for Promoters of Gender and Women's Empowerment*, Quito, Ecuador: Heifer Ecuador Foundation.
- Laub, R. & Sisto, I.** (2007, March). *Economic empowerment of rural women: Good practices and lessons learned*. FAO.
- León, C. D.** (2002). *Gender, Ownership, and Empowerment*. Mexico City: National Autonomous University of Mexico.
- León, M.** (1996). *Women, Gender, and Development: Conceptions, Institutions, and Debates in Latin America*. Mexico City.





Biobusiness Ecuador

Sustainability of native biodiversity



BANCO DE DESARROLLO
DE AMÉRICA LATINA
Y EL CARIBE



Fundación Heifer
Ecuador



GOBIERNO DEL
ECUADOR

Ministerio de
Ambiente y Energía