



# ATSAF - CGIAR++ Junior Scientists Program Final Report

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Agrobiodiversity, a key component of sustainable food systems, is funded upon social interactions of farmers that allows their maintenance. The Andes, considered a hotspot of agrobiodiversity, is the center of origin of a wide variety of potatoes and tubers, which are maintained in-situ on the highlands by peasants at a small-scale. Farmer-based agrobiodiversity governance offers potential for strengthening food security of rural populations, conserving the biocultural heritage, and ensuring the persistence of traditional farming livelihoods. The maintenance of agrobiodiversity on the Andes relies on social dynamics related to the exchange of products and services, such as seeds, knowledge, and to some extent, collective farming practices.

The role of collaborative governance has been analyzed for different natural resources, but it has been shortly discussed for agrobiodiversity, mainly in a complex context as the Peruvian Andes. This research aims to fill that gap, investigating the collaborative agrobiodiversity governance through the social dynamics related to agrobiodiversity management in Paucartambo – Cuzco.

For this specific case, the main attention is directed towards the Association of Native Potato Guardians of Peru (AGUAPAN), which is a nongovernmental organization that operates at a national level in nine regions. This organization has a bottom-up approach by promoting self-management processes of members and strengthening their capacities. It aims to increase their integration with higher level dynamics of agrobiodiversity governance. In this organization, they call the formally organized custodians “guardians”.

The area of study is the province of Paucartambo where the custodians organized in AGUAPAN carry out their activities. Paucartambo is situated in the east part of the department of Cuzco. It constitutes six districts: Caicay, Paucartambo, Challabamba, Huancarani, Colquepata, Kosñipata. The majority of these are located in the highlands.



Figure 1. Location of the area of study

The sampling design was based on the convenience to deeply engage with the guardians in different arenas to generate a profound understanding of their communal dynamics, their ways of production, their social networks, and their motivations towards agrobiodiversity maintenance. For this, the regional case study of Paucartambo-Cuzco was chosen. Interactions with stakeholders on the ground was facilitated by local gatekeepers, including CIP, NGO Grupo Yanapai and the Asociación de Native Potato Guardians of Peru (AGUAPAN).

The potato guardians (n=9) participating in this study were chosen under the criteria of formally being affiliates of the association AGUAPAN, delegation Cuzco. It is worth mentioning that, at the time that the research was conducted, the organization AGUAPAN had been formally constituted in Cuzco department for less than one year, specifically in August 2022, which can be considered as an emerging organization. This aspect is vital to the selection criterion because this indicates that the social linkages for the maintenance of agrobiodiversity are not just based on the formal organization, but on previous relations and dynamics that allowed custodians to engage in the process of an agrobiodiverse production system even before becoming part of AGUAPAN.

The data collection in situ was through mixed methods, by means of semi-structured interviews, ethnographic observation, surveys to determine their specific social networks, collection of geospatial data, video interviews, focus groups, and participant observations. The mix method approach is considered optimal to gather data for social network analysis. This allows researchers to have an in-depth understanding of the network structures

through numerical descriptions and their processes. This generates a more comprehensive understanding of the relationships between members in the network, their perceptions, and interpretations.

Different spaces were visited in order to gather the data. Semi structured interviews took place in custodians farms, also called chacras, in their communities. Ethnographic observations were also conducted, emphasizing the understanding of individuals behaviors and contexts. The interviews addressed questions about agricultural production, communal land management, associativity, and social fabric. During the interviews, participants specifically defined their connections for three dynamics related to the maintenance of agrobiodiversity: seed circulation, knowledge circulation, and collaboration networks for land management.

Informal interviews were conducted to custodians that were not members of AGUAPAN but maintained more than 50 varieties of native potatoes at three different regional fairs and was organized yearly by the municipality in villages. During these fairs, participant observations were an essential part in recognizing non-explicit dynamics of collaboration, seeds transactions, and knowledge sharing.

In addition, it was possible to participate in the VII Annual Meeting of Native Potatoes Guardians from AGUAPAN, where 90 guardians from 9 regions of Peru could exchange seeds. Semi structured interviews were conducted with stakeholders from organizations, including the office from the municipality of Paucartambo in charge of the Economic Development and Environment Management and Grupo Yanapai (NGO), base organization involved in the coordination and scaling of AGUAPAN's activities.



**Figure 2. Custodian in regional fair.**



**Figure 3. AGUAPAN's meeting.**

This research features a collaboration with ATSAF Academy scholar Giovanna Chavez-Miguel, working with the Leibniz Centre for Agricultural Landscape Research (ZALF) in Germany and the International Potato Center (CIP) in Peru. In her PhD project titled "Farmer-based mechanisms fostering resilience on the Andes". Ms. Chavez-Miguel pursues a chapter titled 'Mapping corridors of food security on the Peruvian Andes' in which this study is embedded. The two research centers serve the institutional affiliation in both Germany and Peru and provide supervision and methodological support on this work.

During the field work the role Giovanna Chavez-Miguel, guided the process of this research. Her approach through film-based research was an extraordinary way to connect with the families in the communities, making the process of immersion more comfortable. Both research processes were symbiotic. On one hand, I contributed to her process of the documentary through some guiding questions to the guardians, on the other hand their answers where conducting the topic towards the motivations and valuations for conservation, which allowed a better understanding of the context before proceeding with more in-depth surveys.





**Figure 4. Film recording in farmers community.**

Another important aspect for my research process was the follow up by my supervisor in the CIP. His inputs during the field work process were essential for a proper understanding of the context in the region and to establish strategical connections with stakeholders in the communities. I also had the opportunity to connect with other members of my supervisor's research team, who gave me constructive comments on my research.

At a personal level, this opportunity changed my perceptions on the Latin-American rurality. From my previous experiences conducting research in rural areas in Nicaragua, I thought that this experience was going to be similar. However, the rurality in the Andes impressed me due to its complexity in multiple aspects. This gave me more insights on the importance of research from a bottom-up approach in the Global South.

The language barrier posed a difficulty during the field work, given that people interviewed formally and informally spoke little Spanish even though their mother tongue is Quechua. In some cases where the custodians did not speak Spanish, a family member or our gatekeeper contributed with the immediate, yet non-direct, translation, leading to some information gaps. In qualitative research, it is important to understand not only what's being said but also how it is being said. To face this limitation, the observation of the participants became a key aspect. Despite the limitations, it was possible to conduct the field work as planned.