Gender and Agricultural Innovation in Peasant Production of Native Potatoes in the Central Andes of Peru

by

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ABSTRACT

Gender and Agricultural Innovation in Peasant Production of Native Potatoes in the Central Andes of Peru

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Native potatoes are an important element of food security both as a direct food source and as a cash crop for peasant producers in the Andes of Peru. Production is basically for self-consumption and the shift to commercialization is a challenge. As a response, the Papa Andina Initiative (COGEPAN) was initiated to promote market innovation and provide relative advantage to producers to respond to emerging markets. Research is limited on the integration, information and communication in relation to social relations. Old and new nonreciprocal relations and roles among stakeholders, consequences of customary practices, undermine the ability of female peasant producers. Any process requires an understanding of culture, traditions and the gendered practices of agricultural production. As the research was premised on a feminist perspective, a sequential explanatory and mixed design was utilized for obtaining background and contextual data in a way that coupled collecting sex-disaggregated data with iterative planning activities readjusting the research to sharpen its focus on women. The situation of Andean peasant women within modern-day agricultural innovation systems is influenced by traditions and customary laws embedded in the specific lifeworlds of peasant communities. In COGEPAN, gender relations and roles are changing from the macro to the individual levels. Each
change opens up new opportunities to shape innovation and benefit women. The participatory nature of market chains unfolds spaces for women to reveal leadership abilities. Gender relations and innovation have shifted in their own areas of interest or spheres. However, other gender issues are still embedded in peasant farming systems and the native market chain. Results allow the researcher to recommend further policy analysis. The full range of women’s and men’s activities, resources, and benefits has to be reflected in the assessment of the innovation system and continuing activities. Gendered socio-economic factors affecting the adoption of proposed technological or institutional innovations need to be considered. Structural obstacles have to be addressed by implementing policies that facilitate peasant women’s advancement. The design and implementation of policy and legislation have to acknowledge that communities are not homogeneous and mechanisms have to be context-specific to achieve equitable representation of women and men.
ACKNOWLEDGEMENTS

This thesis is the result of the support, commitment, and trust of many people who have been with me during this journey. I am grateful to have the opportunity to transmit the voice of those ‘voiceless’ peasant women and men of the highlands of Peru, the country I was born in. I thank you for opening not only your doors but also your hearts to work with me patiently for more than two years. I would like to express my profound acknowledgment to the women and men of the Communities of Racracalla, Achin, Marynioc, Chicche, Pomamanta and Chuquitambo. You are the inspiration and the reason for my work.

My research would have not been accomplished if I did not have financial support of different institutions. I acknowledge the University of Guelph through different and numerous scholarships and grants like the Board of Graduate Studies Scholarship and the Richard and Sophia Hungerford Graduate Scholarships. The School of Environmental Design and Rural Development and the Ontario Agricultural College, my school and respective college, have supported my studies and research interests through the Dean’s Scholarship to Research and Leadership Skills, the Craig Pearson International Research Scholarship, the Information and Communication for Community Development Grant, the Pearl Lyons Memorial Scholarship and the Ploughshare Scholarship. I am also thankful to be a recipient of the Ontario Graduate Scholarship (OGS) managed by the Ministry of Training of Colleges and Universities of Ontario.

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I also wish to express my love and admiration to my late parents Oscar and Graciela, their values and principles have guided my existence. I express gratitude to my brothers Miguel and Meliton and my sisters Beatriz and Ma.Isabel for being with me all the time.
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**ACRONYMS AND ABBREVIATIONS**

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<th>Full Form</th>
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<tbody>
<tr>
<td>AIS</td>
<td>Agricultural Innovation System</td>
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<tr>
<td>AGROPIA</td>
<td>Asociacion de Productores Agropecuarios para la Industria Andina</td>
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<tr>
<td>AKIS</td>
<td>Agricultural Knowledge and Information Systems</td>
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<tr>
<td>APEGA</td>
<td>Asociacion Peruana de Gastronomia</td>
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<td>ARD</td>
<td>Agricultural Research Development</td>
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<td>AVSF-CICD</td>
<td>Veterinaires Sans Frontieres – Centre International de Cooperation pour le Developpement Agricole</td>
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<td>CAPAC - PERU</td>
<td>Cadenas Productivas Agrícolas de Calidad</td>
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<td>CEDAW</td>
<td>Committee on the Elimination of Discrimination against Women</td>
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<tr>
<td>CGIAR</td>
<td>Consultative Group on International Agricultural Research</td>
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<tr>
<td>CIP</td>
<td>International Potato Center – Acronym in Spanish for Centro Internacional de la Papa</td>
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<tr>
<td>CLIP</td>
<td>Collaboration, Legitimacy, Interests and Power (SAS2 Tool)</td>
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<td>COFIDE</td>
<td>Confederacion Financiera de Desarrollo</td>
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<td>COGEPAN</td>
<td>Management Consortium of Native Potatoes Producers - Junín and Huancavelica</td>
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<td>DNI</td>
<td>National Identity Document</td>
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<tr>
<td>FAO</td>
<td>Food and Agriculture Organization</td>
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<tr>
<td>FORAGRO</td>
<td>Foro De Las Americas Para La Investigacion y Desarrollo Tecnologico Agropecuario</td>
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<tr>
<td>FOVIDA</td>
<td>Fondo Para La Vida - NGO</td>
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<td>FPR</td>
<td>Farmer Participatory Research</td>
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<td>FSR</td>
<td>Farming Systems Research</td>
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<td>GA</td>
<td>Gender Analysis</td>
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<td>Gender and Development</td>
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<td>GII</td>
<td>Gender Inequality Index</td>
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<td>HDI</td>
<td>Human Development Index</td>
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<td>IADB</td>
<td>Inter-American Development Bank</td>
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<td>ICT</td>
<td>Information and Communication Technology</td>
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<td>IDS</td>
<td>Institute of Development Studies</td>
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<tr>
<th>Abbreviation</th>
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<tr>
<td>IFAD</td>
<td>International Fund for Agricultural Development</td>
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<tr>
<td>IFPRI</td>
<td>International Food Policy Research Institute</td>
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<tr>
<td>IICA</td>
<td>Inter-American Institute of Agricultural Cooperation</td>
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<td>ILO</td>
<td>International Labour Organization</td>
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<tr>
<td>INDEPA</td>
<td>The National Institute of Andean, Amazonas and Afro-Peruvian Populations</td>
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<tr>
<td>IMF</td>
<td>International Monetary Fund</td>
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<tr>
<td>INCOPA</td>
<td>Proyecto Innovacion y Competitividad de la Papa Peruana</td>
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<tr>
<td>INEI</td>
<td>Instituto Nacional de Estadistica e Informatica - Peru</td>
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<tr>
<td>INEI – ENAHO</td>
<td>Instituto Nacional de Estadistica e Informatica – Encuesta Nacional de Hogares</td>
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<tr>
<td>INSTRAW</td>
<td>Institute for Training and Research for the Advancement of Women</td>
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<tr>
<td>IPR</td>
<td>Intellectual Property Rights</td>
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<tr>
<td>IUCN</td>
<td>International Union for Conservation of Nature</td>
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<td>MDGs</td>
<td>Millennium Development Goals</td>
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<td>MEF</td>
<td>Ministry of Economy and Finance</td>
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<td>MINAG</td>
<td>Ministerio de Agricultura - Peru</td>
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<td>NARS</td>
<td>National Agricultural Research Systems</td>
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<td>NGO</td>
<td>Non-Governmental Organization</td>
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<td>NON-COGEPLAN</td>
<td>Peasant Communities Associations</td>
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<td>OEEP</td>
<td>Office of Economic and Statistic Studies – Ministry of Agriculture</td>
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<tr>
<td>PETT</td>
<td>Proyecto Especial de Titulación de Tierras y Catastro Rural</td>
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<tr>
<td>PMCA</td>
<td>Participatory Market Chain Approach</td>
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<td>PPPs</td>
<td>Public-Private Partnerships</td>
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<td>PRATEC</td>
<td>Proyecto Andino de Tecnologías Campesinas</td>
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<td>PROSEMPA</td>
<td>Proyecto de Semilla de Papa</td>
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<tr>
<td>PTD/PID</td>
<td>Participatory technology/participatory innovation development</td>
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<td>RAAKS</td>
<td>Rapid Appraisal of Agricultural Knowledge Systems</td>
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<td>R&amp;D</td>
<td>Research and Development</td>
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<td>Structural Adjustment Policies</td>
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<td>Social Analysis Systems</td>
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<td>SDC</td>
<td>Swiss Agency for Development and Cooperation</td>
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<td>SPRU</td>
<td>Science and Technology Policy Research</td>
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<tr>
<td>UN</td>
<td>United Nations</td>
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<td>UNCSTD</td>
<td>United Nations Centre for Science and Technology for Development</td>
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<tr>
<td>UNDP-PNUD</td>
<td>United Nations Development Programme</td>
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<td>UNIFEM</td>
<td>United Nations Development Fund for Women</td>
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<td>UNRISD</td>
<td>United Nations Research Institute for Social Development</td>
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<td>USAID</td>
<td>U.S Agency for International Development</td>
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1.1 Background

Peasants\textsuperscript{1} or campesinos living in the Central Andes of South America are the traditional custodians of an unlimited genetic pool of Andean crops and tubers. These traditional farming systems depend on women’s emic or insider knowledge to maintain such vast biodiversity. Rural Andean women’s own livelihood strategies, use and rely on crop genetic diversity (Brush, 2004; Tapia, 2000). They have preserved the genetic biodiversity of the potato despite serious adversities such as constant climate stress and food scarcity (De Haan, 2009). Such adaptation and resilience are the foundation of peasant communities in the Andes.

However, the majority of peasant producers in the Andes have not been fully included in agricultural and rural development as a result of the separation between consuetudinary and customary laws that govern their peasant communities and the country. Especially for rural women, there is unequal access to resources that in turn have consequences for gender roles and the institutional environment in which they live.

Peasant producers and particularly female farmers have limited opportunities to access formal and fair agricultural markets, mobilize their knowledge to add value to agricultural innovation, and develop their capacities to integrate themselves into solid institutions that can support the commercialization of the agricultural products they have been cultivating for generations (Barrientos, 2001). Agricultural experts have often stated the fact that any strategy which aims at poverty alleviation and agricultural development must ensure women’s inclusion, either as part or even as drivers of the process, if it is to be successful (FAO, 2009).

\textsuperscript{1} Campesino or peasant is not only a social class. It also refers to the race, social status, income generation and other aspects (De la Cadena, 2000). Most of the population under similar conditions define themselves as indigenous people (Contreras \textit{et al.} 2000). Later in this text the analysis will problematize the socio-cultural stigma of the female peasant as campesina.
There are efforts on the ground attempting to address this challenge. The Papa Andina Regional Initiative was initiated by the International Potato Centre (CIP) in 1999 and is promoting the growth of market niches and adding value to native potatoes grown by female and male peasant producers (Horton et al. 2011). The initiative has worked with partners in Bolivia, Ecuador and Peru to fire up pro-poor innovation within market chains for potato-based products (Ordinola et al. 2011). Market chain actors are diverse and include heterogeneous groups of stakeholders. Meinzen-Dick et al. (2011:42) identifies the key research that defines this social network;

“…The PMCHA employs novel forms of collective action to foster market innovation in the Andes, with special attention to inclusion of small-scale farmers. The participatory market chain approach (PMCA) (Bernet et al. 2006; Antezana et al. 2008) and stakeholder platforms (Thiele et al. 2005; Reinoso et al. 2007) bring small potato producers together with market agents and agricultural service providers to identify common interests, share market knowledge and carry out joint activities to develop new business opportunities. Papa Andina facilitates knowledge sharing and promotes collective learning in a regional and broader context (Devaux et al. 2007).” (Meinzen-Dick et al. 2011:42)

A gender-differentiated analysis of this particular agricultural innovation system would make women visible and define their activities in relation to men at all levels of the system (from the individual to macro levels and vice versa). This approach also calls for a commitment by communities as well as private and public institutions to engage in ‘innovative brokering’ to overcome gender constraints (Manfre et al. 2010). Effective market chain programming through a gender lens requires an understanding of how people respond to different kinds of incentives in market chains and how gender issues affect this response. The integration of gender in the agricultural innovation system calls first and foremost for the identification of existing inequalities between and among men and women. In particular, it draws attention to the differences in men’s and women’s roles and relations that shape access and control to resources. It is attentive to aspects of knowledge, power and structures affecting the social construction of gender and its transformation. All of these factors contribute to gender segmentation in any market chain, and ultimately lead to disparities in the distribution and access to newly generated resources (Mayoux et al. 2009).
In this study, there is a re-positioning of feminist theories to inform and develop gender analysis, which comprehends women’s situation in agricultural innovation systems from their own cultural standpoint. In other words, the focus is on rural Andean women’s own Cosmo Vision or worldview and its influence on their emic understanding of environmental, social, cultural, economic and political systems.

1.2 Problem Statement

Native potatoes are the main components of peasant producers’ livelihoods and the most important element of food security both as a direct food source and as a cash crop (Antezana et al. 2005; Meinzen-Dick et al. 2009). Historically, native potato production has been largely for self-consumption and the shift to local commercialization has been a challenge for peasant producers. As a result of that, Papa Andina was initiated to promote market innovation that would give a comparative advantage to peasant producers by enabling the support of diverse stakeholders and opportunities to respond to emerging markets (Meinzen-Dick et al. 2009; Thiele et al. 2011). Nonetheless, the increasing challenges for resource-poor producers disproportionately affect women (Tallonire et al. 2007; Weatherspoon et al. 2003; Page et al. 2003). Old and new nonreciprocal relations and roles among different stakeholders are consequences of customary practices that undermine the ability of the weakest members of the chain, female peasant producers. In turn, these roles and relations mean access to new information and resources. Therefore, the process requires an understanding of aspects like the cultural and traditional ways of being of Andean producers and the gendered customs and practices of agricultural production. Also important is the degree to which gender defines constraints in participation in activities throughout the value chain. Effective market chains require an understanding of how people respond to different kinds of incentives in market chains and how gender affects this response.

Bode et al. (2008:5) remarks that,

“…very little is known about who in the chain needs what type of information and knowledge in order to make well-reasoned decisions, to learn and innovate constantly and finally to upgrade to meet shifting market conditions (Vermeulen, et al. 2006). It is also unclear, how communication and knowledge management can contribute to bridge these gaps and lead to a better coordination and integration of all value chain stakeholders.”
There has been limited analysis of the integration, incorporation, information and communication that flow between women and the other actors, focusing on the social relations among the stakeholders. Consequently, the potato market chain needs to be analyzed to identify women’s ability to successfully combine their multiple traditional and new roles and relationships in production, income generation and biodiversity management.

1.3 Research Context

The research study was carried out in the Central Highlands of Peru in the regions of Junín and Huancavelica. As the study aimed to deepen its understanding of the native potato market chain systems and its processes from a gender perspective, a comparative analysis of women's traditional production and commercialization of native potatoes with women's recent experiences in the promotion of innovative native potato market chains was carried out.

Two groups were nominally identified within the population:

1. The case study: COGEPAN\(^2\) a consortium of four associations of peasant producers participating in the market chain under the coordination of the Papa Andina Initiative and;

2. The control group: non-COGEPAN peasant communities cultivating native potatoes from the Junín Region and are part of the Alto and Bajo Tulumayo watershed.\(^3\)

The Central Andes falls into the agro ecological zone known as the “Yellow Andes” where altitudes fluctuate from 3,500 over 4500 metres and livelihoods are exposed to danger because of variation in climate that brings drought, floods, frost, or hail during the production season (Mayer, 2002). In Andean areas, poverty is prevalent. It is within this context that indigenous or peasant communities depend for their food and livelihoods on the production and consumption of a range of Andean crops and tubers, principally native


\(^3\) The term 'control' is used in a generic sense to distinguish the non-COGEPAN producers in peasant communities; it does not intend to represent a counterfactual or control group for experimental design purposes.
potatoes (Dandler et al. 1985). Andean producers have been able to adapt and select a
diverse number of varieties and thereby to reduce potatoes’ susceptibility to
environmental risks and climate stress (De Haan, 2009). Native potatoes with seven
*Solanum* species and thousands of varieties are originally from the Andes and it is the
place where they have been produced for over 8000 years (National Academy of
Sciences, 1989). Brush (1991) states that a typical household may be growing from 10 to
12 varieties and between 70 to 100 native potato varieties in communities that Andean
producers are members (Hellin et al. 2005).

These communities depend on their own political and customary structures, official
recognition from the central government, unquestionable rights to land and collective
organization. The land is adjudicated to the communities managed by the community’s
assembly. This governing body defines the conditions of tenure, rights and obligations
(Castillo et al. 2004). The law on peasant communities is inclusive in relation to gender
because it recognizes similar rights for women and men (Deere, 1998b) In theory, a man
or a woman can become a qualified community member. Nevertheless, the customary
practice articulates that the designated male representing the household is the member of
the community unless a woman becomes widow (or rarely, a single mother). Thus,
women can have access to the *comunera* status. In addition, men are the only ones who
have formal authority across the different hierarchical structures since women indirectly
participate as a pressure group (Urrutia Cerruti, 2007).

This type of social structure has great influence on how gender is seen inside and
outside the communities at the individual level and social system. Inequalities arising
within the households as well as within communities exacerbate the combined effects of
exclusion, female poverty and feminization of rural poverty (Diez, 2006). In order to
understand indigenous or peasant women inside the context of communities and their
gender relations, it is useful to compare it to a braid since two of the three components,
class structure and ethnic stratification are linked, while the third component gender
subordination is invisible (Francke, 1990).
1.4 Research Purpose, Questions and Objectives

The purpose of this research was to deepen the understanding of the native potato market chain systems and its processes in the Central Andes of Peru from a gender perspective by comparing women's traditional production and commercialization of native potatoes with women's recent experiences in the promotion of innovative native potato market chains.

Based on this goal, the study attempted to answer the following research question:

*What do women’s and men’s worldviews reveal about the realities of the native potato production in peasant communities, including a new intervention, the innovative market chain of native potatoes in the Andes?*

Objectives

1. To compare women's traditional production and commercialization of native potatoes with women's recent experiences in the promotion of innovative native potato market chains.

2. To offer women the opportunity to document by themselves their worldviews, combining practices, levels of participation, perceptions and beliefs in their own terms, to explain what the production of native potatoes means for them.

3. To analyze the patterns of asset use and access, roles and types of gendered relationships, and how the enabling/disabling environment contributes to the patterns detected and to assess these realities through collaborative mapping of the strengths and weaknesses of the market chains in which they participate.

4. To provide assessment of the appropriateness of the conceptual and methodological framework used and its usefulness for future research and suggest effective policies identified in the research study for future work.

1.5 Overview of Methodology

As the research was premised on a feminist standpoint, a compatible and specialized methodology was required (i.e. gender analysis). A sequential explanatory design was
utilized for obtaining background and contextual data, and this was organized in a way that coupled collecting sex-disaggregated data (using a survey) with iterative planning activities that continuously readjusted the research study to sharpen its focus on women.

A participatory process and set of analytical tools known as Social Analysis Systems (SAS2) was modified to use video mediated in-depth interviews and focus groups. Participant observation was documented in the researcher’s reflective journal. The complementarity of these methods intentionally sought to strengthen participatory qualitative data. The data integration occurs when the qualitative results informs the secondary quantitative data collection. Creswell (2009:5) refers to this approach as “two forms of data that are separate but connected”.

The first research stage was a participatory and qualitative descriptive explanation of multiple perspectives about native potato production and market chains involving forty-two participants. Women and men had to share their views through the video report tool; producing short videos with the description of their stories; this technique was complemented with focus group sessions, semi structured interviews and participant observation. It was carried out to respond to the two first objectives. Here women and men analyzed in a collaborative way the problems and conditions they experience in the production of native potatoes, the importance of this crop in their lives and their worldviews as Andean people. This stage was crucial to integrate women and men in discussions and work in groups. Besides, there were in total six people (four women and two men) who were trained in the use of the video camera and in interview processing. Women and men worked together and helped each other to achieve their tasks.

The second stage took place with a sub set of forty-two participants. This was considered the analytical stage and made use of specific tools (force field analysis, timelines, and the social analysis tool known as CLIP) (Chevalier et al. 2008). These tools are based on the Social Analysis Systems Approach (SAS2) and in which the researcher received specialized training in 2010. These tools were adjusted and modified in accordance to the context and unfolding findings from the third research objective. The exercises considered the participants’ education and understanding of the research study. During this phase, the study paid attention to the gender-differentiated worldviews (among men and women). It was attentive to their interaction, participation and
specifically, expressions of how they felt about their lives and the activities, roles and relations and the different levels (macro to micro) of the agricultural innovation system in which they all are involved. The research emphasized the description of men’s and women’s understandings of life, their ways of living and practices based on their emic knowledge and experiences, so that the participant was recognized as an expert within the data acquisition process.

In the third stage, a larger representative sample of data involving 220 respondents (36 COGEPAN and 184 NON-COGEPAN participants) was used to obtain general findings about the native potato producers. It also allowed generated data to triangulate and complement data collected in the two first research stages. The survey generated contextual and demographic information that helped the researcher to describe, investigate and explain the qualitative differentiation in the production of native potatoes and the resources women and men in both groups may or may not access and control. All qualitative information was analyzed using thematic grouping of the data with open and selective coding. Analysis of demographic and socio-economic data from the survey was analyzed using SPSS version 19.

1.6 Significance of the Research

Several benefits were obtained by the participants and the researcher as a result of the research. Participation in the study allowed peasant producers of native potatoes to express their ideas through dialogue and strengthen collective awareness of the system they are involved in. At the same time, by expressing their ideas, problems, limitations and opportunities, they constantly built trust, knowledge and opportunities for joint action. Through this shared accomplishment, they developed and strengthened capacities that eventually were identified as being essential to the development and sustainability of their organizations and institutions. Continuous monitoring and reflection during the facilitation process were critical to make corrections along the way (action, training and research). This study revealed challenges with innovation systems that relate to governance and national policy making in areas such as land tenure, market functions and integration of gender equality. Policymakers in Peru can utilize the study to support their development concerns and beneficiaries’ needs,
especially peasant producers who are considered the key players of local innovation processes.

1.7 Description of the Thesis

This thesis is divided into nine chapters. Chapter Two presents the relevant literature and conceptual framework for the study. It is divided into three main sections. The first section covers Andean farming systems and socio-cultural elements of peasant production and examines the theoretical background of traditional agricultural production based on the Andean Cosmo Vision and its agro-centric principles. The second section of Chapter Two summarizes the evolution of feminist approaches to development and the significance of gender mainstreaming to achieve gender equality in the international arena. The third section reviews the concept of agricultural innovation systems in order to present the conceptual framework and the main theoretical themes for the study.

Chapter Three presents the theoretical paradigms and methods utilized in the research design. It begins with an overview of the philosophical approach to the study (ontology, epistemology and methodology) followed by the methods utilized in the three phases in which the research was conducted. Chapter Four presents a general description of the study communities and the general situation of Peru, its diversity and agricultural sector. This section is followed by an overview of the different situations and circumstances rural women in Peru have faced. Subsequently, the Papa Andina Initiative is presented as an intervention that fosters pro-poor innovation in market chains to improve food security, market access and reduce poverty for peasant producers in the highlands.

Chapter Five presents a comparative description of the demographic and socio-economic profile of study respondents in the two groups (peasants involved and not involved in the Papa Andina Initiative). Chapter Six presents another component of research findings that derive from respondents’ individual and collective worldviews, manifestations on their ways of being, believing and thinking, including their assumptions about their lived reality within or outside the market chain of native potatoes.
Chapter Seven contains the final component of research findings, including the linkages among different stakeholders. This chapter also examines how women and men in interaction with different stakeholders produce different results – relations and roles that affect their livelihoods.

Chapter Eight discusses the findings presented in the earlier three chapters. This discussion covers gender aspects of the native potato market chain at macro (enabling environment), meso (peasant communities, COGEPAN, market chain) and the micro (household and individual) levels. The analysis identifies windows of opportunities and constraints that can facilitate or limit women’s participation in the market chain and agricultural innovation systems.

Finally, the last chapter of the dissertation, Chapter Nine revisits a final summary of the study. The major conclusions are presented on the second section. Then, a review of the four objectives of the study includes the recommendations for future research and policymaking.
CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This literature review is divided into four main sections. The first section covers the literature on Andean farming systems and socio-cultural aspects of peasant production. This section contains the theoretical background of the traditional agricultural production in the Andes based on the Andean Cosmo Vision and the agrocentric principles. The discussion of the literature highlights two crucial philosophical considerations, 1) peasant knowledge or saber campesino and 2) protection of native potato biodiversity in the high Andes. The second body of literature addresses the evolution of feminist approaches to development, from the Women in Development approach to Gender and Development. The literature also highlights the significance of gender mainstreaming to achieve gender equality. It also includes the perspective of gender in the context of the Andes of Peru and peasant women. The third section reviews the theory of agricultural innovation systems and its evolution from cropping systems to farming systems research followed by the interpretation of extension and knowledge systems that highlights the main dimensions of what is referred as contemporary agricultural innovation systems. Finally, the fourth section of the chapter defines the conceptual framework and the main theoretical themes on which the research was premised.

2.2 Andean Farming Systems and Socio – Cultural Issues

The Andes Region of South America is distinct in terms of environment, climate and people given its location in one latitudinal gradient, which includes the tropical climate in northern latitudes, to the cold climate of the south (Li Pun et al. 2006). The Andes cover over 121 million hectares with an agricultural population of over seven million people in approximately six countries from the northern coast of Venezuela and Colombia to Argentina (Mateo et al. 1987). Two different regions are defined: the Andean region (Ecuador, Peru, Bolivia, Colombia, and a minor proportion Venezuela) and the South cone (Argentina and Chile) (Tapia, 1996). The Central Andes is also known as the ‘High Altitude Mixed Farming System’ and it stretches across intertwined
mountains from the Northern areas of Peru up to Chile and Argentina (Brush et al. 1994). These highlands create valleys that are known as the Peruvian ‘Sierra’ (Brush et al. 1994) where crops can be cultivated up to 4500 m above sea level (Brush et al. 1994).

Therefore, the Andean region can be understood as three interconnected agro-ecological zones.

“…the Green Andes - Northern Peru and Ecuador, this area has sufficient precipitation and the variations in the climate are minimal; the Yellow Andes - Central Peru and Eastern Bolivia is less consistent in relation to the density of the rainfall; and finally, the High Climatic Risk Andes - Southern Peru and the Bolivian Altiplano is extremely variable in regards to rainfall.” (Tapia (1993), cited by Hellin et al. (2002:3)

The agro-ecological diversity results in altitudinal and slope differences that produce different types and forms of soils, drainage, solar exposure, diurnal temperature regimes, and evapo-transpiration conditions (CIP, 2012). The presence of valleys where agriculture is possible are isolated and surrounded by areas of higher altitudes (Mateo et al. 1987). These basically depend on rainfall to produce. Dixon et al. (2001: 291) goes further and states that;

“…the precipitation is concentrated within a single wet season of variable length and ranges from 150 mm in the western ranges to 1000 mm per annum in the eastern ranges. Although the soils, as well as their capability for agricultural production are extremely diverse, their fertility is typically low. All the lands in the region are affected by severe soil erosion. The great variation of soil types and frequent sharp changes in altitude are accompanied by dramatic changes in temperature, humidity and rainfall. An aridity gradient exists from east to west across the Central Andes as well as from north to south along the length of the highlands. Annual mean temperature varies greatly with altitude. Mean daily temperature is generally below 10°C and frost is common, especially during the dry season.” (Dixon et al. 2001:291)

The Central Andean high altitude farming system is characterized by a distinctive socio – cultural context (Mateo et al. 1987). The indigenous farming population cultivates small parcels of land and there is an absence of large holdings. This system is characterized for its minimal use of external inputs (pesticides, herbicides and synthetic fertilizers) and replaces them with internal inputs (llama manure, juices from plants and
rotation of crops) (Mateo et al. 1987). People in the Andes still follow the strong cultural elements practiced by the Inca Empire (Dixon, 2001). Farm families have access to individual micro-plots and to communal cropping and grazing lands at various elevations (Mayer, 2002). The communal lands are administered by the local councils of the peasant communities and serve the purpose of providing extra resources to community members and to generate resources for general infrastructure and cultural, ceremonial, and recreational activities (Mayer, 2002).

Inside peasant communities two types of families can be identified: nuclear and extended. Independent couples with small children constitute the former. Adults who share the house constitute the latter (Mayer, 2002). They live with single children and with married children, in-laws and grandchildren. The latter predominates in the communities in order to guarantee collaboration among members, generate more production and secure family incomes (Mateo et al. 1987). Sometimes, married children live independently and build their own houses, but homes are built close to the paternal house in order to maintain collaborative agricultural labour (Seligman, 1995). Any person over 12 years of age assumes full responsibility in agricultural production and children younger than 12 participate in livestock management. Sharing of labour is very common by means of Ayni (exchange of labour on an individual basis) or minka (exchange of labour on a group basis). Available land for an individual family can be differentiated in three ways: sayanas where the family lives and has a few crops and pastures (about 30 percent); aynoca, lands distributed annually or cultivated communally but utilized individually and finally community lands that are mostly used for grazing and native potatoes (Mateo et al. 1987).

PNUD (2002:19) states that,

“...legal rights over property and other resources are not typically established. One-third of holdings are legally owned, while peasant communities hold two-thirds under customary arrangements. Land rental is not formalized although there may well be informal arrangements.” (PNUD, 2002:19)

Sixty percent of holdings in the Peruvian sierra or lower altitude highlands are distributed through the communities (peasant communities) (Dixon et al. 2001). Individual landholding is less than “3 ha with 1.5 to 2.5 ha cultivated (small parcels or
topos). In the Altiplano area it goes up to 1.5 to 2 ha” (Dixon et al. 2001:292). Approximately 3.1 million ha is cultivated (PNUD, 2002).

Chronic poverty, extensive soil degradation and erosion limit small-scale farming. Off farm activities and migration are some of the choices Andean people have in order to overcome their struggle (Dixon et al. 2001). Local and regional migration flows within the Eastern part of the Andes and the Lowlands of the Amazon. However, the rural population within the system grew by 1.6 percent per annum during the period 1960-1990 (INEI, 2012). But, the growth rate declined in the following years (Dixon et al. 2001). Today, approximately four million people in the Andes of Peru fall within the subsistence-based mixed production system (INE, 2012). The main crops include potatoes, Andean cereals (quinoa and chenopodium), barley and corn. Sheep and guinea pigs predominate in the highlands, while the camelidae (llama, alpaca) are localized in the Southern area of the Andes (Dixon et al. 2001). The topography of the Andes does not make possible the irrigation of the upper lands in comparison to the lower areas of the western highlands (Dixon et al. 2001).

In the Central Andes, the typical land use patterns distinguish three major production systems according to the altitude (Dixon et al. 2001): (1) the valleys with small-scale and traditional irrigation systems make possible the production of corn, quinoa, chenopodium commercial potatoes and vegetables; (2) the intermediate slope with drier western terraces favourable to barley and grains and the eastern slopes optimum for Andean tubers and native and starchy potatoes cultivation; and (3) the highlands or ‘puna’ where the cultivation of more frost-resistant crops (e.g. bitter potatoes) is shared with pastoral activities (llama, alpaca, vicuña). Dixon et al. (2001:293) also suggest that

“...average farming system yields are constrained not only by agro-ecological conditions but also by the limited use of external inputs and the low productivity of family labour. In the Peruvian Sierra, less than 10 percent of smallholders are estimated to use purchased seed, but nearly 70 percent use organic fertilizer of one form or another. Maize yields typically do not exceed 1 t/ha, with quinoa yielding 0.85t/ha and potatoes 10 t/ha. Other cereals (wheat, barley) average approximately 1 to 1.2t/ha, but these yields may reflect the participation of larger producers. Further south, in the Altiplano sub-
system, yields drop further: potatoes from 4 to 5 t/ha; quinoa 0.6 t/ha and wheat and barley about 0.6 to 0.7 t/ha.” (Dixon et al. 2001:293)

According to the Global Facilitation Unit for Underutilized Species (2005), the Andean region is considered one of the most important centres of crop and animal species adaptation. Andean People also have inherited from their ancestors’ knowledge on soil conservation through terraces, irrigation and water conservation structures (Núñez Ramírez, 2005). They know for instance, that the water temperature has to be regulated before it is used for irrigation on the fields; thus, they built waru warus (ridges) and poqas (lakes) to hold and warm the cold stream water (Global Facilitation Unit for Underutilized Species, 2005). As well, Andean people still rely on their capacity to predict the weather for the forthcoming agricultural season based on natural indicators (the behaviour of animals, plants and observations of sun, moon, stars, etc.) (Global Facilitation Unit for Underutilized Species, 2005). Similarly, emic environmental knowledge has led to the development of unique artisanal food processing systems and food conservation practices which include dried and salted meat charqui and dehydrated and fermented potatoes chuño and tunta or moraya (Global Facilitation Unit for Underutilized Species, 2005). Finally, there are traditional storage, transportation and accounting systems. In particular, the Inca main ways, through the mountains and Sierra, plus secondary and foot pathways, constitute an intricate and efficient system to transport by llamas or foot, products and information to the Tahuantinsuyo. “To implement this superb organization, an efficient accounting system based on knots kipus was also developed” (Mateo et al. 1987:19-20).

Traditions and practices have allowed Andean people and their communities to conserve in-situ the diversity of native potatoes and other Andean crops (Franco et al. 1979). Most of these innovations are never sent to markets. These crops, most of which come from eight species of Andean potato, may be bartered amongst highland and

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4 The term ‘Tahuantinsuyo’ comes from two Quechua words: Tawa (four) and suyo (state) (Ramirez, 2005) and was considered the most extensive kingdom in the Americas. The four suyos or domains considered Cusco as the capital’s empire and was distributed: on the northwest was Chinchaisuyo; on the northeast the Antisuyo; on the southwest, the Contisuyo; and on the southeast, the Collasuyo (Ramirez, 2005). The Sun, the Inca and the State owned the territories and the land were distributed to citizens proportionately (Ramirez, 2005).
lowland communities and used for traditional gift giving and other ceremonies and self-consumption for centuries (Global Facilitation Unit for Underutilized Species, 2005). Cowan et al. (1992: 188) confirms that

“...the potato cultivation in the Andean regions of Peru dates back to at least the fifth millennium BC, based on evidence found at sites near Ayacucho, in the south-central Andes, as well as at various Peruvian coastal sites.” (Cowan et al. 1992:188)

Other researchers such as Spooner (2005) propose that the origin of the potato is on the north area of the Titicaca Lake in Puno. The multiplicity of these agro-ecosystems allowed preservation of approximately 3,000 entries of the potato crop (Hellin et al. 2005); Padoch et al. (1991); Bellon (1990) and Boster (1985) acknowledged a close connection between plant diversity and indigenous people in the Americas. Manrique et al. (2011:161) also indicate that

“...in a single valley in the Peruvian Andes, peasant communities may grow between 70 and 100 distinct potato varieties and a typical Andean household may keep up to 50 distinct varieties, including tubers from several potato species...Potato production has been the “important means of supply for food consumption because the climatic and altitudinal conditions of the highlands limit the cultivation of other crops.” (Manrique et al. 2011:161)

Nevertheless, agro – ecological resilience and vast biodiversity have not ensured socio – political respect and representation. Andean people have suffered incessant abuse and exclusion from the early days of the arrival of Spaniards five centuries ago. Political and social marginalization removed them from mainstream of modernity and access to markets. Extreme poverty and biodiversity coexist in Andes, leaving the rural peasant population directly dependent on biodiversity for their subsistence (Manrique et al. 2011).

The concept of gender is socially constructed; therefore, it needs to be understood through social interactions that differ across time, space and culture (Bezner Kerr, 2008). Social relations symbolize both the material and the ideological (Bezner Kerr, 2008). Thus, they exist in the division of labour and resources, ideas and representations (Kabeer, 1994). Gender relations investigate the diverse and unequal roles, responsibilities, access to resources, authority, decision-making patterns and perceptions

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about gender and how these relations are held between men and women within their societies (Moser, 1993; Agarwal, 1997; 2000b; 2001; Kabeer, 1994; King et al. 2001; Lind, 1997; Quisumbing, 2003). Therefore, gender relations are not identical across societies or historically static (Quisumbing, 2003). Gender relations are represented in interaction with other structures of social hierarchy such as class, caste, and race to influence social outcomes and interact with gender in different ways (German et al. 2008).

### 2.2.1 The Principles of Andean Cosmo Vision

Andean Cosmo Vision is the form of life among the rural population of Bolivia, Ecuador and Peru and it is geographically, ecologically and culturally linked to the mountains of the Andes (Pease, 1982). The ancestral culture became apparent since the formation of the *Tahuantinsuyo* and has continued into the present day in the Andean Community of Nations (Bolivia, Peru, Ecuador and Colombia) (Pease, 1992). The perspective of the Andean Cosmo Vision is centred on Andean culture and nature. Nurturing life is the foundation of the Andean Cosmo Vision holistically integrating the local *pacha* (the living, natural collectivity of all beings – space/time), the *runa* (humans), *sallqa* (nature), and *Apus/wacas* (deities) (Tapia Ponce et al. 2012). Learning how to nurture and letting oneself be nurtured are elemental principles and practices. Nurturing is carried out through the treatment of all entities as equivalent beings, with respect, empathy, and reciprocity (Pease, 1992).

In the Andean Cosmo Vision, all living beings are considered equivalent ‘persons’ that complement one another through acts of mutual nurture, manifested in rituals and continuous formal and informal dialogue (Grillo et al. 1990). Andean peoples have developed sophisticated responses to the variety of beings inhabiting a particular agricultural place or *chacra*, the small plot of land at the centre of everyday practices and ritual. *Chacra* is not only the place but also the relations sustaining all equivalent persons such as potatoes, seeds of other Andean crops, llama, rain, rocks in mutual relations of harmony that procure life frequently. Grillo et al. (1990) argue that the Andean culture is *per se* agrocentric because agriculture mediates Andean symbols and cultural production. Andean cultures are predominantly the *Qichua* or *Quechua* and the *Aymara* and these
peoples perceive their natural surrounding as a living force, in which they are part (Grillo, 1998a). The animating force of nature is represented by the deployment of a set of interactive and complementary instincts identified by Kush (1975) as the “semenal thought”, a logical thinking of a vital life (Kush, 1975). It is the articulation of ideas and beliefs that constrain human action evidenced by respect, consideration and love towards nature where humans obtain what they need while showing appreciation, understanding and reciprocity (Kessel, 1991).

Grillo et al. (1990) suggested two schemes in which the agrocentric vision determines the social practice of the Andean people. Agriculture and livestock activities constitute the backbone of economic activity. Therefore, it is the core of the Andean cultural production: the language perception, philosophy and religion, social organization and technology, and science and art (Kush, 1975). Thus, Andean people integrate four systems as recurring categories within their agrocentric vision. The first is the use of land that provides soil and water. The second refers to the means of domestication of plants and animals. The third system allows the construction of microclimate infrastructure allowing that the three of them grant the natural environment to the Andean people for their subsistence resources. The fourth system embraces the techniques of conservation, storage and transportation of foods that ensure effectiveness and continuity of economic production (Grillo et al. 1990).

The Andean worldview sustains the creation and reproduction of diversity in all of its expressions and practices. The existing concept of sustainability is essential as it is devoted to the procurement of balance and harmony among all living beings demonstrated both in daily and ritual practices (Rojas, 2003; Posey, 1999). Local classification of plants demonstrates a comprehensive observation and interpretation of the environment. According to Salas et al. (1990:9)

“…peasants order natural phenomena (soil, rain, hail, frost, the position of the moon, the brightness of the Pleiades, and animal behaviour) into categories that make sense for agricultural use. Simplifying a complex system of thought, the classification relies on two basic principles: dualism and relativism. Dualism is a way of perceiving opposites that can be divided, but at the same time, remains complementary and reciprocal.” (Salas et al. 1990:9)
Following the principle of Andean Cosmo Vision, the territories in the Andes are considered as: high *hanan* with cold soils (*chiri*) or low *hurin* areas with soils that are warm (*qoni*). Both pastoralist land use (*astana*) and agricultural cultivation known as *layme* are practiced. As Salas *et al.* (1990:10) state that,

“…applying the principle of relativism, the opposites lose their absolute delimitation. High terrain becomes low when the point of reference and perception of the peasant is on the former. For an external observer this might be a clear sign of logical inconsistency, but for the peasant (this worldview) is a smooth passage to blend opposite values. The point of reference is the middle *chaupi*. These taxonomies are expressed in the oral traditions and normal conversations.” (Salas *et al.* 1990:10)

The complementarity principle of the Andean Cosmo Vision refers to the control and use of ecologically distinct, spatially separated production zones by single ethnic groups. Murra (1975) articulated this idea as ‘verticality’. Thomas (1973) discusses energy flows and showed that multiple zones were better able to provide sufficient energy than single zones. Golte (1980) suggested that multiple zone use smooth out labour demand, thus making labour more efficient and productive than is possible within a single zone (Brush, 1992). A prerequisite of complementary land use is an inventory of crops that are suited to the different physical conditions of the land: soils, temperatures, moisture, and evapo - transpiration regimes (Brush, 1992). According to Helles (1995), in this relational nature the masculine-feminine duality is the energy that invigorates and regenerates life. This duality of opposites is complementary because the complementarities of opposites result in the harmonization of the land and humans. The health of nature, men, women and the Cosmos is in relation to this harmony, under the union of complementary opposites. Duality, fundamental structure in the Andes, is conjunctive and not disjunctive (Pease, 1989). In other words, the equilibrium of the cosmos is perceived as the encounter between opposite forces that are, at the same time, necessary and complementary.

Another principle, reciprocity, allows Andean communities to act collectively. It determines the roles and activities inside their agricultural practices (Delgado and Ponce, 2003). One of the most common types of reciprocity is denominated *al partir*: a farming family owns the land and the other works it in exchange of dividing the profits equally to
both groups (Mayer, 1974). Ayni is another work exchange arrangement practiced at the family’s level (Mayer, 1974). The exchange of labour inside this farming system allows Andean people to work for others without any exchange of money (Delgado et al. 2003). These classifications of reciprocity depend on the climate, topography and biodiversity of the Andean ecosystems variability (Mayer, 1974). Another type of reciprocity, a moral reciprocity, is the concept of (the Lord) El Don that still reproduces the imaginary hierarchy levels established inside the populations of the Andes (Mayer, 1974).

### 2.2.2 Peasant Knowledge or Saber Campesino

Indigenous or local knowledge used for generations by Peruvian Andean communities has been transmitted from parent (or grandparent) to child according to their customary laws, traditions and beliefs (Haverkort et al. 2003). Without cultural romanticization, the traditional knowledge of the Andean people is central to food security, the development of agriculture and ethnomedicines and nearly all, practical and spiritual aspects of human life. Indigenous knowledge is based on the practical cultural adaptation by Andean people to their high mountain environment, especially the identification and use of local plants, animals, and production zones, and emphasizes the diversity of biological resources that are used (Fr'anquemont et al. 1990; Gade, 1975; Tapia Nunez et al. 1984).

One of the most important crops originated and produced in the Andes, the *Solanum tuberosum* subsp. *tuberosum* is the “fourth most important food crop worldwide” (Vander Zaag, 1984:4) and one of the most diverse crops worldwide (Brush, 1991). Originally domesticated from tuber-bearing members of the *Solanaceae* family by Andean pastoralists and has coevolved in the Andean environment for at least 6,000 years (Pickersgill et al. 1978). Potatoes are cultivated along the Andes of South America for the most part in the upper zones or ‘puna’ between 3,000 m and 5,000 m above sea level, and supply up to 70 percent of the calories consumed by the highlanders (Ferroni, 1979). Eight different potato species and subspecies among four polyploid sets (diploid 2n=24 to pentaploid 5n=60) are produced in the areas. The most common are within the tetraploid, *Solanum tuberosum* subsp. *andigena* group. And others like *Solanum ajanhuiri* are confined to small areas (Brush, 2004). A number of 5,000 morphologically different
varieties have been identified by the International Potato Centre (around 13,000 Andean accessions) (Huaman, 1986). More than one hundred varieties can be found within a small Andean community and more than twelve varieties are cultivated by a single household (Brush, 2004).

Andean potato nomenclature was first described by LaBarre (1947) for the Aymara of Bolivia and folk taxonomies have since been described for Quechua and Spanish speaking peasants of Peru (Brunel, 1975; Brush et al. 1981; Zimmerer, 1991a). Following LaBarre (1947), recent descriptions of Andean folk classification found three or four taxonomic levels for potatoes: genus, species, variety, and sub-variety. Four criteria are important in potato classification: ecology (cultivated/wild/weedy; production zone), use (edible; for boiling; for freeze drying), plant and tuber phenotype, and degree of polytypy (number of subclasses). The similarities of potato nomenclature across languages and types of production systems are notable. Both terms and taxonomy found in contemporary nomenclature are also evident in Bertonio's (1612) Aymara dictionary. In both the seventeenth and twentieth centuries, Andean potato farmers, specifically women, have distinguished potatoes by tuber phenotype, ecology, and use. Women in the Andes are recognized as those individuals who are better informed than men on the use and properties of agro-biodiversity (FAO, 2010).

Native potatoes may be the most magnificent example of Peru mega-biodiversity (Scott, 2011). In the late 1960s Christiansen (1967) reported that Peru had some 1400 native potato varieties; however, the estimations have varied significantly. Tapia (2008a) made reference of 3,000 nominal varieties with different local names. Risi (2009) names 3,800 native varieties, 2700 ‘endemic’ native potatoes and the existence of 2,000 and 2,500 native potato varieties (Huaman et al. 1999). According to Scott (2011), there are two factors that have determined the increasing number of varieties: 1) the documentation of new materials collected or identified since then (Huaman et al. 1996); and 2) the development and use of more precise scientific methods for distinguishing between different accessions that have been maintained in different collections (Huaman et al. 1996) also state that native potato varieties include fewer than 20 native cultivars that have become commonplace in urban markets in contemporary Peru. Recently, the overwhelming majority of native varieties that traditionally are grown for on-farm
consumption (and long-established practices of exchange between farmer communities) have only recently begun to attract commercial interest (Scott, 2011).

Women are the key players in the management and conservation of the native potatoes in the Andes. Their activities are not only centralized to the household (preparation of dishes and artisanal processing). Most importantly, they are in charge of selecting and classifying the tuber that will be cultivated in the fields. Their work begins by selecting the seeds according to their particular characteristics in relation to weather and altitudinal adaptation (Tapia et al. 2000). By doing it, women are assuring the sustained diversity of the crop. Women also involve the family in the agricultural activities, though; in some communities only women can place the potato seed inside the soil (Tapia et al. 1998). Women are responsible for selecting the potatoes after the harvest to preserve and improve crop diversity, making it possible to cultivate the potatoes in different agro-ecological regions according to their specific resistance to pests, diseases and climate change (Tapia et al. 1998). Elderly women inside the Andean communities take the responsibility of taking care of and cultivating recent varieties to preserve and maintain genetic variability in order to create varieties that can support climate variations and diseases. And also, ‘seed fairs’ take place in the Andes; women have the opportunity to share and exchange and obtain different varieties (Tapia et al. 1993; Sarapura, 2012).

Throughout these actions, women ensure their cultural values and survival of biodiversity. Tapia et al. (1997:6) state that “humankind depends on the world’s biological resources for survival, and biodiversity offers the possibility of increasing food supplies” (Tapia et al. 1997:6). Native potatoes come from the Andes of Peru and its citizens have criado nurtured and produced these following the precepts of the Andean Cosmo Vision by which traditional knowledge provides a remarkable legacy to the rest of the world. Women farmers have had a key role in making this possible. Nevertheless, women and gender issues have not always been the forefront of agriculture and development issues in Peru, nor has the struggle for ensuring gender equality in global development been an easy area of development policy-making, programming and scholarship.
2.3 Definitions of Feminism and Gender in Development Studies

After more than forty years, the conceptualization of gender has become a fundamental component of development and policy initiatives (Collins et al. 2010). It started with the First World Conference on Women in Mexico City in 1975. The initial approaches to ‘women’s issues’ gradually transformed to ‘gender in development’ (Cornwall et al. 2006). Women now are well thought-out as self-sufficient agents of development in contrast to victims and unproductive objects for development (Tinker, 1990). The support from the United Nations to adopt development issues as well as the ever-increasing advocacy of feminist development practitioners has sustained the transformation (Pillai et al. 2009).

Over the past 50 years, researchers and practitioners have considered different approaches to understand the relationship between women, men and development (McIlwaine et al. 2003; Tadros, 2010). In earlier work by the author, it was argued that the gender and development perspective can only advance further if it seeks to integrate aspects of human rights, gender-based violence and sexualities (Sarapura, 2009). This would reinforce the need to understand women and men as distinct, gender-differentiated subjects of development (McIlwaine et al. 2003). The concept of gender as well as development can be seen as continually in need of transformation, undergoing the challenges imposed by emerging conceptual and policy frameworks, and generating new ones (Chant, 2008).

The term ‘feminism’ has been defined as, “the awareness of women’s oppression and exploitation in society, at work and within the family, and a conscious action by men and women to change this situation” (Pati, 2006:14). The plural “feminisms” exists to refer to how the concept arises from various bodies of theory and is established historical contexts (Razavi, 1997; Kabeer, 1999). Further elaborations of the term rest on cultural “realities and levels of consciousness, perception and action” (Pati, 2006:11). Bailey et al. (2000:25) add that, “the social roles and the modes women negotiate the world also differ among women in diverse contexts (cultural, social, political, racial or ethnic, religious, etc.), and with diverse personal characteristics (age, education and caste)” (Bailey et al. 2000:25). Pati (2006:14) further argues that feminist theories seek to
uncover, the incidence of gendered thinking that uncritically assumes a necessary bond between being a woman and occupying certain social roles; the ways women negotiate the world and finally, the wisdom inherent in such negotiation.

The field of international development has contributed greatly to forming various perspectives and approaches to women or gender in development processes. Three distinctive schools of thought on women and gender in development can be identified including Women in Development (WID), Women and Development (WAD) and Gender and Development (GAD) (Rathgeber, 1990). For the purpose of the study, GAD is only covered in the dissertation.

**The Gender and Development (GAD) Approach**

By the 1980s, ‘GAD’ was articulated as a further alternative to the WID perspective. For GAD academics and practitioners, WID achieved some of its goals by improving women’s economic conditions (El-Bushara, 2000). It failed, however, to improve the social and economic power of women in relation to men (Beneria et al. 1982; Young, 1992). GAD, for instance, assumed that a holistic perspective that paid attention to women’s lives would inform a gender-differentiated analysis of social relations (Kabeer, 1994; Moser, 1989; 1993). This conceptualization of GAD emerged from socialist feminists who had confronted the more orthodox Marxist pronouncement that class analysis was sufficiently robust to describe women’s oppression (Jaquette, 1982). GAD refutes modernization theory by considering the connections between the relations of production to those of reproduction (Jaquette, 1982). The GAD approach supports transformation in terms of the restructuration of power in social relations (Young, 1992). It also addresses direct challenges to men’s cultural, social and economic privileges in order to enable women to achieve social and economic returns from the same resources men access (Goetz, 1997).

The GAD approach advises that a “women’s only” approach to address subordination of women (and girls) would not consider the more complex social and institutional rules and practices through which gender relations are constructed (Young, 1992). For instance, ‘power’ is a common attribute of gender relations (Whitehead, 1979). Consequently, the analysis of social relations has to begin from the household
dynamics (i.e. private domain) and continue through to the economic structures (i.e. public domain) in which relations are articulated and reconstituted (Young et al. 1981). The subordination of one social group, such as women, to another, such as men is entrenched inside the hierarchical organization of the gendered division of labour and shapes all other kinds of social inequalities (class and race) (Young, 1992).

The GAD approach diverges with WID and WAD on three specific points (Young, 1992). GAD does not exclusively give emphasis to women but is sensitive to men’s contributions. It also rejects the public/private dichotomy by opening up the private domain and giving special attention to women’s oppression inside the household (Goetz, 1997). Ultimately, it acknowledges that in order to attain gender equality and equity, a ‘transformative change’ from household through to community, national and global levels are fundamental to understanding and addressing gender relations in development processes (Moser, 1993). Under this theoretical adjustment, development programs must concentrate on actions to remove subordination within women’s lives in both ‘public and private’ spheres as well as the restructuring of institutions, rather than only access to resources (Moser, 1993). The strategic term often used to refer to this pathway of change is ‘gender mainstreaming’ (GM) (UN, 1999:7).

### 2.3.1 Gender Mainstreaming (GM)

The Fourth World Conference on Women at Beijing (1995) launched the GM approach as a ‘transformative approach’ on efforts to attain gender egalitarianism (Mukhopadhyay, 2004). As a result, the Economic and Social Council produced the following description as a guide for all agencies in the United Nations system (1999:7);

“Mainstreaming a gender perspective is the process of assessing the implications for men and women of any planned action, including legislation, policies and programmes, in all areas and at all levels. It is a strategy for making women’s as well as men’s concerns and experiences an integral dimension of the design, implementation, monitoring and evaluation of policies and programmes in all political, economic and social spheres so that women and men benefit equally and inequality is not perpetuated. The ultimate goal is to achieve gender equality” (Economic and Social Council, agreed conclusions 1997/2; I A) (UN, 1999:7).
Traditionally, the gendered division of labour at the household level brings to light the role of women in terms of care provision (unpaid), which is also invisible in relation to economic terms (United Nations, 2002). As the Human Development Report for 1999:44 indicates,

“…unpaid work in the household and community is an important provider of human development along with private incomes, public provisioning, and the bounty of the natural environment” (UNDP, 1999: 44).

The unpaid work of women has enormous influence on the quality of their lives and well-being and it constitutes an important concern in national and international development policy (United Nations, 2002; Woodford-Berger, 2004).

In order to accomplish equality of genders, gender roles and the basic institutions of society (market, state and the family) need to be restructured (Molyneux et al. 2002). Therefore, “achieving gender equality requires reorganizing gender roles and the basic institutions of society, that is, the market, state and the family (Molyneux et al. 2002). Thus, mainstreaming gender aims at transformative change in order to bring about an equal partnership between women and men” (Vijayamohanan et al. 2009:17). Women, therefore, need to become active in politics and decision-making processes (March et al. 1999). Worldwide, basic human rights and international conventions have been put in place to address women’s rights (Kilby et al. 2008) as well as the incorporation of a gender mainstreaming approach within developmental goals (Alemany et al. 2008).

A rights-based approach views gender issues and concerns as predominantly influential at promoting change and growth because it distinguishes women’s agency, rights and obligations as citizens (UNDP, 2003). The perspective exemplifies the political shift that took place at the Fourth World Conference on Women in Beijing. It demands for women to step out of the so-called women’s economic and social aspects to manifest their voices in economic and social policymaking (Kloosterman et al. 2012).

“Gender planning, with its fundamental goal of emancipation, is by definition a more ‘confrontational’ approach. Based on the premise that the major issue is one of subordination and inequality, its purpose is that women through empowerment achieve equality with men in society” (Moser, 1993:4).
This approach is widely debated among supporters of gender equality as a course of action that empowers women. There is a persistent and growing gap between macro level planning/macro phenomena and gender mainstreaming at the policy analysis and applications levels in governmental, international and inter-governmental organizations” (Symington 2004:2). Furthermore, policies may be unimplementable if intra-household dynamics of power are ignored or assumed to be a private matter (as they often are) (Agarwal, 1997).

Beginning from the smallest social unit (household), women negotiate for their own power. The nature of such intra-household interactions could be described as involving elements of both cooperation and conflict. Household members can cooperate because cooperative arrangements make each of them better-off than non-cooperation. However, there are also conflicts existing in terms of interest distribution and clashes in the exercise of power. In addition, cooperative-conflict relations can be seen in other arenas such as the community, local labor market and the state (Kabeer et al. 2011). In the household, women negotiate with male authority and traditional ideology of ‘altruism’ and ‘dutifulness’ for their economic independence with the hope that it can more or less empower them. At the community level, women negotiate with norms, customs and constraints. Women negotiate not just because they are women, but also because they are producers and workers; in other words, women have to negotiate for their livelihood diversification. Through such negotiation processes, they can gain advantages in gender relations at different levels (Molyneux et al. 2002).

However, at the macro level, gender relations are not necessarily changed. In most of the developing world, women remain a crucial workforce in agriculture either as farmers or as wage laborers (Mukhopadhyay, 2004). In addition, women are progressively becoming involved in off-farm sectors where they tend to occupy the lower position within the poorest wage categories. Empowerment at the household level through obtaining waged employment does not necessarily transfer into women’s empowerment as workers in the wage market or national level. For such reasons, understanding the articulation of concepts of gender analysis, gender mainstreaming, and women’s rights are important (Molyneux et al. 2002). Research has revealed that the single most common approach to gender is to use a gender mainstreaming approach, yet
for most donors; there is little evidence that this has resulted in critical use of gender analysis or women’s rights as tools for developing policies and programs.

### 2.3.2 Analysis of Gender and Power

Gender analysis, an essential element of socio-economic analysis, examines the relationships between men and women and the limitations they face relative to each other (Kabeer, 1994; Kabeer, 2005). As a systemic effort to document and understand the gender-differentiated relations between men and women, it examines the influence of gender roles on the division of work and local knowledge (Kabeer, 1994). Gender analysis also investigates the different values predetermined locally to social roles and knowledge due to gender-differentiated access to resources, services, benefits and capabilities of decision-making as well as analyses of power and control over social relations resulting from a gender-differentiated work distribution (Reeves et al. 2000). An analysis of gender relations provides information on the differentiated outcomes that policies and programs can have on women and men because of their specific situations (UN, 2010). This information makes clear and improves policies and programs to guarantee that women’s and men’s needs are known and addressed in development work (UN, 2010).

The analysis of power in gender roles and relations recognizes that gender orders social relationships in the ways that individuals exercise and bargain power (Kabeer et al. 2011; Mayoux, 2001). Power relations function in economic, social, and political spheres and at different levels (individual, household, community, market, institutional). Gender inequality may also be structured and perpetuated by the economy, the political system, and other social institutions (Kabeer et al. 2011). Evident differences in power are common between social actors, between governmental agencies and local communities that are also conveyed with domestic inequalities, based on caste, class, gender, ethnic origin, age groups, etc. (Poats, 2000). These inequities can be substantial deterrents to participatory management of natural resources and conservation of the environment as they work against democratic process of change (Borrini-Feyerabend et al. 2004). Some theorists argue that in the last 20 years, while natural resource management has become progressively feminized, institutions and organizations in rural areas still reflect and reinforce the patriarchal relations that characterize most of rural societies (Poats, 2000).
Traditional, community level organizations are often biased to men (Borrini-Feyerabend et al. 2004). Women also suffer discrimination within many large-scale organizations created by indigenous peoples even though women’s knowledge contributes to the protection of natural resources. Consequently if it is too difficult to raise the voice of poor and peasant people in the local management of natural resources, it is more difficult and almost impossible to raise the voice of rural poor and peasant women at the level of national policy discussions (Kabeer, 1994; Poats, 2000).

On the other hand, power can be productive and relational (Gaventa, 2004). In that sense, power is converted into a multiplicity of forced relations (Foucault, 1982a), which constitutes social relationships (Gaventa et al. 2008). It subsists only through action and works through institutions and practices that are productive of power effects, framing the boundaries of possibility that govern action (Gaventa, 2004). Knowledge is power and power and knowledge entail one another because knowledge is a resource of power (Gaventa et al. 2008). Finally, Hayward (1998:2) reconceptualizes power as a “network of social boundaries that constrain and enable action of all actors”. Power relations do not exist “without the correlative constitution of a field of knowledge, neither does any knowledge that does not presuppose and constitute at the same time power relations” (Foucault, 1998:465). The differences in views do not necessarily show these approaches as competing. It is better to think about them as complementing each other; each with differing points in addressing mutually reinforced levels of power. “Power begins to resemble Gramscian notions of hegemony or Freirian ideas of the ways in which knowledge is internalized to develop a culture of silence of the oppressed” (Gaventa et al. 2008:72). Power is the means to produce and make use of knowledge (Gaventa et al. 2008), which has an impact on the general understanding of circumstances that influence lives (Gaventa et al. 2008). There are many examples of how consciousness transformation has contributed to social transformation. Consciousness is important in the construction of “collective identity” (Gaventa et al. 2008: 72), meaning making and citizen action. Individually, the approaches to power bring with them implicit or more explicit conceptions of knowledge, and how they relate to power as well as strategies to give and use power (Gaventa et al. 2008). In some cases, knowledge is a resource, used and mobilized to inform decision-making on key public issues. In other cases, knowledge
is produced for including or excluding certain voices. Finally, the last alternative is to emphasize on the ways in which production of knowledge becomes a method for building greater awareness and authentic self-consciousness of one’s issues and his/her capacities for action (Gaventa et al. 2008).

2.4 Gender and Agriculture

In this section of the chapter, the review of relevant literature examines the specific subject of gender and agriculture. In the developing world, both women and men are involved in farming in order to sustain food production and generate income (World Bank et al. 2009). Subsistence crop production obtains less institutional support than cash crop production (Carr, 2008). Furthermore, female extension staff is limited and deficient in extension services (Alderman et al. 2003). Worldwide, the agricultural sector has not seriously considered women in the development of agricultural policy and agrarian reforms (Deere et al. 2000).

Rural women frequently assume extra tasks like housework, cooking, fetching water and wood, childbearing and family health (Carr, 2008). Although men may have primary responsibility for heavier labour tasks such as clearing land, harvesting and storing crops, maintaining equipment, and hunting, fishing, and gathering, many male tasks in agriculture involve technology (e.g. mechanized equipment) or tasks requiring time spent outside the home (FAO, 2011). To understand the differences, five general patterns of gender responsibility in agriculture can be identified (Feldstein et al. 1994; Berger et al. 1984).

(1) Separate enterprises: Men and women work together in the fields producing and removing distinct crops and livestock within the familiar production systems. Generally, women cultivate diverse crops for household consumption and men grow crops for commercialization. (2) Separate fields: a gender-differentiated production occurs inside this group. Women and men produce the same crops but in different fields. (3) Shared tasks: men and women contribute to responsibilities to cultivate the same crop. In many systems, women and men share only labour-intensive tasks such as weeding and harvesting activities. (4) Separate tasks: men and women have allocated specific roles according to their gender. Men for the most part perform the most difficult work and
women engage in post-harvest activities like seed selection and storage. (5) Women-managed farms: when women have to assume the management of the household in some situations women assume the responsibility for farm management: as de facto farm managers, women manage farms in the absence of men. Women turn out to be the farm managers, at times with substantial assets. However, they do not have legal influence to access credit and resources. When men emigrate away from the area, the workload for women is increased. De jure smallholding administration is mostly on female-headed households (e.g. widows, deserted wives, single mothers). Women within this group are mostly the poorest of these communities. They have access and control to few resources and harsh labour limitations (Feldstein et al. 1994; Berger et al. 1984).

Both men and women have demonstrated agricultural knowledge on sustainable resource management practices (UNCSTD, 2004). Nevertheless, they may have gender-differentiated knowledge on crops and practices based on their gender roles and responsibilities (Rojas, 2003). The situation of women has often been ignored in agriculture and their technological skills, use of technologies, and knowledge can be often overlooked (FAO, 2011). As a result, women’s knowledge has not been considered (World Bank, 2012) by agricultural science and at times women’s activities have been considered non-essential areas for research (UNCSTD, 2004; World Bank, 2012). Despite these occurrences, women own, to a great extent, the world’s local knowledge on natural resource management, herbs and medicinal plants (Poats, 2000). The notion of women’s intellectual property rights (IPR) has received little attention (World Bank et al. 2009), and even where traditional knowledge and IPR is discussed, distinct female ownership rights are not necessarily valued evenly. Other aspects, such as ethnicity, class, and religion, influence gender-differentiated agricultural knowledge (American States, 2006). Understanding the different knowledge of women and men in different socioeconomic circumstances helps to determine appropriate and sustainable interventions (World Bank et al. 2009). The gendered differentiation of knowledge, including that of managing agricultural systems, has four key characteristics to be taken into account (Huisinga Norem, et al. cited by FAO 2011:63):

“...women and men have knowledge about different things; men and women have different knowledge about the same things; women and men may
organize their knowledge in different ways and; men and women may receive
and transmit their knowledge by different means” (Huisinga Norem, et al. cited
by FAO 2011:63).

Despite women’s contribution to agriculture, they are still invisible and excluded
from most of the resources (World Bank et al. 2009) and decision-making processes on
the use of productive resources differ significantly between women and men (OECD,
1997). The dynamics inside smallholdings are not always as consensual as practitioners
assume (FAO, 1997), since it is a multifaceted interaction of both male and female
household members (Feldstein et al. 1994). Frequently, women are not consulted and
men are the beneficiaries when a new technology is introduced (OECD, 1997). Cultural
factors also have an influence on the unrecognized economic value of women and girls
even though it is central for household survival (FAO, 2011). Environmental and
demographic factors have to be well thought-out when developing agricultural activities
(FAO, 2008). One of the most problematic issues to confront is the gender gap in both
human and physical resources (World Bank et al. 2009). Women’s strategic productive
needs are inadequate or are restrained to one key resource (such as land) (World Bank et
al. 2009). The relations among resources and the greater constraints that women face in
their access to, and control of, productive resources have not been considered (World
Bank et al. 2009).

Land is a fundamental aspect of gender and agriculture due to the barriers women
face to land tenure and security (Deere et al. 2006). As a result, women’s land rights have
become well established as an issue within research and development policy during the
last twenty years (Deere et al. 2003; Katz, 2003). Land tenure is defined as a set of rights
which a person or organization holds in land (FAO, 2003) and its security is not only
limited to private ownership but can be in other different types such as leasing on public
land and communal property (Akram-Lodhi et al. 2007). Tenure permits holders decide
on how land-based resources are to be utilized to fulfil household needs as well as long-
term sustainable investment (Katz, 2003). Women are habitually deprived of land tenure
in both statutory and customary systems (Agarwal, 2001; 2003; Kevane, 2004; Lastarria-
Cornhiel, 1997). The access of women to land has been determined on their status inside
the household and right of use, not ownership (Muntemba et al. 1995).

Agrarian reforms and relocation programs utilize the ‘head of family’ concept (usually a man) as the basis of land reallocation (FAO, 2012); it infrequently provides attention to women or gender as beneficiaries (Lastarria-Cornhiel 1997; 2008). Nevertheless, access to land tenure is not the only problem that women confront in agriculture (Quisumbing et al. 2009); they are deficient in accessing and controlling fertile soils and water usage (FAO, 2012) Stand-alone irrigation programs are implemented and managed by men who have not any training in gender issues (Rathgeber, 2003).

Labour is a limitation in gender in agriculture. Low levels of investment in human capital decrease labour productivity and constraint women to satisfactorily perform their roles as agricultural producers, workers, mothers, and caregiver (King et al. 2007). Similarly, the absence or not introduction of technologies in order to minimize hard work in domestic spheres is an important limitation (Quisumbing et al. 2009) for the reason that women are unable of distributing their time to more productive (or remunerative) uses unless their labour productivity increases (Behrman et al. 2004). Women also have limited access to new varieties and technologies, as traditional agricultural research and development overlook them (Quisumbing et al. 2009). Therefore, most of the enhanced varieties are not suitable for nutritional needs and are not sufficiently micronutrient-fortified crops (Quisumbing et al. 2009) and; also gender-differentiated preferences for maturation periods, yields, tastes, and colours are not considered (Bourdillon et al. 2007).

When women have to access markets, they face many gender-specific barriers (World Bank et al. 2009) in the market and inside their households. Means of transportation may be culturally inappropriate for women (Quisumbing et al. 2009) and the unfavourable locations to sell the products make them victims of market bureaucrats or expose them to health risks (Barham et al. 2008). If women effectively go to the markets, time constraints and spousal conflicts may arise. Mostly it is poor women who deal with time constraints as a result of the diverse activities and childcare responsibilities (Pandolfelli et al. 2008). Despite the contribution of women to agricultural production, they rarely benefit from agricultural incentives and
modernization (Quisumbing et al. 2009). Economic control and social, cultural and traditional practices destabilize the legitimate requirements of gender equality in agriculture. Gender injustice is the reason why women are still invisible in agricultural programs and projects (Quisumbing et al. 2009).

2.4.1 Agriculture and Indigenous Peasant Women

As in many developing country contexts, Andean women suffer most from inequality since racial and gender discrimination is manifested at different levels including the household (Bravo, 2003). Peasant women, as a result of their female and peasant conditions, suffer double discrimination. However, it is the discrimination of gender that affects them more since it is manifested in rural spaces and in their coexistence with their male counterparts (Pinzas, 2001). The result is that, in the Andes, rural women’s subordination results in limited or no education, restrictive access to property and resources and constrained decision-making in the community and the household (De la Cadena, 1996). Women in the Andes define and redefine their activities largely according to the nutritional needs of children and other food-related household tasks (Tapia et al. 1998). As a consequence, peasant female producers have customarily been in charge of selecting, conserving and managing seed potatoes from the innumerable varieties of the native potato crop, therefore, preserving diversity and continued production at the same time as they contribute to food security in their households and communities (Tapia et al. 1997).

From the perspective of indigenous peoples in the highlands of Peru, gender is the relations of the two sexes. It is expressed not only in terms of the sexual division of labour, but it is also how women and men of a culture see themselves and their reciprocal relationship (Grillo, 1998). In the specific case of the Andean population, gender relations are based, on one hand, on the culturally adequate and identified behaviour for each sex, which is the consequence of their own emic, cultural construction and, on the other hand, the existence of imposed behaviours by hegemonic societies outside the indigenous culture (Urrutia Cerruti, 2007).

Inside Andean indigenous social life, the differentiation between both genders is rigorous (difference of roles, clothes, tasks and activities) and defined as feminine and
masculine (Babb 1985). The strict division of gender roles in the Andes has been expressed through complementary concepts (Silverblatt, 1987). At the same time, egalitarian gender relationships contrast to the concept of gender subordination (Stein, 2003) and give priority to inequality and even violence established on gender (Deere et al. 2003). The incidence of distinct perspectives on gender roles in the Peruvian Andes implies that the division of gender roles includes not only technical division of labour by gender but distinctive gender ideologies, named as marianismo and machismo, shaping the social order of the Andean societies (Bourque et al. 1981). This rigorous division of gender roles inside the Andean population is comparable to a sequence of dualist metaphors based on the analysis of Peruvian societies as well as the separation between the Andes and the Coast (del Castillo, 2003); this is a distinction between the indigenous people, peasants and mestizos (Quechua and Spanish) (Sørensen et al. 2003; De la Cadena, 2001), and the semi-urban and urban people (Stein, 1985). The division of groups differentiate Peru as ‘the two Peru trope’, the ‘official Peru’ associated with populations along coasts, mestizos, townspeople, ladino or Spanish descendent, and the ‘deep Peru’ portrayed as populations in the highlands, Indians, country people or Quechua) (Basadre, 1980 cited in Taylor, 2007:2).

Gender studies in Peru can be divided in two different periods. In the 1970s, women’s issues acquired importance as a result of feminist activism (Vattuone et al. 1997; Ruiz Bravo 2004), and of women’s studies related to partisan and urban projects (Ruiz Bravo, 2005), in which most of them had a tendency to demonstrate women’s existence as economic entities carrying out complex roles and, more importantly, contributing to the familial and social reproduction (Vattuone et al. 1997). In this period, women’s organizations integrated with the emerging collective movements and proposed political options opposed to the status quo until the emergence of the terrorist movement known as ‘Shining Path’ in the 1980s. This initial approximation is modified to interpret women’s capacity to transform their immediate reality and consider women as subjects of development in rural areas (Urrutia Cerruti, 2007). The focal point was peasant women’s work/labour with emphasis on sexual division of work, roles, management and control of certain activities, familial decision-making processes, value and acknowledgement of feminine work and labour markets for women. The interest on these issues brought about
discussion on subordination and complementarity inside peasant families from a basically ethnocentric viewpoint in which prevail myths on values and Andean moral deducing that “complementarity is not analogous to equality” (Vattuone et al. 1997:53).

In the second period, from the 1980s to the 1990s, a decade of violence limited fieldwork in rural spaces. Limitations were imposed from both the subversive action of dissidents and from official government response (Ruiz Bravo, 1996). Such gender analysis that was undertaken tended to conceptualize gender constraints largely based on concepts drawn from academics and feminist movements in developed countries (Ruiz Bravo, 1996).

Nevertheless, some key studies need to be recalled. Deere (1982) reported the effects of the development of capitalism and technological modernization in rural areas. Campaña (1982) studied the localization of women’s economic activities in low profitable rentabilidad zones and Fernández (1982) discussed the effects of the agrarian reform on women’s socio-economic conditions from two agrarian cooperatives (Vattuone et al. 1997). These studies contributed to the improvement of knowledge on the sexual division of labour as the foundation of the reproduction of the family in the context of the peasant domestic economy. The studies focused on peasant women in general rather than the comunera women specifically, although both categories share many characteristics.

From the 1990s, gender discussion concentrated on the limited role of women in the economy to re-conceptualize the development of rural areas in Peru in concert with the priorities of development agencies like USAID, CEPAL and the World Bank whose objectives were to focus actions on women as part of the programs to fight against poverty. In the Latin American context, Roldan (1995), Gonzales de la Rocha (1994), Fernandez Kelly (1994) and Arango (1996b) reported on agrarian structural changes, domestic economy and sexual division of labour and the impact of gender relations via the structural adjustments in the region. Other studies accounted displaced populations as a result of political violence and their outcomes on gender relations (Urrutia Cerruti, 2007). On the academic side, concepts of gender evolved to focus on rural development. De la Cadena (1991) highlights the cultural dimension of gender relations in a peasant community and women’s subordination inside the comunera household, inequality that
reinforces a patriarchal structure (De la Cadena, 1991). She demystified the conception of complementarity in the relationship between men and women and the perception of harmonic or equal relationships in couples (De la Cadena, 1991), emphasizing that the conjugal indigenous space revealed hierarchy and differentiation. By contrast Núñez del Prado et al. (1985) and other Peruvian anthropologists affirmed that gender relations in indigenous groups are explained through the concept of complementarity before than the hierarchical concept, which implies certain equity between men and women (Fuller, 1998).

Rural women in Peru are in the category of the poorest, most illiterate, monolingual, and malnourished. They are also regarded as the worst producers with poor access to training and technology (Fuertes, 1996). The family is considered an economic unit and every member of that family completes an important function argues Amat et al. (1987). This literature suggests that Andean families are characterized by the interdependence of the sexes as well as by broad areas of overlap between the kinds of work that women and men perform. Paradoxically, subordination of women does not follow the association of women’s low-status at work with economic dependence. Women and men share work and economic roles (female widows and single mothers have the same rights as men - comuneros and operate economically their households). The household is integrated into the broader social network of the community where male dominance is replicated at all levels.

There has been even less analysis of the development, structure or the mechanisms by which decisions are taken at meetings in communal assemblies where campesinas have neither voice nor vote. Assemblies, complex spaces of confrontation of interests and factions and, occasionally, of coercion, are spaces of definition and exhibition of the correlation of forces as democratic institutions (Seligman, 1993). Others consider these as spaces of exclusion in terms of language and gender (Harvey, 1989). Inside communities, land ownership is a critical variable. Access to land depends on the comunera and comunero status, which in turn is strengthened as a result of the unequal benefits that men obtain from the patrilocal residence and patrilineal land heritage (Deere et al. 1982).
In recent years, migration, formal education, media and market development have generated important changes in rural society and in peasant families. However, it is still the case that rural women’s participation in public spaces is constrained, limiting their participation in aid programs like Together (Juntos), Glass of Milk (Vaso de Leche) and Popular Kitchen (Comedores Populares), among others. A considerable number inside the indigenous and rural female population have not yet obtained any documentation, subsequently, they are unable to claim their nationality and social benefits (CEDAW, 2007).

Now, this review of literature shifts to consider the contemporary context of agricultural change in Peru. Specifically, it will review the notion of an emerging agricultural innovation in Peru and, subsequently, consider how gender is addressed within the notion of emerging AIS.

2.5 Agricultural Innovation Systems

The innovation systems approach to renewable natural resources and sustainable agriculture (Pant et al. 2009) is a novel, holistic, simple and powerful system of agriculture planning and analysis that came to light as a result of partnerships, of social and natural scientists and practitioners. They pooled interests in agricultural science and technology in order to empower poor farmers (Hall, 2012). As Klerkx et al. (2012:459) state,

“AIS is a co-evolutionary process, in which technological, social, economic and institutional change are combined. Consequently, the interaction of different prerequisites plays determinant roles in the production and exchange of (technical) knowledge, policy, legislation, infrastructure, funding, and market developments. Agricultural innovation is hence not just about adopting new technologies; it also requires a balance amongst new technical practices and alternative ways of organizing by reorganizing markets, labour, land tenure and distribution of benefits (Leeuwis, 2004; Röling, 2009; Klerkx et al. 2010). Moreover, agricultural innovation is not an inherently good and value-free process, but normatively laden and driven by different worldviews and visions” (Klerkx et al. 2012: 459).

The origins of the innovation system thinking lies in the manufacturing cluster analysis manifested in the work of Edquist (1997; 1999); Freeman (1987) and Lundvall
These ideas became popular with rural development and agricultural concepts represented by Biggs et al. (2003; 2004), Clark et al. (2001; 2003), Hall (2001), Hall et al. (2001a; 2000; 2001b; 2003b), Sumberg (2005) and Temel et al. (2003) (Cited by Pant et al. 2009). Innovation systems research and studies also have roots in the 1980s with discussions in the Science and Technology Policy Research SPRU at Sussex University (Babbage, 1832; List, 1931; Marshall (1965) (Lundvall, 2003).

The idea of the ‘innovation system’ is grounded in the concept of ‘national systems of production’ and according to Freeman (1995), its cornerstone authors are Frederich List (1841) and, many decades later, Bengt-Ake Lundvall, 2003). Preliminary studies on innovation are also credited to Adam Smith (1776) who first recognized the influence of innovation (novel production systems and new divisions of labour) on productivity and society (Spielman, 2005). However, it was Ricardo (1821) who looked after of both orthodox (neoclassical) and heterodox economic standpoints on innovation and technological transformation in agriculture (Spielman, 2005). Ricardo’s work summarizes the essential challenges of agricultural production: land deterioration and the importance of technology to transform agricultural production (Spielman, 2005) and proposes land-saving techniques of production (rotation of crops, management of water and the rigorous use of farm animals manure to maintain soil fertility in order to increase land productivity (Spielman, 2005). He suggested the use of enhanced agricultural implements to substitute capital for labour (Spielman, 2005).

According to Spielman (2005:4);

“Ricardo’s analysis gave rise to further interest in the social and economic effects of technological change by such classical political economists as List (1841), Mill ([1848] 1965), and Marx ([1894] 1990). In fact, it is List who is credited with the earliest description of a “national system of political economy”—a precursor to the innovation system concept—in which production results not only from the activities of the firm but also from those social and economic institutions (e.g., education, infrastructure) that make production possible (Lundvall et al. 2002; 2009; Freeman, 1995). Leontieff (1941), further contributed with his celebrated input/output analysis that established an industry level “system” approach to production used later by scholars to explain innovative processes” (Spielman, 2005:4).
However, it was Schumpeter (1934; 1961; 1939) who established the contemporary innovation system perspective and recognized the existing differences between invention, innovation, and diffusion\(^5\). His analysis on the market and institutional environments as means to produce innovation (Schumpeter, 1957) “suggested that innovation results from the character of social and economic institutions, and that institutions change in response to innovation, that is, that the relationship between society and innovation is endogenously determined” (Spielman, 2005:4).

Lundvall (1985) initially explored the concept ‘innovation system’, and the first publication using the term ‘national innovation system’ was in Freeman’s book (Freeman, 1987). Then, an edited volume on Technology and Economic Theory (Dosi \textit{et al.} 1988) published some content on national innovation systems. Another book (Freeman \textit{et al.} 1988) also covered some issues of national innovation systems (Andersen and Lundvall, 1988; Gregersen, 1988). The philosophy of innovation systems according to Agwu \textit{et al.} (2008:1605);

“…brought a significant change from the conventional linear approach to research and development by providing an analytical framework that explores complex relationships among heterogeneous agents, social and economic institutions, and endogenously determined technological and institutional opportunities” (Agwu \textit{et al.} 2008:1605).

This is not a simple aggregation of organizations; it is a group of agents whose characteristics are coherence, harmony and synergy. It is a collaborative learning process in which enterprises/agents in interactions with each other, supported by organizations and institutions play key roles in bringing new products, processes and new types of organizations into social and economic use (Francis, 2006). The conceptualization of a system “in adoption and diffusion theories, connected to perspectives like Transfer of Technology and National Agricultural Research Systems, is exclusively social” (Klerkx

\(^5\) Economists consider changes in technology in three phases and these are known as the ‘Schumpeter Trilogy’ (Schumpeter, 1947): invention, innovation, and diffusion. Invention is represented as an exogenous occurrence and referred as the generation of a new idea or new concept that can conduct to a new product or process (Ahrweiler, 2010). Innovation goes after invention and is accomplished when (1) the idea from invention is achieved through a new product or process, and (2) the new product or process can become commercialized (Ahrweiler, 2010). Diffusion is the process by which the new process or product can be commercialized through and across markets (Ahrweiler, 2010).
et al. 2012:462). Innovations expand through social systems communication which are largely based on human communication (Klerkx et al. 2011). Referring to Rogers (1995) Klerkx et al. (2012:6) also suggests that the role of mass media is also important at “later stages of the diffusion process when groups are motivated to embrace a new technology or product.”

Innovation systems in agriculture have gone from one-way knowledge transfer through different forms of farming systems to a more versatile, interactive dynamic and more flexible process that includes multi-lateral and bi-lateral donors, actors of national innovation systems and local and indigenous communities in activities and knowledge sharing that go beyond the traditional domains of research and development and extension (World Bank, 2012) (Table 2.1).
Table 2.1: Paradigms Shifts in Theoretical Perspectives on Agricultural Innovation

<table>
<thead>
<tr>
<th>Characteristics of the perspective</th>
<th>Diffusion of innovations/transfer of technology</th>
<th>Early Farming Systems Research</th>
<th>Agricultural knowledge and information systems</th>
<th>Agricultural innovation systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Era/Mental model and Activities</td>
<td>Central since 1960s Supply technologies through pipeline</td>
<td>Starting in 1970s and 1980s Learn farmers’ constraints through surveys</td>
<td>From 1990s Collaborate in research (Participatory research) and extension</td>
<td>2000s Co-develop innovation involving multi-actor processes and partnerships</td>
</tr>
<tr>
<td>Knowledge and disciplines</td>
<td>Single discipline driven (breeding)</td>
<td>Multidisciplinary (agronomy plus agricultural economics)</td>
<td>Interdisciplinary (plus sociology and farmer experts)</td>
<td>Transdisciplinary, holistic systems perspective</td>
</tr>
<tr>
<td>Scope</td>
<td>Productivity increase</td>
<td>Efficiency gains (input-output relationships)</td>
<td>Farm-based livelihoods</td>
<td>Value chains, institutional change</td>
</tr>
<tr>
<td>Core elements</td>
<td>Technology packages</td>
<td>Modified packages to overcome constraints</td>
<td>Joint production of knowledge and technologies</td>
<td>Shared learning and change, politics of demand, social networks of innovators</td>
</tr>
<tr>
<td>Drivers</td>
<td>Supply-push from research</td>
<td>Diagnose farmers’ constraints and needs</td>
<td>Demand-pull from farmers</td>
<td>Responsiveness to changing contexts, patterns of interaction</td>
</tr>
<tr>
<td>Relation with policy and institutional environment</td>
<td>Science and technology are relatively independent of political and other social partners – institutional factors as external conditioners of the adoption process</td>
<td>Science and technology are relatively independent of political and other social partners – institutional factors as external conditioners of the adoption process. Agro-ecological and farm-economic context is considered in integrated way</td>
<td>Science and technology develop and are embedded within a historically defined social, political, economic and agro-ecological context</td>
<td>Science and technology develop and are embedded within a historically defined social, political, economic and agro-ecological context. Institutional change is considered a ‘sine qua non’ for innovation</td>
</tr>
<tr>
<td>Innovators</td>
<td>Scientists</td>
<td>Scientists and extensionists</td>
<td>Farmers, scientists and extensionists together</td>
<td>Multiple actors, innovation platforms</td>
</tr>
<tr>
<td>Role of farmers</td>
<td>Adopters or laggards</td>
<td>Sources of information</td>
<td>Experimenters</td>
<td>Partners, entrepreneurs, innovators exerting demands</td>
</tr>
<tr>
<td>Role of scientists</td>
<td>Innovators</td>
<td>Experts</td>
<td>Collaborators</td>
<td>Partners, one of many responding to demands</td>
</tr>
<tr>
<td>Gender Perspective</td>
<td>Neutral and blind – Women issues highlighted</td>
<td>Still Neutral and blind – Women as part of the men’s groups</td>
<td>Gender aware but see women as collaborator – Feminization of agriculture</td>
<td>Gender aware but still &quot;neutral&quot;. Women contributor and stakeholders. Contribute to AIS but still not visible</td>
</tr>
<tr>
<td>Research Agenda</td>
<td>Not gender sensitive</td>
<td>Becoming more gender sensitive because of greater participation of farmers</td>
<td>Becoming more gender sensitive because of greater participation of farmers</td>
<td>Becoming more gender sensitive because of greater engagement of farmers but must have explicit gender dimension</td>
</tr>
<tr>
<td>Role of Women</td>
<td>Women are seen as beneficiaries of the process</td>
<td>Women are considered as part of the groups but as complement of the groups.</td>
<td>Women are seen as active participants in the process</td>
<td>Women are seen as critical actors</td>
</tr>
<tr>
<td>Gender Focus</td>
<td>Focus is on gender difference of access to technology and services</td>
<td>Focus is on gender difference of access to technology and services and on participation and representation in the research process</td>
<td>Focus is on gender difference of access to technology and services and on participation and representation in the research process</td>
<td>Focus is on gender difference in leadership and capacity to influence policy-making processes; social dimension and market linkages are made stronger but must ensure gender inclusion</td>
</tr>
<tr>
<td>Institutionalizing Gender</td>
<td>Personnel policies and gender balance in relevant institutions are started but gender imbalance remains a major concern</td>
<td>Personnel policies and gender balance in farmers’ groups. Is started though, women’s presence still weak.</td>
<td>Personnel policies and gender balance in relevant institutions are improved; building capacity for women scientists and farmers’ organizations is the focus</td>
<td>Institutional development is created to support interaction and to ensure full engagement in policy-making processes but must have explicit gender dimension</td>
</tr>
<tr>
<td>Key changes sought</td>
<td>Farmer behaviour change</td>
<td>Removing farmers’ constrains</td>
<td>Empowering farmers</td>
<td>Institutional change, innovation capacity</td>
</tr>
<tr>
<td>Intended outcomes</td>
<td>Technology adoption and uptake</td>
<td>Farming system fit</td>
<td>Co-evolved technologies better fit to livelihood systems</td>
<td>Capacities to innovate, learn and change</td>
</tr>
</tbody>
</table>

Linear, top-down approaches based on the transfer-of-technology paradigm dominated the 1950s and 1960s, typified by the ‘Green Revolution’ (Ruttan, 1977) and characterized by the Training-and-Visit (Benor et al. 1977) of agricultural extension. It gradually became clear from the 1980s onwards that small-scale farmers and communities had been largely left out of the corresponding development (Chambers et al. 1989b).

In the late 1970s and early 1980s Farming System Research arose with the aim of achieving sustainable agriculture in collaboration with smallholders, highlighting research at the farm level to reduce limitations to the implementation of new technologies (Gonsalves et al. 2005). “Researchers still thought that the problem was not the farmers, but the inappropriate technologies they were being encouraged to adopt” (Gonsalves et al. 2005:26). It brought about the appearance and gradual development of Farmer Participatory Research (Gonsalves et al. 2005), a perspective that emphasized on the creation of suitable technology for small farmers (Chambers, 1992). “Participatory methods are used to better meet farmers' needs and to adapt technologies to site-specific circumstances at a relatively late stage of the research process” (Gonsalves et al. 2005:37).

These approaches included various types of farmer participatory research - Participatory Research and Participatory Technology Development (Farrington et al. 1988; Neef et al. 2011), Farmer First (Chambers et al. 1989b; 1996), and Agricultural Knowledge and Information Systems (AKIS) (Röling, 2009); Participatory Technology/Innovation Development (PTD/PID); Participatory Action Research and co-design among others (Veldhuizen et al. 1997, Reij et al. 2001; Béguin et al. 2009; Almekinders et al. 2009; Faure et al. 2010) and Participatory Learning and Action Research (Ashby, 2009). While each approach has its own specificities, common among them is the realization that innovation follows a non-linear, quite unpredictable process and entails no sharp division of labour between generators of knowledge and designers of technology on one hand and beneficiaries of such knowledge and technologies on the other (Röling, 2008). The emergence of the innovation system perspective (World Bank, 2012) reflects a growing agreement that innovation processes and pathways are highly complex and diverse. Presently, many government agencies, nongovernmental
organizations (NGOs) and ARD projects are applying such multi-stakeholder participatory approaches to innovation with small-scale farmers and other land-users (Röling, 2008). A mix of actors, including farmers and their organizations, researchers, local government, extension agents, development practitioners and the private sector jointly identify local problems and opportunities and develop locally appropriate solutions (Röling, 2008).

In the mid-1960's, the cropping systems approach was introduced in some specific areas of Asia and Latin America as a response to existing complexities of farming systems (Gonsalves et al. 2005). It considered research as the departing point to disseminate information from scientists to extension representatives who subsequently transferred the knowledge to farmers (FAO, 1995). It was achieved by the introduction of “fertilizer-responsive, high-yielding varieties of rice, wheat, and maize in favourable and relatively homogeneous production environments” (Norman, 2002:1). The cropping system approach was a crucial move away from the monocropping laboratory conditions that dominated commodity-based research (Rogers, 1983). This reductionist approach was unsuccessful in terms of bringing technologies to poor farmers in less favourable production environments or agricultural areas because it categorized farmers by their willingness and capacity to innovate (Gonsalves et al. 2005). These were characterized as ‘centralized national public extension systems’ providing information to ‘extensionists’ (mostly men) who disseminated technology and information to ‘overpowering men’ (Fernandez, 2009) or ‘contact farmers’ counting on their willingness to follow and support the innovations. Women at this stage were almost absent as professionals and producers.

In this undirectional information sharing, the farmer was the recipient of the ‘packaged wisdom’ (Röling, 1988) and the extension worker controlled the information that the farmer had access to. If technologies failed and were not adopted, farmers were accused of resisting change (FAO, 1995). The Training and Visit system was the fundamental tool for this model (Benor et al. 1977).

As the system perspective became recognized because of its enhanced technologies so did the techniques such as Rapid Rural Appraisal (RRA), considered as the main
contribution of the Farming Systems Development (FSD). The Participatory Rapid Appraisal facilitated a clear vision of a multi-dimensional picture of the conditions of the farmers (FAO, 1995) through the farmer’s own perspective and language (Lightfoot et al. 2002). By the time the Farming Systems Research (FSR) approach evolved, it was recognized that a new approach had to come in order to involve farmers, practitioners and social scientists (Collinson, 2000). However, such partnerships were poorly linked to mainstream technology development activities that constrained unidirectional diffusion of information and the influence of decision-making in the hands of experts in both natural and social sciences (Chambers, 2008). By the end of the 1980s, farmers’ limitations were more likely to be considered and technical change was implemented in national and international agricultural research programs that included greater farmer input (Chambers, 2008). The majority of national agricultural research systems (NARS) followed the components of the FSR philosophy and approach (Gonsalves et al. 2005). Inevitably, new methodologies emerged including new farmer participatory research (FPR) techniques, inclusion of indigenous knowledge (Fernandez et al. 1989). Other cross-cutting analyses were addressed including environmental impact analysis, statistical techniques and gender analysis (Fernandez et al. 2000). A more diverse set of extension services was required, often delivered through farmer-organized groups. For example: Farmer Research Groups (FRGs), Farmer Extension Groups (FEGs), Farmer Field Schools (FFSs), Comités de Investigación Agropecuaria Local (or local agricultural research committees) (CIALs); and approaches such as Participatory Learning and Action Research (PLAR) (Toon Defoer et al. 2009). With time, particularly as the notion of an Agricultural Innovation System emerged, institutional innovations such as multi-stakeholder innovation development funds, Public Private Partnerships (PPPs), multi-stakeholder committees to support national and international research and other forms of organizational descentralization was recommended (Braun et al. 2000; Chema et al. 2003; Hambly et al. 2012).

Research and extension organizations adapted themselves in order to focus on these changes and some of the results were: The Client - Oriented Research Management Approach (CORMA) (Heemskerk et al. 2004) and the Participatory Extension Approach (PEA) (Hagmann et al. 1998). The institutions that were part of the National Agricultural
Research have become part of the National Agricultural Research Systems. These are connected through networks of diverse groups of stakeholders from the community to national levels (Heemenskerk, 2010).

Notable among the changes in research and extension was the Agricultural Knowledge and Information Systems (AKIS) approach developed in the 1990s as an evaluation of the linear models of innovation (Christoplos et al. 1993). Instead of concentrating on technology, the AKIS posits that information and knowledge present common attributes among farmers, extension workers and researchers (FAO, 1995). It advocates for a two-way flow of information and knowledge among the research, dissemination and utilizer sub-systems assuming equally and important roles in the system (Ramirez, 1997; FAO, 1995). Röling (1990:1) and cited by Klerkx et al. 2012:462) who define AKIS as;

“A set of agricultural organizations and/or persons, and the links and interactions between them, engaged in such processes as the generation, transformation, transmission, storage, retrieval, integration, diffusion and utilization of knowledge and information, with the purpose of working synergistically to support decision-making, problem-solving and innovation in a given country’s agriculture or domain thereof” (Röling 1990:1 cited by Klerkx et al. 2012:462).

As noted in this definition, Klerkx et al. state that;

“AKIS were initially seen as having a clear (national or sectoral) boundary and a common purpose. This raised the critique (Leeuwis et al. 1990) that the perspective still adopted a mechanistic ‘hard systems’ view whereby it was assumed systems exist independently from the observer, and can be analyzed, understood and ‘engineered’ towards an unambiguous goal – a view also recognizable in adoption-diffusion studies and some farming systems studies. Later on, Röling and others more consistently adopted a soft systems thinking perspective, emphasizing that a system and its boundaries will be understood by actors in divergent ways, given their different objectives and life worlds. Thus, the AKIS approach came to focus on the coordination among actors with different perspectives of who is part of a ‘human activity system’ (Röling, 1992) with arbitrary boundaries” (Klerkx et al. 2012: 462-463).

In AKIS, women’s multiple roles in agricultural production and trade were identified, recognized and mainstreamed (World Bank et al. 2009) The recognition of
women and men’s roles diverge within the family unit and these roles change according
to societies and production units such as: small-scale/subsistence, medium-scale, and
larger/commercial farm households (Fernandez, 2009). It became more noticeable as
male and female farmers’ participation increased human resource policies and gender
balance were improved (Fernandez, 2009).

Some organizations like FAO have employed concepts of AKIS and highlighted
apparent restrictions and purposes (Rivera et al. 2005). The application of AKIS has
contributed to important institutional development in agricultural innovation systems
(Engel et al. 1997). Consequently, 'rapid' and participatory tools for the analysis of AKIS
have become available. These are known as Rapid (or relaxed) Appraisal of Agricultural
Knowledge Systems (RAAKS; Engel et al. 1997). This appraisal approach includes
windows and tools (Engel et al. 1997). Windows are analytical perspectives on certain
issues that are relevant for the understanding the AKIS (Anandajayasekeram et al. 2008).
The tools help in gathering, organizing and interpreting information in a participatory
manner (Engel et al. 1997; Rees et al. 2000).

Interesting enough, the Agricultural Innovation Systems (AIS) and AKIS emerged
almost at the same time and both were inclined to the ‘national systems of innovation’
approach. Lundvall (1992) was one of the first to propose this initiative. Then, Hall and
colleagues (Hall et al. 2001; 2006) followed and improved it (Assefa et al. 2009; Pant et
al. 2009). Therefore, Hall et al. (2006: vi–vii cited by Klerkx) defines the Agricultural
Innovation Systems as;

“…a network of organizations, enterprises, and individuals focused on
bringing new products, new processes, and new forms of organization into
economic use, together with the institutions and policies that affect the way
different agents interact, share, access, exchange and use knowledge” (Hall et

Some connections were identified between AKIS and AIS (Rivera et al. 2006:87).
AKIS developed from the extension approach and AIS came out from a research prospect
(Klerkx et al. 2012). Hall et al. (2006) recognize that the most important differences
between these two perspectives are that, AIS’s focal point is based on the control of
institutions and in the basic organization on learning and innovation (Hall, 2006). AIS
also tries including organizations that are not merely centred in agricultural research and extension system (Klerkx et al. 2012). On the other hand AKIS concentrates on actors and processes and assigns inadequate consideration to markets, the private sector, policy environment, etc. (Klerkx et al. 2012). Even though, AKIS has a tendency to suggest that technology has to be transferred from researcher down to agricultural producers, it also acknowledges the value of relocating farmers’ feedback to research systems (Hall et al. 2006).

The AIS approach has expanded to consider the complexity of the interactions between a large number of actors and sub-systems that distinguish innovation (Klerkx et al. 2012). Inside AIS, the role of women farmers is significant to the future of agriculture and marketing systems that can be able to support livelihoods improvement and agribusiness growth (Fernandez, 2009).

AIS, as systemic thinking, is the practical alternative in modern agriculture to deal with food insecurity, farmers poverty, climate change and the depletion and pollution of natural resources (Röling 2009). Nevertheless, AIS still fails to recognize that the diversity of mutually supporting actors and stakeholders may bring to the system divergence and conflict when establishing goals, interests and perspectives (Klerkx et al. 2012). Since AIS is still recent, it acquires different connotations. Depending on its interpretation, some consider it as a process or infrastructure (Spielman et al. 2009), it is also positioned at distinct geographical dimensions (Hall et al. 2010), and it finally consists of distinct types of research, analysis and intervention (Pant et al. 2009).

2.5.1 Key Aspects of AIS

The framework of the agricultural innovation system suggests equality and promotes women and men’s access to technology, inputs, services, and markets (Klerkx et al. 2012). AIS also seeks to open spaces for involvement, leadership, and equal representation as the ways to influence officials (Klerkx et al. 2012). According to Fernandez (2009), the AIS approach can reach its stated potential to benefit small-scale women and men farmers if it develops mechanisms to nurture organizations based on common interests and resources so that they can consider the economic feasibility of producing and marketing (Sarapura, 2012:599). These organizations will have to go
through agro-ecological, market, and transport situations to establish the viability that their products can be marketed and commercialized (World Bank et al. 2009). Access to research support is essential in order to fine-tune technologies that are suitable to specific conditions (World Bank et al. 2009) and, most important, stakeholders need to build capacities and skills to participate in formal organizations to come across export, sanitation, and certification requirements (Fernandez, 2009).

Innovations rely on people’s competencies to learn how to react to market opportunities or other social requirements (OECD, 1999) depending on the organizational cultures in which innovation happens and in the way it incorporates worldviews and visions (set of essential notions achieved by groups in the course of learning how to manage outer adaptation and inner integration) (Schein, 1984). Innovation also depends on the abilities of people to interact and exchange information and knowledge (Spielman, 2005). Interactions develop all the time while producing, sharing and validating knowledge through different processes like networks, alliances and interventions (Fagerberg, 2005). On the other hand, the economic or social accomplishment of a country relies on the participation of diverse groups of stakeholders in a system of innovation (Powell et al. 2005) in order to achieve the development of successful relations between a country’s scientific base and its business community (OECD, 1999). Ultimately, “the economic or social performance of a country also depends on the set of enabling conditions—market infrastructure, appropriate property rights, and effective governance in both input and output markets—that foster the emergence of innovative agents” (Davis et al. 2007:10).

AIS brings to light three essential components of an innovation system (Davis et al. 2007), specifically the importance of strengthening and developing individual and collective capacities to innovate; improving organizational cultures and behaviours to sustain capabilities (Davis et al. 2007); and nurturing networks and linkages with other innovation agents (Davis et al. 2007) to accomplish knowledge dissemination (Spielman, 2005). Innovation, as an outcome of human interaction is not always successful because people do not identify with each other (Klerkx et al. 2012), women and men have different worldviews as a result of their own languages and cultures. Divides can be originated by diverse systems (public and private actors), differentiation between local,
aboriginal and traditional knowledge systems and scientific knowledge systems, social and cultural divergences that can create segregation of certain actors (Pant et al. 2006). Therefore, the most frequent failures in agricultural innovation systems that need to be considered are: (1) **Infrastructural failures** – the nonexistence of physical infrastructure, inappropriate investments in knowledge infrastructure (research & development services) and economic infrastructure (Klerkx et al. 2012). (2) **Institutional failure** - unsuccessful laws, regulations and other formalized rules (hard institutional failures) and also unwritten rules, norms, values, and culture (soft institutional failures) (Klerkx et al. 2012). (3) **Network failure** - blocks to new ideas from outside apart from potential collaborations (Håkansson et al. 2002). (4) **Capabilities failure** – lacks the system’s technical and organizational capacity to adjust and deal with new technology and organizational innovations, (entrepreneurship, adequate education/training and networking skills) (Klerkx et al. 2012). And, (5) **Market structure failures** – lacks transparency inside the knowledge market (Klerkx et al. 2009a). The challenge now is to determine how these various failures are influenced by and in turn, influence gender transformation within the AIS. It is with this purpose in mind that the following section of this chapter presents the conceptual framework for this study.

### 2.6 Conceptual Framework

The conceptual framework is multidisciplinary and based on bodies of theory that seek to understand the key components of the research: traditional knowledge, gender, innovation and smallholder agriculture in the highlands of Peru. In the conceptualization of the realities of native potato production and commercialization in peasant or indigenous communities of the central Andes there is a focus on the specific innovative intervention – the market chains.

Andean farming systems are closely connected to culture and people. Peasant producers’ activities and agricultural practices are closely related to the Andean principles of respect, reciprocity and nurturing of the land, the nature and the Cosmos. These are projected through their agrocentric philosophy of life and traditional knowledge or *saber campesino* that sustain the continuity in the conservation of hundreds and even thousands of native potato varieties. Knowledge of specific characteristics and
practices like multi-cropping, conservation of terrains, predicting climate for the upcoming cropping season (based on local or grassroots indicators – including the behaviour of animals, flowering of certain species, observations of clouds and stars, etc.) as well as post-production systems of crop and animal products, among others, have allowed the development and successful evolution of permanent settlements in severe conditions (altitude and climate stress). In the Andean individual and collective worldviews of men and women, these aspects of life are carried out complementarily by performing assigned gendered roles and responsibilities, which in the end are manifested as women’s ‘invisible’ subordination.

The feminist standpoint and emphasis on the social construction of being male or female (i.e. gender) helps to distinguish and identify cultural and socially embedded female and male roles, responsibilities, activities and expectations. Cultures, including the Andean culture, interpret and translate the biological differences between men and women into beliefs on actions and activities that are appropriate for each gender as well as their rights, resources, knowledge and power. Gender, as a consequence, shapes peasant women’s and men’s life chances and their roles in the household, community, organizations and the wider institutionalized system. Played out in the life cycles of peasant women and men, gender often ends with inequalities in access to resources, use of power and limits to participation. Gender determines the way that resources are allocated and the form these affect or influence men and women. And generally, it is women, especially rural women, who are positioned inside the category of the poorest, most illiterate, monolingual, and chronically malnourished.

A new approach is needed to overcome the systemic nature of gender inequality. How might the concept of agricultural innovation systems (AIS) bring an agenda of empowerment for the poor? It is through a co-evolutionary process, in which technological, social, economic and institutional changes are combined (Hall, 2012). Consequently, the interaction of different prerequisites plays determinant roles in the creation and allocation of (technological) knowledge, policy, legislation, infrastructure, funding, and market improvements. Agricultural innovation, for the purpose of the study, is not just about implementing new technologies. The AIS is a system that also involves a balance among original technical systems and unconventional forms of organizing by
reorganizing markets, labour, land tenure and distribution of benefits (Leeuwis, 2004; Röling, 2009; Klerkx et al. 2010). Moreover, “agricultural innovation is not an intrinsically good and value-free process; it is normatively laden and driven by different worldviews and visions” (Klerkx et al. 2012:451). These arguments bring important analytical variables to the study like networking, attitudes and practices to innovate, role of policies interaction and learning. The AIS could continue and enhance the principles of the Andean Cosmo Vision, such as social cohesion, generation and dissemination of knowledge and the idea of reciprocity in order to establish formal organizations. At the same time AIS can contribute to the explication of the diversity and multiplicity of new actors or stakeholders, networking, knowledge sharing, and roles and relations. Such an understanding should support the creation of new and formal institutions that will enable female and male peasant producers to transition from informal organizations to more formal and renewed institutional arrangements in order to secure their access to and control over different resources (education, basic services, markets, information and technology, etc.).

The significance of studying agricultural innovation systems in the Andes of Peru from a participatory, feminist standpoint emphasizes the enduring struggles of men, and especially, women peasant producers. The study makes a distinct contribution to feminist research with the integration and mix of quantitative and qualitative participatory methods for data collection. Feminist research highlights women’s experiences as gendered subjects and makes “efforts to understand and meet challenges related to their status as women” (Sands, 2004:50). It is important to appreciate the richness of data texture (participatory qualitative methods: participatory video, some tools from SAS2, focus groups and interviews) and the incorporation of a larger set of context data (a quantitative method: survey) (Epstein et al, 1991). Quantitative data analysis provided the contextual and life-size picture where peasant communities live. It integrated with the personal stories of women and men which reflected their thoughts and feelings about their lives and experiences. Together, this mixed methods approach brought depth and texture to the research study.

Through the interpretation and analysis of the findings existing gender inequality in roles and activities and access to resources inside the communities and producers’
associations were identified. Analysis also captured the relations of power and oppression experienced by producers from the highlands and interrogated how gender is embedded in the construction of knowledge itself.

The conceptual framework is used to highlight and identify the gap between the political and the social dimensions, especially in relation to the dynamics that sustain poverty and inequality, but also, in relation to the institutions and governability that can create strategies to empower women and men in the highlands. Peasant women and men were, by design of the study, expected to bring forth their knowledge and Andean ways of innovation and their sense of living (community and families, beliefs and customs). The use of conceptual framework further helps to endorse heterogeneous actors from public and private sectors to be identified. It seeks to assess how these partners come together and bring new spaces to illuminate issues of justice and opportunities for female and male peasant community members. By recognizing the Andean Cosmo vision and all the aspects involved within it, the conceptual framework highlights the relationship among the different actors of a market chain that seeks the integration of different stakeholders in a common objective: the visibility and action of peasant men and women in Peruvian agriculture.
Figure 2.1: Graphic of the conceptual framework of the study

Gendered Realities of Native Potatoes Production and Commercialization

Gender and Feminist Issues
- Relations
- Roles and Responsibilities
- Power and Knowledge Production

Social and Gender Relations

Complementarity (Subordination) Reciprocity
- Participation to Make Decisions and Relations
- Access and Control of Resources

Social and Gender Relations

Andean Farming and Socio-Cultural Elements
1. Andean Cosmo Vision
   - Agro-centric Principles
2. Peasant Knowledge or "Saber Campesino"
   - Sustainability
   - Biodiversity

Agricultural Innovation Systems
- Interaction and Learning
- Linkages – Networking
- Attitudes and Practices to Innovate
- Interaction of Behavioural Patterns and Innovation Triggers
- Policies
- Coping with Information

Reciprocity
- Social Cohesion
- Knowledge Base

Adaptive Capacities
- Innovative Capacities
Summary

This chapter has reviewed the literature and the conceptual framework on which the research has been based. The literature on Andean farming systems and socio-cultural aspects of peasant production illuminates the background of the traditional agricultural production in the Andes established on the Andean Cosmo vision and the agrocentric principles. The literature emphasizes the principles of peasant knowledge or saber campesino, which is basically focused on the protection of native potato biodiversity in the high Andes. The second body of literature addresses the evolution of feminist approaches to from WID to gender and development. The literature also highlights the significance of gender mainstreaming to achieve gender equality. It also includes the perspective of gender in the context of the Andes of Peru and peasant women. The third section comprises the theory of agricultural innovation systems and its evolution from cropping systems to farming systems research followed by the interpretation of extension and knowledge systems that highlights the main dimensions of what is referred as contemporary agricultural innovation systems. Finally, the fourth section of the chapter defines the conceptual framework and the main theoretical themes on which the research was premised.
CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter presents the research paradigms and methods utilized in the study. It begins with an overview of the philosophical considerations (ontology, epistemology and methodology) followed by the methods utilized in the three data acquisition phases.

The research is supported by the ontology or ways of being of the Andean peoples - a vision of the Cosmos (or Cosmo vision) closely related to the ‘feminine side’ and the Potato (la papa). Andean people or campesinos are by nature considered ‘agricultural’ and their lives depend on agricultural practices (Rengifo, 2009). Though, they see agriculture as a form of a symbiotic and mutual nurturing relationship (humans – nature and cosmos) (Ishizawa, 2006), following their expression ‘nurturing by being nurtured’ (Rengifo, 2005). Nurturance is carried out through the treatment of all entities as equivalent beings, with respect, empathy, reciprocity and joy (Rengifo, 2009).

The feminist and participatory epistemologies were utilized to conduct the research. These supported the research in order to differentiate female Andean producers’ traditional knowledge and at the same time to highlight their life-experiences inside the peasant communities (Harding, 1987). Therefore, women were able to be involved in the production and reproduction of knowledge related to their own realities and specific context (Chambers, 1983).

The Feminist Participatory Action Research (PAR) approach is the methodology that guided the research. PAR’s principles and methodologies as Reid et al. (2006:316) states is;

“…a conceptual and methodological framework that enables a critical understanding of women’s multiple perspectives and works towards inclusion, participation, and action, while confronting the underlying assumptions researchers bring into the research process. Feminist participatory action researchers seek to facilitate building knowledge to change the conditions of women’s lives, both individually and collectively, while reconstructing conceptions of power so that power can be used in a responsible manner (Brydon-Miller, 2004; Ristock & Pennell, 1996) (Reid et al. 2006:316).
The research sought to present women and men’s perceptions and views of their participation in the market chain of native potatoes in the highlands of Peru. By examining their relations and roles in agricultural innovation systems and market chains, women and men at the community level present their own expressions to present the realities of their lives and the way these roles and relations have influenced their lives and the lives of other people who have been connected or worked with them.

The study makes a distinctive contribution to feminist research with the integration and mixing of quantitative and qualitative participatory methods to collect information. Until now, there have been few published studies that combine feminist approaches with a mixed methods approach (Finch, 2004). She argues that research using an approach other than qualitative to address feminist questions remains underdeveloped (Finch, 2004). Feminist research highlights women’s experiences as gendered subjects and explores “efforts to understand and meet challenges related to their status as women” (Sands, 2004:50). It is important to take advantage of the richness of data texture (participatory qualitative methods: participatory video, some tools from SAS2, focus groups and semi-structured interviews) and the incorporation of a larger amount of ‘contextual data’ (a quantitative method: survey) (Epstein et al. 1991 mentioned by Hodgkin (2008:296). Quantitative data assisted in illuminating the contextual (demographic and socio-economic information) and life-size picture in which peasant communities live. It was accompanied by the “personal story” (Hodgkin, 2008:296) of women and men, thoughts and understandings in their lives, which brought “depth and texture” (Hodgkin, 2008:296) to the study through qualitative methods.

Through the interpretation and analysis of the findings, the power of mixed methods allowed the researcher to 1) compare women's traditional production and commercialization of native potatoes with women's recent experiences in the promotion of innovative native potato market chains and to 2) identify and highlight the existing gender disparities, similarities and differences that women producers confront in the different levels they mobilize. It also assisted in identifying important aspects that have been currently missing or unidentified in order to recommend policies for future work.
3.2 Ontology

Ontology deals with the nature of being and raises questions about those research elements that are knowable - be they people, institution or systems – and how we make sense of them (Denzin et al. 2009). The ontological considerations underlying this research relate to the feminist and gendered vision of the Andean Cosmo Vision. Wilhelm Dilthey (1833-1911) took the term ‘Cosmo Vision’ or ‘worldview’ or ‘life view’ quite literally. Weltanschauung (worldview) or Lebensanschauung (life view) means, ‘having a look at’, ‘having a view of’ or ‘having a vision of” the world (Valladolid, 1990). And because a Weltanschauung is a view, it unavoidably implies a point of view or a certain perspective. Andean Cosmo Vision (view of the basic nature of the Cosmos) is fundamentally different from Western philosophies that distinguish materialism (matter) and idealism (ideas/mind). Western philosophies of science have ways of viewing the basic nature of reality through the lens of science, capitalist development or through the lens of (Western) religion (Merchant, 1992; Noorgard, 1994). Neither science nor religion has a counterpart in the Andean Cosmo Vision (Valladolid, 1990). “Learning how to nurture and letting oneself be nurtured is a primordial principle and practice in the Andes” (Grillo et al. 1989:15). Nurturing is carried out through the treatment of entities as equivalent beings, with respect, empathy, reciprocity and joy (PRATEC, 2009). All living beings are considered equal subjects complementing one another through acts of mutual nurturing, which is manifested in rituals and daily dialogue (Grillo, 1993).

The Andean Cosmo Vision contains an authentic divine meaning (PRATEC, 2009). Gordon (2001:184) states that; “mysticism is the principle that words (including beliefs) are, at best, blueprints for how to associate truthfully with the sacred underlying nature of reality.” It is that association with the Sacred–not the expressions or way of life–that is of elemental significance (Grillo, 1991a). The Andean Cosmo Vision is not entirely about beliefs (Valladolid, 1991); it is also about the experience of certainty that turns out to be achievable with these beliefs. It is about the connection with Nature and the Cosmos that suits these beliefs (Grillo, 1993).

Andean Cosmo vision perceives the Cosmos as a constant flux, an infinite interaction of societal reciprocity with the ecological and natural environment (PRATEC,
Any individual or group action has significant implications in an integrated and connected world. Indeed, human beings or groups’ actions have to be interactive with nature and deities in order to restore regularly equilibrium in the universe and infinite cycles of investment (Lozada, 2007). The injurious manipulation and destruction of the environment is unthinkable. The ecological habitat is more than a natural environment; it is a provider and a receiver in relation with humans. Humanity is one species amongst others sharing the same life scenario (Grillo, 1990). Therefore, Andean Cosmo Vision is simultaneously geocentric and agrocentric; whole Nature becomes something alive (Rengifo, 1998a).

Indigenous cultures have sustained a relationship with Nature that is inextricably interwoven with the land itself (Valladolid, 2010). This bio-cultural practice is intrinsic to a particular way of knowing, being, and relating to the world, which centres on the land (Toledo, 2007). The region’s ayllu or chacra-based cultural practices could be said to centre on an Andean order, in which the Quechua language develops through intimate conversation and practices among sallqa, runa, and apus collectivities (Toledo, 2003). This Andean biocultural order is shared in Quechua, Aymara and many other indigenous languages. The Quechua order implies that every living being lies along this transversal pathway, cyclically regenerating all life in response to all beings. The Quechua/Aymara peasant (campesino, peasant of the chacra) perceives work to be cyclical and in a state of permanent motion, trans-territorial and trans-regional (Toledo, 1993). Chacra is not only the place but it is also the relations sustaining equal subjects such the seed, the llama, the rain, the rock in harmony to procure life continually (Grillo, 1991). The chacra is protected within the pacha, the landscape that Andean indigenous peoples have become intimate with, the landscape that they have come to know in all its expressions over time. Through ritual, the Andean worldview claims to sustain the creation and recreation of diversity in all of its expressions and practices (Grillo, 1998).

The Quechua and Aymara person walks with kawsay mama (the living mother, the living seed) along its multiple paths, through which diversity is cultivated as a spiritual practice of biocultural sustainability (Grillo, 1998; Choque et al. 2001; Valladolid, 2001a; and b). Viewed from the West, this world order is a paradigm shift: a cycle of life that is conversant with the vitality of all beings, an elliptical motion tilted in accordance with the
The movements of all living beings, runa, sallqa, and Apu in pachá, in a specific place and time (Rengifo, 1998b). The Apu, or mountain deity, responsible for overseeing a specific pachá that is in turn harboured within pachamama, Mother Nature, protects the Andean landscape (Ishizawa and Grillo, 2002).

The Andean landscape is thus governed by the engagement between the runa and the haqi/jaque (community) in a practice dedicated to conscientiously procuring harmony among all living beings, for the welfare of all. Whereas the ontology of Western thought would halve the world between being and beings, the Andean world order renders the world as a whole, not through a reductionist division of beings, but rather as an integrated whole (Rengifo, 1991a). The complementarity of opposites plays an elementary role in the Andean culture, by which the relationship with Nature and the Cosmos, relationships with each other, the relationship of energies within themselves are informed (Valladolid, 2008). The basic idea behind the complementarity of opposites is that opposite concepts define each other and, in fact, they cannot exist without each other (Gonzalez, 2009; Rengifo 1998b).

The complementarity of opposites has a role equal to that of Ayni, which is the principle of reciprocity (Valladolid, 1991). The core of Ayni is that of exchange (receiving something at the same time that of giving back something else) (Rostworowski de Diez Canseco, 1988). Through this action, a relationship keeps balanced at the same time as the relationship is nourished. Therefore, Ayni informs Andean people’s relationships with each other and it is reflected in the nurturing of seeds and natural resources in conversation with the Cosmos (signs and indicators in relation to climate and weather) (Valladolid, 1991). People in the Andes experience reality in a different way allowing them to establish genuine relationships with Nature and the Cosmos (PRATEC, 2009).

The complementary opposites of gender relationships in the traditional Andean culture also follow that pattern (Grillo, 1993). The clear distinctions between men and women and the bringing together of their disparate energy into a unified whole is fundamental to the Andean Cosmo Vision (Rengifo, 2009). The masculine and the feminine elements are considered equal but different with unique identities. Though, their relationship becomes imperfect if one of them is absent (Grillo, 1993), and consequently they
need from each other (Valladolid, 1991). Men and women have their own exclusive areas that complement each other in social and economic forms. As for example, Pachamama, the main God, is a woman, whilst ‘Father Sun’ activates her motherhood (Urrutia Cerruti, 2007).

The Andean myths authenticate this Andean vision of the relationship involving a man and a woman: the woman is considered as an individual of superior moral order, since she can be near to Mother Earth (Grillo, 1990). A woman is the one who has closer relationship with the land, and the most concerned about preserving nature and life (Celiberti, 2010). Women are most involved in seed selection and dissemination (PRATEC, 2009). Indications of a type of women’s superiority in addition to the female and male essential egalitarianism intangibly rest on the mental schema of peasant people (Celiberti, 2010).

A permanent symbiosis between all components of a community is a natural characteristic of the Andean culture (Rengifo, 1998a). It is constant and the culture of a living world that strikes to the rhythm of cosmic cycles and earthquakes (Grillo, 1993). For the farmers in the highlands of the Andes, the potato is considered as a female human being (La Papa). It is a member of the family. Peasant people see the potato like a mother or daughter who provides food, warmth, love, health, encouragement and affection. Farming people ‘dress’ (cover) the potatoes through ploughing. People also cheer with the potato through the ch’uwas and ch’allas and share dances with her at their parties. Consequently, the potato has multiple needs and also feels and needs love and care (Apaza, 1997).

As the potato is considered a mother like the Pachamama (Mother Earth), women know how to select the seeds and what seeds can be selected for different purposes. It is said that women are the soil that regenerate life (Tapia et al. 1997). The potato as a being is capable of receiving energetic influences of women that can even harm the crop in the field. Women have to avoid visiting the fields when they are menstruating otherwise the crop will die (Apaza, 1997). The potato’s breeding is done with great care; it has to rest temporarily in another room, and sideways from people’s bedrooms. Humans have to take care of the potatoes and breed them as potatoes breed humans. It is also the means or
the nexus of relationships and commitments between the human community, the natural community and deities. Conversation is very important for the whole collective nature activity. Each dialogue is there to harmonize and nurture well-being (Tapia and De la Torre, 1997).

3.3 Feminist Paradigm

The study was supported by epistemological notions suggested by feminist and participatory paradigms referred to here as Feminist Participatory Action Research Approach. The feminist paradigm embraces a “subjectivist and transactional standpoint” (Guba et al. 1994:109), by which the researcher and the research participants create knowledge together. Then, knowledge is influenced by the values and positions (categorized in the literature as ‘positionality’) of both the researcher and participants in the study (England, 1994). Feminist research aims on transforming, critiquing and emancipating both the researcher and the researched (Nagy Hesse-Biber, 2012). It expects “to provide for women explanations of social phenomenon that they want and need” (Harding, 1987:8). Feminist research “generates its problematic from the perspective of women’s experiences” (Harding, 1987:7), as a reaction to the nonattendance of women’s perspectives and is assumed by providing more attention to women and gender (Ramazanoglu et al. 2002), most feminist scholars concentrate on how the means and ends of the research process can become more or less ‘feminist’. They categorize identical key features that are based on the importance of gender as a central element of social life, (Fonow et al. 2005; Harding et al. 2005), so that it is not only the study of women per se. It is also and most importantly the study of gender and the inter-relationships of women and men (Latther, 1988).

A particular strength of feminist research is its largely ‘problem-driven’ nature (Harding et al. 2005). Feminist work can and should make use of both quantitative and qualitative methods, despite the fact that qualitative methods are more closely connected to feminist research (Deutsch, 2004). Furthermore, feminist researchers assist to build knowledge to transform women and men’s lives and conditions while restructuring the concept of power (Maguire, 1987; 2008). Feminist research makes possible to recognize women’s various perspectives so that it works toward inclusion, participation, action,
skills and social change at the same time that confronts fundamental notions that the researcher brings into the research process (Nagy Hesse-Biber, 2012).

3.4 The Participatory Paradigm

The participatory worldview offers humanity a more satisfying myth by which to live and also increases the skills, knowledge and networks of poor people and communities (Mayoux et al. 2005). This perspective ensures equity and effective participation of the subjects involved in the research process (Chambers, 2008). Subsequently, knowledge generation and critical awareness improvement can be constructed in order to identify needs and priorities to develop self-confidence for decision-making and problem-solving (Quarry et al. 2009).

Chambers (1983) argues that participation is both a process that involves people to create sustainable outcomes and an end to develop people’s potential to be in charge of their lives (Chambers, 1996). Feminist researchers have preferred participatory research (Rose, 2001) and the feminist movement had a significant influence on participatory research’s deliberation and development (Kindon et al. 2007; Tandon, 1996). Crucial to this epistemological connection is that the fundamental obstacle to feminist inquiry, the identification of the knower (Olesen, 1998), which is a question that refers to both women as subjects of research and women as researchers (Rose, 1997). Nevertheless, feminists have criticized participatory research ability to deal with the social world as a place of gender detachment or gender equality which is established on the participation of identical numbers of male and female respondents. Maguire (1987:52) in reference to male orientation of participatory research, mentions that; “women and gender as the focus for analysis have been ignored, minimized or marginalized” (Maguire, 1987:52). She also argues on the ways in which feminist theory and practice can be used to inform and develop Participatory Action Research (PAR) (Maguire, 2008).

Feminists have long proposed that research ought to empower women and that the researcher cannot be neutral, and considered that research is a political process (Fonow et al. 1991; Reinharz, 1992). In addition, Reinharz (1992:175) interprets the essential association between feminist scholarship and activism: “the purpose of feminist action research must be to create new relationships, better laws, and improved institutions”
(Reinharz, 1992:175). Change comes about both by empowering women in the research and by sharing information that changes the actions of others. The process includes doing research not for the sake of research but as political action, seeking significance that is then available to all women (Mies, 1983). Doing PAR certainly transforms the researcher, sometimes completely, sometimes in stimulating, nourishing ways (Maguire, 2008). The self-reflexivity such modifications provoke is an attribute of all feminist scholarship in some way (Cornwall, 2007). A researcher in action, contained by both the feminist and participatory paradigms, consequently turns out to be a researcher-facilitator who must be prepared to unleash undeniable attitudes and knowledge that become apparent from their position as ‘experts’ or training as ‘scholars’ (Maguire, 1996; Deutsch, 2004).

3.5 Methodology

The design of this study was informed by feminist and participatory paradigms and was cognizant of the Andean Cosmo vision. The study was guided by the logic that research questions should be explored and remain open to a range of data collection methods that draw on evidence from a variety of sources and, specifically, listening to the voices of women as a disadvantaged social group often unheard within positivist research (Oakley, 1999). Describing aspects of their lives, based on telling of their experiences, participants are the experts and the researcher is a facilitator of the process. Validity and reliability are developed in the sequencing of the multiple methods. Both qualitative and quantitative data are collected to examine the modification or reproduction of gendered inequalities or similarities between the control group and the case study over time and space (Hughes et al. 2010).

The quantitative survey method used in the study was intended to provide descriptive background and contextual data, and this also enabled the generation of sex-disaggregated data. Iterative planning activities were used to readjust the project continuously in order to sharpen its focus on women. The tools used in the study and described below were an adapted SAS2 methodology, modified participatory video6 used

6 A sample of videos used in this project can be found at http://www.youtube.com/watch?v=eR4mvS7_ccQ
in conjunction with focus group discussions, and also, participant observation. Table 3.1 provides a summary table of these methods and their link to the research objectives.

### Table 3.1: Summary of the Research Objectives and Methods

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<th>Research Objectives</th>
<th>Research Question</th>
<th>Phases of Evidence of Data</th>
<th>Tools</th>
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| - To compare women's traditional production and commercialization of native potatoes with women's recent experiences in the promotion of innovative native potato market chains.   | What do women and men worldviews reveal about the realities of the native potatoes production in peasant communities and in a new intervention, the innovative market chain of native potatoes in the Andes? | Phase 1: Participatory Descriptive (n=42)                                                 | • Semi-structured interviews  
• Focus group discussions  
• Mediated video (description of women and men’s stories and experiences)  
• Participant observation – reflective journal  
• Individual situation analysis |
| - To offer women the opportunity to document by themselves their worldviews, combining practices, levels of participation, perceptions and beliefs in their own terms, to explain what the production of native potatoes is for them. |                                                                                                         | Phase 2: Analytical and Collaborative Phase (n=42)                                      | • Social Analysis Approach (SAS2):  
• Modified force field (supported analysis of the meso level- driving and restraining forces)  
• Timeline (understand changes experienced by female and male leaders)  
• Social analysis C.L.I.P (understand the relations, power, interests at macro level)  
• Nominal identification (supported identification of actors and their roles at macro level)  
• Individual situation analysis (women positioning in the context)  
• Focus group discussions  
• Agricultural calendars  
• Participant observation |
|                                                                                   |                                                                                                         | Phase 3: Quantitative Phase (N=220)                                                      | • Survey (allowed to obtain sex-disaggregated data of socio-economic and demographic information) |
|                                                                                   |                                                                                                         |                                                                                          |                                                                                                                                  |
|                                                                                   |                                                                                                         |                                                                                          |                                                                                                                                  |
|                                                                                   |                                                                                                         |                                                                                          |                                                                                                                                  |

65
Intentionally, the data collection concentrated on the two first phases. The first phase was a participatory descriptive explanation of multiple perspectives about native potato production and market chains. Women and men had to share their views through the video-mediated report tool, producing short videos with the description of their stories. This technique was completed with semi-structured interviews, individual situation analysis and focus group discussions. It was carried out to respond to the first two objectives. Here women and men analyzed in a participatory and collaborative way the problems and conditions they have in the production of native potatoes, the importance of this crop in their lives and their worldviews as Andean peoples. This stage was crucial to integrate women and men in discussions and work in groups. As well, there were in total six people (four women and two men) who were trained in the use of the video camera and in the interview processing.

The analytical phase employed some qualitative and participatory tools (agricultural calendars, focus groups, nominal identification of stakeholders, social analysis C.L.I.P, force field and timeline). The last three tools were taken from the SAS2 methodology. These tools were adjusted and modified in accordance with the context and generated findings for the third objective. The exercises included consider the participant’s education and understanding of the research study. In this stage, the study focused on exploring women’s and men’s worldviews through interaction and participation in order to express how they felt about their lives and the activities, roles and relations in which they all are involved.

In the third stage of data acquisition, a larger representative sample of data was necessary to generalize the population of native potatoes producers and clarify some of the fissures and contradictions found during the two first stages. Some of these were related to household representativeness, access to resources, demographic information (gender, status, age) level of education, income, labour and earnings (individual and enterprise), land accessibility and area of land owned.

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Chevalier et al. (2008) state that SAS2 (Social Analysis Systems) is a collaborative inquiry and social engagement approach. It was developed as a participatory research methodology that addresses complex problems where multiple stakeholders and perspectives share views. The tools promote the involvement of participants as partners who jointly gain skills though analysis and decision-making (Chevalier et al. 2008).
A survey was used to obtain mostly contextual and demographic information that helped the researcher to describe, explore and explain some aspects of the qualitative differences between women and men through gender analysis of the production of native potatoes and the resources producers have had access to as a result of their participation. The survey was cross-sectional, with data collected at one point in time. During the entire research process and fieldwork, the researcher also used participant observation and record information in her journal.

3.5.1 Selection of Communities /Associations for the Research

In Peru, producers of native potatoes in the Central Andes (Huancavelica and Junín Regions) are cultivating for subsistence (consumption within the household and informal markets) or as members of associations cultivating for the formal market (market chains). As illustrated in Figure 3.1, this study involved three associations from the communities of Chuquitambo, Pazos – Huancavelica; Chicche, Apata – Jauja and Pomamanta, Comas – Concepcion. In total, 220 participants were involved in the study. The first group (n=36) was the case study (known as experimental group)\(^8\) involving peasant producers participating in the native potato market chain COGEPAN (Management Consortium of Native Potatoes Market Chains) and functioning under the Papa Andina initiative.

\(^8\) Denomination of experimental group and control group in this study does not refer to the description used in quantitative research.
Figure 3.1: Map of Peru and the Communities included in the Study
The communities in the case study groups were purposely selected and they were identified as members of COGEPAN after meetings were held with International Potato Centre and FOVIDA’s representatives. For the case study, introductory visits to the communities took place to give details of the research study and its purpose. All COGEPAN members were invited to participate in the study.

Participants in the second (control) group are from Junín Region and are members of the Alto and Bajo Tulumayo Watershed (Peasant Communities of Racracalla, Comas – Concepcion, Achin, Comas – Concepcion and Maryanoic, Comas – Concepcion). Non-COGEPAN producers in Huancavelica Region were involved in other market chains supported by a separate corporate collaboration known as GLORIA and NGOs (Caritas). The control group participants (n=184) were purposely selected through contacts with key actors (practitioners and researchers working with peasant producers of native potatoes in Junín Region) as well as visits by the researcher to local and provincial fairs (Jauja, Apata, Santa Rosa de Ocopa, Pazos and Concepcion) and attendance at different events organized by local and provincial municipalities (Jauja, Junin and Concepcion) to promote native potatoes. Table 3.2 summarizes the size and distribution of the research participants (male and female peasant producers).

Table 3.2: Size and Distribution of Sample

<table>
<thead>
<tr>
<th>Clusters</th>
<th>Male Participants</th>
<th>Female Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Experimental Group or Case Study:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COGEPAN (Producers Associations of Chuquitambo, Pomamanta and Chicche)</td>
<td>16</td>
<td>20</td>
</tr>
<tr>
<td><strong>Control Group:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Peasant communities of the Alto and Bajo Tulumayo Watershed -Communities of Racracalla, Achin and Maraiqnoc)</td>
<td>154</td>
<td>30</td>
</tr>
</tbody>
</table>

In both cases (control group and case study), invitations and cover letters were
distributed in the first meeting and participants signed the books from the communities (control group) or on an existing producers’ list where names and signatures appeared (case studies) in order to assure participation in the third stage of the study. In the case that they could not sign, they stamped their fingerprints. Photocopies of the books and the lists were provided to the researcher to confirm participants’ participation (see Appendix for a copy of the invitation, cover letter and survey).

Women and men interested in participating in the first and second stages of the research study expressed their agreement either orally (video) or in written form (signed agreement forms sent with the cover letter and invitation). Consents were maintained separately from the questionnaires to ensure confidentiality; the researcher was not able to match the survey results with any one respondent or with demographic information. In addition, a media or a talent release form was provided to the participants and it was sent back to the researcher with the other forms. In other cases, they accepted the release form’s content orally. In the case of the third stage, entire groups were requested for their permission to participate in the survey.

Forty-two women and men responded to the call for the first and second stages of the research project. All case study group members confirmed their participation. Participants who expressed on their interest to join in the study were provided with an information sheet on the activities and schedule of sessions. Visits to the communities and participants’ homes and fields were scheduled. The researcher attended and observed different activities, which participants performed in both case study and control groups. The activities included harvest events or pachamancas, selections of seeds and tubers, post-harvest activities (chuño and papa seca production), informal commercialization and selling of products in the markets and local fairs.

3.5.2 Process of the Study

Local participants, through their direct involvement, took control of the process. Within this framework emphasis was given to the identification of the producers of native potatoes and all stakeholders directly and indirectly involved with them. Discussions covered their interests, worldviews and problem-solving experience with emphasis on their knowledge systems and Quechua worldviews. The study had the support of two
practitioners from the Ministry of Agriculture and FOVIDA – Peru who were familiar with the communities. They also knew Quechua and assisted the researcher on the process when translation was needed. In addition, an assistant was in charge of training participants in the participatory video (Lunch et al. 2006) techniques and edited the videos every night with the participants in the study. The discussions took place in Spanish and Quechua.

3.6 Data Analysis

Data for each of the methods (focus groups, semi-structured interviews, qualitative information, video narratives, SAS2 tools) were analyzed in separate batches because the methods for data collection and the samples were dissimilar (e.g. two sets of 21 female respondents). When utilizing the inductive approach (Peräkylä, 2005), the analysis of data involved clustering data around units (open and selective codes) of meaning and underlying categories until themes emerged. The analysis was considered complete when it was not possible to establish additional underlying categories to generate higher order arguments.

The totality of the data set obtained from the video stories and storylines was transliterated and read a number of times before setting off the coding process. On the third reading, developing arguments were coded into sub-themes; if these were significantly similar they were collapsed into a single theme. Notes from the journal (fieldwork), observations, transcriptions and emerging themes were stored inside a summary code sheet. All through preliminary ‘noting of patterns and themes’ the data were analyzed manually through the use of clustering and metaphor making – which involves “conceptual and figurative grouping” (Huberman et al. 1998:187). Finally, themes were clustered under their own categories (Strauss et al. 1990; 1998).

Similarly, the analysis of qualitative sets of data from the interviews and focus group discussions were done through the following steps: (1) transcribing the interviews and focus groups discussions into a verbatim transcription; (2) reading and re-reading the writing transcription; (3) breaking into pieces within thematic statements the transcripts; (4) conveying a descriptive code to each thematic assertion that reflected the meaning of that specific topic.
All information was then placed into different matrices under each descriptive code. The information was separated into two main groups: the control group and the case study group information. Inside each matrix men and women’s information was assigned different boxes. Then, major themes from the data were described and categorized through complementation and triangulation of data resources. It was also very important to consider the notes from the participant observation during the analysis as well as the results of SAS2 tools. The notes were stored in a journal and the main emergent themes were clustered under each main variable. After all data were coded, analyzed and reduced the various sets or batches of qualitative data from each method were again triangulated for the total or overall stage of analysis.

The quantitative data were used to provide demographic and contextual information of the study. Data analysis involved generating descriptive statistics for all individual variables which were then summarized in tables and discussed in the text. Initially, frequencies were gathered on each variable contained within the individual, household and enterprise levels for each association separately. Data were also divided, cleaned and evaluated for the female and male clusters separately. Frequencies analysis was used to calculate the responses to all the questions in the survey. The quantitative results were analyzed with the help of the Statistical Package for Social Sciences (SPSS) software, Version 19.

3.7 Ethical Considerations

The study took into consideration the following principles for working with peasant women and men in the Andes: (a) clear understanding of the different racial, ethnic, and cultural groups of the rural and peasant population in the Andes of Peru; (b) respect for the person’s individuality and view of his/her culture; (c) researcher’s self-awareness of own prejudices and cultural niche; (d) viewing each client as “a unique individual within their socio-cultural context and tailoring the work to meet his/her specific needs” (Gelman, 2004:102).

A protocol approved by the Research Ethics Board of the University of Guelph was followed. Confidentiality was guaranteed by the non-identification of the participants. All their responses remained anonymous (individual identification was through ID numbers.
and then alias). Informed consent allowed participants to be free to choose whether to collaborate in the research activity or not. Accordingly, the researcher sent participants cover letters, invitations explaining the purpose of the research and the right to accept or refuse to participate in the research activities.

The researcher explained the purpose of the interviews and filming every time these events took place. Informed consent for recording voices and images in research was used with a media or talent release form obtained prior to the beginning of any voice and image recording for data collection purposes. The respondents had the right to refuse to audio record, have photos taken or even withdraw their photos or recordings at any point in the research process.

Summary

This chapter laid out the ontological, epistemological ad methodological approach of the study. It also presents an overview of the Andean Cosmo Vision and its relevance to the ontological considerations of the study. Employing a feminist participatory action research methodology, the study incorporates both qualitative and quantitative methods. The chapter concludes with recognition of key ethical considerations for the study and some recommendations for future research.
CHAPTER FOUR

SETTING THE RESEARCH CONTEXT

4.1 Introduction

Chapter Four presents a general description of the national context in which the study took place, the country of Peru. It begins by presenting the general situation of Peru, its diversity and agricultural sector. This section is followed by an overview of the condition of rural and peasant women in the Peruvian context and explains the different situations and circumstances women have faced over time causing their subordination and exclusion at different levels, including within their own communities. The following section examines the specific context in which peasant producers live and cultivate native potatoes. Subsequently, the Papa Andina Initiative is presented as an intervention that fosters pro-poor innovation in market chains to improve food security, market access and reduce poverty for peasant producers in the highlands. In this section a summary of the key gender dimensions of the Papa Andina Initiative are presented. In the last section of the chapter an overview of the political and physical situation of the peasant communities that took part in the research study is provided.

4.2 The Situation of Peru

Peru approximately included a population of 28.2 million in 2007 with an estimated increase to 29.5 million people in 2012 (INIE, 2012). The country is a mixed and diverse nation (ethnically and culturally), and has experienced profound political and social conflicts that originated chronic instability and has not allowed the materialization of an authentic national identity (Eguren, 2004). The country embraces one of the most diverse societies with 71 ethnic groups. Ten percent of these groups live in the Andean region and ninety percent in the Amazons (INDEPA, Ethno linguistic Map, 2010). The National Institute of Andean, Amazonas and Afro-Peruvian Populations (INDEPA) calculated about 4.13 (2007) million of indigenous people in 2007. The majority of them are located in the high Andes inside the Quechua (eighty three percent) and the Aymara (eleven percent) ethnic groups (INDEPA, 2010).
The unique geographical characteristics of the country (Coast, the Andes and the Amazonian rain forest (Brack Egg et al. 2000) offers the planet’s largest number of ecological life zones, as it has 84 of the 101 zones listed in the classification of Holdridge (Holdridge, 1966). Around 25,000 species of plants that relate to seven to ten percent of the total species existing in the world can be found in Peru (Brack Egg et al. 2000). The Andean region is one of the most important centres of origin of key crops in the planet such as the potato and maize (Brack Egg, 1999). The Andes of Peru also contains a wealth of comparatively unidentified and underutilized crops and genetic resources have potential for crop growing, food security and commercialization (UN, 2010). Most of these Andean crops (fruits, roots and tubers, cereals and leguminous plants) are cultivated by people in the Andes and constitute the principal source of food, nutrition and income (Brack Egg et al. 2000). They consist of Andean cereals (kiwicha, quinoa, and amaranth) legumes (beans, lupins), Andean tubers and roots (arracacha, yacón, chagos, potato, sweet potat, olluco, oca) (Brack Egg, 1999; Tapia, 1990).

Studies reported by the National Research Council (1989) established that local Andean civilizations started to experiment with natural resources and that they knew each ecological niche, or ‘floor’ begins at altitudes about 500 to 1,000 m vertically beyond the preceding floor (Brack Egg et al. 2000). It results in a regulated and particular environment for life (Vera, 2006). The coast, highlands and the jungle/rain forest form the major terrestrial regions of the country (Vera, 2006). Each zone includes unique ecological niches and microclimates (Brack Egg, 1999) produced by ocean streams, the extensive assortment of Andean altitudes, solar angles and slopes, and the arrangement of the vast Amazonian basin (Brack Egg, 1999). Because of these intricacies, various authors have identified a large number of ecological sub-regions for different purposes. For instance, in the highlands (Sierra) there are sub-regions in which only grazing of llamas and alpacas is possible. As well, certain niches may only be cultivated with varieties of native potatoes adapted to the specific soils and altitude. Vera (2006:6) classifies the land use in Peru as follows: “three per cent arable, 21 per cent meadows and pastures, 55 per cent forest and woodland, and 21 per cent other, including one per cent irrigated land (Vera 2006:6).
Agricultural activity in Peru is therefore highly diverse. Variations are principally due to technological differences, product and input market linkages, climatic and geographic diversity and market access services (credit, agricultural insurance, etc.). Based on these characteristics, the Ministry of Agriculture (2010) defined the existence of four types of agriculture in Peru. First, non-traditional exports are produced on large areas of land with advanced technology and production at high levels and profitability. The second group, referred to as extensive agriculture, corresponds to the traditional products (e.g. maize) cultivated extensively across the nation. This production supplies the large domestic market and occasionally international markets. Extensive agriculture is practiced, however, mostly on small tracts of land and its technological level varies. The third group consists of export potential products, which are not yet consolidated as exports. In this group are products of the ancestral Andean culture, jungle crops (usually resulting in agro-industrial products) and new agricultural products with high export potential (MINAG, 2010). Finally, the fourth group is based on products assigned for self-consumption (lima beans, quinoa, olluco, oca and mashua) (MINAG, 2010).

On the other hand, the agricultural sector supplies only 7.6 percent of the country’s GDP (Escobal et al. 2004), and represents the central support of the household economy in rural areas (Escobal et al. 2004). Around 65 per cent of the labour force is assigned to the agricultural sector (Deere et al. 2001b). In order to enhance productivity and boost competitive advantage for development in the country’s diverse agriculture, Peru has expanded its investment in research and development as a component of GDP from 0.08 per cent in 1997 to 0.11 percent in 2001 (IDB, 2012). This level of investment, however, is lower than the average for Latin America and the Caribbean (0.62 per cent of GDP in 2001) (Robles et al. 2012). There is a lack of linkage among key players in the agricultural innovation system (private and public institutions) and resource allocation retains little relationship to sectoral priorities (Robles et al. 2012). The National Competitiveness Plan (2012) intends to promote the adoption of new technologies and innovations, foster research, make possible specialization and sustain technology transfer as key components for enhancing the country’s competitiveness and its ability to overcome free trade trade-off with other nations especially North America (Robles et al. 2012). Technological innovation, particularly in the agriculture sector, has been identified
as one of the key components for increasing the share of industry in GDP and in the country’s exports (Robles et al. 20012). In this framework, the Ministry of Economy and Finance (MEF) announced the creation of three funds in support of science, technology and innovation (Falconi et al. 2012). The first is the Competitiveness Research and Development Fund (FIDECOM) that promotes R&D for business projects in productive and technological innovation (IDB, 2008). The second is the Guarantee Fund for agriculture that will be a component of the COFIDE trust fund to assure bank loans to small and medium-sized producers (IDB, 2008). The third is the Human Capital Fund that will finance university studies abroad for Peruvians who will return to the country to work in the public sector (IDB, 2008). The policies are consistent with overall results in Peru’s economy considered as the most established in the region since 2001 as a result of the export of natural resources (Falconi et al. 2012). Its gross domestic product (GDP) growth rate averaged 8.8 percent from 2001 to 2008 (Taft-Morales, 2012). Results from diverse measurements demonstrate some improvement in the human development index (HDI) and reduction in the poverty incidence (number 63) (UNDP, 2009).

Peru’s development is for the most part conditioned by its geography and natural resources (Brack Egg et al. 2000). However, there are also other factors hindering human development and social equality (OECD, 2011) such as the hierarchical values established in colonial times, which gave rise to the economic, ethnic, and geographic separation that distinguishes Peruvian society nowadays (CIA, The World Fact Book 2012). Peru’s current move to democracy took place in 1980 following 12 years of military rule (Taft-Morales, 2012), which was distinguished by a prolonged economic crisis. In addition, the government could not fight back and control a radical Maoist guerrilla group known as Shining Path (Sendero Luminoso) (Taft-Morales, 2012). Sixty nine thousand and two hundred sixty deaths and disappearances occurred in that period (Commission on Truth and Reconciliation - Peru, 2003; Palmer, 1994), and the rural areas of Peru were most negatively affected in social, cultural, economic and political terms (Palmer, 1994).

Despite relatively high GDP growth rates, low inflation, macroeconomic stability, cutback of external debt and considerable advances in social and development indicators, disproportions across the country continue high, predominantly between rural and urban
areas (Bertelsmann, 2012). The maternal-infant mortality rate has declined and the goal of universal primary schooling has been achieved (IDB, 2008). In 2005, almost 58 per cent of the economically effective population was unemployed or underemployed and the informal labour market was amongst the highest in Latin America and the Caribbean (Hausmann et al. 2007). Therefore, poverty levels remain high and almost sixty per cent of the population was considered poor and thirty seven per cent considered under extreme poverty (INEI, 2007a). The majority of the poor live in the Andes or Amazonian region and approximately sixty two per cent of people who speak Quechua live in poverty although forty two per cent of Spanish-speaking population is in the identical condition (Hall, 2006).

The country has to deal with major challenges in the delivering and excellence of essential public services, especially in rural and remote areas where people still live in poverty or extreme poverty, and over 40 per cent of the population undergoes persistent undernourishment (IDB, 2012). Approximately, a quarter of the nation has not yet had access to basic services like water, sanitation and sewage systems (Taft-Morales, 2012). The quality of education is considered to be one of the lowest in the hemisphere (Taft-Morales, 2012). Rural and indigenous women occupy the lowest levels in the poverty scale (INIE, 2005). A total of 3, 451,000 women account for 50.2 per cent of the total population in rural areas. The largest concentration of women in extreme poverty lives in rural mountainous areas (67.6 per cent) (INEI, 2010). In relation to the Gender Inequality Index, Peru overall ranks on the 41st place out of a total of 169 countries (PNUD, 2012). Peru’s female population that was affected by terrorist violence and living in rural areas ranks the lowest in levels of different indices of well-being (PNUD, 2012). Therefore, differences among women’s standard of living in Peru varies greatly and depends entirely on their geographic locations, ethnicity and source of livelihood.

4.2.1 The Condition of Rural and Peasant Women in the Peruvian Context

According to FAO (2005), women’s position in rural areas of Peru is ‘sad and painful’. They constitute the ‘last step on the ladder’ where urban males occupy the first place, and then urban women followed by rural men (FAO, 2005). Peasant or indigenous women have the lowest educational level and the highest rate of illiteracy. Trivelli
(2004), reports that female heads of peasant households have an average of 2.7 years of schooling in comparison to 7.3 years among non-indigenous women (Atal et al. 2009). They also have less access to resources and health care services (FAO, 2005). The lack of basic infrastructure and access to services like health, isolation and language barriers exacerbate education (Hall et al. 2006). The weakness of social organizations that can help to facilitate access to services and markets is an additional factor that seriously affects livelihoods in the Andean region, especially for indigenous women (Diez, 2001). Rural women in general are considered to occupy a weak position in public spaces such as community assemblies and boards (Atal et al. 2009). Women are often excluded from political processes while leadership positions are reserved for men. It has been recognized that there is not enough information on the relationships and conditions inside peasant and rural households (Trivelli, 2004) and there is limited understanding of how power is divided between the different household members and what determines the level of influence each household member possesses (Wiig, 2012).

Peasant women do not only suffer invisibility inside their communities, they also suffer different forms of subordination and ethnic and racial discrimination in Peruvian society that paradoxically contrast with the state’s commitment to a discourse of equality, democracy and equity founded in its concepts of citizenship and political organization. In that context, physical and biological characteristics like hair colour, dress, language and the culture to which they belong are associated with discrimination, devalorization and exclusion (INEI, 2010; Manuela Ramos, 2011). Francke (1990) utilizes the image of a ‘braid’ in which the three components explain the situation of women. Two of them (class structure and ethnic stratification) are intertwined, while the third component of gender subordination is invisible (Francke, 1990). These are directly related to two fundamental considerations: the perception about peasant women inside their socio-cultural context and an appreciation of their lack of genuine empowerment. In the socio-cultural context, it is peasant women who suffer more discrimination than peasant men because of their education, language and dress (Diez Hurtado, 2010). Studies of gender relations in the Andean region of Peru reveal the image of gender systems in which pre-Hispanic and recent indigenous elements are integrated into Western culture. The
existence of hierarchies ensures that women retain subordinated positions legitimized by cultural domination, social processes and structural relations (Bourque et al. 1981).

These forms of male and cultural hegemony are observed in practical ways. For instance, peasant married women are generally involved in mothers' clubs, giving talks on nutrition, family planning and other responsibilities that fit with the traditional role of caregiver (Garavito et al. 1997). The idea that men represent the households unless women are widowed or separated is strongly defended by hegemonic practices such as community leadership. Some women work outside the home to increase family income, and tend not to see these activities as work but only as a contribution to the family (Garavito et al. 1997). Also, peasant women rarely hold positions of authority, although they have worked effectively in women's committees organizing for better quality of life (FAO, 2005). Such forms of discrimination are not only expressed inside the household (family violence), but in the political sphere, restricting rural women’s access to decision-making and silencing their voices. In the period of 1990 – 2000 and under Alberto Fujimori’s government, there were two major events affecting peasant women that left negative impressions on their lives, and in turn forced massive migration to the cities and abandonment of entire peasant communities. The ‘Plan Verde’ implemented a policy of forced sterilizations promoted through paternalistic giveaways (free food) and threats of coercion leading to more than 300,000 men and women being sterilized. Second, women in the highlands suffered widely from terrorist violence due to the extreme actions of both the military forces and the terrorist groups (Shining Path and the Tupac Amaru terrorist movements) (Franco Valdivia et al. 2009). Peasant women were sexually abused and their children mistreated. There were forced disappearances of family members, tortures and extrajudicial executions from both sides (Comisión de la Verdad y Reconciliación, 2003).

Over the past decade, women’s rights activism has pressed for changes in access and control of land, property, housing and economic resources, often with the help of international organizations. The United Nations Convention on the Elimination on all forms of Discrimination Against Women (CEDAW) in 1981 pressed Peru to review its Civil Code. In 1984, a new Civil Code directed that men and women have the same rights, responsibilities and functions inside the household and that both men and women
are those who equally and legally can act as representatives for the family (de la Cadena, 1991).

One of the most important changes has been the Special Land Titling and Cadastre Project (PETT’s in the Spanish acronym). This policy initiative formalizes existing informal property rights. PETT started to issue joint titles to couples for individual agricultural parcels nearly two decades ago. This unique redistributive policy intervention could potentially empower and benefit women as well as ignite change in gender norms within the affected communities (Wiig, 2012). In practice, however, there is a huge gap between obtaining formal land rights and the actual distribution of benefits by sex (Deere et al. 2002). The problem involves many complications, to the extent that most of the women in the highlands lack basic personal identification known as the National Identity Document (DNI). The problem of undocumented rural women is quite complex because of the barriers they confront in obtaining their identity cards. These range from economic factors (high cost of processing fees) to women’s lack of motivation. An additional barrier to obtaining the required documentation is the Military Identification Card (*libreta military*) as a prerequisite to the National Document of Identity (DNI’s in the Spanish acronym) (FAO, 2005). Consequently, women may feel they have not option but to become part of the 'invisible population'.

Despite the fact that women in rural areas are key to agricultural activities and seed preservation, land tenure is still a major obstacle. Inside the communities, women are not considered to be agriculturalists (Deere et al. 2002) and a small proportion of women is considered farm managers (Barrig, 2006). In rural areas of Peru men still believe that they are the principal contributors of fieldwork while women are only helpers (De la Cadena, 1999). Differently from men, women work in the fields and inside the household in their ‘traditional’ activities (e.g. housework, food processing) (FAO, 2012). In addition to their reproductive work, women are actively involved in a range of farming tasks that span almost the entire production cycle (FAO, 2012). Participation of women is equal to that of men in planting and higher during the harvest and post-harvest activities. This is understood not in the urban sense, such as cooking, washing, caring for children, but is extended to the care of animals, plants in plots near the house, and petty trade activities - productive work that is not recognized as such (FAO, 2012).
In addition, the literature is uncertain on the degree of separation of moneymaking and management of financial accounts between the spouses (Barrig, 2001). It is clear that female ownership in low levels in relation to land is the main explanation to credit-constrained opportunities (Ferm, 2008). Other limitations they encounter in formal financial services are due to processing and loan costs, lack of education, social and cultural barriers, the informality of their trading activities, and collateral requirements, such as land titles (Alvarado et al. 2004). The National Household Survey from INIE-ENAHO PERU (2001) shows that it is only 12 per cent of the rural population that has access to credit, and from this group only 3.5 per cent are women. In some cases rural women have been favoured by local NGOs that value women’s social networking and/or their communal banking facilities to employ group strategies in order to return loans. Still, in many of these cases, even women who have access to the loans find that it is men in the household who ultimately control the money (Alvarado et al. 2004).

Women in agriculture in the Andes are less exposed to extension services and male-female representation is culturally restricted (Alvarado et al. 2004). Male extension workers often provide information and knowledge services to men (producers, peasants and leaders) on the mistaken notion that the trainings will ‘trickle across’ to women (Alvarado et al. 2004), often, responsibilities and constraints that women face are ignored in the message (FAO, 2005). As women are less educated and access to knowledge in their mother tongue is rare, technical information can be a scarce resource for rural women. In general, women face challenges in changing agricultural R&D because they have less access to training and formal leadership positions in agriculture inside their communities as men are socially positioned to represent women in the community and at political levels (FAO, 2005).

Agricultural extension in many countries is also accessed through Information and Communication Technologies (ICTs). Sex-disaggregated information on ICTs was difficult to obtain. The only source is the National Household Survey (NHE) carried out by INIE-ENAHO PERU in 2002. It reports household expenditure on telephone and Internet expenditure. Eight per cent of households in the country have access to these technologies and less than one per cent of the rural population can make use of these services. Only 0.4 percent of rural women have access to ICTs and this finding is
supported by ELAC’s report (March, 2012) that ICT is almost non-existent in rural Peru.
The report states that the rural population of Peru has fewer opportunities to use digital
technologies in comparison to their urban counterparts whether at home or in telecentres,
cybercafés, schools or the homes of friends or relatives (ELAC, 2012).

4.2.2 Andean Peasant Communities

For some authors, a peasant or Andean community descends directly from the pre-Inca Ayllu, whereas others argue that the Andean community is the result of Spanish colonialism when Indians were forced to serve the colonial state (Pease, 1995). Most modern academics, however, embrace the assumption that a peasant community is a product of the blending of Andean and Spanish influences, with additional fundamentals of the Republican period (Nuñez 1995). In the colonial era, the indigenous population in the Peruvian Andes lost most of their ancestral lands terratenientes or hacendados (landlords). As a result of the Spanish invasion, the Andean or indigenous people had to move to the highest and poorest regions in the mountains in order to survive (Peyser et al. 1994).

The constitution of 1919 legalized the registration of communal lands and the constitution of 1933 allowed peasant communities to attain legal recognition as ‘indigenous communities’ (comunidades indígenas) (Smith, 1989, Del Castillo, 2006). The registration granted a community the protection and demarcation of its land and resources (mainly labour) that were previously on the hands of villages and haciendas (Samaniego, 1978). The first registration of five indigenous communities in Peru took place in 1926 and today around six thousand comunidades campesinas (INEI – Peru, 2012; del Castillo, 2003) are officially registered with a population of approximately two million peasants living inside these communities (INEI, 2012). A system of local management with their own economic and cultural institutions and specific sets of rules and punishments (Trivelli, 1992) was established inside the Andean communities as a justification of the state’s absence. This type of self and autonomous government follows the principles of the indigenous system of customary law that goes separately from state law (Urrutia, 1992).
Dramatic changes occurred in the 1970s when Juan Velasco’s land reform programs, rural cooperatives as well as agrarian companies of social interest (Sociedades Agrícolas de Interés Social) were established (Eguren et al. 2009). The majority of the Andean communities were disappointed because they were not direct beneficiaries of land tenure. A formal association governed by an external official managed the land (Del Castillo, 2006). Since the land reform of the 1970s the official name of indigenous communities (comunidades indígenas) changed into peasant community (comunidad campesina) (Del Castillo, 2006). A peasant community’s main attribute is that it preserves its own cultural mechanisms of organization, which are established on traditional knowledge (Urrutia, 2003). These are the outcome of the interaction of humans with different components of biodiversity, which, in turn, assists them to evade over-exploitation (Mariategui, 1928; Castro Pozo, 1979). The participation and contribution of women to the community is crucial because they become exclusively responsible for most of the activities involving the Nature/Nurture bond (Mayer et al. 1989).

Female producers in the highlands and especially in peasant communities not only play a decisive role in their households’ food security (Tapia et al. 2000), but also perform a significant position in the management of seeds and provision of food (Tapia et al. 2000). Women select the seeds based on the crops’ in-situ morphological and yield interpretation, food quality and crop yield, processing, and resistance to plagues, drought or floods (Tapia et al. 2000). Management of seeds is part of the management of risks in communities where climate stress is more frequent and intense (De Haan, 2009).

In peasant communities, it is the women who are able to calculate how many seeds are needed for the surface of a given field (Tapia et al. 2000). Knowledge and skills are passed on dynamically from generation to generation and these actions have long subsisted outside public and private sectors, R&D and agricultural extension systems (Tapia et al. 2000).

4.3 The Papa Andina Initiative

Papa Andina is a regional initiative anchored by the International Potato Centre (CIP) and generally supported by the Swiss Agency for Development and Cooperation (SDC) and later by New Zealand Aid Program and the McKnight Foundation. The initia-
tive fosters pro-poor innovation in market chains to improve food security, market access and reduce poverty for peasant producers in the highlands (Horton et al. 2011). Throughout its development, Papa Andina struggled with the central challenge that international agricultural R&D organizations also confronted, which was operating a scientific research program that would generate high-quality international public goods while at the same time contributing to sustainable local development and poverty alleviation (Devaux et al. 2011). Agricultural R&D is viewed as the main driver of technological change and agricultural development but with the advent of the concept of innovation it is now understood as one among many sources of technological change (Biggs, 1990; Hall, 2009). For agricultural R&D to benefit the rural poor, it needs to be linked to practical improvements in value chains affecting small farmers.

In this context, Papa Andina focused on ‘agricultural research for development’ and it shared conceptual links to the late 1990s New Paradigm Project of the International Service for National Agricultural Research (ISNAR), which proposed a theoretical framework for understanding, and managing institutional and organizational change processes in agricultural systems. The framework emphasized the growing role of urban and global markets in driving agricultural change and the need for research organizations to understand the changing global context and to respond appropriately to shifting demands for agricultural research and related services (Horton et al. 2011). Results from this project, and many similar initiatives which applied innovation system concepts, have found that connecting research with action is more effective at all levels of the system (Thiele et al. 2007; Devaux et al. 2011).

The Papa Andina initiative worked with strategic and operational partners in three countries: “the Foundation for Promotion and Research on Andean Products (Fundación PROINPA) Bolivia; the National Agriculture Research Institute (INIAP) Ecuador and the Project for Innovation and Competitiveness of the Potato (Proyecto INCOPA) Peru, a coalition of private and public organizations” (Devaux et al. 2010: 13; Devaux et al. 2011). Innovation processes were facilitated in potato market chains by involving small-scale farmers with researchers, agricultural service providers, policy-makers and market agents (Horton et al. 2011). The role of the Coordination Team as Devaux et al. (2010: 6) state was,
“...that of a ‘second-level innovation broker’, supporting and backstopping the national teams, facilitating learning and knowledge sharing among them, and encouraging the co-development of approaches and methods for improving innovation-brokering processes at national and local levels” (Devaux et al. 2010:6).

Although Papa Andina was originally set up as an applied regional research project, it developed into a diverse and decentralized knowledge brokerage and innovation, facilitating networks based on CIP’s long standing experience with participatory approaches for on-farm research (Thiele et al. 2011). The new element for CIP was to engage multiple stakeholders to work with markets (Thiele et al. 2011). Its focus shifted from research to brokering and supporting innovation processes with local action, innovation, and development in the public and private spheres (Thiele et al. 2011). CIP worked hand in hand with the development and application of new approaches through the sharing of both tacit and explicit knowledge.

Improving knowledge systems requires fundamental changes not only in the knowledge and skills of individuals but in their attitudes and habits (Horton et al. 2010). Individual and organizational learning is necessary to bring about changes in knowledge, skills, and especially attitudes, behaviours, institutional and organizational procedures which in turn require the development of trusting interpersonal relationships through the application of participatory approaches (Horton et al. 2011). Over time, Papa Andina developed a number of new R&D approaches (The Participatory Market Chain, Multi-stakeholders Platforms and Horizontal Evaluation) (Devaux et al. 2011) to facilitate pro-poor innovation in market chains.

The PMCA is based on a participatory action approach to stakeholder collaboration in agricultural R&D known as Rapid Appraisal of Agricultural Knowledge Systems (RAAKS) (Engel et al. 2003) (Devaux et al. 2010), and designed to “identify business opportunities in market chains that are important to small farmers; develop economically viable ways to exploit these opportunities and benefit small farmers as well as other market chain actors” (Devaux et al. 2011:110).
According to Horton et al. (2010:1) the Participatory Market Chain Approach also;

“...requires researchers and development professionals to work in new ways with diverse stakeholders, including not only small farmers but also market agents and policy makers, its successful introduction requires an intensive capacity-development process that fosters the development of social networks, changes in attitudes, and the acquisition of social as well as technical knowledge and skills (social learning and social capital formation) in locally relevant agricultural chains” (Horton et al. 2010:1).

These aspects support the improvement of communication, build trust, and nurture joint activities that stimulate commercial, technological, and institutional innovation around new business opportunities through a three-step process (Bernet et al. 2011). These phases are: “1) familiarization with the market chain and the key actors; 2) joint analysis of potential business opportunities and; 3) Development of market-driven innovations (Bernet et al. 2011)” cited in Horton et al. (2011:71).

At the same time, Papa Andina’s work began with multi-stakeholder platforms, in some cases to facilitate innovation processes, in others to improve coordination along market chains (Thiele et al. 2009) (Thiele et al. 2011). Multi-stakeholder platforms are spaces and events where public and private stakeholders interact, share reciprocal interests, build trust, and join in common initiatives (Thiele et al. 2005). Often such platforms are developed as a result of PMCA and continue after the approach has been implemented; in other cases, the PMCA works through platforms that already exist (Devaux et al. 2011). Multi-stakeholder platforms were first proposed in the context of natural resource management where a group of stakeholders share a common resource such as water access in a river basin (Röling et al. 2002). The use of the concept in the context of market or value chains is less common and has hardly been discussed in the literature. A recent overview of collective action for small farmer market access gave particular consideration to small farmer organizations, but did not mention platforms (Markelova et al. 2009). In a market chain context, platforms may perform two somewhat different but interlinked functions. First, they create a space for learning and joint innovation. Second, they provide a coordination function within the market chain to reduce cost. Each of these functions can be linked to separate bodies of literature (Thiele et al. 2011).

Papa Andina worked with two singular and effective forms of multi-stakeholder
platforms in a market context, and both have been effective, as Thiele et al. (2011:187) state;

“The first was platforms structured along market chains that bring farmers and their associations together with traders, processors, supermarkets, researchers, chefs, and others to foster the creation of new products with greater possibility of added value for small farmers, and pro-poor innovation (Devaux et al. 2009). The second platforms structured around geographically delimited supply areas, has also addressed market coordination problems in assuring volumes and meeting quality and timeline constraints associated with a supply chain made up of many dispersed and peasant producers. They also address coordination problems in the subsidiary markets for support services and complementary inputs, bringing NGOs and others in to provide technical support or access credit” (Thiele et al. 2011:187).

As these two approaches were underway in each country, the program needed a means to share and learn from the diverse experiences. For this purpose, a participatory evaluation approach, known as ‘horizontal evaluation’ was developed (Thiele et al. 2011). Through the work at the farm and market chain levels, it became clear that public awareness and advocacy were also needed to achieve large-scale impacts, and work began in these areas (Ordinola et al. 2008). As large companies began to show interest in processing native potatoes, Papa Andina also began to work in the area of corporate social responsibility (Thomann et al. 2009).

During the work to improve the participation of small farmers in high value market chains, new priorities for technological research emerged, which were addressed through applied research for sustainable technological innovation (Horton et al. 2011). In order to ensure that powerful groups that did not capture all the benefits of Papa Andina’s work, it also began to work on empowerment and gender, opening up aspects that were initially assumed to be gender neutral in the project (Thiele, 2012 personal communication).

A key feature of Papa Andina is that it brings together many participants in the PMCA and innovation system, including smallholders, market agents, and agricultural service providers, many of whom did not know one another or who actively distrusted one another (Meinzen-Dick et al. 2009). The initiative helps to identify new opportunities for all of these stakeholders to collaborate and innovate. Papa Andina recognizes that
gender analysis and female farmers’ active involvement in assessing innovation processes and systems are central to developing sustainable, profitable agricultural market chains that are well integrated into the wider innovation system (Sarapura, 2012). In turn, this system-level integration is important for gender equality and the empowerment of resource-poor women and their families. Each phase of the PMCA incorporates specific gender related assessments and activities as explained on (Table 4.1) (Sarapura, 2012).

**Table 4.1: Three Phases of the Participatory Market Chain Approach and Stakeholder Platform**

<table>
<thead>
<tr>
<th>Phase</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase I</td>
<td>Family and community competitions for innovation integrating gender sensitivity training. During this phase stakeholders are identified and grouped.</td>
</tr>
<tr>
<td>Phase II</td>
<td>Bring female and male small-scale farmers representing different communities of the region, market agents, and agricultural service providers who don't know each other or who distrusted one another together to share their findings, customs and discoveries with other members of the system (Stakeholder Platforms). Support from research and development institutions and NGOs key for success.</td>
</tr>
<tr>
<td>Phase III</td>
<td>Continued knowledge sharing and Stakeholder Platforms for further technical and institutional innovation at the national and international levels. Small - scale farmers have the opportunity to display their products and genetic material. Women have the chance to interchange or buy tubers from other groups. Strong presence of women and men in fairs and events outside their communities (regional and national) to show their work. At this level, individual women farmers have gained confidence not only to integrate themselves into new and extended networks of information and knowledge sharing, but also to exchange new and potential varieties cultivated in other areas of the Andes (human capital). Women and men small farmers have gained individual and collective capacities and skills for communication, negotiation, facilitation and teamwork. Propitious social learning environment through collaborative work strengthened their social learning (social capital). When working effectively, market chains empower especially poor and socially excluded women farmers who otherwise have little opportunity to participate and make decisions. Women have the chance to interact with other market chain actors and professionals from research and development organizations increasing their access to knowledge, innovation, contacts and self-development (self-confidence, self-esteem and self-reliance).</td>
</tr>
</tbody>
</table>

Source: Sarapura, 2012

Flexibility in the duration of each phase and in the use of specific tools (quantitative surveys, focus groups, and so forth) is necessary (Bernet et al. 2006). Both the PMCA and stakeholder platforms facilitate the articulation of demand and supply for innovation-linked services and reduce transaction costs in marketing the produce of many small far-
mers (Bernet et al. 2008). In the Andes, PMCA has been validated in two complete cycles (2003–04) both in Peru and Bolivia (Horton et al. 2011). The method has been shared with other organizations in these countries, which has led to further testing. In Peru, the Intermediate Technology Development Group, an international NGO, subsequently used the method in the cheese, coffee, and cacao subsectors. Starting in 2005, PMCA was introduced and tested in potato, sweet potato, and vegetable commodity chains in Uganda (Horton et al. 2011).

4.3.1 The Papa Andina Initiative in Peru

In Peru, INCOPA works through local partners (CIP-INCOPA, FOVIDA and CAPAC PERU), in the Andes or highlands: Ancash, Junín, Huánuco, Cajamarca, Cusco, Pasco, Ica, Huancavelica, Apurimac, Ayacucho, and Puno (Ordinola et al. 2011). The model operates on three main levels. The first is the market chain approach (widespread in recent years), which focuses on contact among all the different actors in the market chain. The second area is research for development, which channels all this information so that research institutions – CIP, research centres, and universities – can respond to what the markets require with a view to improving competitiveness. Finally, policy influence makes it possible to scale up results, and to generate trends that may enable policymakers – ministries, regional and local governments – to adapt their actions and promote others that have already been approved at the different levels. These three major fields of action are synergetic (Ordinola et al. 2011).

In the Regions of Junín and Huancavelica, Papa Andina works collaboratively with FOVIDA (Life Fund), a second-level broker for social, economic, and technological development with an orientation to provide highly specialized services for the development of market chains of potato and other tubers which are cultivated in the highlands of Peru. FOVIDA has been part of the CAPAC Cadenas Productivas Agrícolas de Calidad platform that was established after cycles of PMCA that had already led to other commercial innovations and there was a perceived need for a more permanent forum to support the innovation process. These platforms engaged private sector market actors as either members or partners for innovation (Thiele et al. 2009). In this framework, both FOVIDA, an NGO with extensive experience in promoting pro-poor market chains) and CAPAC PERU (a stakeholder platform that has covered part of the Region of Junín and Huan-
cavelica) have been connecting peasant producers to new international and national markets (Devaux et al. 2007). CAPAC interacts with some private sector actors as members (formal membership) and others (Snacks Latin America, Tottus and Wong) as partners.

Even though there are only five certified varieties (Compis, Peruanita, Huayro, Tumbay and Amarilla), there are other varieties that are extensively cultivated for commercialization (e.g. Amarilla Runtus, Puca Huayro, Duraznillo, Huamantanga, Ishcopuro y Puca Camotillo, Sumacc Soncco, Ceeccorami, Putis and Tarmish) and 15 other varieties multiplied by the producers’ associations and FOVIDA in order to be tested in the near future. Furthermore, producers maintain approximately more than 400 varieties (De Haan, 2009). In addition, INIA (Instituto Nacional de Innovación Agropecuaria) maintains an in-vitro collection of 18 pathogen-free native potato varieties, which was multiplied in Huancayo for the NGO ADERS Asociación para el Desarrollo Sostenible, to be used for the industry and fresh consumption. “A FONTAGRO project is supporting the evaluation of the processing aptitude of 12 native varieties for chips and for mashing potatoes” (Hidalgo et al. 2011: 327). The services provided by FOVIDA and CAPAC PERU fall into two categories: 1) capacity building in production and post-harvest management, organization and business management in order to increase farmers’ productivity and competitiveness with a criteria of environmental sustainability. 2) business services, including legal representation of small-scale individual or organized farmers, contract management, and credit for inputs and transport.

The services are provided on a non-profit basis as an initial investment in the setting-up and consolidation of a new, inclusive market chain. They are financed by development cooperation funds from Switzerland, New Zealand, and the USA, and draw upon technological and methodological expertise from CIP for Farmers Field Schools (FFS) and Integrated Crop Management (ICM) practices) and the National Institute for Agricultural Innovation (INIA). Particular care is taken to make the corresponding costs visible to both farmer organizations and the agro-industry. There is a shared plan to transfer them to market chain actors as business develops (Thomann et al. 2011).

Furthermore, FOVIDA is supporting capacity development and enhancement of production by peasant producers, motivated by their aspiration to supply the industry, and
they have obtained an increase in average yield from 6 to 12 metric tons per season as a result of an adequate use of inputs (Thomann et al. 2011). As a result, FOVIDA is enabling the Management Committee of Producers in Junín and Huancavelica known as COGEPAN (Comité de Gestión Productores de Junín y Huancavelica) to make arrangements for the incoming agricultural season. The board assumes the negotiation process with the companies or supporters of Papa Andina (for example: Snacks Latin-America, Larga Vida para la Papa, Libiak Investments, Z & ALFA, Del Ande, Roky's, Plaza Vea, among others) to supply the native potatoes production (Huaman, 2011 personal communication). In this way, demand is defined and production is arranged.

In effect, COGEPAN, FOVIDA and partners organize the planting and harvest season per zones, the establishment of the management committees, the structure of production costs, price proposals, financing mechanisms and the hiring of a commercial articulator in order to advise on contracts. Additional tasks are arranging the quotas for each partner organization, the provision of land and financing according to the peasant community, the distribution of tasks for the operating committees, signing contracts and/or agreements and finally marketing of the native potatoes (Huaman, 2012 personal communication). Papa Andina and the innovation processes and partnerships to which it has given rise are the context of this study and an important initiative for both technical and institutional change in smaller agriculture in Peru.

Summary

In this chapter, the ecological, economic, social, political and cultural setting of the Central Andes of Peru was briefly described. A general definition of peasant communities and the situation of peasant women in statutory and customary laws were highlighted. Finally, an introduction to the Papa Andina Initiative, in which the market chain of native potatoes is functioning, was provided. In the following chapter a specific focus on the peasants both in and outside the Papa Andina Initiative is discussed.
CHAPTER FIVE

PROFILE, SOCIO-ECONOMIC AND DEMOGRAPHIC INFORMATION OF PARTICIPANTS

5.1 Introduction

Chapter Five presents the comparative description of the profile, socio-economic and demographic information of the case study, which involves those producers who are members of COGEPAN and the Papa Andina Initiative for participatory market chains. This chapter also examines peasants who are not part of the Papa Andina Initiative. They are positioned as a general comparison or control group referred to here as NON-COGEPAN. These producers are self-organized as Peasant Communities’ Associations. The information presented here is extracted from the household survey, semi structured interviews, participatory tools and participant observation as documented in the researcher’s reflective journal. Data were generated from the quantititative information obtained from the survey and the focus groups discussions. The quantititative data were analyzed using SPSS 19. Data collected through the surveys relate to female and male participants representing the household in either the COGEPAN or NON-COGEPAN groups. The information generated from data analysis (Appendix 6) was summarized and presented in this chapter. Qualitative data were analyzed using thematic grouping of the data and open and selective coding. Findings presented in this chapter focus on both groups, especially with respect to access to resources. This is a general overview of the peasant producer’s context in order to highlight similarities, differences and trends between the COGEPAN and NON – COGEPAN groups.

5.2 Research Communities

The research study was carried out in the Central Andes of Peru involving six peasant communities located in the Regions of Junín and Huancavelica (see also Figure 4.1). The two groups nominally identified within the population are referred to as the case study group (COGEPAN) and the control group (NON-COGEPAN) (Table 5.1).
Table 5.1: Physical Description of the Communities Involved in the Study

<table>
<thead>
<tr>
<th>Producers Associations</th>
<th>Region</th>
<th>Province</th>
<th>District</th>
<th>Village / Peasant Community</th>
<th>Altitude (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Case Study – Papa Andina Initiative (COGEPAN)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Association of Peasant Producers of Chuquitambo</td>
<td>Huanacvelica</td>
<td>Tayacaja</td>
<td>Pazos</td>
<td>Chuquitambo</td>
<td>3,500 – 4,800</td>
</tr>
<tr>
<td>Association of Peasant Producers of Pomamanta</td>
<td>Junin</td>
<td>Concepcion</td>
<td>Comas</td>
<td>Pomamanta</td>
<td>3,500 – 4,200</td>
</tr>
<tr>
<td>Association of Peasant Producers of Atacocha - Chicche</td>
<td>Junin</td>
<td>Jauja</td>
<td>Apata</td>
<td>Chicche</td>
<td>3,500 – 4,600</td>
</tr>
<tr>
<td><strong>Control Group – Peasant Communities from the Alto and Bajo Tulumayo watershed (NON-COGEPAN)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conservationist Association of Peasant Producers – Racracalla</td>
<td>Junin</td>
<td>Concepcion</td>
<td>Comas</td>
<td>Racracalla</td>
<td>3,800 – 5,000</td>
</tr>
<tr>
<td>Conservationist Association of Peasant Producers - Maryanioc</td>
<td>Junin</td>
<td>Concepcion</td>
<td>Comas</td>
<td>Maryanioc</td>
<td>3,400 – 4,600</td>
</tr>
<tr>
<td>Conservationist Association of Peasant Producers - Achin</td>
<td>Junin</td>
<td>Concepcion</td>
<td>Comas</td>
<td>Achin</td>
<td>3,600 – 4,800</td>
</tr>
</tbody>
</table>

The villages or peasant communities involved in the study are situated at elevations ranging from 3,500 (Quechua ecological zone) to 4,000-4,800 metres above sea level (Puna ecological zone) (Table 5.1). Households depend primarily on small-scale agriculture, in which native potato production is the principal activity. Additionally, they diversify activities in other agricultural and livestock activities and various types of regular or casual employment. There are, however, resource-poor communities. The poverty level in the Region of Junín was reported at 32.5 per cent in 2010, with 13.8 per cent extreme poverty. Chronic malnutrition in the poorest mountainous areas affects nearly 50 percent of the population (INEI, 2010). In the Region of Huancavelica the situation is much worse; 88.7 per cent of the population lives in poverty and 72 per cent in extreme poverty (UNDP, 2007). Communities involved in the study were selected on the basis of tradition of potato cultivation, ethnicity, and relative distance from major...
markets or cities. The selection of Junín and Huancavelica also reflected variation in the levels of poverty associated with these rural communities.

Geographically, the specific villages or communities of Achin, Racracalla, Maraynioc, Chicche and Pomamanta are located in the Region of Junín and closest (180 kilometres approximately) to the main commercial cities of Concepcion and Huancayo (Region Junín, 500,000 inhabitants). The communities interact frequently with these major urban markets, though access and transportation are difficult in this mountainous area. The community of Chuquitambo is located in the region of Huancavelica closer to the town of Huancavelica (40,000 inhabitants) and recognized for the numerous native potato cultivars grown by its farmers. All of these communities regularly trade and commercialize their products with surrounding towns and communities of Huancavelica and Huancayo. All communities are organized as semi-autonomous indigenous communities (comunidades campesinas) managed by a locally elected president (Government of Peru web site, 2012).

5.2.1 Profile of Participants

The number of peasant producers working in the market chains is still small in comparison to the population that cultivates native potatoes. Of the households, 17.3 per cent of producers participate in the market chains of native potatoes while 83.6 per cent have not yet been part of any market chain of native potatoes. Men constitute 77.3 per cent of the total of respondents compared to women who represent only 22.7 per cent of the total (see Appendix 6, Table 1). In spite of this, the trend is that once producers become involved in formal market chains like the Papa Andina initiative, women producers are more numerous when compared to men’s involvement (see Appendix 6, Table 1). A main characteristic of the market chains is that men and women producers are well distributed across different age groups and there is no substantial difference in age ranges. In the NON-COGEPAN cluster, the majority of participants were mature and older (between 41 to 50 years old) (See Appendix 6, Table 3). In this group, a high incidence of men without knowledge of their age was found (4.8 per cent) (see Appendix 6, Table 3).
While women’s marital status was very different between the two groups, men’s status was alike. In COGEPAN, married women predominated (41.6 per cent) (see Appendix 6, Table 4). In the NON-COGEPAN group, 10.4 per cent single mothers and 6.0 per cent were female widows in comparison to 48.4 per cent to married men (see Appendix 6, Table 5). Furthermore, diverse types of household composition were found in the study: household units included nuclear family households (parents with children); single-female parent nuclear family households (one female parent with children); and extended family households in COGEPAN and NON-COGEPAN groups. Other similarities between both groups were perceived. Female respondents in both groups reported five or more children per household (COGEPAN – 36.1 per cent; NON-COGEPAN – 14 per cent) (see Appendix 6, Tables 8 and 9). In addition, female-headed households were just about similar in both groups, in the COGEPAN group (5.6 per cent) and in the NON-COGEPAN group (5.5 per cent) (see Appendix 6, Table 10 and 11).

5.2.2 Context of Participants

This section presents the findings on peasant producers’ entitlement to several components that are critical for achieving agricultural productivity: 1) access to education, 2) access to resources, 3) institutional support, 4) access to agricultural extension, 5) access to land and control over land, 6) access to credit and financial services and finally, 7) access to markets. Although women are able to claim many of the same rights to these resources under statutory laws, in practice and under customary laws, men are better positioned than women to access and act on these factors of production. In addition, and above all, results from the study reveal women and men peasant producers are at a disadvantage in relation to the rest of the population of Peru.

1) Access to Education

As indicated above, formal education is not accessible for many peasant households. The results from the survey indicate that respondents from both groups (COGEPAN and NON-COGEPAN) have had little or no formal education (see Table 5.2).
Table 5.2 Formal Education of Respondents

<table>
<thead>
<tr>
<th>School Grade</th>
<th>COGEPAN (n= 36)</th>
<th>NON-COGEPLAN (n= 184)</th>
<th>Total (n= 220)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>&lt; 1 (no schooling)</td>
<td>1</td>
<td>2.8</td>
<td>3</td>
</tr>
<tr>
<td>Grade 1 - 3</td>
<td>3</td>
<td>8.4</td>
<td>9</td>
</tr>
<tr>
<td>Grade 4 - 6</td>
<td>9</td>
<td>25.0</td>
<td>8</td>
</tr>
<tr>
<td>Grade 7 - 9</td>
<td>2</td>
<td>5.6</td>
<td>0</td>
</tr>
<tr>
<td>Grade 9 -12</td>
<td>1</td>
<td>2.8</td>
<td>0</td>
</tr>
</tbody>
</table>

Men in COGEPAN went to school up to grade 6 (25.0 per cent), while men in NON-COGEPLAN (42.3 per cent) did not go to school. On the other hand the majority of women in COGEPAN accomplished their education up to grade 3 (25.0 per cent), whereas women in the NON-COGEPLAN group (5.9 per cent) had no education. In the focus groups discussions and in the video-mediated interviews, female and male participants complained that people from Lima and politicians have not yet understood women and men from the highlands and what their world offers to the Peruvian society and this is the reason why communities do not have schools and other public services. They perceive that the Peruvian government and policy-makers have ignored them for decades and this action has left them in poverty and exclusion with high levels of illiteracy.

We need to have more opportunities and access to commercialize our products. I have been cultivating native potatoes for more than 30 years and we have never had the opportunity to meet people from the government; they never come here to see our realities.

Female participant, 37 years old, COGEPAN

From all the six communities involved in the study only the community of Racracalla has a primary and secondary school. Meanwhile COGEPAN and NON-COGEPLAN communities do not have schools and, in most of the cases, children have to
walk to other communities/towns or move away in order to receive some type of elementary and secondary schooling.

Women and men involved in the study think that education and transport services are closely linked. For example, in Chuquitambo (COGEPAN), public or private transportation is very limited and students have to attend the only school (Grade 1 to Grade 5) close to the community, which is in the district’s capital, Pazos. Students who want to attend higher education have to live in the nearest cities (Pazos, Huayucachi and Huancayo). Families are separated because parents have to stay in the community and take care of their fields while youth live by themselves in rented rooms.

It was observed that some young women face inequality and discrimination within their households, which requires them to assume responsibilities early in their lives and leave their studies. In Chicche (COGEPAN), the wife of one of the leaders brought to light the conditions of young women in the highlands by narrating her oldest daughter’s story as follows;

I am the president’s wife and I help him in all activities he is involved in the house, association and the community. In the field, my children and me help my husband; we have to work very hard every day. I have 8 children. I wish my children would be in school. Unfortunately, we cannot send them to school because we do not have money to support their education.

My daughter is 15 years old and lives up in the mountains with my 2-year-old son. We have to walk 5 hours to reach the place where she is. She takes care of the alpacas and llamas there. We have the animals there because we have natural pastures and water for the whole year. We only bring here to my house the llamas that are ready to transport the seeds and harvest. My girl likes doing that job. She stays there 6 days a week and comes back every Saturday in the evening, because she attends night school in Concepcion, she is in grade 5. She has to travel one hour by truck to reach Concepcion. Then, every Sunday morning she comes back to the mountains carrying out her groceries and things she will need for the week.

When she is in the mountains, she only looks after the animals by taking them to the fields. She makes sure thieves do not steal the animals. ‘She is the only one there’. We do not have older male children; it is the reason we have to send her there.

Peasant women, 45 years old, COGEPAN
It was found that some young women in COGEPAN feel the necessity to get more education so they take advantage of evening or weekend schools in the main towns where they learn there to write and read. They believe that if they get more education they will be able to improve upon their parents’ production and commercialization of native potatoes. It was also noted that women participating in COGEPAN receive training in basic banking (opening an account, signing contracts and cheques, doing basic economic and financial transactions).

2) Access to Resources

Resources are intricately linked to Andean livelihoods in Peru and particularly in the central highlands where peasant communities subsist. For that reason, an analysis on the issue of resources access and benefit sharing is needed as it relates to gender. Andean women’s access to and control over resources is critical for the achievement of equitable and sustainable development and poverty reduction. Gender equality in the distribution of resources has positive effects on eradicating deeply entrenched inequality as a result of discriminatory norms and practices. Cultural and traditional inequalities in the gender distribution of resources place Andean women and men at a disadvantage relative to the rest of the Peruvian population, particularly in their capacity to participate in, contribute to and benefit from broader processes of political and social life in the country. Women continue to be absent from key decision-making processes shaping the allocation of resources and opportunities, which further perpetuates gender inequality. On the other hand, women engaged in the market chain approach have started to slowly overcome some of the cultural and structural impediments to have access to opportunities and resources other women in the highlands are still confronting. However, as discussed earlier, women in COGEPAN are emphasizing new opportunities that place them in different positions that may affect their traditional forms of living.

In Annex 1, the quantitative information obtained from the participants from the two groups (COGEPAN and NON-COGEPAN) is summarized. Women and men from both groups made clear that they lack access to most of the resources and basic public services available to people in other areas of Peru. Participants stressed the importance of resources such as water, information and communication, roads, healthcare and education.
in order to be included in the agricultural and political life of Peru while at the same time obtaining decent work and lives. They also stated that the lack of resources and basic services in the Andes creates a feeling of difference in relation to the ruling elite while simultaneously creating sameness among peasant communities in the Central Andes.

Lack of access to basic resources underlies poverty and hardship in the lives of peasant women and men in the Central Andes. Participants in the study live in simple adobe or rough stone houses with uncovered dirt floors. Female and male participants from the three peasant communities indicated that they do not have access to water to irrigate their land in the areas where they cultivate native potatoes. There is an absence of canals and ducts that could utilize the water from the natural springs or other sources of water. The lack of water also limits the use of peasant communities’ land located in higher altitudes and where native potatoes can be cultivated. Furthermore, female participants considered that potable water in their houses is a basic need that they cannot yet fulfil. They also feel that a sewage system is needed in the three communities. Female community members are disadvantaged relative to men in this matter since they are responsible for transporting water to their houses for daily consumption. In all three communities (NON-COGEPLAN), people have access to drinking water through a public water standpipe. Only the community of Racracalla (NON-COGEPLAN) has a health centre, although other communities also have access to this clinic. The service is limited because there is only one physician working full time. The other communities (NON-COGEPLAN and COGEPLAN) do not have any type of health service in their communities. Women suffer most from the lack of health care services in the highlands of Peru and this affects their performance and presence in agricultural production and market activities.

Access to information and agricultural extension varies among the research communities. Participants from COGEPLAN reported that they have support from FOVIDA, which facilitates their access to agricultural radio programs and access to cell phones and information (Annex – Table 2), but they still lack agricultural extension support from the non-profit, private sector and the government. They believe that peasant communities need to have access to networks of information. Their participation in COGEPLAN is important, although these services do not benefit the entire population. Communities where they live are far from the main towns, especially the community of
Chuquitambo (COGEPAN). Peasant women and men from the NON-COGEPAN group stated that they had not access to any media such as radio or television. The only sources of information they continuously have are community meetings and communal work, which they organize and carry out. In addition, women acknowledged that they acquire information from the government-supported or NGO social services meetings they attend.

Peasant producers consider a major problem is a lack of transportation and proper roads, which affects their access to education, technology and information. Women and men from both groups (COGEPAN and NON-COGEPAN) have limited access to roads to facilitate transportation of the products and native potatoes to the markets. The small paths they use are unsafe and dangerous. During the time spent in the communities the researcher observed that elementary and secondary students must walk long distances to schools in other communities. Men and women rely exclusively on the use of llamas to transport the tubers and supplies to and from the fields given that the small paths are unsafe and risky to climb. Men explained that they have to transport their products on their backs from the main town and it can take up to five hours to reach their destinations. When selling native potatoes or other Andean crops they have to transport the products from their communities to the main town. But if they decide to sell the products in larger cities like Huancayo and Concepcion, they have to travel for seven hours to reach these larger markets.

3) Institutional Support

Female (56 percent) and male (44 percent) producers involved in COGEPAN stated that since they have been participating in the market chain of native potatoes they have had the opportunity to work with FOVIDA and this NGO is the only institution providing extension and technology support. The services FOVIDA provides in extension and technical support are crucial for producers who have never had the opportunity to become familiar with new technologies that add value to the production and commercialization of their products. FOVIDA is constantly and permanently providing support such as market advice, training and generating spaces at the knowledge sharing at local, meso and macro levels.
In contrast, other institutions supporting peasant producers are weak or non-existent. The Ministry of Agriculture has stopped providing extension services as a consequence of the decentralization process.\(^9\) Participants in COGEPAN identified two key extension and technological supports available to them from COGEPAN. The first opportunity involves, Farmer Schools, which promote collective participation in a producer-oriented learning process. Women and men reported that this way of sharing information motivated them to participate because their experiences and knowledge were appreciated while new information was introduced. For example, producers believe that farmer school activities in the field and greenhouses helped them to identify the diseases or pests and to learn innovative ways of controlling the diseases/pests.

This type of participatory, collective and visual approach to learning helps producers to be trained in an unconventional learning process. The second extension method provided by COGEPAN is the Internships or Pasantías. Women and men interchange experiences and obtain knowledge for the production of native potatoes through internships. Women reported that they have the chance to travel to Cajamarca and other parts of the Andes of Peru to visit other native potato production systems observing different technologies that producers in other contexts apply. Women have also had the chance to obtain new varieties to cultivate in their own fields. A practitioner from FOVIDA considers that internships are the best way to train COGEPAN members because the exchange of experiences directly helps to improve and increase the production of native potatoes. He states, ‘the events support the creation of new alliances and partnerships among producers at the end’. As he explained further,

\(^9\) Decentralization is defined as the process by which power of decision and responsibility from the central level of organization is transferred to sub-national governments. The motivation comes from more efficient and effective distribution of public resources to an attempt to reduce spending and encourage self-financing by sub-national governments.
We are here to support farmers’ access to markets and help them to become sustainable overtime. My role is to help them to participate in national and regional events to display and sell their native potatoes. I help them to participate in national, regional and local events such as fairs, displays and competitions. We take farmers to different parts of Peru and they have to bring their production (limited number of kilos) for display and sale. This approach is a way of becoming involved not only with consumers and buyers, but also and the most important, they meet other farmers to interchange knowledge and varieties. We initiated these activities in 2009. They have the opportunity to promote their products and varieties in local fairs.

In 2010, some of the farmers attended different fairs (Jauja, Concepcion, Huancayo). The Ministry of Agriculture and Agro Rural usually organizes these fairs and events. They invite and include farmers from the different regions where native potatoes are produced. We help the farmers from Junin and Huancavelica to be part of these events. For example, our associates sold around 1,280 kilos in the recent National Fair of Agriculture Yauris 2010. Another group went to Cajamarca (August 27 to 29) with the Internship Program. They brought some material for display because we were not allowed to sell any product. However, some of our female members were able to interchange or buy new varieties and knowledge. They bought or bartered some varieties. One or two tubers are enough to start cultivating new varieties. They have to take care of the tubers to be cultivated next season. They displayed fresh tubers and chips from some unknown varieties. These activities are of great help to farmers (women and men) they know different techniques, realities and create networks for the future. Our objective is to produce and sell 500 metric tonnes in the next years. Farmers have land, they need to irrigate the fields and become better organized. It is our role to support them in their organization and settlement.

Male Practitioner at FOVIDA

FOVIDA’s practitioners’ identify with producers and play an important role in COGEPAN. Most of the professionals speak the language and come from rural areas. They are aware of the limitations and challenges peasant producers face. COGEPAN respondents reported that FOVIDA is supporting their access to resources. This is possible through institutional change as described below from a female practitioner’s standpoint.
COGEPAN is one of the few institutions in Peru that is supporting women to have a place in society. Women members of the native potatoes market chain belong to the indigenous or peasant communities and until now they have been largely affected by two main problems which affect most of the women in developing countries: Machismo and lack of information on their basic rights. Women need to be motivated and practitioners have to go to the communities to invite women’s farmers to join the associations. As a woman, I am an example. I go to the communities. The first time women attend meetings; they sit in the back of the rooms. Eventually they feel confident and come to the front and start showing their own identity. We have to help them to fortify their identities and to be conscious they have rights. We have to respect their culture and language. Women have to become aware of the value of their identity and their basic and most important rights. Men do not consider women capable to participate in the communities like them. Women in our groups are fighting to have an important role in the organizations. It is the only way women will overcome machismo and exclusion. Agricultural market chains are demonstrating that women can overcome patriarchal ideas and become equal to men. Women bring to society good qualities like social cohesion and collective action, innate qualities of Andean women. These features enable women producers support on self-organizing themselves, a very important action for peasant people. They need to work together in organizations with different stakeholders and inside different systems of innovation. It is not an easy step because the sense of collaboration comes as a result of trust and the level of trust is in the level of trust an individual farmer has for another farmer. It is a web of trust that makes an organization strong and sustainable.

There are also other aspects we need to consider when working with female producers; poverty, harsh weather and the most important women’s invisibility and exclusion from training. We do not say women did not attend meetings and training. Yes, they have done it all the time, but the problem is that they attend accompanied by males and they do not participate because they have been excluded, marginalized by their fathers and husbands.

People in the highlands do not have education and women’s position is worst; they lack all types of education. Husbands do not allow women to speak and participate. Women do not know how to speak and communicate in public. For me, lack of participation is a cultural factor. Women do not feel their roles are recognized in the community and in the society. We want women to be involved and have an active participation. They are in charge of the potato diversity, the water and the food security of their families. They play a very important role. It is women who are most committed the household’s wellbeing. Women are the key to the management of the vast natural biodiversity in the world and for instance the security of their households’ food. We have to train women to be confident of sharing their knowledge and use the resources appropriately to achieve sustainable and economic development.

Female Practitioner at FOVIDA

Women from COGEPAN have learned that there are some priorities that need to be attended to as a result of training and learning from other actors in the market. Earnings should be utilized to improve production, buy or rent more land, improve the home or buy or rent a place in the main city for children to study, as well as for diversifying their activities (animal husbandry, livestock or other Andean crops and roots). The most important achievement is that some husbands are learning to give women an equal role in the household. As one of the husbands commented;
I try helping my wife in all activities in the field; I cannot be here all the time since I work in the mining industry. I know my wife works more than before because she has more responsibilities at COGEPAN. She is one of leaders and has increased the production of native potatoes. Besides, she has to process the native potatoes so we have more income at the end. She also has to attend the meetings and training in Huancayo, the internships in Lima and other parts of Peru. Most of the time, she goes with her peers from FOVIDA and somebody needs to take care of the fields and the children. I try collecting more vacation time so I can be at home taking care of the children and helping her in all activities. I also choose to have vacations during the busiest time of the year, which are planting and harvesting season.

Male participant, 40 years old, COGEPAN

As a result of the extension, training and technical support, female COGEPAN producers have learned that working inside a formal organization brings satisfaction and agreement among members. Producers have become familiar with two principal aspects as a result of the trainings and technical support: a) improvement of production practices and b) adding value to the native potatoes for the commercialization (Table 5.3).
Table 5.3: Training and Technical Support Results

<table>
<thead>
<tr>
<th>Improvement of production’s practices</th>
<th>Adding value to the native potatoes for the commercialization</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Women have gained more knowledge in the techniques and production of native potatoes. And they also have learned how to handle the different varieties according to their colour shape and vegetative cycle.</td>
<td>• Women have improved their skills to add value to fresh tubers for consumption, industry and export purposes.</td>
</tr>
<tr>
<td>• Women and men have become familiar with integrating their techniques with the new ones acquired in COGEPAN to increase the native potatoes’ yield and production.</td>
<td>• Women and men have learned to deal with international and national formal markets. They have become familiar with transactions, contracts, adding value, presenting, handling and packing the products.</td>
</tr>
<tr>
<td>• As a result of training and technological support, women and male producers have been producing improved and virus free seeds.</td>
<td>• Women and men have become familiar with differentiating formal and informal markets and the benefits they may get when dealing with international markets.</td>
</tr>
<tr>
<td>• Female producers have increased and extended the production of native potatoes to leave household subsistence to market purposes.</td>
<td>• Women and men have learned that by processing and handling the product properly, prices are going to be better than those in the informal market.</td>
</tr>
<tr>
<td>• Women have learned new techniques to select and store the native potatoes in order to be commercialized months after harvest time. Post-harvest activities have been enhanced and improved to maintain the tubers longer in the storage room.</td>
<td>• Women have improved their skills to add value to fresh tubers for consumption, industry and export purposes.</td>
</tr>
</tbody>
</table>

4) Access to Agricultural Extension

Male and female producers in the peasant communities (NON-COGEPAAN and COGEPAAN) have very limited or almost no access to technology, training or information from public and R&D entities. The skills, capacities and infrastructure resource-poor farmers require responding to the challenges in the Andes, and to take advantage of potential market opportunities, have been beyond the means of the Peruvian Government and the Ministry of Agriculture. Public sector services and especially agricultural extension have declined since the 1980's and peasant producers have suffered.

Findings of the study indicate that despite the obvious need for extension services, resource-poor farmers have had little access to any kind of technical support except some specific cases in the communities where there is a presence of the INIA (Institute of National Innovation in Agriculture) and CIP (International Potato Centre) (NON-COGEPAAN) and the NGO FOVIDA in COGEPAAN (Table 5.4).
Table 5.4 Respondents’ Type of Extension Support

<table>
<thead>
<tr>
<th>Type of Extension Support</th>
<th>COGEPAN (n= 36)</th>
<th></th>
<th>NON-COGEPLAN (n= 184)</th>
<th></th>
<th>Total (n= 220)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>None</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
<td>134</td>
<td>72.8</td>
</tr>
<tr>
<td>Public</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
<td>15</td>
<td>8.2</td>
</tr>
<tr>
<td>Research</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
<td>5</td>
<td>2.7</td>
</tr>
<tr>
<td>NGO</td>
<td>16</td>
<td>44.4</td>
<td>20</td>
<td>55.6</td>
<td>0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Peasant producers in the NON-COGEPLAN group stated that the government in Peru lacks long-term and sustainable strategies for agricultural development, and any efforts by governments at different levels (district, region, nationally) tend to be politically oriented. There is no support for those producers who are still subsistence-oriented or who have limited access to markets and weak producers/community organizations. Women and men producers ranked the risks and challenges they face in the production and commercialization and is indicated in Table 5.5.
Table 5.5: Risks and Challenges in the Production and Commercialization of Native Potatoes

<table>
<thead>
<tr>
<th>At Risk Aspects</th>
<th>Men</th>
<th>Ranking 1 = high*</th>
<th>Women</th>
<th>Ranking 1 = high*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bad quality of seeds</td>
<td>4</td>
<td>Bad quality of seeds (degeneration of seeds, small and deformed seeds)</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Insufficient and inadequate</td>
<td>2</td>
<td>Poor soil (lack of nutrients, contaminated with virus and nematodes)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>agricultural practices</td>
<td></td>
<td>Change on plants’ growth because of changes in climate</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Lack or inadequate fertilization</td>
<td>6</td>
<td>Lack or inadequate fertilization</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Poor harvest or low production–</td>
<td>3</td>
<td>Agricultural practices done at the wrong time</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Unknown reasons</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post-harvest activities (handling</td>
<td>5</td>
<td>Selection of tubers and post-harvest activities that are not properly done, produce the presence of insects and diseases that damage all the tubers in the store rooms</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>of tubers, damage from tools,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>transportation and storage)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Appearance of new diseases and</td>
<td>1</td>
<td>Appearance of new diseases (paco luma)</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>unknown plagues (paco luma)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ways to commercialize native</td>
<td>4</td>
<td>Limited and inadequate access to</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>potatoes and possibilities to get</td>
<td></td>
<td>commercialization and formal markets. Prices are very low because of abusive informal intermediaries/wholesalers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>access to new markets are very</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>difficult for us. Prices also are very low that do not cover expenses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Producers are not well organized</td>
<td>2</td>
<td>Inside the associations, there is some friction and disagreement with leaders</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>in formal groups</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Male and female producers need to work and be part of formal organizations in the communities, to become visible</td>
<td>1</td>
<td>Male and female producers who are not leaders have to be included in formal organizations in the communities – Equally with leaders</td>
<td>1</td>
</tr>
</tbody>
</table>

* Ranked according importance and priority to participants.

Assistance is needed, reported producers in the communities, because they are facing many new problems like local adverse weather, which severely affects native potatoes and causes diseases unknown to producers (e.g. Paco Luma). In addition, harsh droughts and frosts for the last four years have caused producers to lose most of their varieties due to late blight (*Phytophthora infestans*).

We have suffering with late blight, frost and water scarcity. Before, we knew how to control diseases and plagues; right now we have more resistant diseases and our natural products do not work. Three years ago, we had drastic weather and we lost everything. It was a catastrophe. We need to know more about new technologies and we need to work with professionals who know the
solutions to our problems. We need to learn new techniques and forms to control the inclemency of the weather.

Female Producer, 38 years old, NON-COGEPLAN

Bringing new areas of land in the communities into cultivation due to demand for land has reduced natural pastures or fallow and possibly altered the microclimate in these specific areas. Climate change is a problem and concern for producers; during the study they expressed their preoccupation with constant and rapid change in climate and recognized the loss of surrounding glaciers and springs (e.g. loss of the Huaytapallana glacier and Lake Marcopomococha). The result has been water scarcity and limited water availability in the highlands.

New technologies and extension are also important for maintaining biodiversity. Peasant producers are aware of the vast genetic variability of the native potatoes, but their problem is to maintain these techniques and benefit from the use of improved varieties that can be adapted to the different climatic challenges they have to face. In addition, women producers in the study stated that they needed to be better integrated in extension services and become aware of new techniques in order to help them to be more productive. Women in the highlands are dedicated to many agricultural and non-agricultural activities so the techniques they utilize for production, harvest, and post-harvest production have to be suitable to their specific needs.

Extension services should reach all producers in the highlands, women and poor producers. We do not see the Agronomists from the Ministry of Agriculture or other organizations in our fields and communities. If they come to visit the fields, they choose only men; they prefer working with the leaders of the community. They do not choose women (married women).

Female participant, 32 years old, NON-COGEPLAN

When extension professionals go to the communities, their services are usually very selective because beneficiaries are predominantly male leaders or richer peasants inside the communities and not male or female peasant community members. Extensionists reported that women usually attend the fairs and events as observers since the person
invited to the event is the husband. However, observations suggest that it is the women who manage the seeds or tubers and are in charge of identifying all varieties in the competitions. These fairs take place in different places of the highlands as a one-day event once a year and generally just after harvest when farmers typically have abundant supplies of tubers. The fairs are popular social occasions where people meet, exchange information, knowledge, news and views, and eat and drink together. These are also occasions for producers to search for and obtain varieties they may have lost, or wanted to produce. Knowledge is passed on at the same time as seeds are handed over.

Producers reported that they have special interest in old varieties, especially those which were believed to have been lost in the region. It was observed that the fairs motivate producers to participate in diversity contests in which the producer who displays the most diversity is awarded a prize. Sometimes the prizes are a real economic incentive to the farmers to introduce more diversity into their fields. The organizing committee nominates the judges and sets out the criteria for the judging of the material. The prizes awarded to the diversity contest winners underline the importance of agro-biodiversity, and also pay tribute to the achievements of those who are custodians of the cultural heritage. These activities also favour the exchange of genetic material between families who come from different ecological zones, and who are looking for new seeds to replace exhausted or lost ones. It is obvious that as women are in charge of managing the surplus and making the exchanges, they select the products that are traded.

An additional result of the fairs is the recognition given to women or their families who are particularly active as conservationists and who protect these genetic materials with greater dedication. These women or families are generally well known by their neighbours and if a family happens to lose genetic material for climatic or social reasons (theft), diseases or mischance, they will turn to the conservationists to recover some seeds. There are even cases reported in which older women know how to propagate potato from botanical seeds as a way of increasing diversity and selecting new varieties. Most of the time, the presence of unaccompanied women is not common in the fairs. Women are observed to be participating with husbands even if women can best identify the varieties brought to compete better than their husbands. It is unusual to see women displaying their products alone. In most of the cases, they participate collectively as
representatives of ‘Mother’s Clubs’ ‘Glass of Milk Program’ or a similar community – based program. The chronicle of a peasant male leader corroborates the mentioned statement (Figure 5.1).

Figure 5.1: Male Leader’s Perceptions on Biodiversity Fairs

There are three principal fairs associated with native potatoes. 1) the seed or biodiversity fairs; 2) the regional and agricultural fairs; 3) the gastronomic fairs. The fairs are organized locally and at community level by district, province, region and country, depending on organizers and purposes (Table 5.6).
### Table 5.6: Types and Characteristics of the Native Potatoes Agricultural Fairs

<table>
<thead>
<tr>
<th>Type of Event</th>
<th>Characteristics</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The Seed or Biodiversity Fair</strong></td>
<td>• Selects producers leaders in their zones, some are female leaders</td>
<td>• Women producers have the opportunity to demonstrate their key role in the</td>
<td>• Very selective (limited number of producers – leaders)</td>
</tr>
<tr>
<td></td>
<td>• Evaluates native potatoes biodiversity at individual/family level and</td>
<td>production and maintenance of native potatoes</td>
<td>• Peasant married women have limited participation since men represent households</td>
</tr>
<tr>
<td></td>
<td>association level (Most of the time, women participate as wives)</td>
<td>• Women demonstrate their knowledge in the use of native potatoes and their</td>
<td>• At local level fairs women have more visible participation than in provincial or regional fairs</td>
</tr>
<tr>
<td></td>
<td>• Identifies varieties cultivated by peasant producers organically</td>
<td>interest maintaining native potatoes</td>
<td>• Funding a limitation to restrict producers' participation</td>
</tr>
<tr>
<td></td>
<td>“conservationist producers”</td>
<td>• Display and dissemination of written information such as posters, leaflets,</td>
<td>• Peasant producers have limited understanding of the importance of native potatoes globally and scientifically</td>
</tr>
<tr>
<td></td>
<td>• Native potato diversity is characterized and evaluated qualitatively and</td>
<td>panels, drawings and triptychs as forms of training to producers</td>
<td>• Incentives or prices to winners of competencies do not fulfil the expectations of participants</td>
</tr>
<tr>
<td></td>
<td>quantitatively</td>
<td>• Allows peasant producers to think ‘out of the box’ (witnessing changes that</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Space to encourage farmers to continue to reinforce native potato</td>
<td>occur since first time participating in seed fairs)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>genetic variability</td>
<td>• Creates awareness on the potential of native potatoes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Takes place in different localities. For example, The Native Potato Fair –</td>
<td>because of authorities, chefs, practitioners and public attendance</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Concepción</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Producers are rewarded for managing and conserving the potatoes biodiversity</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(number of ecotypes/varieties)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Organized by municipalities and public institutions</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Takes place locally, district, provincial and regional at established date</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Regional and Agricultural Fairs</strong></td>
<td>• Women producers’ presence more visible</td>
<td>• Women participate equally to men producers</td>
<td>• Not all producers attend the fairs – selective/funding</td>
</tr>
<tr>
<td></td>
<td>• Events are organized by the Ministry of Agriculture</td>
<td>• Producers of native potatoes compete with other crops’ producers</td>
<td>• Only producers inside formal organizations participate in these events</td>
</tr>
<tr>
<td></td>
<td>• Congregates public, private, producers organizations and peasant</td>
<td>• Native potato producers have the opportunity of attending workshops and</td>
<td>• Workshops and information sessions too complex for producers</td>
</tr>
<tr>
<td></td>
<td>communities in one event</td>
<td>information sessions</td>
<td>• Isolated groups of native potato producers does not allow full integration and familiarity with fairs/events</td>
</tr>
<tr>
<td></td>
<td>• Awards native potato producers for producing seeds of good size and productivity</td>
<td>• Producers can commercialize their products to the public</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Generally established in one place once a year – For example, the Regional</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fair EXPO – Yauris, Huancayo</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Gastronomic Fairs</strong></td>
<td>• Generally organized by gastronomic organizations, NGOs and civil society</td>
<td>• Major diffusion of the native potatoes utilized in regional food is a novelty in Peru</td>
<td>• Very complex activity for peasant producers especially</td>
</tr>
<tr>
<td></td>
<td>groups</td>
<td>• Emergence of a new type of cuisine ‘Novo Andean Cuisine’</td>
<td>women since they are not familiar with different contexts and situations</td>
</tr>
<tr>
<td></td>
<td>• Importance to women’s participation and visibility</td>
<td>• National and international media pay attention to producers’ voices</td>
<td>• Producers are seen as non visible part of Urban Peru</td>
</tr>
<tr>
<td></td>
<td>• National and international connotation to make the native potatoes known</td>
<td>• Producers commercialize native potatoes in limited amounts</td>
<td>• “food fairs are not for pictures and shows, we want to have basic things to fight against poverty and exclusion”</td>
</tr>
<tr>
<td></td>
<td>• Values native crops especially native potatoes produced in the highlands</td>
<td></td>
<td>Woman producer</td>
</tr>
<tr>
<td></td>
<td>have preponderant importance in the fairs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Focused not only on business but also cultural aspects of Peru</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Below, description of a seed fair in which the researcher was invited to participate as a judge provides an example of the impressions acquired during the whole process.
An Example of a Seed Fair: The Second Regional Festival of Native Potatoes – July 9, 2010 - Province of Concepcion, Junin, Peru

The fair was held at the main square of the Province of Concepción (Junin) as part of the activities for the celebration of the 128th Anniversary of the called “Heroic Battle of Concepcion”. The fair was organized by public entities such as Agro Rural Program, Agency of Concepcion-Jauja, in coordination with the Provincial Municipality of Concepcion and the Agrarian Agency Concepcion of the Regional Ministry of Agriculture-Junin. Individual and producers’ associations of native potatoes of the provinces of Chupaca, Jauja and Concepcion participated in the event. In addition, processing companies such as the Association Pachamama, agribusinesses “Andean Condor” and “Esmeralda”, the processing company “Lays - From the field to your hand”, a cuisine school “ibot Chef”, among others. These types of events have been taking place for many years as a way to promote small production and conservation of the genetic variability of native potatoes. Nowadays seed fairs include producers participating in formal market chains of the crop. Registration of the producer or association takes place the day of the fair.

Three aspects were considered in the registration process: 1) Individual Registration: Name of participant(s); individual producer or producers associations; 2) Central Register: Number of varieties/ecotypes, name of varieties/ecotypes for an individual presenter; and, 3) Record of Evaluation: it combines the two previous records and provides a profile for each participant.

The organizers of the fair were in charge of selecting three professionals to be part of the evaluation jury. For the evaluation, one of the judges has a profound knowledge of the seeds and varieties. In addition, two outsider professionals were invited to be judges so the process would be impartial. In this case, the panel consisted of three extension and R&D professionals. The following parameters were the basis of the judges’ evaluation

- Diversity of species and varieties: Awards for greater number of varieties of native potatoes
- Presentation: Tubers have to be free of damage; optimum conditions for seed tuber. The more eyes the tuber has the more suitable it is to produce more sprouts. Another aspect they consider important is the depth of the eyes.
- Health: a tuber has to be free of any mechanical damage, insects or diseases in order to avoid the transmission of diseases, viruses and insect eggs.
- No use of any synthetic fertilizer or pesticides. For example, one of the judges could distinguish the individual varieties characteristics and also recognize if the tuber was cultivated with synthetic fertilizers and pesticides. It was assumed the tubers were organically cultivated and that producers only used organic fertilizers (llama and alpaca manure and plant extracts to control plagues and insects).
- Culture and agronomic knowledge of participant: Participants had to be knowledgeable and familiar with the varieties and their morphological characteristics (habitat of plant growth, leaf forms, stem colour, degree of flowering, flower colour, maturity, tuber skin colour, flesh colour and sprouts colour).

Most of the participants were married couples. Questions were addressed to the couple and a wife always responded for herself and her husband. Women knew the answer and defended their comments. Women producers were observed to clearly demonstrate that they are in charge of the native potato diversity on their fields and communities. Most of the participants brought around 400 varieties and they had to display the varieties individually (the number of tubers were of at least five per variety). Positive reactions came from organizers and the public and not from the processing companies. No extensionists or professional representatives from Frito Lay or PepsiCo were in the fair; only marketing and displays for the Potato chips were in the stands.

The process provides complete and accurate information about a collective memory associated with native varieties. By the end of the fair, the results are presented to the public and the winners are awarded with agricultural inputs (seeds, organic products and tools) and all participants receive a certificate for having attended the fair.

Among the winners of this fair, all of the three first prizes were assigned to representatives from peasant communities who are not participating in any market chain of native potatoes; the first place corresponded to a couple from Racracalla represented by a male leader and his wife who displayed 450 ecotypes of native potatoes, the second place corresponded to an individual producer from Jauja who brought 430 ecotypes, and the third place was awarded to another couple, again, represented by the husband a leader from the community of Racracalla who presented 420 ecotypes.
COGEPAN has introduced peasant producers to another novel type of agricultural fair. Producers participate in different commercial bio-fairs and displays where the organizers are diverse representatives of the Peruvian gastronomy sector such as the Peruvian Society of Gastronomy (APEGA), the National Association of Ecological Producers (ANPE) and the Agro National Convention (CONVEAGRO). Their purpose is to establish partnerships and knowledge sharing between producers and chefs based on the native potatoes biodiversity and the culinary use of the product to establish agro-gastronomic chains.

In 2010, the researcher attended and observed the Mistura gastronomic fair and in that year the fair’s darling was the native potato. The fair is described as follows,

The Peruvian Society of Gastronomy (APEGA) led by Gaston Acurio, a well-known chef, initiated the gastronomic fair ‘Mistura’. The fair has turned out to be the principal food fair in Latin America and also gained international reputation. It is not only a food festival, but also a Peruvian celebration with not social distinctions. It brings together Peruvian pots and stoves from all Peruvian corners in order to commemorate the country’s culinary tradition, reiterate Peruvian identity and celebrate Andean cultural diversity. Peruvians, for many centuries, have linked food with fiesta. Some of these celebration such Killa Raymi, San Juan, Cruz de Motupe, Lord Captive, Christmas, Easter and family festivities have become occasions to share dishes prepared using the most excellent techniques and recipes that guisanderas and cooks pass down from generation to generation. Traditional food goes along with music and social interaction among Peruvians without considering race, ethnicity, age or religion.

The fair congregates diverse group of actors within the Peru's gastronomic chain: farmers, cooks, bakers, food sellers, confectionery, huariques, and restaurants, cooking schools, food processing companies. They pay their respect and tribute to Mother earth. They recognize that Mother Nature has been munificent with Peru. During its 7000 years of chronicle, the country continues to be recognized to have one of the most fascinating and diverse cuisines. The splendour of Peruvian cuisine is based on the history and the specific convergence of gastronomic styles and materials from different regions of Peru. Over the last five centuries, Peruvian cuisine has also had the input of European, Arabs, and Africans, Chinese, and Japanese savours.

Source: Mistura website, 2010; author’s field journal

As the example of the Mistura fair suggests, the chef, Gaston Acurio, has been promoting native potatoes and supporting farmers through his restaurants worldwide using species and products from the three different regions of Peru. In order to use the products in his restaurants, he meets and invites peasant producers to his kitchen in order to learn how chefs utilize their products and he shows peasant producers what he can improve or change. As a result, a new alliance has been created in 2012, ‘the Peasant and Chef’ alliance (La alianza campesino cocinero). At the same time, producers visiting his
restaurants in Lima share with the chefs their knowledge. Based on an interview, this is a summary of the views of a well-known chef:

We have already understood that we all are part of the same process called “Peruvian cuisine” and its representation in the country and the world. The cooking industry in Peru has decided to act since we do not have politicians’ commitment and unity to work on behalf of common objectives and strategies that may move the country to the status of a first world country. Personal ambition has to be set aside in order to construct the common truth. We have to stop assigning politicians to look after the responsibilities of the population. If we leave politicians with the good and the bad, it is egoistic and arrogant. For example from the businessman’s perspective who evades taxes, passes the red lights on the streets, lives in a big mansion but complains about politicians and the political parties. Where is the moral and ethics of that person? Or in the case of the union’s leader who is complaining all the time, but he is negotiating his personal interests under the table. All Peruvians have the responsibility to confront the problems we face as a country.

The political class has the responsibility to conduct and facilitate the specific decisions that are required by the state, though, some businessmen still do not understand their privileged position in our country. The role of the private sector represented by modern businessmen is not to accumulate wealth but generate it. I do not mean that they have to distribute their wealth; they have to re invest the wealth with values and examples. Our country is in the beginning of unity and dignity. We have to look inside ourselves and recognize our multiculturalism. We have to look it as an opportunity, as a competitive advantage in relation to the world. We are a country of many races, ethnicities and pueblos where everybody must mutually recognize and admire each other. Unfortunately, the state does not support the processes; it is absent and indifferent. We have to know how to convert ignored opportunities in opportunities for everybody. This is the challenge. Small farmers and peasant producers have immense opportunities into specialized niches and Andean crops. However, agrarian policies have to be oriented to support these small farmers to become prosperous global entrepreneurs. We have thousands of small farmers who can successfully associate themselves in organizations. It is the work of all sectors of the government to help it happen.

For example, the native potatoes market chain is still imperfect. We feel proud of our genetic biodiversity of native potatoes but what is our contribution and that of the government? Cooks and chefs feel happy when they cook a causa rellena, the consumer feels happier when he/she eats it together with the wholesaler or seller in the markets. Pitifully, we have not asked and paid attention to the producer who is living the whole year in a subsistence economy. It is an unjust chain and we have to support the weakest members to overcome this challenge and achieve fair commercialization of their products.

The true revolution will be achieved when peasant producers of native potatoes from the highlands can sell the potatoes to the best chefs and cooks in the world because these people will discover that with the native potatoes they will be able to prepare the best purée. We are still facing exclusion and racism, though; we are becoming less racist than we used to be 10 years ago. We are more integrated and learning to accept different cultures and customs. However, the great challenge is to recover the trust among Peruvians.

It is not difficult or impossible. Peru is its entire people and for that reason we have to live with honour. A Peruvian citizen has always returned to the country all that he/she has received from it. We do not still value women’s role in the fields and in our country. They are who suffer more from this system. They face inequality only because they are women and Cholas.

In effect, the findings indicate that among the three types of fairs, the “seed or biodiversity fairs” have the purpose of promoting producers’ native potatoes’ biodiversity and production. These also have the purpose of promoting trade, agribusiness and agro-
exporting of native potatoes. As a result of that, women benefited in two ways: 1) Delivering cultural and local practices and, 2) Gaining new ideas to be disseminated in their specific contexts (Figure 5.2.).
Figure 5.2: Benefits from Seeds or Biodiversity Fairs

- Women feel confident that the native potatoes they offer to the public are cultivate without using synthetic fertilizers or pesticides.
  
  "We are called "conservationist producers" because we do not use any chemicals when we cultivate the potatoes. Female producer - Chucará, Junín"

- Women present and share information on native potatoes varieties that are new to the public and the dishes they have innovated with native potatoes sub-products (native Potatoes cakes, coffee).
  
  "Consumers prefer the yellow "amarilla" and "huayo" varieties but we have more varieties that are better than those varieties, they do not know too much about colored potatoes. Female producer, Masma, Junín"

- Women share with the public and jury their local and traditional ways of preserving and maintaining the native potatoes - Feel valued and empowered.
  
  "We have to support and value women's work in maintaining the native potatoes. Peasant communities have assured food for their families and communities because of women's work. Inaugural speech from the Mayor of Concepción, Junín"

- Women have access to graphic information - Beneficial to their education and background.
  
  "Delivering Cultural and Local Practices"

- Women producers learn that native potatoes are source of economic profit - industrial processing, added value and access to new and formal markets.
  
  "I did not know we could sell the native potatoes in other countries. Female Producer from Yacas, Junín"

- Women transmit their gained experiences in the community and household.
  
  "Transmit their gained experiences in the community and household"

- Women feel confident that the native potatoes they offer to the public are cultivate without using synthetic fertilizers or pesticides.
  
  "I come to the fair because I have the chance to get new varieties and increase the number of varieties I cultivate. Female Producer - Chicche, Junín"

- Women exchange and buy new varieties they do not have in their household/community.
  
  "Many consumers are chefs and come from the school for cooks, they look for new varieties like purple native potatoes, it means we can cultivate more of these varieties to be commercialized in the market. Female Producer - La Libertad, Junín"

- Women present and share information on native potatoes varieties that are new to the public and the dishes they have innovated with native potatoes sub-products (native Potatoes cakes, coffee).
  
  "Excel male partners when examined on the varieties they own (morphological characteristics, qualities and use of native potatoes)"
5) Access to and Control Over Land

All women and men producers in both groups (COGEPAN and NON-COGEPAN) affirmed that they have access to the land on which they cultivate native potatoes (Table 5.7).

Table 5.7 Respondents’ Access to Land

<table>
<thead>
<tr>
<th>Access to Farmland</th>
<th>COGEPAN (n= 36)</th>
<th>NON-COGEPAN (n= 184)</th>
<th>Total (n= 220)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>Yes</td>
<td>16</td>
<td>44.4</td>
<td>20</td>
</tr>
</tbody>
</table>

Married women are not considered community members who can have direct access to land unless it is through their husbands’ membership in the community. Widows or single women can access land as community members because they do not have husbands. Single men may not access land directly either (Figure 5.3)
Figure 5.3: COGEPAN Female Members Type of Land Holding

A married woman representing the household in COGEPAN have indirectly access to land from the community by administering the land their husbands were assigned by the community. The community owns the land.

Female widows have direct access to community land since they are the household's representatives in the community as a result of partners' death. The community owns the land.

Legend: Colours of Boxes
Dark Blue: Types of land holding
Light Blue: Types of access
Green: Characteristics

Married, widow and single women participating in the market chain of native potatoes are beginning to buy their own land (solely or jointly with husbands).

As an alternative to increase the production of native potatoes, women have been renting and sharecropping land when their own and community land is not enough for the production.
Access to community land is important for male and female producers since cultivated land favoured for native potato production is located in higher altitudes (above 3,800 metres or higher) and it is exclusively owned by individual peasant communities in the region. On lower altitude areas in the communities, a peasant producer may individually own or share with the family small pieces of land or plots to cultivate commercial varieties of potatoes and other crops.

The distribution of community land is similar in both groups (COGEPAN and NON-COGEPAN) and simply depends on producers’ marital status and membership in the community. A member is assigned a determined portion of land on the basis of a denominated topo (2,700 square metres, equivalent to 0.27 Ha, or 0.67 acres). Each community has its own regulations and set of laws to distribute the land. Communal land distribution in peasant communities is held in communal assemblies where all members participate. There are some considerations that influence the participation of women in these assemblies.

For example, in the case of the community of Racracalla, each year, community members meet in assemblies held in August (one month before planting season). The community owns around 7,638.18 hectares distributed to 122 families. In Racracalla, each household usually gets from 2 to 3 topos, and assigned to the head of the household listed in the community’s register. The family representative is a man, widow or in exceptional cases a single mother. In the assemblies, community members of Racracalla gather and decide on the land to be cultivated in that season based on two considerations. Most of the land owned by the community is located in higher altitudes with Andean pastures utilized to feed the alpacas and llamas. And a piece of land has to lie fallow for at least seven years before it can be cultivated again. Community members collectively have to assist in the distribution of the land. All household representatives gather together to visit the fields in order to be assigned the fields they are entitled to cultivate for the season. Figure 5.4 summarizes the distribution of land according to peasant communities’ traditional laws using the example of Racracalla.
Figure 5.4: Distribution of Land According to Customary Law

Legend: Colours of Boxes
- Yellow: Accessibility to Land
- Purple: Women
- Blue: Men
- Grey: Exceptions

- Men: Represent women in the community (husbands, fathers, fathers in law and even brothers)
- Married women, single women and girls are not eligible to be members of the community unless they inherit the membership from their father and have to support the extended household or if they are single parents.
- Single man does not have the right to be a member.
- Eligible to have access to land:
  - Female widow inheriting land from deceased husband
  - In exceptional situations, single mothers who live in the community with their children
  - The community only provides land to the man who is the head of the household - Usually married men
  - A male newcomer with family has the right to be a member of the community after a three-year permanent residence and being registered in the communities' files.
  - The most important is that he has to fulfill the communities' requirements (participation in assemblies, oyiri, good behavior).

- Most demonstrate they have lived in the community at least three years in order to be eligible for full membership.
Findings indicate a key difference between women and men in the NON-COGEPAN and COGEPAN groups with respect to land access. Female producers participating in COGEPAN admitted they have gained more power when accessing, controlling and owning land because of their inclusion in the market chain of native potatoes and being part of COGEPAN. In the survey, 100 per cent of the respondents in COGEPAN confirmed their access to the land in order to cultivate the native potatoes had improved. Married women participating in COGEPAN and who did not have direct access to the community land are buying land under their names (11.1 per cent). In addition, 30.6 per cent of women indicated that they access to land in other forms such as renting, and sharecropping (known locally as *sembrando al partir*). Therefore, women in COGEPAN have gained access to land in different forms as shown in Table 5.8.

**Table 5.8: Respondents’ Type of Land Holding**

<table>
<thead>
<tr>
<th>Type of Land Holding</th>
<th>COGEPAN (n= 36)</th>
<th>NON-COGEPAN (n= 184)</th>
<th>Total (n= 220)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>Community Land</td>
<td>5</td>
<td>13.9</td>
<td>129</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>13.9</td>
<td>30</td>
</tr>
<tr>
<td>Own land, community land, renting and sharecropping</td>
<td>10</td>
<td>27.8</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>30.6</td>
<td>0</td>
</tr>
<tr>
<td>Own land</td>
<td>1</td>
<td>2.8</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>11.1</td>
<td>0</td>
</tr>
</tbody>
</table>

As a result of practising these different types of land tenure, some female producers at COGEPAN have been able to possess and manage more than one hectare (19.4 per cent), though 30.6 per cent of women stated that they manage no more of 5000 square metres than half a hectare (Table 5.9).
Table 5.9: Respondents’ Area of Land Holding

<table>
<thead>
<tr>
<th>Area of Land Holding</th>
<th>COGEPAN (n= 36)</th>
<th>NON-COGEPAN (n= 184)</th>
<th>Total (n= 220)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td></td>
<td>No.  %</td>
<td>No.  %</td>
<td>No.  %</td>
</tr>
<tr>
<td>- 5000 m²</td>
<td>7 19.4</td>
<td>11 30.6</td>
<td>0 0.0</td>
</tr>
<tr>
<td>5000 m² - 10,000 m²</td>
<td>6 16.7</td>
<td>2 5.6</td>
<td>106 57.6</td>
</tr>
<tr>
<td>+ 10,000 m²</td>
<td>3 8.3</td>
<td>7 19.4</td>
<td>48 26.1</td>
</tr>
</tbody>
</table>

6) Access to Credit and Financial Services

According to female and male respondents from COGEPAN and NON-COGEPAN, financial services and credit allow women and men producers to invest in and improve the production of native potatoes. Access to credit is a problem for peasant producers (NON-COGEPAN). Findings indicate that 100 per cent of respondents in peasant communities do not have any access to credit (Table 5.10).

Table 5.10: Respondents’ Access to Credit

<table>
<thead>
<tr>
<th>Access to Credit</th>
<th>COGEPAN (n= 36)</th>
<th>NON-COGEPAN (n= 184)</th>
<th>Total (n= 220)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td></td>
<td>No.  %</td>
<td>No.  %</td>
<td>No.  %</td>
</tr>
<tr>
<td>Yes</td>
<td>5 13.9</td>
<td>7 19.4</td>
<td>0 0.0</td>
</tr>
<tr>
<td>No</td>
<td>11 30.6</td>
<td>13 36.1</td>
<td>154 83.7</td>
</tr>
</tbody>
</table>

Lack of credit means farmers cannot buy tools and inputs, or make improvements in their post-harvest storage. When peasant producers make an attempt to acquire credit from financial institutions, they are rejected because they do not have legal documents for the property they own to be used as collateral. Peasant producers admit that they are not well organized inside their communities and associations because they lack formal recognition and accreditation from the public register office. Female members of the communities face more difficult challenges because the majority of them do not have government identity cards. Often the land women cultivate is very small and in most
cases land tenure is under men’s names so there is a little chance for women to access farm credit.

In the case of peasant producers targeted by COGEPAN some improvements were noticed. Peasant women and men have started to have access to credit and financial services (Table 5.10). COGEPAN women (19.4 per cent) indicated that they have access to credit and 13.9 per cent of men also can have access to financial institutions. Female and male respondents confirmed that as a result of their inclusion in the Papa Andina Initiative and the commercialization of native potatoes with the support of FOVIDA and other stakeholders from the private sector, women have had the opportunity to open bank accounts and have a bankcard to make their transactions. In other words, peasant women for the first time are able to carry out and achieve financial responsibilities. Nonetheless, in both groups (COGEPAN and NON-COGEPAN), there are apparent limitations and constraints on women with respect to using or trusting banks because they stated that they will more likely have some money saved at home than within saving accounts in banks or micro-finance institutions (Table 5.11).

Table 5.11: Respondents’ Access to Savings

<table>
<thead>
<tr>
<th>Access to Credit</th>
<th>COGEPAN (n= 36)</th>
<th>NON-COGEPAN (n= 184)</th>
<th>Total (n= 220)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>Yes</td>
<td>2</td>
<td>5.6</td>
<td>5</td>
</tr>
<tr>
<td>No</td>
<td>14</td>
<td>38.9</td>
<td>15</td>
</tr>
</tbody>
</table>

When peasant women in COGEPAN have some earnings they are enrolled in the popular communal banks (*banquitos comunales*) inside the group. Each month men and women deposit certain fixed amount based on the number of participants. The group treasurer takes care of the money in the group and recording the amount saved and disbursed. As an example in Chicche, there are 16 members; each one deposits in the common account $100 soles/month ($1,600 soles/month). Through a random selection of
names, each month a person gets the total, so in 16 months the entire cycle of selecting a recipient is finished.

7) Access to Markets

In the focus groups discussions, female and male peasant producers from the experimental group (NON-COGEPLAN) had the opportunity to nominate and rank the most important post-harvest practices for native potato production. For female producers, the top priority was to assure native potatoes for the household consumption (Table 5.12). Male producers’ top priority is the commercialization of native potatoes in informal markets, even though the women in the household perform this activity. For men, the second ranked activity was to assure enough supply of native potatoes for the household. This selection was followed by the maintenance of tuber seeds for next season. Men believe that the first activity is the best alternative for peasant producers to improve their livelihoods. They also specified that they have land that can support their commercial production. Bartering was the fourth option they chose and like women they believe it is a good source of obtaining agricultural products that are not produced in the highlands. Men’s last option was the processing of sub-products, in which they use smaller and discarded tubers (Table 5.12).

Table 5.12: Post Harvest Practices NON-COGEPLAN

<table>
<thead>
<tr>
<th>Rank</th>
<th>Post-Harvest Practices</th>
<th>Rank</th>
<th>Post-Harvest Practices</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Household consumption</td>
<td>1.</td>
<td>Commercialization in informal markets</td>
</tr>
<tr>
<td>2.</td>
<td>Tuber seeds for next season</td>
<td>2.</td>
<td>Household consumption</td>
</tr>
<tr>
<td>3.</td>
<td>Bartering</td>
<td>3.</td>
<td>Tuber seeds for next season</td>
</tr>
<tr>
<td>4.</td>
<td>Processing/sub-products</td>
<td>4.</td>
<td>Bartering</td>
</tr>
<tr>
<td>5.</td>
<td>Commercialization in informal markets</td>
<td>5.</td>
<td>Processing/sub-products</td>
</tr>
</tbody>
</table>

Throughout the process of the research, participants confirmed that women are in charge of the post-harvest activities since female producers have a better knowledge of
the varieties, their culinary, productive and commercial qualities. As well, women are in charge of marking and selecting mother plants for tuber seeds in the fields. The facets essential for women are to assure there are potatoes for the household’s consumption (fresh and processed) as well as tuber seed selection, bartering and, on a very small scale, the commercialization of native potatoes. Women are in charge of the post-harvest activities and storing the native potatoes for family consumption. The activities are complemented with the exchange or bartering of their products. When the harvest is finished and all tubers transported to the houses where they store the potatoes, women have the responsibility of selecting and sorting the tubers. The first task is to select the best and bigger tubers for household consumption. Then they select the seeds for the next season. The preferred tubers are medium size, with a considerable number of eyes, so the tuber will produce a sufficient number of sprouts. Only then are the tubers selected for bartering and commercialization using those with a good shape and showing no damage. The smallest tubers are used for processing and obtaining chuño and potato starch. Men and women agree that women are in charge of selecting the tubers because they know the varieties better and handle the potatoes with care (Figure 5.5). The numbers inside the boxes indicate the priority and importance women producers grant to the native potatoes.
Figure 5.5: Key Role of Women in Subsistence and Commercialization of Native Potatoes

Key Role of Women in the Household Subsistence and Commercialization of Native Potatoes

- Assuring food for their families and communities for the entire year
- Tuber Seeds for next season
- Exchanging or bartering products with lowlands communities and other producers
- Commercialization of native potatoes in informal markets
- Informal Commercialization and Petty cash
- Household Consumption - Fresh Tubers and Processed (Chuno, dried potatoes, toco, toco, tongo and starch potato)
- Medium Size tubers
  - Excellent shape and condition (not damage)
  - Generally proceed from healthier mother plants marked in the field by women
  - Tuber need to have considerable number of eyes and profound eyes to produce vigorous sprouts
- Big size tubers
  - Colored and Yellow tubers utilized for special trading
  - Generally yellow varieties - Consumers' preference
  - Tubers sold in small amounts - Kilos or Lashings "montones"
- Morphological Characteristics of Tubers
  - Big size tubers for fresh consumption
  - Smallest tubers for processing
  - Good health, no damage from tools, insects or diseases
  - Colored and Yellow tubers utilized in special occasions

Priorities
Female producers from the NON-COGEPAN respondents group believe that native potato production and processing are designated to family consumption and that only surplus on production and processed potatoes could be sold in the fairs or informal markets. Women emphasized that native potatoes are not only consumed fresh during the whole year, but also that the sub-products from artisanal processing such as *tocosh*, *tongo* and *chuño* are necessary for household consumption. As an example, women will select coloured potatoes according to the size of the tubers designed for different purposes as demonstrated in Table 5.13.

**Table 5.13: Women’s Selection of Coloured Potatoes**

| Selecting coloured potatoes (red and pink flesh) | 1. Daily household consumption  
| Small size tubers | 2. Processing  
| Medium size tubers | 3. Seed tubers (size similar to an egg)  
| Big size tubers | 4. Special occasions (gifts, special festivities, visitors and guests)  
| | 5. Bartering  
| | 6. Commercialization |

Women select fresh tubers in good health, free of diseases, insects and pest damage and best sizes, shapes and colours in order to maintain healthy tubers for long time in the storage room. Producers store and maintain the potatoes for the whole year to assure food for families. Fresh tubers for this purpose are given as gifts, cooked in special festivities and offered to visitors or family members in unusual occasions like weddings.

As indicated above, the small or discarded tubers are selected for artisanal processing like *chuño*, dried potato, *tocosh* and potato starch. Larger tubers may be used for barter or trade. Respondents explained that this is an activity producers maintain from their ancestors. They exchange native potatoes and other Andean crops they cultivate with communities that live in lower altitudes or the selva (Jungle). The exchange is basically for accessing products they cannot cultivate in their lands such as coffee, coca leaves, cacao, oranges and tropical crops. When the harvest and selection of seeds is done, male farmers take their llamas as means of transportation to carry out their products. They usually travel days to reach their destinations and stop *descanso* (rest) in
the tambos (stops) built centuries ago by the Incas. It is an ancient custom that people from the highlands have maintained over time to trade their products. People in the Andes have always looked for many ways to ensure enough and diverse food. Instead of fighting the restrictions that their location and climate impose on food production, they have become specialists and traders – growing many different types of the crops that they can grow, and growing enough to trade the excess with other communities who can grow different crops.

Preservation of the plant varieties is very important for women producers since they have limited access to healthy and new seeds which are certified virus-free. They maintain their varieties in situ so the selection of tubers for the consecutive season is done scrupulously with the purpose of maintaining healthy material. Women reported that they usually select the tubers for seeds from healthier mother plants\(^\text{10}\) that were marked in the fields.

Tubers have to be free of damage from harvest activities, insects, pests or diseases; respondents also stated that they needed to have deep and multiple eyes to produce vigorous sprouts. At the end of the selection process, tubers are stored separately according to the use in special places inside the household (dark, cold and dry places) where there is not sunlight (tubers for consumption) or scattered light (tuber seeds) to maintain the dormancy of the tubers (Table 5.14).

\[^{10}\text{Healthy mother plants (common language) or positive selection involves marking healthy-looking mother plants for latter seed collection (FAO, 2009).}\]
Table 5.14: Types of Storage Utilized by Women and Men Producers

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Types of Storing</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumption</td>
<td>Trojas o Montones Storage</td>
<td>Tubers are stored in a dark room with ventilation on the bottom of the bed. A bed of straw and muña supported on spaced adobe bricks or pieces of wood to cause ventilation is built on the corner of the room. The tubers are placed on the bed at a height of no more than one metre. Then the tubers are covered with muña.</td>
</tr>
<tr>
<td>Processing Chuño, tongo and tocosh</td>
<td>Collona Storage</td>
<td>In field and temporarily storage for potatoes designed for processing</td>
</tr>
<tr>
<td>Tuber Seed</td>
<td>Phina Storage</td>
<td>Similar to ‘trojas’ and ‘montones’ storage type, adding some lime powder ‘cal’ on the tubers. The tubers have to be stored in rooms with scattered light in order to induce the growth of short and strong sprouts and also greening tubers. Producers adapted technologies and learned from early interventions according to their conditions and needs.</td>
</tr>
<tr>
<td>Tuber Seed</td>
<td>Tarima Storage</td>
<td>Tuber seeds are stored in bed banks in rooms with diffuse light. Tubers are also spread with lime powder or ‘cal’ to act as a natural pesticide and disinfectant. The bed bank can have divisions to store the different varieties separately.</td>
</tr>
</tbody>
</table>

As a result of the varietal selection and consideration the priorities, producers sell their products at local fairs, informal markets or through petty trading where the native potatoes are commercialized by kilos or grouping montones.

In the regional markets like the city of Huancayo, wholesalers only buy large volumes of native potatoes and pay less for a kilo because they sell the potatoes in Lima or other larger markets in the country. Producers (men and women) reported that they have to transport the potatoes to Huancayo (around five to six hours travelling through barely accessible roads) and pay the fees for transportation. These are costs they have to consider when commercializing the potatoes. Another aspect they consider is that they are subject to the wholesaler’s willingness to pay. Wholesalers determine the price of the products and the amount of the purchase. They usually pay low prices which do not cover the expenses of the producers. Producers also sell in local markets.

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11 The muña (*Diaphoricae peruviensis*) is an herbaceous perennial plant containing antibacterial properties. Its branches control pests in seed germination and also during storage.
Native potatoes are sold by kilos (small amounts) to the consumers of the district and travellers who travel to the jungle. Women wholesalers usually buy the products and take these to the jungle (Satipo, San Martin of Pangoa, Ipoke, etc. and other small towns in the jungle). The difference participants reported is that prices are better (higher) than in cities like Huancayo and they get more money because they do not spend money in transportation (Figure 5.6)

Figure 5.6: Map of the Areas Women Wholesalers Sell Native Potatoes
For female and male producers in COGEPAN the production of native potatoes is market-oriented. Female and male peasant producers from COGEPAN had the opportunity to rank the most significant post-harvest practices they carry on with native potatoes. For female producers, their top priority was assuring native potatoes for commercialization (Table 5.15). In order to achieve it, women have to select the tubers. They usually harvest native potatoes for three purposes: (1) for international markets; (2) For industry (flakes or chips and fresh and (3) for seed tubers. Women producers believe that it is more important to select the tubers for international markets paying special attention to this activity because they have to fulfil export requirements of certification, quality control and sanity. For men, the commercialization of native potatoes is important but they consider that the production of seeds to be more profitable for them (Table 5.15).

**Table 5.15: Post Harvest Practices COGEPAN**

<table>
<thead>
<tr>
<th>Post-Harvest Practices</th>
<th>Women (n=11)</th>
<th>Men (n=10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank</td>
<td>Rank</td>
<td></td>
</tr>
<tr>
<td>1.  Select tubers for commercialization</td>
<td>1.  Select tubers for commercialization (Seeds)</td>
<td></td>
</tr>
<tr>
<td>(international markets)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.  Select tubers for commercialization</td>
<td>2.  Select tubers for commercialization in formal markets (industry/fresh)</td>
<td></td>
</tr>
<tr>
<td>in formal markets (industry/fresh)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.  Processing/sub-products and selling</td>
<td>4.  Commercialization in informal markets</td>
<td></td>
</tr>
<tr>
<td>in informal markets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.  Selecting seeds for next season</td>
<td>5.  Processing/sub-products</td>
<td></td>
</tr>
</tbody>
</table>

Sales are limited since they only sell the potatoes two days a week because these are the days that local fairs take place in the district. The type of markets women and men producers have access is limited and these are predominantly informal. Figure 5.7 shows the type of market accessed by female and male producers.
In the Central highlands, peasant producers have to walk long distances to reach the markets. Some respondents walk two hours between Achin and Comas because they do not have access to transportation. If they do have access to transportation, women and men still have to walk one hour to reach the nearest market, which is Racracalla. Producers can hire rural trucks, which drive unsafely. It was observed and reported that women ride in the back and men sit safely in the cabin. When women as a group decide informally to commercialize their potatoes in Lima, they hire a truck that transports other products and have some free space to deliver their products. Again, women travel with the cargo in the back of the truck under unsafe conditions.
When identifying the different markets women and men producers have access to, they classified them between formal and informal markets. The formal markets are those that producers penetrated as the result of their inclusion in COGEPAN. In these markets they have the opportunity to sell fresh tubers in bigger amounts (tons) for industry. The informal markets are those that producers have been previously involved in and this is where they usually sell the native potatoes in small amounts. They stated that the accessibility to these new markets has been supported by FOVIDA (Figure 5.8).
Groups participating in the market chain and working under the support of FOVIDA have been inserted to national and international markets. As a result of that, producers have started to sign contracts and obtain some international contracts. This is a benefit of becoming organized inside an association and working with FOVIDA - COGEPAN. Women at COGEPAN work equally with men producers in all the activities that concern COGEPAN.
Women in the group believe that selling their native potatoes to international markets (France) is more profitable and they obtain the best prices for their products. They sell the product in chips. However, they have to rely on a contractor to process the potatoes and sell the chips, and then they have to ship the merchandise to France in containers. The agreement is to send five containers every two months and each container weighs 2,800 kilos.

The next market COGEPAN producers have had access to, is Frito Lay owned by PepsiCo – America Latina. Producers sell the tubers and receive 1.80 soles per kilo. The disadvantage here is that they complain about the company’s policy of restricting production to two or three potato varieties because Frito Lay only limits the processing to a few varieties. Participants believe that this is not a way to support the maintenance of the genetic diversity they possess.

Furthermore, a producer has the responsibility to commit one ton of his/her production to Frito Lay. Farmers have to sign a contract before the season begins, but it is up to the company to respect the agreement and the transaction can be risky and uncertain for the producers if the company rejects the tubers. Farmers sending the merchandise to Lima pay for the transportation. If the produce is rejected in Lima, producers have to look for other buyers who pay for the merchandise at very low prices.

Some producers are now accessing supermarkets in Peru (e.g. Wong, Tottus, Plaza Vea). The native potatoes are sold fresh and in special bags. Aside from these formal market opportunities, the other type of commercialization is seed-tubers for propagation. Producers have started to produce fields of native potatoes specifically for seed – tubers. In the seed fields, they produce the seeds under sanitary agronomic control in the practices so the production will be clean of diseases, insects and pests. The seeds are sold to individual or community producers in other ecological zones inside or outside the region. These seeds are high quality and are free of viruses. The price they obtain for a kilo is better than those prices they obtain for tubers in formal markets; they get around 2.50 soles per kilo.

Although they have gained access to new international and national markets, they still practice the informal commercialization of their products. Women still play an
important role when potatoes have to be commercialized in these types of markets. Women’s groups from the same community or association (both COGEPAN and NON-COGEPAN communities) gather together and make arrangements to transport their products (fresh potatoes and sub-products of native potatoes such as chuño). They arrange transportation for the group and transport all the products to the local, district or provincial fairs. Once there, they individually get their own space to sell the product. Daughters have inherited this activity from their mothers. Women respondents stated, however, that although native potatoes sold in local markets by the kilo earn prices that are low in comparison to the prices obtained from formal markets, prices are better than those obtained for selling in regional markets (Huancayo). These markets provide native potatoes to local consumers, restaurants and local restaurants or recreos. Most of the restaurants in the areas of Concepcion and Jauja have high tourist traffic. Tourists try the vibrant cocina Novoandina in Spanish (new Andean cuisine). This local/national food movement was born in Cuzco (1986) after the two terrorist groups were eradicated and a sense of nationalism returned to the country.

FOVIDA, working under the ‘Papa Andina initiative’ led by the International Potato Centre (CIP), has supported the development of native potato sub-products, with selected ‘gourmet’ native potatoes, including naturally red and purple coloured chips. In the late 1990s, for first time native potatoes produced in the highlands were sold in Lima (Peru’s capital) on a small scale and then Frito Lay followed them and entered to the highlands area. Producers in the market chain have had the prospect of having superior added value potatoes being commercialized as final products which in turn allows more and better access to dynamic markets.

Novo Andean cuisine takes the techniques and skills of European culinary training and experience in fine and professional kitchens abroad and uses it as a base for engaging the folk traditions of Peruvian cooking as well as ingredients with a past that many Peruvians were trying to leave behind, a past exemplified in ingredients such as native potatoes and quinoa among other native and Andean crops. This time of return was also a time when a serious challenge to Peru’s democracy exploded in two guerrilla movements, the Shining Path and the Tupac Amaru Revolutionary Movement that during the eighties and early nineties almost won control of the country. Then neo-liberalism emerged as the dominant force in Peruvian politics and economics and became the platform for Novo-Andean cuisine in the expansion of middle and up-scale restaurants in Lima. A growing group of restaurant owners created a demand for training culinary staff. Once established in Lima, and Lima-based restaurateurs could expand to Cuzco. This took place at the same time Novo Andean cuisine was gaining notice internationally. Chefs could present to tourists something authentically Peruvian, which the international travelers were also learning about in their native languages through food journalism and fine Peruvian restaurants in their cities.
Until now, the commercialization of native potatoes in fresh and added value has been in different brands and names such as: Pure Andino (Andean mashed potatoes), Tikapapa, Jalca chips (export), Lay’s Andinas, Ethiquable chips (export) Inca’s Gold, Natu Krunch, Nips, Mr. Chips, Yacus (bagged fresh potatoes) among others.

Key informant interviews determined that FOVIDA is one of the few NGOs in the region interested in supporting peasant development. Their interest is to include women in the market chains by developing their capacities and skills to improve the production and the sub-products. They are aware that women in the highlands play a decisive role in agriculture but at the same time, women are not visible in the peasant community because of their culture and education. FOVIDA pays attention to women’s visibility and autonomy. It is the reason that peasant women constitute more than 50 percent of the total members. They are representing the household without being the heads of the household and working equally with male members.

FOVIDA’s specific function in the market chain is that of ‘articulator’ and trader. It is the organization that links producers with markets by representing them in the commercialization of native potatoes. In one of the meetings FOVIDA held with the producers, they presented a contract with a company called Del Ande SAC. Fomento de Vida – FOVIDA and COGEPAN are denominated ‘the Provider’ for signing the contracts and agreements.

Finding new markets for the producers is not easy for FOVIDA. Producers have had some problems to commercialize the native potatoes with buyers. FOVIDA and the producers have signed agreements and contracts but the processors do not always respect them. Frito Lay has limited its business with COGEPAN because of the limited demand for native potatoes chips in urban areas of Peru and in other cases surplus in the national production of native potatoes. FOVIDA supports the commercialization of production so its responsibility is to obtain decent prices so producers do not lose any money as a result of the companies failing to accomplish the contracts. As one interviewee stated,
The three varieties are our alternative because of the high quality they possess. These varieties can be commercialized easily and farmers can get good prices without losing any money.

Male FOVIDA Practitioner

FOVIDA usually pays 50 per cent of the value of the product in advance and when the product is in Lima and is accepted by the company, producers obtain the other 50 per cent.

According to producers and observations at meetings where the researcher was present, FOVIDA does not always think about the sensitivity and confidentiality of the commercial information supplied to producers. Producers are not necessarily involved in the commercialization at all levels. For example, FOVIDA representatives initiated a proposal to create a collective brand unilaterally, and only later presented that decision to COGEPAN’s members. As well, producers can openly disagree with FOVIDA. For example,

I do not agree that we have to accept what FOVIDA says to us to follow. I do not agree that the variety Ccicorane has to be promoted in the fairs and events. This variety does not have the quality that other non-commercial varieties have. It is perfect for producing chuño because is starchy and turns white from black flesh at the end of its processing. You have to consult with us before you take any decision.

Producers in meeting with NGO’s representatives

Nonetheless, according to key informants and observations, the main problem for the commercialization of native potatoes is logistics. The business-planning framework for native potato commercialization including obtaining material, providing service, information and capital flows is immense and complex. Companies request the varieties producers need to produce and FOVIDA has to ensure that those varieties will be available for sale. FOVIDA has to consider the companies’ logistical requirements throughout the entire year; they cannot stop providing the products once they sign the contracts.
Poor logistics affect the producers more when the companies do not respect the contracts they were urged to sign. In addition, the company may reject the product in its central factory in Lima after the product has been sent to Lima from the Andes (according to one respondent, fourteen hours of travelling). When the tubers arrive in Lima, they have to pass the company’s quality control and participants report that the production is rejected most of the time. So again, producers are obligated to sell their products at very low prices in Lima. They have to look for any market and accept whatever prices the wholesaler offers to them. When FOVIDA and the buyers reach an agreement, they agree on the varieties they are going to produce but after this agreement the remainder of the market chain is highly uncertain.

Summary

This chapter provides a description of the peasant producers’ demographic and socio-economic profile. The study respondents include producers in COGEPAN (Papa Andina Initiative) and outside this program (NON-COGEPAN – Peasant Communities Associations). The information in this chapter identified the major limitations to peasant production of native potatoes, based on survey findings and focus group data from both group of producers (COGEPAN and NON-COGEPAN). There are similarities between women and men producers of both groups with respect to access to natural resources, land, credit and information. Through partnership with FOVIDA, COGEPAN producers have more access to more and higher value market opportunities as well as expert-based extension services and innovative agricultural fairs. Both groups of farmers have substantial knowledge of native potato diversity, especially among women. The chapter also brings to light some significant and crucial changes between the two groups.
CHAPTER SIX

WORLDVIEWS OF PEASANT PRODUCERS OF NATIVE POTATOES

6.1 Introduction

Chapter Six introduces another set of research findings – women and men’s individual and collective worldviews (NON – COGEPAN and COGEPAN producers) and participants’ expressions of the individual and collective ways of being and thinking they hold about their reality inside their specific context of the Andean Cosmo Vision. In the case of COGEPAN producers these ideals are projected in innovations occurring in the market chain of native potatoes.

Data for this chapter are generated from various methods such as participatory mediated video interviews, tools and a SAS2 tool (timeline) as documented in the researcher’s reflective journal. All data were analyzed using thematic grouping of the data followed by open and selective coding (See the example in Appendix 5 of a cover letter). This chapter starts by comparing women’s and men’s individual and collective beliefs and values or worldviews. It highlights COGEPAN and NON-COGEPAN participants’ descriptive language of the Andean world.

It offers a comprehensive framework of women and men’s basic beliefs about the Andes and native potatoes and the relationships that guide and shape their lives as peasant producers. These relations transform and change as a result of becoming involved with new interventions and experiences such as the Papa Andina initiative.

6.2 Peasant Women’s Individual Worldviews

Generalizing a peasant producer’s understanding of her/his place within the wider universe or Cosmo Vision is not an idea but a lived reality. In this study a narrative approach was used to listen to peasant or indigenous women and men and their stories of their place within the wider context of life in the Andes.

In this section of the findings, one story from a peasant woman is summarized below to illustrate the very close relationship between the respondent’s ways of being and acting within her environment, and specifically the actions she takes for her production
(and reproduction) of native potato biodiversity. In this narrative, the respondent (narrator) and her family members have cultivated native potatoes their entire lives. The narrator states that native potatoes are living beings and that they are like animals and humans so they have to be nurtured and treated with respect.

She also emphasizes that taking care of and nurturing the potatoes is returning to native potatoes what they do for peasant producers taking care of each other and ‘nurturing’ each other.

The narrator is a peasant woman who still practices her ancestors’ customs in cultivating the native potatoes. It is respect for the land, the sense that the land is part of a whole with humans, water, Cosmos and nature that allows peasant people to preserve the biodiversity of native potatoes. Her story is presented in Figure 6.1.
Figure 6.1: A Peasant Woman Views on the Native Potatoes

Potatoes are like people and animals, they are living beings. Potatoes have family (parents, children and other relatives). Female potatoes are red or purple and male potatoes are white. All are part of a whole: Nothing goes separately.

We have potatoes that resist to frost, drought, and late blight. Potatoes have different colors, gender, shapes (oval, elongated, pineapple and tree alike). Some varieties are late and others precocious. Some produce in few months (three to four months); others take longer (six to seven months) to produce.

Appreciating Biodiversity

We have different varieties that we have learned to preserve and collect overtime you can find most of the varieties in our and other communities with different names (Spanish, Quechua and Aymara).

Preserving Biodiversity

In our condition, harsh weather and high altitudes, we grow our most precious crop: native potatoes. We have learned to eat potatoes in different ways. We know which variety is good for soup, for puree, for flower and even for coffee. For example, “papa chiri” is good for chulpo.

Assuring Food

We produce the native potatoes for own consumption (fresh and processed). Potatoes like humans are a family. All members of the community work together in one field and next day in another member’s field. We practice “Waño” (ayni) to cultivate the potatoes.

Adapting to Climate Change

Mutual Community Support

Potatoes nurture us and we have to take care of them as they take care of us. If we “criamos” nurture the potatoes and take care of them, we will have good harvests. We have to visit the fields and talk to the plants, they listen and you would see when they are in the time to produce flowers. They have different colors and they look happy when we talk to them.

Relationship with Mother Earth

We preserve all the varieties because we know what the Mamapacha “Mother Earth” wants from us. Mamapacha does not want fertilizers and pesticides. She becomes angry and stops producing the potatoes. In the last years, she is very upset because we do not treat her as we used to do. The soil looks different now, it is pale and dry. The soil is tired.

We have problems with the climate.

Now, we have to plant the potatoes in higher altitudes over there the soil is still “virgen”, it does not have diseases. We maintain our “andenes” and cultivate in different “topos” plots. In each “topo” we cultivate as many varieties as we can, so we will have varieties that are more resistant to diseases and their yield will be better. We have been familiar to climate change and changes in the weather. It is the reason we have maintained the varieties.

We have a new disease, we call it “Paco Luna”, we never had it before and we have to learn to control it. As we have more humid days and rain, the plants die easily.
Elements of the above narrative as well as other narrative statements recorded in this research relay how individually and together in conversation, female peasants constantly struggle to position themselves in their communities and the outside world. They also reflect on how they see others and how others see them. The reflections prepare them to become aware of what are the current directions they follow to alleviate problems or challenges and take advantage of the outcomes. First of all, women in the study recognized themselves as *campesinas* or peasant women\(^\text{13}\). They are all female members living inside a peasant community and participate in the communities’ activities with or without active community membership. Husbands, fathers, fathers-in-law and even brothers represent married women, sisters, and daughters in the community.

In exceptional situations as stated in Chapter Five, with respect to land access, single mothers with children who reside in the community for at least three years can become eligible for full membership. Once a single mother presents her petition, a general assembly is held to consider membership. Then, by general voting, the entire community unanimously has to accept the petition thus the woman is registered as *empadronada* or an active member with access to community land, all resources from the community and participation in all community assemblies.

If there is a male member inside the household, he represents the family in the community (assemblies and council) and it is the community’s customary laws that supports them by providing land to the household through the man representing their family and who is the head of the household. On the other hand, *comuneras* community members who are *campesinas* can be active members of the community if they become widows and they inherit the land from their deceased husbands.

A single man can become a member if he inherits his father’s membership and assumes the responsibility to support a household. A male newcomer with a family has the right to be a community member if he is registered in the community after his arrival and completing three years of residence. The man has to fulfil the communities’

\(^{13}\) Women explain that a *campesina* is the woman who was born in the peasant community and part of the same ethnic group carrying out and practicing the same culture and customs. There is no class assumption in their statement.
requirements (participation in assemblies, *Ayni*, good behaviour). An active member has to participate with his/her family in assemblies and communal work. Inside the community, men have access to the principal leadership positions (president, vice president). *Comunera* women usually take the positions of treasurer or deputy member for sports and other social activities. *Campesinas* also participate in the community-based programs representing their family. They work in the fields and also they work voluntarily (for free) in the social programs in the community. Female leaders and members in the programs are typically mothers with children in school indicating that these women are motivated to have their children attend some level of formal schooling.

These mothers actively participate in government funded programs ‘Popular Kitchen’ and ‘Glass of Milk’, development programs and have to go to the schools or community centres to provide, prepare, and distribute the food to their children. They also have to attend the meetings regularly. It provides women the opening to interact with other women from their own and other communities. A similar case happens with the newly created program *Juntos*₁⁴ – ‘together’. In these government funded programs members have the chance to learn and improve themselves in exchange of a fixed monthly amount (100 soles or approximately 38 Canadian dollars). The programs have a double effect on women. On one hand, women develop and strengthen their capacities through group support and decision-making processes since they experience how a formal organization works and assume responsibilities for first time in their lives. On the other hand, the programs do not produce or generate income or resources and limit women to participate within their local community groups (Figure 6.2).

₁⁴ According to Perova *et al.* (2009:2) The Program ’*Juntos*’ is “a public sector Conditional Cash Transfer (CCT) program that integrates two broad objectives: (i) in the short run, to reduce poverty by providing households with cash transfers; and (ii) in the long run, to break the intergenerational transmission of poverty through promotion of human capital via improved access to education and health services. She also states that the program accomplishes its goals through the provision of eligible households with a monthly cash transfer of $100 (soles). Unlike other CCT programs, this is a lump-sum payment and does not differ across households (Perova *et al.* 2009:2)
6.2.1 Constraints to Women’s Participation in Peasant Communities

In many circumstances the participation of peasant women in the Central highlands of Peru is limited to that of invisible worker and partner. Paradoxically, men and women equally cultivate and produce native potatoes and women are in charge of most of the post-harvest activities, food security and commercialization of native potatoes. Women’s visibility in the communities’ political and decision-making processes, however, is limited, especially among married and single peasant females. Peasant communities and their governing entities are autonomous in decision-making about the functioning of the communities and who qualifies for active membership.
Peasant communities are structured in ways that govern members’ lives, families and communities – communal life or *Ayllu*. Women’s membership and presence are still invisible and undervalued, although women’s contribution is obvious in all activities inside the household and the communities. Women work, manage and control agricultural and community activities (*faenas, Ayni, Minka*, bartering, community-based groups’ activities, household decision-making) as wives and not active members of the communities. Table 6.1 summarizes the formative factors for women’s participation in the peasant community.

**Table 6.1: Formative Factors for Women’s Active Membership in Peasant Communities**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Underlying Causes</th>
<th>Outcomes</th>
<th>Examples of Men’s Narrative</th>
</tr>
</thead>
</table>
| Men represent married women in the community | • Public policies  
• Structure of the Community and the state  
• Sense of complementarity, duality and reciprocity determines their actions and behaviours | • No access to resources  
• No political action and representation  
• Unable to get direct access to community’s land | We (the men) politically represent women because we are responsible for all the activities in the community”, we do the hard work and women “work with us”, “we balance each other’s work” because women know what they have to do and we know what we have to do. Our work is equal and reciprocal. Male community leader |
| Women cannot have a political role inside the community’s management | • Women are more illiterate than men  
• Women suffer family violence and abuse from husbands - Macchismo  
• Most women speak only Quechua | • Absence of women in leadership positions  
• Women concentrated in social programs but not those of economic production | "Meetings are not for her” she does not know anything about it. She has to take care of the children and the animals at home. I represent the family in the community. Male community leader |

Unfortunately, the discrimination women face in their communities is not only specifically inside their context but they also face wider intolerance and rejection from Peruvian society at large (Table 6.2). As one respondent explained,

We are marginalized from all the services. People call us *cholitas*; taxi, truck and bus drivers from our region do not like to take us in the bus because “we have bad smell”. They send us to the back. And if we are older it is worse for us. People still laugh on us when I wear my skirt *pollera*; they reject peasant women from Peruvian life. They see us different from other women in Peru.

Female participant, 32 years old, NON-COGEPLAN
### Table 6.2: Indicators of the Discrimination Women Face Outside the Communities

<table>
<thead>
<tr>
<th>Issues</th>
<th>Illustrations</th>
<th>Outcomes</th>
<th>Quotes</th>
<th>Female Participant, 42 years old, NON-COGEPAH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dressing and Appearance</td>
<td>• The skirt (la pollera, el faldilín)</td>
<td>• The clothes women dress are still an important factor of ethnic identity and social status and also indicate and characterize the precedence of women and the ethno culture they belong</td>
<td>I think all Peruvians have blood from the Incas, so we are “mixed”. The problem is that people classify me because of my trenza, mi pollera y mi sombrero. People ask me if I am from the south of Huancayo - Huayucachi parte baja before they buy my products in the local fairs. It does not make any difference for selling my products but affects me, I feel ashamed.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• The hat (el sombrero)</td>
<td></td>
<td>My father did not want me to go to school because he needed somebody to take care of the llamas and alpacas in the fields</td>
<td>Female Participant, 54 years old, NON-COGEPAH</td>
</tr>
<tr>
<td></td>
<td>• The braid (la trenza)</td>
<td></td>
<td>At home and the community, we spoke Quechua all the time for that reason it is the only language I have spoken all my life.</td>
<td>Female Participant, 61 years old, NON-COGEPAH</td>
</tr>
<tr>
<td>Education</td>
<td>• The majority of women in the study did not finish elementary school</td>
<td>• Because of their level of education, women cannot participate in all activities as men do. Most of the time, they are timid and introverted.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Language</td>
<td>• 100% of the women who participated in the study still speak Quechua and 20% of women speak only Quechua</td>
<td>• Women cannot communicate with other people because of language barriers</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Peasant women who are COGEPAH members are in contact with the outside world but still carry their customs and beliefs (culture) with them in their actions, lives and the production of native potatoes. However, there are some variations and changes that women have experienced since they are included in COGEPAH. The personal narrative of one woman who is a COGEPAH leader tells the story of the different achievements and transformations women have experienced as a result of participating in the market chains of native potatoes (Figure 6.3). The female leader’s personal characteristics allow her to become a role model in COGEPAH. As a key informant confirmed,

She is a role model for the rest of the women and men in COGEPAH, the community and the region said peer female in the interviews at COGEPAH main office in Huancayo. She is a very determined woman who works very hard to achieve a better life for her and her family.

Female key informant
Figure 6.3: The Journey of a Peasant Leader
When women like this leader have access to opportunities that they did not have before, they encounter negative and positive influences that make possible or difficult their participation in COGEPAN (Table 6.3).
Table 6.3: Positive and Negative Aspects of Women’s Experience in the Market Chain

<table>
<thead>
<tr>
<th>Negative Aspects</th>
<th>Levels of Action</th>
<th>Description</th>
<th>Positive Aspects</th>
<th>Description</th>
</tr>
</thead>
</table>
| Multi-tasking    | Individual       | • Women do not have time for their own activities (spare time)  
• Women have assumed new responsibilities and roles. Though there is some support in COGEPAN (day-care facilities) women have to travel for some hours to get to FOVIDA’s main office | Positive Aspects | Developing new capacities and skills  
• Women learn about the processes of production, commercialization through information tools (telephone, Internet and programs in the radio)  
• Women learn about innovation systems market chains and what it means for their activities  
• Women have a better command of Spanish and try speaking Spanish most of the time |
|                  | Household        | • Women have to do all the housework and attend the family  
• Women have to plan and work in their field (planting, cultivation, harvest, post-harvest activities and commercialization)  
• Production of other crops (barley, oca, mashua, olluco, lima beans)  
• Women have to take care of the small animals and livestock in their houses (sheep, cows, llamas, alpacas, guinea pigs, chicken, etc) | Positive Aspects | Women feel confident that their situation is evolving and can provide a better life for themselves and their families (affording to send children to schools in Huancayo, buying/renting houses in towns where children can study)  
• Women feel better that they are contributing to the household’s economy  
• Women try maintaining their houses clean and in better conditions (adding potable water and electricity) |
|                  | Community        | • Women have to attend the community-based groups meetings and activities  
• Women have to attend all community work (faenas) activities  
• Women have to support programs in the schools where children study (events, activities, meetings) | Positive Aspects | Women share information and gastronomic findings with female community members what she learned while visiting other areas of Peru (i.e ‘native potato coffee’)  
• Women prepare different dishes with products are not produced in the area (fish and tropical vegetables)  
• Women have learned to present proposals for supplying products to public institutions (PRONAMACH or PROONA) for school programs in the region |
|                  | COGEPAN          | • Women represent the household in the organization and COGEPAN (meetings, events, signing contracts, plan of activities, buying inputs)  
• Women have to attend meetings and training in COGEPAN – travel to Huancayo from the community  
• Women have to attend events outside their area– expend time travelling (Fairs, internships)  
• More activities to carry out because of transition of subsistence production to commercial production (cultivate more land, have people working in the fields (Minka or Ayni) exchanging work and services | Positive Aspects | Women learn to deal with other people – stakeholders that are not part of their household and communities  
• Women learn what is to be part of a formal organization, and the benefits they have to become micro-entrepreneurs  
• Women participate in meetings and make contributions as men do. Though they communicate with other stakeholders and present in public spaces, they are still in the process of reinforcing their relational and leadership skills  
• As needs for labour have increased, women are learning to get workers (extra paid labour) in their fields. They have learned to manage with labourers and organize tasks and activities |

|                  | Individual       | Women still confront problems of  
• Women have the ability to utilize | | |
<table>
<thead>
<tr>
<th>Negative Aspects</th>
<th>Levels of Action</th>
<th>Description</th>
<th>Positive Aspects</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men Jealousness and Envy</td>
<td>Individual</td>
<td>Violence and abuse from husbands or male members of household, which directly affect their performance in COGEPAN. They still try hiding problems at home and pretend men have accepted their work outside the house and assume responsibilities that come with it.</td>
<td>Strengthening old capacities</td>
<td>Women’s firm character, work ethics, fairness, and reliability utilized to face risks and vulnerability</td>
</tr>
<tr>
<td></td>
<td>Household</td>
<td>Men are jealous at home see women learning and trying new experiences</td>
<td></td>
<td>Women’s previous capacity to mobilize and commercialize products is helping them to assimilate easily trips and visits outside their households</td>
</tr>
<tr>
<td></td>
<td>Community</td>
<td>Men from the communities are jealous of women and feel they have to be under husband’s protection (In Chuquiambo, some men from the community approached the researcher and expressed their concern about the female leaders)</td>
<td></td>
<td>As a result of participating with a diverse group of stakeholders, women are learning how to improve the lives of loved ones. One feature is that they send children to private schools in the capital of the district (Huayucachi), Concepcion or Huancayo to have the education they cannot have in their communities</td>
</tr>
<tr>
<td></td>
<td>COGEPAN</td>
<td>Men frustrated with women’s new roles in the organization – resentment</td>
<td></td>
<td>Female members teach other women in the community how to store the potatoes for consumption, packing of chuño and selecting fresh potatoes for supermarkets</td>
</tr>
<tr>
<td>Educational and relational skills</td>
<td>Individual</td>
<td>Majority of women did not finish elementary school</td>
<td></td>
<td>Female leaders are concerned on including other women in all activities in COGEPAN</td>
</tr>
<tr>
<td></td>
<td>Household</td>
<td>Women were used to be at home and concentrate in household/field activities without keeping in touch with other people - Intimidated when dealing with strangers</td>
<td></td>
<td>Supporting single mothers and disadvantaged men in the group</td>
</tr>
<tr>
<td></td>
<td>Community</td>
<td>Women used to assist to the community meetings but men are always the speakers. Women sat on the back of the room and now they are beginning to integrate themselves but men resist changes by saying that women have to be at home taking care of animals and</td>
<td></td>
<td>Even though, women have some limitations to communicate in public, leaders are very polite and courteous with the public and when responding questions in relation to the native potatoes and their traditions</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Women transmit strength and confidence when sharing their customs and traditions in relation to the native potatoes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Women used to assist to the community meetings but men are always the speakers. Women sat on the back of the room and now they are beginning to integrate themselves but men resist changes by saying that women have to be at home taking care of animals and</td>
<td></td>
<td>Women teach their children on the value of native potatoes and how this crop can improve their lives and livelihoods</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Women integrate new ideas of cooking the native potatoes with old customs (using the clay pots for making new dishes)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Women share with female community members their experiences in COGEPAN and contribute to improving certain practices carried out in the preparation of the food in the Club of Mothers and Popular Kitchen programs</td>
</tr>
</tbody>
</table>

**Note:** The table entries are based on the document provided, and the natural text is a direct translation from Spanish to English, focusing on the key points and themes discussed in the original text.
<table>
<thead>
<tr>
<th>Negative Aspects</th>
<th>Levels of Action</th>
<th>Description</th>
<th>Positive Aspects</th>
<th>Description</th>
</tr>
</thead>
</table>
| children         | COGEPAN          | • People see them as campesinas  
• Women still feel afraid and intimidated of speaking in public  
• When women participate in events, they get exposed to new environments that sometimes intimidate women. For example, women had to participate in Mistura Fair and they expressed some concerned in relation to speaking in public and that people would not understand them correctly. | • Women wear their traditional dress when representing COGEPAN in different events  
• Women share with the public about the different uses and qualities of the native potatoes  
• Women share their traditional forms of preparing the native potatoes in gastronomic events (dulce de chuño) |

In many cases, the problem is that men feel aggravated and frustrated and the way to transmit their feelings is through violence often induced further by alcohol. In most of the opportunities we met at the female leader’s house, her husband came home very drunk and started talking loudly until his children took him to his room. In another occasion, during a meeting with FOVIDA’s representatives one of the main male leaders explained that he was very frustrated with the NGO because they preferred certain people to represent the organization (referring to the female leader) at local and national events. One of the female practitioners working with COGEPAN demonstrated her awareness of the limitations and constraints women producers from the communities have to encounter when she stated that women’s participation in market chains is changing the whole social panorama because women are accessing new spheres that were previously forbidden to them.

Women and men participating in the market chains of native potatoes recognize that they have different relations than those who do not participate in the market chains. As a result, women have slowly developed and strengthened new capacities and skills. Women have a more successful and visible presence in the native potato market chain, but also in their communities and households (Table 6.4).
### Table 6.4: Benefits of Participating in the Market Chain of Native Potatoes

<table>
<thead>
<tr>
<th>Acquired Benefits</th>
<th>Indicators</th>
<th>Narrative Description</th>
</tr>
</thead>
</table>
| Creating Opportunities for Economically Disadvantaged Female and Male Producers | • The market chain of native potatoes supports and promotes the participation of marginalized producers and has improved poverty reduction.  
• Through this process, female and male producers are able to move from income insecurity and poverty to economic self-sufficiency and ownership | We have been selling our potatoes to Frito Lay and this year we have more opportunities for accessing new markets (Tottus, Plaza Vea, Andes and other companies in Huancayo and Lima). We have the opportunity to cultivate more native potatoes (fresh for cooking and industry for chips) and improve the livelihoods of our families and communities. As a result of our success, we are trying to incorporate more producers in our group. We are in conversations with the farmers from the Tulumayo area, Comas, Junín and Huancavelica who will join us. We will become a strong organization that will represent the native potatoes producers in the region. We need to have this type of alliance and networking so we can share material (new varieties), ideas and information.  
Male member (COGEPAN) |
| Developing and Strengthening Relational and Inter Relational Skills              | • Women have the possibility to know other people who are not only part of their communities or informal markets where their mothers and grandmothers mobilized  
• Now, female producers form part of a more diverse and heterogeneous group where they position themselves and the other actors of the market chain  
• Women and men have the opportunity to interact with male and female representatives of public and private sectors, NGOs and other stakeholders. | I have improved a lot since I am participating in the market chain. I have got new opportunities to improve because we meet more people who know what we are doing; they share ideas and have interest in our activities. When my wife and I participate in the commercialization of native potatoes with FOVIDA we learn a lot about prices and contracts. Before, we used to commercialize only informally and most of the time the agreement was oral; we did not have any documentation or contracts.  
Male Member (COGEPAN) |
| Developing Capacities and Strengthening Individual Agency                      | • Women are practicing new experiences and encounter new challenges  
• Women have the chance to participate directly in meetings where they can learn and discuss prices and contracts  
• In spite of limited education, women are overcoming disadvantages in relation to men. They take advantage of meetings and workshops to speak out and feel confident when speaking in public  
• Women and men have the opportunity to participate in external internships where they meet new people and know other contexts and realities different to their communities. For example, COGEPAN’s women had an internship position in Cajamarca where they knew new agricultural practices and acquired new varieties of native potatoes  
• For first time, women are learning to perform financial activities. Most of the payments are in giving in cheques, and women have learned to open an account in the bank and make financial transactions. | All women in COGEPAN have been developing and fortifying their capacities because of the activities and internships we promote in FOVIDA. Women from the Andes are very strong characters, hardworking and determined people. As they encounter new experiences they use all these attributes to challenge the structure and are doing things we never expected from them. We have some innate leaders who obviously need time and education. So we are here to provide it, especially to women producers since they are the most disadvantaged in the highlands. Women eventually are learning to speak in public; it is very difficult for them because when we started working with them they even did not participate in meetings. Now, they have bank accounts in Huancayo and they have to sign contracts and agreements. We have some female leaders who are learning to act differently from their female ancestors; they are making a difference in their communities and households.  
Male Practitioner (COGEPAN) |
<table>
<thead>
<tr>
<th>Acquired Benefits</th>
<th>Indicators</th>
<th>Narrative Description</th>
</tr>
</thead>
</table>
| Undertaking Old and New Responsibilities with Innovative Ideas | • Women as producer: maintaining, selecting, producing, cultivating, processing, adding value and storing the native potatoes  
• Women as an entrepreneur: Contracting service of people to work in the fields (Minka, Ayni, money)  
• Women as marketer: Commercializing the native potatoes as wholesalers, retailers or intermediaries (Formally and informally) in the market chain, local fairs and regional informal markets  
• Women diversify activities on-farm and off-farm. Cultivate the land, commercialize their products in informal markets, process the products and raise animals in the house (guinea pig, lamb, cows and pigs). Women have learned that dealing with formal markets gives them more security for prices, which always are higher. Most of the women attend fairs and rent a spot where they directly can sell their products to consumers or wholesalers. Women usually attend all local fairs during the week. Female producers sell potatoes in established locations where they become familiar with clients. They also have to pay a fee to the municipality every time they occupy the place. | I work all year; I do not take time off my activities with the native potatoes. Women have to work harder to help the family. We cultivate the potatoes in the field; we select the best seeds for next year, for commercialization and for processing. Then we sell the potatoes for to formal markets. We also sell the potatoes in informal markets. We do not rest anytime.  
Female Leader (COGEPAN) |
| Making use of ITC and information | • Women as communicator: Women have become familiar with the cell phone and make use of this device to generally accomplish the commercialization of native potatoes by taking advantage of the information FOVIDA provides through call phones or text messages to the leaders. | A woman leader has her cell phone when she attends the fairs to know the prices and the amount available for each market. Thus, they know if their product is going to be sold easily or not.  
Reflective Journal – June 20th, 2010 |

### 6.3 Collective or Communal Ways of Seeing their World – NON – COGEPAN

Working in the plot (*chacra*) is essential for a peasant in the highlands of Peru. Our lives are here says a male participant and a woman answers back, it is the place where we grow and maintain the hundreds of native potatoes varieties. It is conserved here in their place-where they were born”. The land, *la chacra*, is the centre of female and male peasant producers’ lives and actions. It is through the land, reciprocal actions and communal work that participants in the study relate themselves to the native potatoes. In particular, peasant women’s main concern is agriculture and for that reason the importance of preserving and cultivating their main crop is central to their lives.

Women in the highlands have strong sense of safeguarding the variability of the native potatoes under their cultural beliefs of respect, support and reciprocal actions with family members, the community and nature. The diversity of native potatoes is not only a source of variety for the local population, or a testimony to the astonishing range of...
microclimates and ecological zones, but it is also a mechanism to control or minimize diseases and pests. As one of the NON-COGEPA respondents explained,

Communal work and life lead us to respect the Mamapacha and take care of it so we can cultivate our papitas. We have to respect the land and nature and appreciate what it gives us. In return, we have to maintain it free of pesticides, fertilizers and other dangers. The land has to renew itself in order to produce well.
Female participant – Community leader’s wife

Peasant producers share and strengthen these common worldviews in their relationship with the land and the native potatoes by practicing strategies and techniques to confront the constant and permanent changes in the climate and weather (Table 6.5).
### Table 6.5: Gendered Communal and Local Understandings to Maintain the Native Potatoes

<table>
<thead>
<tr>
<th>Techniques and Strategies</th>
<th>Variations</th>
<th>Description</th>
<th>Considerations</th>
<th>Techniques</th>
<th>Who does what?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi-cropping</td>
<td>One plot for all the varieties – Mixing of varieties - <em>chalo</em></td>
<td>Cultivating different and various varieties in one parcel or plot</td>
<td>Varieties show diverse reactions to frost, drought, rain, insects, diseases and plagues</td>
<td>• <em>(v) Muru phocaya</em> resistant to drought, hail and frost</td>
<td>Women • Select the seeds according to each ecological zones • Mix seeds for each plot • Plant the seeds • Store the seeds • Mark the tubers in the field • Choose the area where to cultivate – they know how differentiate types of soil</td>
</tr>
<tr>
<td></td>
<td>Varied number of accessions in different plots, ecological zones and in different planting time (<em>temporada chica</em> and <em>temporada grande</em>)</td>
<td>Different varieties in different plots or ecological zones. For example starchy varieties on lower areas and bitter varieties on higher areas</td>
<td>Seasons differ from one year to the other. One year colder and dry, the other humid and rainy</td>
<td>• <em>(v) Yanna Pucella, Yana Manwa</em> resistant to late blight (<em>rancho</em>)</td>
<td>Women and Men • Harvest the tubers • Cultivate the crops</td>
</tr>
<tr>
<td></td>
<td>Planting potatoes with different crops for protection</td>
<td>Cultivating native potatoes with other Andean crops to repel insects</td>
<td>Producers recognize the qualities of other Andean tubers and crops as insect repellents or live fences</td>
<td>• <em>Mashua</em> (<em>Tropaeolum tuberosum</em>) an insect repellent because of its bactericide, nematicide, fungicide, insecticide properties • <em>Verbena</em> (<em>V. peruviana</em>) extract used as insecticide</td>
<td>Women and Men • Visit and exchange products with people from other communities • Create links to people from other communities as God parents (<em>padrino</em>) of children, houses, land</td>
</tr>
<tr>
<td></td>
<td>Exchanging and Sharing seeds with producers in other zones</td>
<td>Bartering, (<em>trueque</em>) and <em>compadrazgo</em> with other communities in different altitudes</td>
<td>Creating traditional networks to assure food for the family and the communities</td>
<td>• Establishing links and friendship with people who live in different altitudes and produce different crops</td>
<td>Women and Men • Harvest the tubers • Cultivate the crops</td>
</tr>
<tr>
<td></td>
<td>Knowledge and Weather Prediction by Grassroots Indicator or <em>Señales</em></td>
<td>Producers rely on different techniques and strategies – signs - to forecast the weather for the coming season (frost and drought in their crops ahead of time)</td>
<td>Predicting changes in the weather - Frosty nights – (<em>helada</em>)</td>
<td>• Producers fire and burn manure (<em>posta</em>) from <em>alpacas</em> and <em>llamas</em> to create a warmer environment</td>
<td>Women • Dry and collect manure • Know when weather is propitious for frosty nights – red sky and position of moon</td>
</tr>
</tbody>
</table>
|                           | Predicting the weather and its changes | Recognizing the behaviour or presence of different plants and animals as weather predictors | • *Muña* – When producing big white flowers, it will be a good year for potatoes production | Interpreting the | Women and Men • Identify plants as indicators like cactus (*sancayo*) – flowers and *muña* as indicators for production of potatoes • Identify animals’ behaviour to identify drought/rain (*perdiz*) | • Sunny, hot and dry

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<table>
<thead>
<tr>
<th>Techniques and Strategies</th>
<th>Variations</th>
<th>Description</th>
<th>Considerations</th>
<th>Techniques</th>
<th>Who does what?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurturing the Soil</td>
<td></td>
<td>The construction of terraces or <em>Andenes</em></td>
<td>Control the erosion of the mountains, stores the rain water and create a special microclimate</td>
<td><em>Andenes</em> allow us to plant the native potatoes in a special microclimate where water and weather can be controlled</td>
<td>Women and Men • Identify and interpret position, appearance of stars, clouds, direction of wind and comet • Differentiate stars’ shapes (network, plough and condor’s nest forms) to predict the weather</td>
</tr>
<tr>
<td></td>
<td>Mother Earth has to be nurtured and taken care as she takes care of her people</td>
<td>Rotating the use of the parcels</td>
<td>Land has to rest for at least 8 years to be utilized again</td>
<td>• <em>Andenes</em> allow us to plant the native potatoes in a special microclimate where water and weather can be controlled</td>
<td>Women and Men • Know that the degree of slope and slope and distance between the breaks will contribute to erosion control, water and nutrient uptake and microclimatic effects</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Preparing the soil and terrains according to the indicators</td>
<td>Some signs allow producers anticipate or delay the planting season</td>
<td>• Presence of big, low and consistent clouds on the Huaytapallana pike allows to know a rainy season so planting could be started ahead of time</td>
<td>Women • Identify when the soil is tired (<em>cansado</em>) • Know movement of clouds and sun and announce hail or presence of future rainfall</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cultivating native potatoes at different times and agricultural practices</td>
<td>Practicing small planting season <em>siembra chica</em> and principal or big planting season <em>siembra grande</em></td>
<td>• Small Planting Season (July – August) Sweet and yellow varieties are planted in lower areas of the communities close to the community and water sources (canals <em>acequias</em>, ponds) (Harvest January-March) • Big planting season (September-November). Bitter, starchy and pigmented varieties planted in higher altitudes (harvest May-June)</td>
<td>Women and Men • Plan the planting season according to the weather, community’s agreement and seeds availability • Participate in the land distribution of the community</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Men • Participate in the land distribution of the community</td>
</tr>
<tr>
<td>Techniques and Strategies</td>
<td>Variations</td>
<td>Description</td>
<td>Considerations</td>
<td>Techniques</td>
<td>Who does what?</td>
</tr>
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</tbody>
</table>
|                           |            |             | Applying different types of tillage systems | • The *barbecho* tillage system\(^{15}\) | Men  
  • Plough and prepare the land with *chaquitacllas* ahead of planting season |
|                           |            |             |               | • The *chacmeo* minimal tillage system\(^{16}\) | Women  
  • Place the seed on the removed portion of soil  
  Men  
  • Remove and prepare the soil |
|                           |            |             |               | • The *ocos* tillage system\(^{17}\) | Women  
  • Place the seed inside the hole and cover it with soil  
 Men  
  • Open the hole |
| Improving and taking care of the landscape | Building live fences and canals | • *Olluco* (*Ullucus tuberosus*) and tarwi (*lupinus mutabilis*) are used as live fences to protect damage from insects and depredators (birds and animals). | Women  
  • Select and maintain the seeds of tubers and crops utilized as fences  
 Men  
  • Build and maintain the canals and irrigate the land when water is available  
  • Add other materials to the construction of fences to make these stronger (rocks, stones and cactus)  
 Women and Men  
  • Maintain the fences healthier adding manure to the plants |
| Inter-breeding (animals and plants) | Breeding animals that contribute to the production of native potatoes | Llama and Alpaca | • Using the wool and meat to feed the families  
  • Using the manure to feed the soil  
  • Using the llamas as means of transportation | Women  
  • Make use of wool, meat and manure from Alpacas and llamas  
 Men  
  • Know techniques to dehydrate meat  
 Women and Men  
  • Utilize the llamas as means of transportation |
|                           |            |             | • Using the meat in fresh, dehydrated and utilizing the camelids to transport the products to the fields, exchange, bartering and commercialization | Men  
  • Utilize the llamas as means of transportation |
|                           |            |             | Creating traditional networks to assure food for the family and the communities | Women and Men  
  • Visit and exchange products with people from other communities  
  • Create links to people from other communities as God parents (*padrino*) of children, houses, land |

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\(^{15}\) The “*barbecho*” tillage system developed in lower altitudes is carried out in the small planting season in July and August (commercial and starchy native potatoes) and consists on turning on compact masses of crop-free land to be converted in loose soil. Cultivation is in rows. Usually practiced by men.

\(^{16}\) The *chacmeo* minimal tillage system is adapted to the *chaquitaclla* and carried out ahead of the big planting season (January-April) (native potatoes planted in higher altitudes). It consists on flipping around two pieces of compact masses of soil of the crop free land (natural pastures) to later on deposit the seed in the middle.

\(^{17}\) The *ocos* carried out in the principal season, a minimal-tillage practice practiced in higher altitudes with *chaquitaclla* in is the action of opening a hole inside the soil (men) and followed by the women who stores the seed inside the hole and covers it with the soil. It is a practice that producers carry out in higher altitudes and principal season (bitter and starchy native potatoes).
<table>
<thead>
<tr>
<th>Techniques and Strategies</th>
<th>Variations</th>
<th>Description</th>
<th>Considerations</th>
<th>Techniques</th>
<th>Who does what?</th>
</tr>
</thead>
</table>
| Multiple Ways of Using Native potatoes to Assure Food | Women’s knowledge on native potatoes qualities allow to use the crop in different and various forms to assure food for the households and communities | Cooking and Preparing diverse dishes, sub products and remedies to use wisely the harvest and processed products | Selecting the tubers for specific purposes (fresh consumption, cooked, dehydrated, fermented) | • Starchy native potatoes and coloured potatoes can be used, boiled, roasted, fried and dried (papa seca or carapulco). And also can be utilized in purées, stews, soup, causa, etc  
• Bitter varieties are used for processing, dried and frozen that result in chuño. Chuño can be used in puddings, desserts, soups, boiled and as appetizer with cheese  
• Leaves and stems are used fresh (food for animals) and dry (as fuel to cook)  
• Bitter potatoes juice as shampoo and detergent  
• Fermented processed potatoes tocosh medicinal | Women  
• Have profound knowledge of nutritional qualities  
• Know how to multi-use the native potatoes in different presentations  
• Obtain varieties that they do not have in the household from other people/zones  
• Aware importance of native potatoes diversity for local food security |
| Harvest, post-harvest and processing practices to assure food | Profound knowledge on local/traditional harvest techniques, seed selection, storing, and transformation of perishable products in order to be stored for long time | Native potatoes can be dehydrated and dried to be stored | (Chuño or tanta, dried potatoes)  
Chuño is ground and toasted like coffee in order to prepare the beverage (‘Potatoes coffee’) | Women  
• Know the varieties and qualities  
• Select seeds and tubers according to needs/use  
• Know techniques and nutritional uptake qualities to diversify food consumption |
| Practising Collective and common Action inside and outside the Communities | Manifesting respect to Mother Earth in the festivities | Offerings to Mother Earth in the festivities | Sharing offerings with community and household members | Women and Men  
• Share activities like stepping, washing the chuño inside and outside the ponds/river |
| Exchanging and Sharing seeds with producers in other zones | Bartering, trueque and compadrazgo with other communities in different altitudes | Creating networks to assure food for the family and the communities | • Collectively chewing the coca leaves and preparing food for offerings – Sharing values and customs | Women and Men  
• Visit and exchange products with people from other communities  
• Create links to people from other communities as God parents (padrino) of children |

<table>
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<tr>
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<th>Description</th>
<th>Considerations</th>
<th>Techniques</th>
<th>Who does what?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promoting and Developing Communal Attachment</td>
<td>Practicing <em>Ayni</em></td>
<td>Learning to relate and live in mutuality and equality</td>
<td>• Interchange of support, help, kindness and knowledge where labour and work are shared</td>
<td></td>
<td>houses, land</td>
</tr>
<tr>
<td>Practicing <em>Ayllu</em></td>
<td>Carrying out collective work and life in relation to agricultural and communal activities</td>
<td>• Managing agricultural land use and organizing labour</td>
<td></td>
<td>Women</td>
<td>Women collectively agree to work in others fields and prepare the food for the day every time they work together. Leaders or leaders’ wives support women in need. <strong>Women and Men</strong> Plan the work in the fields and community in order to accomplish all activities for each member.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Women and Men</strong></td>
<td>Participate in all communal and agricultural practices and activities</td>
</tr>
</tbody>
</table>

As a result of these practices and strategies to maintain the native potatoes as the most important crop in their daily diet and community activities, female producers, in the majority of cases, actively share traditional common forms of recognizing and characterizing the native potatoes at different vegetative periods or stages of the plant and tuber (fields and/or post-harvest activities) (Table 6.6).
Table 6.6: Seed Selection Practices and Identification of Native Potatoes

<table>
<thead>
<tr>
<th>Vegetative periods or stages of the plant and tubers</th>
<th>Tasks and Characteristics</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre Planting Period</td>
<td>- Selecting the tubers and varieties</td>
<td>- Time in the storage and conditions of the storage room</td>
</tr>
<tr>
<td></td>
<td>- Shape and condition of tubers (diseases, discoloration, number and depth of eyes)</td>
<td>- Planning distribution of varieties in the plots</td>
</tr>
<tr>
<td>Planting Period</td>
<td>- Distributing the varieties and planting them according to their agronomic and qualitative characteristics</td>
<td>- Vegetative period</td>
</tr>
<tr>
<td></td>
<td>- Time in the storage and conditions of the storage room</td>
<td>- Adaptation to ecological zones and steps</td>
</tr>
<tr>
<td></td>
<td>- Mother plants identification (most vigorous, healthy and best agronomic patterns in the field)</td>
<td>- Response to different types of soil</td>
</tr>
<tr>
<td>Growing Period</td>
<td>- Type of growing (semi erectus, erectus, prostrated)</td>
<td>- Plant’s behaviour</td>
</tr>
<tr>
<td></td>
<td>- Colour of flowers, leaves and stems and presence of long stolons</td>
<td>- Plant and individual variety’s characteristics</td>
</tr>
<tr>
<td></td>
<td>- Mother plants identification (most vigorous, healthy and best agronomic patterns in the field)</td>
<td>- Capacity of tubers to yield/production of tubers</td>
</tr>
<tr>
<td></td>
<td>- Selecting tubers according to condition (damage, diseases, etc)</td>
<td>- Potential seed tubers for next season</td>
</tr>
<tr>
<td>Harvest Period</td>
<td>- Selecting tubers according to condition (damage, diseases, etc)</td>
<td>- Considerations for processing, consumption and seeds</td>
</tr>
<tr>
<td></td>
<td>- Identification and selection by varieties and length of production (precocity or tardiness)</td>
<td>- Storing and processing tubers/ varieties according to different purposes – especially culinary aspects (resistance to frost, starchy varieties, small sizes and bitter/sweet tubers)</td>
</tr>
<tr>
<td>Post-harvest Period</td>
<td>- Size, shape, color and condition of tubers</td>
<td>- Storing and processing tubers/ varieties according to different purposes – especially culinary aspects (resistance to frost, starchy varieties, small sizes and bitter/sweet tubers)</td>
</tr>
</tbody>
</table>

Note: responses cited by (1) =Women and/or (2) =Men

Most of the activities involving seed selection and varietal identification depend on women. Women usually carry out the activities together and in colloquial in dyadic communication with one another by singing and chatting. Every decision is implicit for women when they work together. Men also participate in the activities but it is women’s decisions that contribute to the preservation and maintenance of the native potatoes. All of the activities are carried out using agricultural and festive calendars that allow them to cultivate the native potatoes in phases so they can have manage production for the whole year. In this case, women and men practice their traditional knowledge of native potato breeding (crianza) and production. They, women and men, intertwine their agricultural practices with their cultural beliefs to nurture the native potatoes throughout the production, harvest and post-harvest activities (Figure 6.4).
Figure 6.4: The Native Potatoes Agricultural and Festive Calendar According to NON – COGEPAN Respondents

<table>
<thead>
<tr>
<th></th>
<th>January</th>
<th>February</th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>August</th>
<th>September</th>
<th>October</th>
<th>November</th>
<th>December</th>
</tr>
</thead>
<tbody>
<tr>
<td>Climatic</td>
<td></td>
<td></td>
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<tr>
<td>Condition</td>
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<tr>
<td>Phenomenal</td>
<td></td>
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<td></td>
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<td></td>
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</tr>
<tr>
<td>Danger of hail</td>
<td>1,2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Danger of frost</td>
<td>1,2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incidence of Diseases</td>
<td>P. infestans, Paco luma</td>
<td>1,2</td>
<td>P. infestans, Paco luma</td>
<td>1,2</td>
<td>Fusarium spp. Globoidea spp.</td>
<td>1,2</td>
<td>Fusarium spp. Globoidea spp.</td>
<td>1,2</td>
<td>P. infestans, Paco luma</td>
<td>1,2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incidence of Insects</td>
<td>Premnotrypes spp. Frankliniella spp.</td>
<td>1,2</td>
<td>P. infestans, Paco luma</td>
<td>1,2</td>
<td>Premnotrypes spp.</td>
<td>1,2</td>
<td>Premnotrypes spp.</td>
<td>1,2</td>
<td>Frankliniella spp.</td>
<td>1,2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Signs/Soil</td>
<td>Presence of plants and animals</td>
<td>1</td>
<td>Red sky, hot and dry day</td>
<td>1,2</td>
<td>Cloudy, hot, rainy, humid days</td>
<td>2</td>
<td>Presence of plants and animals</td>
<td>1</td>
<td>Dry and hot days</td>
<td>1,2</td>
<td></td>
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<tr>
<td>Festivities</td>
<td>Pascua de Reyes</td>
<td>1,2</td>
<td>La Candelaria</td>
<td>1</td>
<td>Fiesta de las Cruces</td>
<td>1,2</td>
<td>San Juan/ Summer Solstice</td>
<td>1,2</td>
<td>Fiesta de Santiago</td>
<td>1,2</td>
<td>Dead Day</td>
<td>1,2</td>
</tr>
<tr>
<td>Agricultural Activities</td>
<td>Distribution Of Communal Land</td>
<td>1,2</td>
<td>1,2</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>1=Women</td>
<td>2=Men</td>
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</tbody>
</table>

1=Women          2=Men

Both Seasons

<table>
<thead>
<tr>
<th></th>
<th>Principal planting season</th>
<th>Small planting Season</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

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In order to cultivate and maintain their native potato varieties, producers actively explain that they rely on partners on which their ancestors also relied. Women expressed the view that the production of native potatoes would not be a reality without the contribution of these allies (*yanasus*) (Table 6.7).

**Table 6.7: Traditional Partners in the Production of Native Potatoes**

<table>
<thead>
<tr>
<th>Traditional Partners in the Production of Native Potatoes</th>
<th>Women</th>
<th>Expressions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mother Earth, “Mamapacha or Pachamama”</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• She is like us, she is a woman and gives life and nurtures us, it is equal communication amongst all of us with Mother Earth because she is our mother</td>
<td></td>
<td>La Mamapacha takes care of their children (us) and we have to take care of her. If we nurture the Mamapacha she will be not upset and will not give us new diseases or bad production</td>
</tr>
<tr>
<td>• It is the place we share with the soil, the air, the sky, the stars, the sun, the water and the moon. All of us are part of it</td>
<td></td>
<td>Female producer (NON-COGEPAN)</td>
</tr>
<tr>
<td>• We respect the changes we have with climate because everything is alive and natural forces say that mother earth that wants to tell us that we are not respecting her and we are abusing her</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>The Llamas</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Our llamas are our only helpers and providers. Llamas are our means of transportation; they can have access to places where others cannot, like the paths that lead to our fields. They easily transport from 15 to 20 kilos and go sky-high for long time without getting tired</td>
<td></td>
<td>Llamas are very important in our lives; they are the only source of work and transportation. We would not be able to transport, barter and commercialize our products. We also eat charqui (dry meat from llama)</td>
</tr>
<tr>
<td>• Llamas’ manure is our natural fertilizer. Llama’s meat is used for consumption and is consumed fresh and dry 'charqui' (dehydrated). Llamas’ wool is also utilized to sew the clothes, stitch the sacks to transport the potatoes and manure and seam the hondas</td>
<td></td>
<td>Female producer (NON-COGEPAN)</td>
</tr>
<tr>
<td><strong>Chaquitaclla or Taccla (plow)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• We use the chaquitaclla for all our agricultural activities; it is our best friend in the field. It is a multi-task tool. We use it for preparing the land, breaking up the soil, making holes (ocos) and ploughing the soil. It is easy to carry and cheaper to build. Our ancestors also used it and it is the tool that prepares the potatoes fields in the altura. There is not another tool that can be used here</td>
<td></td>
<td>The chaquitaclla is the only tool for preparing the land for potatoes. Potato tubers get rotten during the rainy season, we use chaquitaclla to build (las acequias) ridges to drainage. La Yunta - cannot have access to the fields and cannot cut deep enough, cannot make these ridges, neither can they maneuver the steep slopes that are cultivated.</td>
</tr>
<tr>
<td>• Men are the only ones using the chaquitaclla in the fields, in our tradition, it is said that chaquitaclla expresses manhood and men’s power hombria. Men barbecha the soil and we clean it from the weeds. Men prepare the soil and we set the seed inside the soil.</td>
<td></td>
<td>Female Producer (NON-COGEPAN)</td>
</tr>
</tbody>
</table>

There are some innovative practices women and men in COGEPAN have been using in order to integrate their traditional customs or local practices with new knowledge gained as a result of their participation in COGEPAN. Most notable is that peasant producers, through training, fieldwork and information exchange, have
learned that native potatoes can be a source of economic and commercial benefit (Table 6.8). Women and men in COGEPAN have had the opportunity to share their knowledge with one another and with the outside world, including other market chain activities such as agricultural and gastronomic fairs and niche products companies. Findings from this study indicate that women still have problems in understanding technical content such as scientific names. On the other hand, men grasp information with less difficulty; but male respondents emphasized their need for more profound knowledge to recognize, differentiate and rank varieties.
### Table 6.8: Innovated Practices for Women to Maintain Native Potatoes Biodiversity

<table>
<thead>
<tr>
<th>Innovated Practice</th>
<th>Features</th>
<th>Constraints</th>
<th>Threats</th>
</tr>
</thead>
</table>
| In-situ Conservation of Native Potatoes | - Positive Selection of Plants – Healthy plants\(^1,2\)  
- Morphological and genetic diversity\(^2\)  
- Different ploidy levels\(^2\)  
- Diverse number of species\(^1,2\)  
- Massive number of cultivars\(^1,2\)  
- On-farm maintenance of native potatoes (own places of origin and diversity) – (female peasant producer driven approach) \(^1\) | - Inconsistent morphological characterization and proper registers of varieties\(^2\)  
- Need more knowledge on conservation (on farm) of the varieties (post-harvest and storing activities) \(^1,2\)  
- Natural mutation and recombination of varieties\(^2\) | - Climate change is the main threat for producers because they are facing climate stress more frequently than before\(^1,2\)  
- State attention and sustainable partnerships to Andean are not yet prioritized in order to know the needs and potentialities of native potatoes and peasant producers\(^1,2\)  
- Formal market pressure to produce only one or two varieties is forcing producers to eliminate varieties that have been preserved for generations\(^1,2\)  
- Women and men producers still face exclusion and inequality when participating in training and events\(^1,2\)  
- Programs are structured in a way to see peasant producers as ‘strangers’ and ‘newcomers’ to the Peruvian society\(^1,2\) |
| Recognizing the Native Potatoes Resistance to Diseases and Pests | - Varieties are horizontally resistant to insects, diseases and pests\(^2\)  
- Vegetative periods vary from early to late periods\(^1,2\)  
- Some varieties contain low reducing-sugar and long-term capacity to be stored in the storage\(^2\) | - Needs of more profound scientific knowledge to recognize, differentiate and rank varieties \(^2\)  
- Climate change, formal market pressure and new diseases\(^1,2\) | |
| Distinguishing varieties for their nutritional qualities and features when processed | - Select, cultivate and process native potatoes according to traditional culinary quality\(^1\)  
- Produce diverse sub products of native potatoes for daily consumption, bartering and petty trade\(^1,2\)  
- Specific varieties are transformed in \textit{chuño} or \textit{tunta}, dry potatoes, flour, potato starch, potato alike coffee al and tocosh for commercialization\(^1,2\) | - Most of varieties are not yet known to the public\(^1,2\)  
- Qualitative and medicinal properties need scientific support to be tested and approved. For example, \textit{tocosh} is thought to have high levels of natural penicillin but without scientific proof\(^2\)  
- Needs to add value to products to be sold commercially\(^1,2\) | |
| Promoting Seed Accessibility and change | - Fairs, local markets, internships, bartering and gastronomic events effective actions for maintaining and developing diversity (using and valuing native potatoes at local, regional and national levels) \(^1,2\)  
- Women develop and strengthen trading exchange and selling skills\(^1\)  
- Women have the chance to demonstrate the tubers they have selected, stored, cultivated and harvested\(^1\)  
- The fairs are the ways women demonstrate how they have managed potato’ biodiversity \(^1\)  
- Female producers profound knowledge on native potatoes is successfully authenticated\(^1\)  
- Events represent excellent opportunity for socializing, sharing knowledge and getting information from other farmers or actors\(^1,2\)  
- Female producers are awarded and recognized for preserving and maintaining native potato biodiversity\(^1\) | - Few programs fund the mobilization of peasant producers to participate in events\(^1,2\)  
- Women producers need to participate and be involved in the management of these events\(^1\) | |

1=women 2=men
Figure 6.5: The Native Potatoes Agricultural and Festive Calendar According to COGEPAN Respondents

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<th>Months</th>
<th>January</th>
<th>February</th>
<th>March</th>
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<td>Danger of hail</td>
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<tr>
<td>Signs &quot;Señas&quot;</td>
<td>Presence of plants and animals</td>
<td>Red sky, hot and dry days</td>
<td>Cloudy, hot and humid days</td>
<td>Presence of plants and animals</td>
<td>Dry and hot days</td>
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<td>Festivities</td>
<td>Pancua de Reyes</td>
<td>Candelaria</td>
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<td>Fiesta de Cruces</td>
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<td>San Juan/ Summer Solstice</td>
<td>Fiesta de Santiago</td>
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<td>Agricultural Activities</td>
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<td>Putting tubers in sacs</td>
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<td>&quot;Labeling and sealing the sacs</td>
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<td>Transporting the tubers to the field</td>
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<td>Stepping the tubers</td>
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<td>Transporting and placing the tubers in the pond</td>
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<td>Drying the Chuño</td>
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<td>Transporting the Chuño to the Storage</td>
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<td>Commercialization of tubers–informal markets</td>
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| 1=Women | 2=Men | * Activities unique for COGEPAN peasant producers

Both Seasons | Principal planting season | Small planting Season

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Comparisons between the NON-COGEPLAN (Figure 6.4) and COGEPLAN (Figure 6.5) suggest that peasant producers involved in new market chains still carry out agricultural practices based on the agricultural and festive calendars. They have, however, added other activities as a result of producing native potatoes for commercialization (industry, fresh tubers and seed propagation) (Figure 6.4). In total, at least ten additional tasks feature in their agricultural and festive calendar.

Summary

Chapter Six has presented findings relevant to individual and collective values and beliefs among male and female peasant producers. Women and men from both groups of respondents (COGEPLAN and NON-COGEPLAN revealed that their individual and collective forms of looking at the world are strongly attached to their traditional understanding of preserving and maintaining native potato biodiversity. This is achieved in communal and relational forms through dialogue and reciprocity.

As a result of the Papa Andina Initiative, women and men have used their traditional understanding, creativity and collective values to learn from and support each other. Women are especially attentive to their collective needs. Women leaders feel respected and have gained authority as experts in their communities, which strengthen their individual self-esteem and confidence among other women, including those working in NGOs such as FOVIDA. Indigenous women’s identity has been the target of discrimination in the wider society. Attention to native potato production and women’s expert knowledge can help to emphasize old cultural values such as equality and complementarity between men and women by offering an opportunity to emphasize women’s substantial contributions to productive work. The findings indicate, however, that they learn new skills through COGEPLAN activities. Women are focusing on commercial and economic production of native potatoes, which may affect the maintenance of the native potato diversity.
CHAPTER SEVEN

COLLABORATIVE MAPPING AND ANALYSIS OF THE ACTION GROUND

7.1 Introduction

Chapter Seven presents the last component of research findings – female and male producers’ collaborative identification and analysis of the interaction between different stakeholders, institutions or actors in peasant communities associations (NON-COGEPLAN) and the innovative market chain (COGEPLAN). Peasant women and men looked at how different stakeholders, institutions or actors interact to produce different results - relations and roles - that affect their livelihoods. Data for this chapter were generated from various participatory and collaborative actions, such as video-mediated interviews, the social analysis CLIP, and other SAS2 tools (force field and nominal identification of actors). Other methods included individual situation analysis and participant observation as documented in the researcher’s reflective journal. All data were analyzed using a thematic grouping of the data and open and selective coding.

The first section of the chapter presents the nominal identification analysis of the different stakeholders (actors and institutions) involved directly and indirectly with male and female peasant producers (COGEPLAN and NON-COGEPLAN). These stakeholders were identified and classified by participants according to their overall functions and roles as defined by the peasant producers’ perceptions and observations. The second section of the chapter presents the mapping of power relations and their impact on social relations and roles in order to demonstrate the important strengths and weaknesses of the macro to micro level linkages within the system, within which COGEPLAN and NON-COGEPLAN producers are embedded. The Collaboration/Conflict, Legitimacy, Interest and Power (CLIP –SAS2) analysis tool was used in focus groups discussions to collaboratively create the profile and identify the characteristics, relationships and roles of key stakeholders, actors and groups directly or indirectly involved with female and male peasant producers. The analysis of the data used the specialized software associated with the CLIP-SAS2 tool.
In the third section of the chapter, once the different actors and groups, relations and roles are portrayed and presented, an examination of the institutional and organizational components of COGEPAN and NON-COGEPAN groups is provided in order to understand the forces that support and obstruct the production and commercialization of native potatoes in peasant communities and the market chain of native potatoes. Finally, in the fourth section of the chapter the roles and division of labour among female and male peasant producers inside their groups, peasant communities (NON–COGEPAN) and the market chain (COGEPAN) are defined and described.

7.2 Nominal Identification of Stakeholders

There are many actors and institutions in the native potato production and post-harvest system in Peru. The epistemological approach of this study seeks to examine these stakeholders from the perspective of peasant producers. Through the use of the nominal identification of actors (SAS2), female and male participants from COGEPAN and NON-COGEPAN producer groups identified the stakeholders (public, private, research and development, civic society and academic) actors and institutions. An element to differentiate, the scope (macro, meso, micro and endogenous levels) was applied. It facilitated the identification and organization of this large group of actors. In the following sub-section on power relations, the tool for social analysis known as CLIP (Collaboration, Legitimacy, Interest and Power) from the SAS2 tool kit was used. The analysis of the data utilized the CLIP software. As a complement to the information obtained, a narrative method which presents a woman’s evaluation of her own individual situational mapping was utilized to understand her impression of the holistic context in which she is embedded (market linkages, support institutions/services, peasant community and household) and how these are linked to her personal existence and worldview.

18 From here on stakeholders is a term used as a synonym with actors and institutions. Actors are usually individuals and institutions include organizations, networks and groups.
7.2.1 NON-COGEPLAN Nominal Identification of Actors

In the case of NON-COGEPLAN, female and male producers identified the institutions, actors or stakeholders that may or may not be supporting peasant producers and their respective communities. There are some questions about actors or institutions, according to the producers, with respect to whether or not they are accountable for what they are executing in the peasant communities.

In the nominal identification technique, public institutions predominated (n=6) productive players (n=2). In addition, respondents recognized the presence of (n=2) research centres: the International Potato Centre (CIP) and the National Institute of Agricultural Innovation (INIA). Female and male producers generally coincided on stakeholder identification, although there were some cases in which women gave a distinct and separate opinion of the actors. For example, in the identification of government agencies, female producers identified the actor as a support to the community and social-based programs, while men indicated it is absent in peasant communities. Also, men could better explain their understanding of the position and responsibility of each actor or group within the cultural, social, political and economic system (Table 7.1).
<table>
<thead>
<tr>
<th>LEVEL</th>
<th>Actor/Stakeholder/Group</th>
<th>Overall Function</th>
<th>Outcomes</th>
</tr>
</thead>
</table>
| Central Government Public Sector | • Formulation and implementation of policies and laws to facilitate the effective functioning of the rural and peasant communities  
• Ministry of Agriculture - Provide technical support to regional and local governments to carry out the functions transferred under decentralization | • Absence of key sectors (agriculture) 1,2  
• Support community and social based programs 2  
• Passive and non-active ally 1,2 | |
| Macro or National Level | Research and Extension Centres - Research and Extension Organisms | • CIP - Non-profit research organism  
• INIA - National and Public Institute for Agricultural Innovation - Public research and extension organism | • Localized and sporadic presence 2  
• When active very effective (CIP) 1,2  
• Mostly train and transfer technology to practitioners and leaders (INIA) 1,2  
• Visit producers but products expensive and most of these toxic 1,2 | |
| Meso Level: Regional and Provincial | Input Suppliers | • Private and for profit companies that primarily sell agricultural products to producers | |
| National University | • Academic institution. Students involvement with communities could be beneficial  
• Responsible for development of regional planning, execution of public investment projects, promote economic activities and manages public property | • Agrarian University sporadically works with Peasant Communities 1,2  
• Few projects that really benefit the communities 1,2  
• Projects have to be managed through provincial government 2  
• Most of the time tension and disagreement 2  
• Specific and limited number of programs with farmers (PRONAMACHS) 1,2  
• Passive but potential ally (AGRO RURAL) 2 | |
| Public Sector | • PRONAMACHS - Promote sustainable management of natural resources in the watersheds of the highlands.  
• Agro Rural – National Program that is part of the Ministry of Agriculture and coordinates rural productive development programs, promoting consensus with local decision-makers for inclusive local economic development. | • Active when commercialization takes place (wholesaler and traders) 1,2  
• Regulate prices, most of the time low prices (wholesalers and traders) 1,2  
• Long-time exchanging tubers – established network (bartering) 1,2  
• Once they know their “caseria” they are loyal to producers good prices for the potatoes 1 | |
| Regional Universities | • National University of Central Peru –  
• Private University “Los Andes – Huancayo” | • Passive and inactive collaborators 2 | |
| Informal Markets | • Regional Market (Huancayo, Satipo)  
• Provincial Market (Concepcion, Jauja)  
• District Markets (Comas, Andamarca)  
• Wholesalers, traders and consumers - Buy native potatoes in the fields and markets  
• Consumers – Pay good prices, small amounts  
• Bartering (Pariahuanca, Andamarca - Neighbouring villages and Peasant Communities – Lower altitude towns) | • Pay good prices, small amounts 1,2  
• Once they know their “caseria” they are loyal to producers good prices for the potatoes 1 | |
| Micro Level: District and Town Centre Governments – Municipalities | • Governor – District Level  
• Municipal Agency – Town centre government  
• Juez de Paz no letrado – Political representative in the town centre to conciliate and maintain peace in town centres  
• Lieutenant Governor – Represents the Governor in town centres  
• Police Commissary -  
• Local Informal Market – Petty sale to consumers and food vendors, native potatoes sold by kilos | • Support community members in all activities (peasant community) 1,2  
• Provide community land to members 1,2 | |
| Endogenous Level | Peasant Community | • Peasant Communities - General Assembly  
• Community Council  
• Specialized Committees (activities and Annexes)  
• Community members  
• Conservationist Association of Native Potatoes | • Collective work and activities to support members 1,2  
• Integrates all members in Ayllu system 1,2  
• Engaged with community members 1,2 |
<table>
<thead>
<tr>
<th>LEVEL</th>
<th>Actor/Stakeholder/Group</th>
<th>Overall Function</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Conservationist</td>
<td>• Men Leaders</td>
<td>• Represents the peasant community in events and fairs&lt;sup&gt;1,2&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Association of Native Potatoes (Key Stakeholder and end user)</td>
<td>• Men and women members</td>
<td>• Integrates and promotes participation and group work&lt;sup&gt;1,2&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Members’ Families</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Men and Women living in the community but not active members of the association</td>
<td></td>
</tr>
</tbody>
</table>

<sup>1=Women  2=Men</sup>

### 7.2.2 COGEPAN Nominal Identification of Actors

Both female and male peasant producers involved in COGEPAN were easily able to identify stakeholders and groups that have political, economic, social and cultural presence and how they influence the production and commercialization of the native potatoes. Participants were able to identify, analyze and describe the characteristics of each stakeholder and state easily whether or not they are visible by their actions in the regions. Female and male producers in COGEPAN emphasize the importance of the international and national formal markets that they access. They acknowledge that some of the industries do not respect contracts and agreements with peasant producers. They also value the treatment they receive from NGOs such as Veterinarians without Borders, which have been supported by the agricultural development program of France and Belgium.

The perceptions of female and male producers in relation to the national government and public sector are similar to responses from the NON-COGEPAN group. They feel that the government’s role should be stronger and more accountable. Confidence and trust in their public institutions are lacking. In addition, there is very little investment by the governments/authorities in technical assistance (sprinkler irrigation or water reservoirs for peasant producers). With such a lack of support, there is no way that peasant producers of Peru could innovate and improve their products to achieve greater profitability. The lack of support from the Peruvian government, say producers, is due perhaps to the mistaken view that to help small-scale agriculture requires large-scale expensive technologies.

Female and male farmers see the role of the International Potato Centre as a facilitator and supporter to FOVIDA, the NGO working with the producers in
COGEPAN. Women and men also think that academic institutions or universities can play a more important role bringing university students to the communities (Table 7.2).

### Table 7.2: Nominal Identification of Stakeholders (COGEPAN)

<table>
<thead>
<tr>
<th>LEVEL</th>
<th>Actor/Stakeholder/Group</th>
<th>Overall Function</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Macro Level - International and National Level</td>
<td>International Markets</td>
<td>• France and Belgium - Non-profit buyer (flakes) - <strong>Vétérinaires Sans Frontières – Centre International de Coopération pour le Développement Agricole (AVSF-CICIDA)</strong></td>
<td>• Active and fair ally. Best prices and producers in charge of adding value to potatoes</td>
</tr>
<tr>
<td></td>
<td>National Formal Markets –</td>
<td>• Companies and Buyers - <strong>Industry – Frito Lay, PEPSICO</strong> - Buyer, processor - Supermarkets - Plaza Vea, Tottus - Buyer, intermediary, adding value to native potatoes - Wholesaler - Ursus, Campo Lindo - Wholesaler, intermediary, good prices - Restaurants and Chefs (APEGA) - final Buyers, buy products from peasant producers as an organization in order to support a major number of producers</td>
<td>• Active allies, good prices • Sometimes agreements are not accomplished (Pepsico) 1, 2 • Share information with producers (Restaurants and Chefs) 1, 2 • Support producers to sell native potatoes in a large extend of markets, agricultural fairs, hotels and restaurants in Peru and abroad 1, 2</td>
</tr>
<tr>
<td></td>
<td>Central Government</td>
<td>• Controls production, delivery and allocation of goods and services by and for the government or its citizens, whether national, regional, provincial, district/town centre</td>
<td>• No present in communities (agriculture) 1, 2</td>
</tr>
<tr>
<td></td>
<td>Public Sector</td>
<td>• Different institutions like the Ministry of Transportation, Agriculture. Support and provide basic services like communication, transportation, roads and technical support</td>
<td>• Support cities and urban areas 1, 2 • Passive and non-active ally 1, 2</td>
</tr>
<tr>
<td></td>
<td>Research and Extension Centres - Research and Extension Organisms</td>
<td>• CIP - Non-profit research organisation • INIA - National and Public Institute for Agricultural Innovation - Public research and extension organisation</td>
<td>• Involved with FOVIDA. Ally (CIP) 1, 2 • Mostly train and transfer technology to practitioners and leaders (INIA) 1, 2, Absent</td>
</tr>
<tr>
<td></td>
<td>Input Suppliers</td>
<td>• Private and for profit companies that primarily sell agricultural products to producers 1. Distributes resources and finance projects by sectors – Regions of Junín and Huancavelica</td>
<td>• Offer products and sometimes organize “day fields” 1, 2 • Few projects that really benefit a the communities 1, 2</td>
</tr>
<tr>
<td>Meso Level: Regional and Provincial</td>
<td>Regional Government</td>
<td></td>
<td>• Projects have to be managed by provincial government 2 • Most of the time forget communities 1, 2, Absent</td>
</tr>
<tr>
<td></td>
<td>Public Sector</td>
<td>• <strong>PRONAA</strong> - Promotes the supply of producers’ products for schools’ breakfasts • Agro Rural – National Program that is part of the Ministry of Agriculture and works to achieve communal development.</td>
<td>• Passive but potential ally (AGRO RURAL) 1, 2</td>
</tr>
<tr>
<td></td>
<td>Regional Universities</td>
<td>• <strong>National University of Central Peru</strong> – • <strong>Private University “Los Andes – Huancayo</strong> – Regional academic institutions with potential to work in both regions</td>
<td>• Passive and inactive collaborators 1, 2</td>
</tr>
<tr>
<td></td>
<td>NGO – FOVIDA</td>
<td>• Operates independently from the government and is not part of the private sector. The role of FOVIDA is acting as a broker, intermediary and extension provider. It acts as COGEPAN’s facilitator and organizer in the market chain. It is the only active organization supporting producers</td>
<td>• Only ally that supports COGEPAN 1, 2</td>
</tr>
<tr>
<td></td>
<td>Informal Markets</td>
<td>• Regional Market (Huancayo, Satipo) • Provincial Market (Huayucachi, Tayacaja, Concepcion, Jauja) • District Markets (Comas, Pazos)</td>
<td>• Active when commercialization takes place (wholesaler and traders) 1, 2 • Regulate prices, most of the time low prices (wholesalers and traders) 1, 2</td>
</tr>
<tr>
<td>LEVEL</td>
<td>Actor/Stakeholder/Group</td>
<td>Overall Function</td>
<td>Outcomes</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Micro Level: District and Villages/Town Centres | Municipal Agency – Local Government                        | • Wholesalers, traders and consumers - Buy native potatoes in the fields and markets  
• Consumers – Pay good prices, small amounts *(montones)*  
• Governor – District Level  
• Municipal Agency – Town centre government  
• Juez de Paz no letrado – Political representative in the town centre to conciliate and maintain peace in town centres  
• Lieutenant Governor – Represents the Governor in town centres  
• Local Informal Market – Petty sale to consumers and food vendors, native potatoes sold by the kilo  
• Peasant Communities | • Once they know their casera they are loyal to producers good prices for the potatoes1  
• Support community members in all activities (peasant community) 1,2  
• Provide community land to members (Peasant Communities) 1,2 |
| Endogenous Level                           | Peasant Community                                          | - General Assembly  
- Community Council  
- Specialized Committees (activities and Annexes)  
- Community members  
- Conservationist Association of Native Potatoes | • Collective work and activities to support members1,2  
• Integrates all members in Aylhu system1,2  
• Engaged with community members1,2 |
| Individual Association of Native Potatoes Producers (Key Stakeholder and end user) | Male and Female Producers  
Family members | | • Groups all producers from each community1,2  
• Integrates and promotes commercial production of native potatoes1,2 |

1=Women  2=Men

Peasant producers feel they are overlooked by national and central governments which play a key role in providing resources, financing and economic support to communities. There is also another aspect participants brought to the study, which is the existence of friction between the central government and the regional government as a result of the decentralization process. Frequently, two different political parties conduct two different types of government at the national and the regional levels, and these institutions contradict each other. Peasant producers believe that the role of all government is to integrate the country and its citizens for one common purpose, which is the welfare and wellbeing of the citizens.

7.3 Collaboration/Conflict, Legitimacy, Interest and Power (CLIP –SAS2) Analysis

The nominal identification of actors assisted producers to continue with a modified CLIP analysis. The CLIP tool was conducted in focus groups discussions. This tool enabled female and male producers to collaboratively create the profile, identify the characteristics and relationships of key stakeholders, actors and groups directly or indirectly involved with peasant producers and on the production and commercialization of native potatoes.
The purpose of this exercise was to help female and male producers to brainstorm some key questions in order to consider that power is about understanding relationships among different individuals and groups and the factors that influence those relationships. In order to help them to understand power, participants were advised not to think of power as a ‘thing’ or ‘object’, in which people may own more than others, but as an exceptionally important way of defining relationships between different actors.

This method was able to identify the different actors graphically and examine the relationships among them one by one, describing actors in as much detail as possible. Once this process was completed, comparisons were made with what actually happens in these relationships. Brainstorming questions focused on key features of these relationships, namely their interests, legitimacy, collaboration/inconsistency (conflict). The researcher decided to replace the term ‘conflict’ for ‘inconsistency’, since producers had been using the term during the study to interpret the historical context of armed conflict and the fragile coordination within and between Peruvian public institutions.

A common characteristic for both groups is that power and power relations are considered by female and male producers from COGEPAN and NON-COGEPAN groups as key aspects that determine the access and availability of resources to produce and commercialize native potatoes. They stated that the exercise of power determines their condition as ‘peasants’, as well as ‘producers’. Participants identified the level of power and resources each stakeholder would practice or contribute to their peasant associations (COGEPAN and NON-COGEPAN) based on the brainstorming questions. Power was assessed based on economic wealth, political authority, and the ability to use information and communication.

### 7.3.1 Mapping Power, Relations and Roles (NON-COGEPAN)

When NON-COGEPAN female and male producers assessed the power and type of power of stakeholders, they specified those actors and institutions that hold power (absolute power) to be the government and the public sector. Participants considered their function should be that of enablers and deliverers. Moreover, participants consider that these actors can make valuable contributions in order to promote real development. They recognized that universities have less power but producers believe these institutions can
make significant contributions to the improvement of agriculture in the Andes. Other stakeholders that were assigned less power were still considered as key stakeholders. They include informal markets, peasant communities and different bodies associated with them, bartering partners and research institutions. Although recognized as relatively less powerful, male and female producers consider that these allies have been sustaining the informal commercialization of native potatoes (informal markets), the management and preservation of the potatoes’ genetic diversity (i.e. bartering) and the collective support (i.e. communities) (Table 7.3).

If the central government and the universities worked all together, we could have different laws, policies and programs that would support the entrance to new markets for the native potatoes and the other Andean roots and tubers we cultivate. They have absolute power to change our present situation. We need the support of these key institutions to eradicate poverty and fight against climate change.

Male community leader – 42 years old

### Table 7.3: Types of Power Exercised Between Stakeholders (NON COGEPAN)

<table>
<thead>
<tr>
<th>POWER RELATIONS</th>
<th>Government (GO)</th>
<th>Public Sector (PS)</th>
<th>Universities (UN)</th>
<th>Informal Markets (IM)</th>
<th>Bartering (BA)</th>
<th>Input Suppliers (IS)</th>
<th>R&amp;D and Extension Sector (RE)</th>
<th>Peasant Communities (PC)</th>
<th>Community Based Organizations (CB)</th>
<th>Peasant Communities Associations (AS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td>P</td>
<td>P</td>
<td>MP</td>
<td>MP</td>
<td>NP</td>
<td>MP</td>
<td>MP</td>
<td>MP</td>
<td>NP</td>
<td>NP</td>
</tr>
<tr>
<td>Role of Stakeholder</td>
<td>KS</td>
<td>KS</td>
<td>KS</td>
<td>KS</td>
<td>SS</td>
<td>KS</td>
<td>KS</td>
<td>KS</td>
<td>KS</td>
<td>KS</td>
</tr>
<tr>
<td>Type of Relationship</td>
<td>E/D</td>
<td>E/D</td>
<td>E and/or D</td>
<td>D</td>
<td>EU</td>
<td>D</td>
<td>D and/or E</td>
<td>EU/EU/B</td>
<td>EU/B</td>
<td>EU/B</td>
</tr>
</tbody>
</table>

P=Power          MP=Medium Power      NP=Non Power     KS=Key Stakeholder  SS=Secondary Stakeholder  Enabler=E  D=Deliverer  EU=End User  B=Beneficiary

### 7.3.2 Mapping Power, Relations and Roles in COGEPAN

Participants in COGEPAN agreed that the government and the public sector hold strong power at different levels – national, regional, provincial, district and municipal because projects and programs are managed by these entities. Producers also stated that the government manages all resources, especially financial or economic, to influence the production and commercialization of native potatoes, although this actor/institution has not done much to support their development. Female and male producers in COGEPAN
believe all power is centralized in the national government and all actions depend on this entity. The lack of attention they receive from the government results in the poor conditions in which they live. They also stated that FOVIDA has relative power in relation to other groups, and this power is exercised to provide support to native potato producers. They do not feel there is any power exercised or given to the peasant producers; they lack economic wealth, political authority and they do not have any ability to use power because of the lack of access to resources they experience relative to other (urban) Peruvians. Finally, they do not have access to information and communication from media, television and radio broadcasting because they live in rural and remote areas in the highlands where means of communication are not accessible to them.

Female and male producers in COGEPAN also sense that the two regional universities have strong power to work with the producers in research, extension and technology development. They stated that universities do not use the money they are assigned to work and research with the communities. Academic and research institutions have been inactive and there is little research presence in the highlands as compared to earlier. For the participants, formal markets and input suppliers only have economic power but lack the other types of power. They believe research and extension organisms like CIP and INIA have strong power in relation to information and communication through technology dissemination and extension. They consider that these institutions are essential to the development of the highlands in Peru. As a result of the power relations analysis participants analyzed losses and gains related to the benefits producers obtained as a result of the intervention or presence of the stakeholders in their communities and activities. They perceive a direct and indirect influence of the stakeholders on the gains and losses of producers (Table 7.4).
The findings in this analysis also demonstrate that female and male producers in COGEPAN and NON-COGEAPN communities feel strongly that is the central government’s responsibility to respond to citizens needs and that treatment has to be one and the same with producers or farmers in the Coast region of Peru. Highland farmers are aware that in other parts of their country government provides support to extensive and intensive agriculture. As they are peasant producers and cultivate in harsh weather, they feel the government lacks interest in promoting native potatoes and other Andean crops. Participants affirmed that the lack of government attention is reflected in the overall ineffectiveness of the public sector. Female and male peasant producers think that all levels of government service lack interest in peasant communities and promoting the development of agriculture. They stated that there is no policy concerned with promoting agricultural innovation in the highlands. It is the reason they still rely on informal markets and bartering to achieve household food security. Participants stated that there is no financial facility such as credit institutions, extension programs or the permanent presence of research centres (NON-COGEAPN). Overall, women and men expressed mistrust in all aspects of the public sector because peasant communities and peasant producers in the highlands have not yet been included in the decision-making and participatory processes taking place in the country.

Female and male participants (COGEPAN) do acknowledge that international research and development institutions such as CIP work with them sporadically and have contributed to maintaining Andean plant varieties and in some cases, rescuing varieties. In these cases, the support from these institutions have helped
them to increase the number of varieties in the communities. When these R&D organizations work with peasant communities they have the opportunity to obtain technological information and genetic material that CIP and the national partner, INIA, have maintained in their germplasm banks. Female and male participants from NON-COGEPAN stated that the benefit is huge because they acquire seedlings that are free of diseases. However, they say that the presence of these institutions is not permanent and that over the last 10 years they have not had the strong presence in the communities they had before.

In the case of COGEPAN members, women and men made clear that the presence of FOVIDA (which collaborates with CIP and INIA) in the production and commercialization of native potatoes is highly compatible with the interests of COGEPAN because it has provided a channel to new formal markets while at the same time providing positive changes in their lives. They stated that becoming members of the producers’ associations has been very beneficial to them since that the membership has helped them to access extension and new formal markets.

Previously, production was only consumed in their households and sold within communities at lower value. They also believe that the absence of the public sector (government and local universities) is not compatible with the interests of the producers and their activities. Limited access to basic services, credit, education, and technology is an impediment to them. Participants in COGEPAN consider that the presence of the peasant community as an institution plays a neutral role because it does not influence the production or commercialization of the native potatoes. It was acknowledged that since peasant producers are entitled to use and cultivate community land, these local indigenous institutions are still relevant even though they have formed COGEPAN groups. The data indicate that the level of legitimacy perceived by women and men from COGEPAN in relation to the other stakeholders varies. As stated above, participants expressed their mistrust of the different levels of government, public sector, local universities and input suppliers. Participants believe, however, that the international market (France), the chefs and restaurants organized as the Peruvian Association of Gastronomy (APEGA) exert a strong and increasing reach into the Andes, supporting
their access to a large group of markets, agricultural fairs, hotels and restaurants in the country or abroad.

7.4 Collaboration and Inconsistencies Identified in the Analysis (NON-COGEPLAN and COGEPLAN)

Analysis of collaboration and inconsistencies among stakeholders was highly focused on resource access. The problems of water accessibility and availability of land are key concerns to producers. For NON-COGEPLAN peasant producers, there is little access to formal markets. There is also very little investment in the implementation of technology (high-technology and conservation irrigation, water reservoirs, agricultural technologies to fight climate change, technological practices to support and ease women’s work in the household plot and community) and other technical assistance. Therefore, peasant producers are trapped in poverty and exclusion and they cannot innovate and improve their products to achieve greater profitability. As a result, female and male producers must rely on local-level institutions operating in their communities and the association itself (Table 7.5).

Table 7.5: NON-COGEPLAN Producers’ Sense of Collaboration and/or Inconsistence

<table>
<thead>
<tr>
<th>Collaboration</th>
<th>Government (GO)</th>
<th>Public Sector (PS)</th>
<th>Universities (UN)</th>
<th>Informal Markets (IM)</th>
<th>Bartering (BA)</th>
<th>Input Suppliers (IS)</th>
<th>R&amp;D and Extension Sector (RE)</th>
<th>Peasant Communities (PC)</th>
<th>Community Based Organizations (CB)</th>
<th>Peasant Communities Associations (AS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inconsistence</td>
<td>PC, AS</td>
<td>AS</td>
<td>AS</td>
<td>AS</td>
<td>PC, AS</td>
<td>AS</td>
<td>GS, PS, UN</td>
<td>GS, PS, UN</td>
<td>GS, PS, UN</td>
<td></td>
</tr>
</tbody>
</table>

Female and male participants (NON-COGEPLAN) noted that the public sector does provide some support to the community-based programs in the communities such as the Glass of Milk, Together and Popular Kitchen’ programs. Currently, a government-funded program, ‘Agro Rural’, is working in the installation of a pressurized irrigation system for the community of Racracalla, which will expand the agricultural frontier for 130 rural families. The project will include permanent irrigation of agricultural lands and increase production for 10 hectares of native potato and 20 acres of pasture and permanent crops.
Collaboration is latent but very strong inside peasant communities but it is also frail and mostly invisible to outsiders and external actors.

In contrast, female and male participants from COGEPAN have an established relation of collaboration in their groups (see Table 7.6). In the NON-COGEPAN group, there is no apparent conflict and tension among the producer groups. To a lesser degree, there is inconsistency and absence of public and private actors that can promote native potato production at the national level in order to alleviate poverty and social exclusion. COGEPAN participants believe that the creation of sustainable and well-built networks and alliances with the government as well as with other sectors would support the maintenance of Andean crop biodiversity and generate and produce new varieties. They have confidence that they know how to produce seed tubers to fulfil the needs of Peruvian and international markets.

Table 7.6: (COGEPAN) Producers’ Sense of Collaboration and/or Inconsistence

<table>
<thead>
<tr>
<th></th>
<th>NGO – FOVIDA (FO)</th>
<th>Government Sector (National, Regional, Provincial) (GS)</th>
<th>Universities (UN)</th>
<th>Formal Market (FM)</th>
<th>R&amp;D and Extension (RE)</th>
<th>Peasant Communities (PC)</th>
<th>Input Suppliers (IS)</th>
<th>Public Sector (PS)</th>
<th>Producers’ Associations (PA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collaboration</td>
<td>PA, FM</td>
<td>PS, RD, UN</td>
<td>GS, PS</td>
<td>PA</td>
<td>RE</td>
<td>PA</td>
<td>FO</td>
<td>GS, UN</td>
<td>FO, FM, PC</td>
</tr>
<tr>
<td>Inconsistence</td>
<td>PA, FM</td>
<td>PA</td>
<td>PA</td>
<td>PA</td>
<td>GS, PS</td>
<td>PA</td>
<td>PA</td>
<td>PA, PC</td>
<td>GS, PS, RE, UN</td>
</tr>
</tbody>
</table>

The collaboration that COGEPAN producers obtain from other stakeholders and groups is very limited. Participants stated that the only organization that collaborates with them is FOVIDA, which in turn supports producers’ access to formal markets. Formal markets are in some ways inconsistent with the producers.

While the international market supports the market chain through the provision of good prices and permanent but not continuous commercialization (quotas are provided every three months and not more than 20,000 kilos per quota), the national markets still do not create a safe and trusted environment because they do not respect contracts and agreements signed with peasant producers. Frito Lay, one such company, is working with native potato producers, but collaboration and trust between these partners is very weak.
Producers have not established any network of collaboration with the government, specifically at the national, regional and provincial levels and they would like it to become a reality. They feel there is an inconsistency in relation to the research and extension sector, because these institutions are not consistent in their work with native potatoes producers. They believe that if the communication and collaboration with this sector were closer and more reliable, the sharing of knowledge and integration of their traditional knowledge with modern scientific knowledge would provide producers with new forms of maintaining, preserving, and cultivating native potatoes.

In order to complement the views of female and male producers, the following tool (individual situation analysis) was done for a woman from each group.

7.5 **Individual Situation Analysis**

In this section, data from the SAS2 are complemented by narrative analysis in participatory action research. An individual analysis of a peasant woman producer is used to structure and represent information gathered from the research study about the position of women in relation to other actors involved directly or indirectly in the production of native potatoes. This technique generated women-centred views on each stakeholder.

The female producer narrative considers the different levels of the system in which she is involved: the household, the peasant community, the informal (NON-COGEPAN and COGEPAN) and formal (COGEPAN) markets, public institutions, research and development agencies and the government. The female-centric narrative identifies, through the arrows, the function of each actor/institution in relation to: 1) the gender constraints she may come across; 2) the power relations she experiences from these actors, groups or entities; and 3) most important impressions.
Figure 7.1: Killa’s Individual Situation Analysis (NON-COGEPLAN)
7.5.1 *Killa’s Individual Situation Analysis (NON-COGEPAÑ)*

In Figure 7.1 the protagonist is a female widow (42 years old) fictitiously called *Killa*, which means moon in Quechua. She has been the head of the household for more than ten years after her husband died as a result of a long and painful lung disease that he contracted as a worker in the Morococha mine. She has four children (two boys and two girls). The boys are single, one 28 years old and working as a truck driver; the other 24 years old working in the mining industry. The girls live with her in the community. One of them is 20 years old and married with two small girls. The youngest girl is 12 years old and she attends primary school. The girls help their mother in taking care of the household, the animals and the agricultural practices in the field. *Killa* shares her experiences and insights in relation to each actor, entity or stakeholder she has identified as having some involvement with her agricultural and livelihood activities.

The woman identified three stakeholders or actors that are in the community. The first are the governments (national, regional and provincial levels). *Killa* believes that government at all levels manages all resources but that programs are not addressed to peasant communities or rural areas of the Andes. Adding to her statement, she stresses that the governments demonstrate indifference and lack of concern in relation to peasant women in the highlands, and especially in relation to women in agriculture.

*Killa* considers that the community-based programs are very important in the communities. These programs support all the community through their activities (a communal kitchen, the Glass of Milk and Mothers’ Club). Assistance comes from different government sectors or ministries, Ministry of Women Affairs (now most of the programs are managed by the Ministry of Development and Social Inclusion), Ministry of Production and Ministry of Health among others.

Research and development agencies are familiar to *Killa*. When working in the communities, the institutions provide extension, training and inputs. However, their presence is not permanent and they usually work with the community’s male leaders.

*Killa* represents her household in the community so she is the person who manages the land that the community assigns to her household for the agricultural season. She identified four groups that she links to, and in most cases, she has to deal with these
actors.

First, male leaders try imposing their ideas on female members and want to control decisions. As they represent the community, male leaders sometimes get benefits, of which the rest of the community members are not aware. Men, Killa observes, like holding the best positions in the management of the community.

*Killa* also interacts with male community members who share the work of the community. Although they have more support from the community and community leaders, sometimes in the form of more and better land, she feels worried that things have not changed too much for men or women since she was a child.

*Killa* recognizes other registered female members of the community. She feels very confident sharing the work and other activities with the women in the community. *Killa* says that single female members suffer more than married women

Killa also identifies married women from the community. She states that women (married or single) work together on community-based programs and even agricultural activities. *Killa* states that married women cannot vote or exercise any management position in the community.

*Killa* named two stakeholders that are related to the commercialization of native potatoes. The first institution is the informal markets where sales are in small amounts and prices are very low and which *Killa* has to transport the potatoes from her house to the fairs or other local markets. *Killa* does all the work. In addition, she states that it is not unusual for men (transporters or buyers) to take advantage of their position to pay less and mistreat her in the informal markets. *Killa* usually barters potatoes for other products or crops that she does not produce on her land in order to have food for the winter. Also, she thinks this is better for her and her business because she can deal with other women. *Killa* also mentions that she finds that women living in lower areas of the Andes discriminate against her because she is ‘different’.

*Killa* separates and differentiates her relations between the household’s female members and male members. When *Killa* talks about the women in the household (her daughters), she feels happy that they share the work and the activities with her. She
admits that, unfortunately, the girl sometimes has to miss school to help in the fields (planting and harvest season). When the girls’ brothers come from work they act like bosses or imitate the deceased father. When these sons are at home, they do help in the production of potatoes and in other activities in the field and the community (they try to be at home during the periods when there is more work in the field). Still, they always want to impose their ideas because of their contribution. They are men who act as if they were my “husband” says Killa. They only help in the field and when they have to help at home they are reluctant to do some of the tasks. The final result is that Killa feels angry with them because of their attitude and behaviour.

7.5.2  Wanka’s Individual Situation Analysis (COGEPAN)

The central character of the analysis is Wanka a married woman producer (35 years old) who is representing her family in COGEPAN. Wanka has five children and all of them attend school. The oldest is a fourteen year-old boy who studies in the provincial city. He has to travel around one hour by bus to reach his school. The second child is a girl (12 years old) who studies in town. She has to walk approximately 50 minutes in each direction to reach her primary school. The other three children include two girls (4 and 5 years old) and a little boy (2 years old) who stay at home. When Wanka has to work with FOVIDA or participate in any event (fair, displays and internships); her mother and husband have to take care of the children and the agricultural activities. When her children are free they help take care of the animals and some other small tasks at home and the fields. There are many aspects of daily life that Wanka shares with other peasant women like Killa (who is not involved in COGEPAN). The difference in Wanka’s life is the presence of the NGO – FOVIDA and her linkages to the formal markets (international and national). Unlike Killa, Wanka does not give importance to the community-based programs and bartering even though she sometimes engages in these activities (Figure 7.2).
Figure 7.2: Wanka’s Individual Situation Analysis (COGEPAH)
In Figure 7.2, Wanka identified three stakeholders or actors that are important to in the community. First, governments at the national, regional and provincial levels; Wanka believes that the government should pay more attention to the Sierra of Peru. Wanka states that the NGO – FOVIDA is the only entity constantly working with the producers and giving special attention to female leaders. The only problem she finds is that FOVIDA sometimes takes a paternalistic role and make decisions unilaterally; only after their decisions are made do they consult with producers. Like Killa, Wanka acknowledges that research and development agencies provide needed extension, training and inputs for producers. However, they are selective and work only with leaders.

International markets are highly valued by Wanka. She mentions that they offer the best prices and ensure that producers cultivate the native potatoes organically. As the presence of this ally is essential for small-scale producers, tension and conflict can arise among men leaders who want to control the management and production process in order to fulfill the quota without considering other members (particularly women).

Wanka feels confident and trusts some of the formal national markets with which she and other COGEPAN members are dealing. As well, they are starting to supply some supermarkets and national restaurants operating in Lima and led by chefs involved in APEGA. Wanka states that the institutional side of these linkages is weak because there are some male producers who compromise the supply of native potatoes to these markets leading to other buyers or wholesalers purchasing the product.

There are companies that pay well for her native potatoes. Such companies sign contracts with producers before the planting season begins. However, at the end of the harvest the company does not necessarily respect the agreements and does not buy the product transported by the producers to Lima. In these cases, producers are forced to look for informal buyers (operating in the main markets in Lima) to sell the native potatoes at lower prices which does not cover the transportation and other expenses. Another aspect Wanka considers is that the supply has to be continually available the whole year. This is a serious challenge for her and other producers in COGEPAN.

Like Killa, Wanka separates and differentiates her relations within the household (between female and male members). Wanka’s priority is to give her daughters better
education. When children are not in the school on the weekends or holidays they have to help in the field and home. For that reason, Wanka and her mother do most of the work because they do not have too much help. Wanka’s husband works in the mines. When her husband is at home, he supports her in many ways. He tries to be longer periods at home so they can jointly carry out all agricultural and household activities. Wanka says that her husband shares all the work at home with her and, when she has to attend meetings or training sessions, he stays at home to take care of the children. When Wanka’s husband and her sons are at home, they help in the production of potatoes and in other activities in the field and the community (they try to be at home during the periods there is more work in the field). Her husband teaches their male children to share the work at home. Wanka mentions that when she travels, her husband and the children go to the river to wash their clothes. She also mentions that they are learning to cook.

7.6 Organizational and Institutional Components of Individual Organizations

The force field tool from the SAS2 toolkit and data from the survey were utilized to examine the organizational and institutional components of the NON-COGEPAN and COGEPAN groups. The tools facilitated female and male participants to identify the factors that support the functioning of their organizations in the production and commercialization of native potatoes, and the factors hindering the effective functioning of the organizations in the production and commercialization of the native potatoes. In this section results are presented from each of the research participant groups (NON-COGEPAN and COGEPAN).

Peasant women and men have been official members of the communities’ associations for longer periods than producers in COGEPAN (Table 7.7). Though, the majority of men have been members for more than seven years (48.9 per cent) and the largest percentage of women (13.6 per cent) have been members for four to five years.
Table 7.7: Respondents’ Membership Time

<table>
<thead>
<tr>
<th>Membership Time</th>
<th>COGEPAN (n= 36)</th>
<th></th>
<th>NON-COGEPLAN (n= 184)</th>
<th></th>
<th>Total (n= 220)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male No. %</td>
<td>Female No. %</td>
<td>Male No. %</td>
<td>Female No. %</td>
<td>Male No. %</td>
<td>Female No. %</td>
</tr>
<tr>
<td>2 years – 3 years</td>
<td>16 44.4</td>
<td>20 55.6</td>
<td>0 0.0</td>
<td>0 0.0</td>
<td>16 7.3</td>
<td>20 9.1</td>
</tr>
<tr>
<td>4 years – 5 years</td>
<td>0 0.0</td>
<td>0 0.0</td>
<td>47 25.5</td>
<td>25 13.6</td>
<td>47 21.4</td>
<td>25 11.4</td>
</tr>
<tr>
<td>6 years – 7 years</td>
<td>0 0.0</td>
<td>0 0.0</td>
<td>17 9.2</td>
<td>2 1.1</td>
<td>17 7.7</td>
<td>2 0.9</td>
</tr>
<tr>
<td>More than 7 years</td>
<td>0 0.0</td>
<td>0 0.0</td>
<td>90 48.9</td>
<td>3 1.6</td>
<td>90 40.9</td>
<td>3 1.4</td>
</tr>
</tbody>
</table>

The results of the force field analysis indicate that male and female participants believe that, in order to become solid and sustainable associations, they need to become formally organized in order to improve and overcome many obstacles they encounter in their daily activities in the production and commercialization of potatoes. Peasant producers believe they should take advantage of customary laws to become well and formally organized. They think that their organizations are weak and do not include all members equally, especially married women. Married women do not have visibility in the community. In order to overcome this problem, they concluded that their priority has to be the institutional and organizational issues their groups encounter. They can provide more support for including women and youth in decision-making processes. Throughout the study, they stated that they know the meaning of gender and they want their organizations to be gender-responsive. Even though they are members of the same community, they feel that they need to organize themselves formally to get access to resources (credit, inputs and extension). Their actual situation limits their access to formal and international markets. They believe, however, that they have many characteristics that can help them to overcome these limitations such as a strong sense of community life and work, access to land, native potato biodiversity and women’s knowledge of native potatoes (production, consumption, selection and processing) (Figure 7.3).
Figure 7.3: Factors that Support and Obstruct the Institutional and Organizational Aspects of NON-COGEPLAN

Supporting Factors

5
- Sense of communal life and work

4
- Traditional laws support creation of formal organizations
  1,2
- Leaders bring external information to the community
  1,2
- Seed fairs integrate producers with other actors
  1,2
- Women do most of work in the community and household
  1,2
- Women very familiar with native potatoes
  1,2
- Community own large portions of land
- More than 400 varieties with different qualities
- Opportunity for commercialization
  1,2
- Have basic skills in trading and traditional networks
- Established informal organizations
  2
- Producers called conservationists
  1,2
- Established informal organizations

Obstructing Factors

0
- Informal organizations
- Male leaders visible, members invisible
  1,2
- Isolated and ignored by government and public sector – No support
  1,2
- Married women do not have land, resources
  1,2
- Groups exclude women - selective
  1,2
- No access to markets and problems in commercialization
  1,2
- No Extension services and information (commercialization and production)
  1,2
- Consumers do not know potatoes diversity –
  Considered as Second class crop
- Prices very low – intermediaries abusive
  1,2
- Weak organizations
  1,2
- Lack of accountability
  1,2

With respect to COGEPLAN, a regional platform in which the NGO – FOVIDA is the lead organization, the force field analysis offered additional and unique findings. The role of FOVIDA is that of the ‘articulator’ or trader. It is an NGO that links producers with markets by representing them in the commercialization of native potatoes and
providing them with training. The initiative is still very young and producers have been working as a formal organization no more than three years since the committee was introduced (see Table 7.7).

Members agreed that women have advanced considerably and they are now equal partners in COGEPAN. Married women are assuming leadership roles and have administrative and representative responsibilities inside COGEPAN. Women are representing the organization in different events, fairs and internships or exchanges in other areas of the region where native potatoes are cultivated. When men and women together identified the factors that support and obstruct the production and commercialization of native potatoes, they gave equal integration of women and men inside the group the highest score. It was stated that some women still find some resistance at home when they have to participate in activities outside their communities and local organizations. Some men indicated their strong satisfaction with women’s involvement in COGEPAN.

Men believe that women now can work equally with them in all membership activities and it is one of the key factors that all work is carried out with coordination and agreement within COGEPAN. Women and men think that they are facing new challenges and difficulties in the market chain, but the positive aspects of COGEPAN help them to overcome these problems and limitations. Female and male producers highlight that the commercialization of native potatoes through formal national and international markets is the best achievement, since it gives peasant producers the chance to move away from subsistence to value-added commercial production. However, they still think that agreements and contracts are not respected by the industry. When there is overproduction of native potatoes, the company does not comply by receiving the merchandise that producers send by group transport to the processing plant. It takes COGEPAN members at least 10 hours to travel to Lima and this is an expense that they cannot recover if the cargo is rejected. They also believe that the international market, which requests organic native potatoes and pays higher, more equitable prices for these potatoes, is a potential and a promising market that needs to be further explored.

Husbands of female members believe that COGEPAN is helping to improve their
households’ economic situation and that their lives have improved as a result. This neutralizes men’s resistance to women’s mobility outside the communities and the local association. Yet some men still resist the idea that their wives have to travel outside the communities and the region to represent COGEPAN in national events. One advantage for married women is that COGEPAN encourages couples (generally husbands) to travel with their spouses and participate in the training sessions.

Not everything runs smoothly all the time in COGEPAN. Male and female producers reported some lack of interest and responsibility that some producers demonstrate in the associations. Some producers do not attend training and meetings, or arrive late all the time. Others are envious of other producers, especially women leaders. Nevertheless, female and male leaders give credit to the training they receive in FOVIDA; they say that they have been facing new diseases and pests as a consequence of climate change and they believe it is crucial to have information and count on extension services to properly deal with these problems (Figure 7.4). It can be noted that women and men intentionally overlapped some of the factors because they believe they are interrelated and the emergence of a problem can be solved with the emergence of one or more solutions.
Figure 7.4: Factors that Support and Obstruct the Institutional and Organizational Aspects of COGEPAN

**Supporting Factors**

1. Group work done in coordination and agreement
2. Sell native potatoes as an organization and get better prices
3. Equal integration of women and men inside the group
4. Men in the household feel that economic situation is improving
5. FOVIDA promotes husbands’ participation in training and events (husband and wife)
6. Find and get access to new markets (International markets and fair trade markets)
7. Get technical support from some institutions and NGOs like FOVIDA

**Obstructing Factors**

1. Mistrust and envy, happy with little
2. Breach of contract with/from processors
3. Preference to leaders and some women from FOVIDA
4. Husbands say women dedicate their entire time to COGEPAN
5. Some markets offer cheap prices when production is high
6. Experiencing new problems with weather and climate change – new diseases and new insects

1=Women 2=Men
7.7 Roles and Division of Labour

In this final section of Chapter Seven, the roles of female and male peasant producers inside their groups, peasant communities (NON–COGEPAN) and the market chain (COGEPAN) are determined, defined and described. Data in this section were obtained from participatory and collaborative actions involving the use of video focus groups discussions and participant observation as documented in the researcher’s reflective journal.

The following points identify gender roles and the gender division of labour, which were common to both COGEPAN and NON-COGEPLAN peasant producers.

1. In order to cultivate and maintain the native potatoes, female and male participants demonstrated that they have to mobilize themselves and work at different altitudes and various distances from their houses and communities.
2. In the highlands of Peru, families have their fields in different altitudes and locations (close to their communities and up in the highlands, closer to and far from the houses). Men have to work the land, construct terraces and irrigate the native potatoes closer to home.
3. These are the reasons why men stay in the fields all day and the women have to take food to them. Women play a determinant position and they are the caregivers, preservers and sustainers, while men are the talkers, movers and transmitters.
4. In order to have access to water, male and women peasant producers have a determined day or time that they can use the water. This type of work takes most of men’s time.
5. Work distribution takes into account men’s and women’s primary livelihoods (on and off-farm labour). The household is considered as their social unit and the place in which they mobilize labour, manage resources and organize consumption.
6. Producers live and work in the communities or with associations that are part of the community itself.
7. Members of the household share the household’s activities, and all members of the household participate in collective or communal group work inside the community (native potato production) with other relatives, god fathers (compadres) or generally as communities. This is a type of official or obligatory work serving the community (faenas\(^\text{19}\)).

8. Roles and activities in faena are complementary, interdependent and task-specific between female and male members and also reveal the structure of peasant communities.

When working with the NON-COGEPAN participants in focus group discussions in both homogeneous groups (only men or only women) and mixed groups (men and women), the following aspects of gender roles and gender division of labour were uncovered.

In the first instance, they explained that their roles are completely complementary and they share all activities. Women know what they have to do and men do their work; it is evident how the division of labour is gender-differentiated.

Men and women work together and cultivate the potatoes. Men are in charge of transporting the seeds and the food; women re-select the tubers for the planting and place it in sacks. Men prepare the fields and women plant the potatoes. When the plants are ready to cultivate, plough or till, women do the work with men. Women also have to make the food for activities in the field.

Female Participant, 32 years old, NON-COGEPAN

Women explained why and how they follow men when they work in the fields.

Our husbands and other men from the community open the soil or the holes (ocos) with the chaquitacllas. Women follow men and place the seeds in the holes (ocos) then, we cover these with dirt. After 15 days, men transport the manure with the llamas and we all together spread it in the field.

Female participant, 42 years old, NON-COGEPAN

\(^{19}\)Faenas are obligatory contributions to the community or Ayllu. Community members and members of each household contribute with their work, service or skills for the improvement of the community or the community land. The faenas are planned ahead of time in community assemblies and citizens are reminded of the activity through traditional customs (church bell ringing).
As stated earlier, married women in the communities cannot access land directly from the community. It is men who have to represent the household in any institutional activity (assemblies, voting) or decision-making process at community level. In the case of the native potato production and commercialization, men and women have adopted common and specific roles as demonstrated in Table 7.8.
Table 7.8: Gender Roles in the Production and Commercialization of Native Potatoes (NON-COGEPLAN)

<table>
<thead>
<tr>
<th>Activities and Steps</th>
<th>Roles</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Activities</strong></td>
<td><strong>Steps</strong></td>
</tr>
<tr>
<td>Land Distribution to Community Members to plant Native Potatoes</td>
<td>Community Members gather to receive the plots the community assigns them for a year</td>
</tr>
<tr>
<td>Re-selecting the seeds for planting</td>
<td>Female producers gather in order to select the seeds they stored after harvest</td>
</tr>
<tr>
<td>Planting the Native Potatoes</td>
<td>Preparing the Land (Chacmeo)</td>
</tr>
<tr>
<td></td>
<td>Transporting the Seeds/manure to the field</td>
</tr>
<tr>
<td></td>
<td>Opening the soil (Ocos)</td>
</tr>
<tr>
<td></td>
<td>Placing the seeds on the row or hole (oko)</td>
</tr>
<tr>
<td></td>
<td>Covering the rows or holes</td>
</tr>
<tr>
<td>Cultivation Practices</td>
<td></td>
</tr>
<tr>
<td>Weeding</td>
<td>Removing the Soil</td>
</tr>
<tr>
<td>Hilling</td>
<td>Applying natural fertilizers - Manure</td>
</tr>
<tr>
<td>Application of Pesticides</td>
<td>Preparation of natural pesticides (i.e. extract of <em>Verbena peruviana</em>)</td>
</tr>
<tr>
<td>Selection of Mother Plants</td>
<td></td>
</tr>
<tr>
<td>Harvest Activities</td>
<td>Removing the Stems</td>
</tr>
<tr>
<td></td>
<td>Harvesting the Native Potatoes</td>
</tr>
<tr>
<td></td>
<td>Storing the potatoes in sacs in the field</td>
</tr>
<tr>
<td></td>
<td>Loading the sacs in the field and at home</td>
</tr>
<tr>
<td>Transporting Native Potatoes</td>
<td>Field to Home</td>
</tr>
<tr>
<td>Post-harvest Activities</td>
<td>Selection of Tubers</td>
</tr>
<tr>
<td></td>
<td>Storing of Tubers</td>
</tr>
<tr>
<td>Processing Native Potatoes &quot;Chuño&quot;</td>
<td>Transporting the tubers to the field &quot;era&quot;</td>
</tr>
<tr>
<td></td>
<td>Stepping on the tubers</td>
</tr>
<tr>
<td></td>
<td>Transporting and placing in/out the tubers in/from the pond</td>
</tr>
<tr>
<td></td>
<td>Drying the Chuño</td>
</tr>
<tr>
<td></td>
<td>Transporting the Chuño to the Storage</td>
</tr>
<tr>
<td>Commercialization</td>
<td>Storing the potatoes in sacks</td>
</tr>
<tr>
<td></td>
<td>Transporting the potatoes</td>
</tr>
<tr>
<td></td>
<td>Commercializing the potatoes in informal markets</td>
</tr>
<tr>
<td>Bartering</td>
<td>Preparing the llamas and the cargo</td>
</tr>
<tr>
<td></td>
<td>Preparing the food and supplies for the trips</td>
</tr>
<tr>
<td></td>
<td>Visiting the Towns and Communities</td>
</tr>
<tr>
<td>Additional Activities</td>
<td>Preparation of the food and feeding people in the fields</td>
</tr>
<tr>
<td></td>
<td>Cultivating live fences</td>
</tr>
<tr>
<td></td>
<td>Construction of terraces or andenes, canals</td>
</tr>
<tr>
<td></td>
<td>Participating in seed fairs</td>
</tr>
</tbody>
</table>

1= Men and widows participate in the event.

Legend: Coloured boxes show activities carried either by women or men and both of women and men.
The roles married women perform inside the communities are more as partners and wives than as leaders or having an equal role to men. Only widows or single mothers have a visible role in the community and can vote and decide together with men on the community’s affairs. Married women have stronger participation in community-based social programs (Table 7.9).

Table 7.9: Community Positions and Activities Performed by Men and Women inside the Community (NON-COGEPA N)

<table>
<thead>
<tr>
<th>Activities</th>
<th>Position</th>
<th>Female</th>
<th>Male</th>
<th>Female and Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community</td>
<td>Membership in the Community</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Decision-making processes in community’ issues</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Representing the Community in the province and region</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Working in communal faenas (work)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community-based Programs</td>
<td>Representing the Community in the Programs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Leadership Roles Inside and Outside the Community</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1= Only female widows and single mothers
Legend: Coloured boxes show activities carried out either by women or men and both of women and men

Table 7.10 summarizes the aspects and roles that women and men assume within the household. According to NON-COGEPA N participants, men and women share responsibilities and roles at home.

Table 7.10: Gender Roles and Household Decision Making (NON-COGEPA N)

<table>
<thead>
<tr>
<th>Considerations</th>
<th>Indicators</th>
<th>Female</th>
<th>Male</th>
<th>Male and Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intra-household Decisions</td>
<td>Food, home improvement, health, education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agricultural Practices</td>
<td>Crops, livestock and husbandry activities and land improvement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercialization of Products</td>
<td>Selling products, processing and selling sub-products</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Money management</td>
<td>Household, agriculture, livestock and extra activities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Activities</td>
<td>Representing the Household in festivities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hosting</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Legend: Coloured boxes show activities carried either by women or men and both of women and men
Given the short period of time since the Papa Andina Initiative has addressed innovations in the market chains in the Andes of Peru, women peasant producers in COGEPAN have experienced some dramatic and positive changes in their lives due to the transition in their systems production (from subsistence or self-consumption production to commercial production of native potatoes). Women are now cultivating more land and applying new techniques to increase production and yield. In some cases, they are assuming leadership roles inside the groups and representing COGEPAN as leaders at different events in various contexts.

Women represent more than 50 per cent of the total number of members in COGEPAN. Women producers are having more presence, are more visible and are participating in higher numbers than men inside their specific associations.

Women and men carry out the same activities inside their respective associations and in COGEPAN women participate in all decision-making processes. Women also represent COGEPAN in public events like fairs and gastronomic presentations. Women are also eligible for an internship representing COGEPAN (Table 7.11).

Table 7.11: Positions and Activities Performed by Men and Women inside their Respective Associations (COGEPAN)

<table>
<thead>
<tr>
<th>Activities</th>
<th>Position</th>
<th>Female</th>
<th>Male</th>
<th>Female and Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Association</td>
<td>Member of the Association</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Decision-making processes in the association’ issues</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Representing the association in different activities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Working in communal faenas (work)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COGEPAN</td>
<td>Representing the Association in COGEPAN and making decision for the Association</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Representing COGEPAN in national, regional and provincial events (fairs, shows)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Representing COGEPAN as interns in other areas/institutions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Negotiating contracts with buyers/industries</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Preparing registers for planting and costs of production</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Leadership Roles Inside and Outside COGEPAN</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Legend: Coloured boxes show activities carried either by women or men and both of women and men
As producers, women have become familiar and share with men the responsibilities of carrying out new agricultural practices in the market chains. Before the season begins, in the months of June to July, women and men actively plan the planting season and buy the fertilizers and other inputs for the season.

Through COGEPAN, they have learned to adapt their practices to new techniques and in most cases they have learned to adapt their old practices to new ones. Both men and women carry out the new practice, ‘positive selection’, which is the selection of mother plants in the field that are free from insects, pests (viruses) and diseases.

They also utilize commercial pesticides in the fields when necessary. Men will load the pesticide into the back sprayer because of its weight. Women also have learned to arrange the presence of additional or casual workers when they need help to plant the potatoes, cultivate the land, transport the harvest and carry out post-harvest activities (selection of tubers, packing in sacks the tubers, lifting the sacks into the trucks for transport, etc). This work may be done for products or service exchange (Minka or Ayni) or payment in cash by the day known as jornal.

In order to maintain the varieties *in situ*, women and men have learned that they have to propagate seedlings from mother plants or they also have to propagate new material they get from CIP or other national research centres (INIA). For that purpose they have greenhouses where only men wearing overalls, aprons and boots go inside when plants have grown. Women do not enter the greenhouse because of phytosanitary reasons since it is stated women’s dress (*pollera or faldillin*) is long and puffy that could possibly contaminate the material inside the greenhouses (Table7.12).
Table 7.12: Gender Roles in the Production and Commercialization of Native Potatoes (COGEPAN)

<table>
<thead>
<tr>
<th>Activities and Steps</th>
<th>Activities</th>
<th>Roles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communal Land Distribution</td>
<td>Preparing the Land (<em>Chacmeo</em>)</td>
<td>Female</td>
</tr>
<tr>
<td>Pre – Planting Preparation</td>
<td>Preparing registers for planting and costs of production</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>Propagating seedlings in greenhouses</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>Arranging # of workers <em>Minka/Ayni</em></td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>Preparation of Land for planting</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>First Fertilization</td>
<td>Female</td>
</tr>
<tr>
<td>Planting Time</td>
<td>Transporting the Seeds/manure to the field</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>Opening the soil <em>Chayma</em></td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>Placing the seeds on the row or hole <em>Chayma</em></td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>Covering the rows or holes</td>
<td>Female</td>
</tr>
<tr>
<td>Cultivation Time</td>
<td>Second Fertilization</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>First Hilling</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>Positive Selection of Plants – Discarding/selecting</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>Second Hilling</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>Application of Pesticides</td>
<td>Female</td>
</tr>
<tr>
<td>Harvest Time</td>
<td>Storing the potatoes in sacks in the field</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>Loading the sacks in the field and at home</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>Transporting native potatoes Field to Home</td>
<td>Female</td>
</tr>
<tr>
<td>Post-harvest Activities</td>
<td>Seed/Tubers Selection (Industry, seed, commercialization)</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>Sampling chips</td>
<td>Female</td>
</tr>
<tr>
<td>Selecting Tubers for Industry</td>
<td>Selecting tubers for industry</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>Putting tubers in sacks</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>Labelling and sealing the sacks</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>“Accompanying” the load to the Industry Plant</td>
<td>Female</td>
</tr>
<tr>
<td>Processing <em>Chuño</em></td>
<td>Transporting the tubers to the field (<em>era</em>)</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>Stepping the tubers</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>Transporting and placing the tubers in the pond</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>Drying the <em>Chuño</em></td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>Transporting the <em>Chuño</em> to the Storage</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td><em>Chuño</em> for Commercialization</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>Commercialization of Tubers–informal markets</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>Bartering</td>
<td>Female</td>
</tr>
<tr>
<td>Commercialization – Informal Markets</td>
<td>Storing the potatoes in sacks</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>Transporting the potatoes</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>Commercializing the potatoes in informal markets</td>
<td>Female</td>
</tr>
<tr>
<td>Additional Activities</td>
<td>Preparation of the food and feeding people in the fields</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>Cultivating live fences</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>Construction of terraces or <em>andenes</em>, canals</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>Participating in seed fairs and internships</td>
<td>Female</td>
</tr>
</tbody>
</table>

Legend: Coloured boxes show activities carried either by women or men
It was relevant to this study to ask COGEPAN members if their gender roles and gender division of labour influenced household-level gender roles. When women and men discussed how decisions are made inside the household they considered the following roles each person performs (Table 7.13). An interesting finding was that when discussing in the focus groups (mixed groups that include women and men), female and male participants from one association only agreed that men make intra-household decisions. This was the only group that made that statement. When women were asked if they agreed to that statement they said “yes” and the reason provided was that men have more education than women and can make better decisions than women. Otherwise, in the other mixed focus groups and female-only groups it was reported that both men and women participate in household decision-making.

### Table 7.13: Gender Roles and Household Decision (COGEPAN)

<table>
<thead>
<tr>
<th>Considerations</th>
<th>Indicators</th>
<th>Women</th>
<th>Men</th>
<th>Women and Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intra-household Decisions</td>
<td>Food, home improvement, health, education</td>
<td></td>
<td>Chaquitambo</td>
<td></td>
</tr>
<tr>
<td>Agricultural Practices</td>
<td>Crops, livestock and husbandry activities and land improvement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercialization of Products</td>
<td>Selling products, processing and selling sub-products</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Money management</td>
<td>Household, agriculture, livestock and extra activities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Activities</td>
<td>Representing the Household in festivities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hosting</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Legend:** Coloured boxes show activities carried either by women or men

### Summary

This chapter presented the final set of results on the nominal identification analysis of different stakeholders (institutions or actors) in peasant community associations (NON-COGEPLAN) and the innovative market chain (COGEPLAN). Peasant women and men looked at how different stakeholders, institutions or actors interact to produce different results - relations and roles - that affect their livelihoods at the macro or systemic level and inside their own organizations down to the micro-level of their own organizations and households. Data from the use of a feminist participatory action
research method (narrative analysis) were also presented in this chapter. Two individual women’s perspectives on relations were elaborated. As the results demonstrate, there are many aspects shared by peasant women, especially married women. Women in COGEPAN, however, have achieved much as a result of their inclusion in the innovations involving improved market chains for native potatoes.
CHAPTER EIGHT

DISCUSSION OF FINDINGS

8.1 Introduction

Chapter Eight discusses the findings of the study through the lens of the conceptual framework and the relevant bodies of knowledge. This discussion chapter covers gender aspects of the native potato market chain at the macro (enabling environment), meso (peasant communities, COGEPAN, market chain) micro (household) and individual (self) levels of the agricultural innovation system. The argument identifies windows of opportunities and constraints that can facilitate or limit women’s participation in the market chain. Considerations start out on the assumption that an innovation system is embedded in a macro-level (the enabling environment and the culture), the meso-level (organizations and institutions – local performances), which has impacts on the micro/household levels and the individual level (the personal level). Changes in the household in favour of gender equality have a direct impact on the meso and macro levels since individuals influence organizations and the overall institutional and regulatory environment. Changes at the macro level have impacts on organizations and institutions at all levels and these have an influence on the household dynamics at the personal or individual level. And finally, changes in the individual level help to identify major constraints and opportunities that an individual female producer faces and their implications for the household, the meso and macro levels.

The chapter is divided into four sections; the first section discusses the specific context, the macro level or the overall institutional environment (cultural, political and structural) where peasant women and men still practice and carry out their cultural ideas and worldviews related to native potatoes. The second section shows that aspects related to meso-level access to resources are influential over what happens at the meso and micro levels. The third section discusses the role and the importance of the Papa Andina Initiative, which involves the meso-level where producers live and work. The fourth and final section reflects on the micro level and discusses the implications of the study for understanding the lives of women in the Peruvian highlands.
The study took place with the participation of the members representing a household. In the NON-COGEPAN cluster, the majority of the members were men, followed by female widows and single mothers. In COGEPAN, the majority of the members were married women representing the household in the organization. The data obtained in the socio-economic information reveal that women and men were members of three types of household composition: nuclear family household where parents live with children, female and male single-parent nuclear family household (one parent with children); and last and more numerous, the extended family household that include members of the nuclear family with the addition of other members (grandparents). Men representing the household were generally married in both groups. It is also noticeable that a transition has occurred between the two groups and that most married women form part of COGEPAN, which is very different from NON-COGEPAN where only female widows and single mothers are included. This limitation is the result of the customary law inside the communities where only men represent the household in the communities. Women in COGEPAN are members of the organizations as household representatives. In general, women in both groups (COGEPAN and NON-COGEPAN) are mature women, and their ages vary from 31 to 50 though there are some female and male members in their early 20’s working in COGEPAN.

8.2 The Macro Level

The macro level looks at the overall institutional environment (cultural, political and structural), at the systemic interrelations between actors of different institutions and groups with peasant communities (NON-COGEPAN), and at the new agricultural innovation system intervention: the market chain of native potatoes (COGEPAN).

Social norms, culture and traditions influence Andean farming and agricultural innovation systems and their outcomes. Gender as a social and cultural norm builds and shapes roles, relationships, power dynamics, entitlements, resources, responsibilities for men and women, which at the same time are embedded within households, communities, markets and institutions. In addition, agricultural innovation, feminism and gender embrace one common principle, which is to include equally heterogeneous groups of actors or stakeholders at different levels (micro to the macro) in order to achieve institutional, organizational, economic, technological and social innovations.
8.2.1 The Cultural Environment

The purpose of this research was to deepen the understanding of the native potato market chain systems and its processes in the Central Andes of Peru from a gender perspective by comparing women's traditional production and commercialization of native potatoes with women's recent experiences in the promotion of innovative native potato market chains.

The findings of the study reveal that women and men of both groups (COGEPAN and NON-COGEPAN) practice and rely on their culture, worldviews and customs to cultivate and commercialize the native potatoes, which in turn influence their visibility and inclusion in the political, social and economic life of the country. Peasant producers still depend on their Andean Cosmo Vision and customary laws, which are in contrast with universal or consuetudinary laws established in the rest of the country.

Duality, Complementarities and Invisibility

As the study demonstrates, peasant women, especially in NON-COGEPAN, suffer as a result of their triple degree of social exclusion as women, rural citizens and peasant women. As the study demonstrates, they still feel excluded from the rest of the population. Married women in NON-COGEPAN do not have any control over land, other resources and inputs. The findings of this study suggest that even though men and women complement each other in the household and in the fields, the complementarity is not considered as equal. An invisible hierarchy exists between men and women. Married women do not have direct access to the political life of the community unless they are widows or single mothers. Husbands represent married women in access to and control over communal land where the native potatoes are cultivated. Men are considered socially and institutionally as the representative of the household. However, women participate in all reproductive work in the household and the community including unpaid activities like communal work (faenas) and in almost every task associated with production and reproduction of biodiversity and family life. The literature confirms that peasant women (campesina) rural, indigenous (indigena) and commoner (comunera) are treated as a homogeneous group in terms of their being the poorest of Peruvian society, the most invisible and marginalized of all citizens (Urrutia, 2003).
Therefore, as the study found, inside the communities invisible differentiation exists among peasant women and specifically, the comunera and the campesina. The campesinas are all women and girls living in the communities with or without rights to participate in the political life of the communities. A married woman, girl or female youth belong to the category of campesinas. In the case of comunera, in which widows and single mothers are included, they can have the position of registered members of peasant communities with rights to participate in all decisions made inside the community. Moreover, these women are single parents and head of their households whose only access to land is through the community. In the study not all comuneras in the NON-COGEPAN group have accessed land or held private holdings. Married women only have access to land jointly with their husbands. From this perception of complementarity as cited in Andean myths, symbols and traditions, the participation of married women is indirect since decisions are shared within the family and peasant men transmit and channel those decisions to the community and other public spaces.

The findings of the study confirm that a male newcomer with family or a single woman has the right to be a member of the community after three years of residence in the community. They may previously have been registered in the communities’ files. The most important requirement is that they have to fulfill the communities’ requirements (participation in assemblies, ayni, good behaviour). An active member has to participate with his/her family in assemblies and communal work. Inside the community, it was found that men could have access to the principal political positions (president, vice president). And the comunera women usually take the positions of treasurer or deputy member for sports and other activities because men believe women manage the money better. The wife supports the husband in all activities (non-visible work and participation). Campesinas who participate in the community-based programs represent the family in these groups. They work in the fields and also they have to work voluntarily (for free) in the social programs in the community. They have to carry out different activities with other female members of the community who also participate in the native potato production.

Female leaders and members in these programs represent the household inside the organizations and most are mothers who have children in school. They actively
participate in the Popular Kitchen and Glass of Milk programs and have to go to schools or community centres to provide, prepare, and distribute the food to their children. They also have to attend meetings regularly and these events provide women the opportunity to interact with other women who belong to the community and outsiders. It is the same with a newly-created program *Juntos* (together) in which women have the chance to learn and improve them in exchange for a fixed monthly amount. These types of programs have a double effect on *campesinas*. On one hand, it supports women to develop and strengthen their capacities through group support and decision-making processes because most of them experience how a formal organization works and assume responsibilities in the organization for the first time. They have the chance to become leaders in their communities if they have the abilities. On the other hand, these types of experiences limit women to be accustomed to paternalistic welfare programs since these are supported and financed for that purpose. In addition, women have limited or no space to become innovative or productive since they are not in programs in which they can produce or generate income. Communities in the study still face the dilemma of including women in their political bodies and conferring on women a visible position as a result of public policies and projects. Communities and their governing political entities are autonomous in deciding on the functioning of the communities and inclusion of members. The peasant communities’ structure definitely affects the autonomy and identity of women in their communities. Peasant communities are the units that govern members’ lives, families and communities. Women demonstrate their presence in all activities inside the household and the community by managing and controlling the agricultural and community activities (*faenas, Ayni, Minka*, bartering, community-based group activities, household decision-making). However, their role is still invisible and undervalued.

Men’s perceptions and behaviour reveal that there are cultural, ethnic and gender characteristics deeply rooted in the communities. These conditioned particularities and inequalities in gender relations are sometimes connected to Andean values and morals. These attitudes and actions have negative repercussions on women’s lives because of the contradiction between equality and complementarity. One example is the role of the sons in their mother’s households.
Complementarity between women and men reproduces women’s subordination and political absence inside communal institutions and at district, provincial and national levels. Inside their communities, peasant women have not yet been recognized as full community members. These actions have restricted their land holding, political representation and visibility.

As we will see in the individual level section, invisible subordination can be transformed because of the integration of women in a multiple and varied group of stakeholders (participatory and collaborative practices) and economic and institutional innovations.

Women and men from COGEPAN and NON-COGEON stated that the production of native potatoes is culturally innate and a characteristic of peasant people living across the Andes of South America. The literature recognizes that a great genetic wealth is maintained exclusively inside peasant communities throughout the highlands of Peru where men and women peasant producers are socially and culturally organized in relation to their households and the peasant community (Grillo, 1998). Peasants still live in autonomous closed communities, organized and self-governed according to communal life Ayllu (basic social unit), communitarian work Ayni and family shared work.

Still, the findings of the study further suggest that new entities such as COGEPAN can also be important. It is there, in the peasant community’s lands, where most Andean biodiversity is cultivated, maintained and consumed due to female and male peasants’ accumulated traditional and local knowledge. Men and women know how to make use, in sustainable forms and using renewable energy of plant and animal resources in areas under immense and constant climatic, ecological and topographic variations.

As the findings demonstrate, peasant producers still maintain their ancestral wisdom of permanent conversation with nature and the sacred; everything that surrounds them is part of their lives. The principle of relatedness and complementary opposites is inherent in the thinking of female and male peasants and is present in the time, space and all their social, economic and religious organization. Peasant people understand that life is cyclical and that it responds to periods of intense energy of the earth and the cosmos in which the unity of complementary opposites is reflected. Harmony is sustained in the ongoing dialogue between people, the pacha and the deities of heaven and earth.
As the findings confirm, peasant people understand life as a weft where everybody is interconnected and united in a network. An isolated human being does not fit within their comfort zone. Women are quick to indicate their preference for the solidarity of their daughters or the collective efforts of other women or even the complementary labour of men in COGEPAN and NON-COGEPAN groups. Human beings are knitting relationships, interacting continuously and reciprocally among themselves and with the nature and the cosmos. There is not an opposition to ensure the triumph of one over the other, but a permanent state of being.

This study proves what is known in the literature, that ontology is played out at all levels, including in the socio-economic (Hernandez Astete, 1998). Andean cultures are fundamentally agricultural ones, the chacra or parcel becomes the centre of peasant life and the earth, (Pachamama) is a mother who gives food, allowing the regeneration of life. The feminine is therefore sacred as the origin of life. The woman corresponds to the sacred origin for humankind (runas) where everything is male or female in heaven, nature and the community. At this level authority is always dual and it is the couple (male and female) that allows the balance. In other words, complementary feminine-masculine duality is the ordering principle of peasant lives. As discussed below, only to some extent is this principle being practiced in daily life in the Central Andes.

**The Agrocentric Principle**

The culture of indigenous people in the Andes is agrocentric (PRATEC, 1988), which conducts their lives and actions. Projects that work with a producer fail if cultural continuity is not taken care of, because it is through land (the plot or la chacra) as well as collective work that participants in the study relate themselves to their peasant community. Based on that, their actions and lives are governed under certain principles and values such as reciprocity, duality and complementarity, harmony and respect and living well. Working in the chacra is essential for the lifeworld of a peasant person in the highlands of Peru.

The plot or la chacra is the small portion of land on which peasant people cultivate their subsistence crops. It is the place not only where they ensure the production of food for the family, which allows them to reproduce or preserve the genetic biodiversity they maintain for generations. The chacra is also the place where they connect to Mother
Earth and the place where they find balance between the earthly and the spiritual worlds. It is the place where they are able to integrate nature, cosmos and land with human beings following their traditional principles such as reciprocity (guaje, ayni, minka and bartering), duality and complementarity, living in harmony and respect and living well (buen vivir).

Peasant communities continuously adapt themselves to face climate change or climate stress. They have developed diverse reciprocal strategies to preserve the native potatoes through the vertical collectivity of ecological steps or zones pisos ecologicos such as the Ayni, and bartering. The most important activity for the farmers is guaje or ayni, a reciprocal activity and community-shared work carried out in the communities for faenas and agricultural activities. They say that the individual, families and community’s living well (vivir bien) and harmony depend on these activities. It is the communal work that allows the members to share their work under their saying “today for you, tomorrow for me” (hoy por ti, mañana por mi). As the study has found, peasant people respect what their ancestors have given to them, including their Quechua language, ways of living and socializing, as well as their customary laws.

The findings confirm that the communities promote dialogue and to some extent inclusion. For example, when planting season is approaching they hold communal assemblies to gain consensus and agree on the activities for the season. The most important activity is the community’s land distribution to cultivate native potatoes. In common agreement, they distribute the parcels (topos) to each household or family. After it is done, they usually go up to the mountains to distribute the topos for each member so each household has a portion of land to cultivate the native potatoes (between 2 to 4 topos per family, as found in this research).

Buen vivir, living well or well being in the communities is living in consensus through dialogue and respect where women and men unanimously aim to coincide in their ideas in order to avoid conflict. All of this is done in equilibrium and complementarity with nature; harmony between men and nature is crucial to preserve the genetic biodiversity of the potatoes and assure food for their families.
The Fundamental Contributions of Female and Male Peasants to the World

The findings reveal two fundamental contributions of peasant producers to the world: 1) native potato biodiversity and 2) the peasant knowledge (saber campesino).

In this study we noted that peasant people own individually around 400 varieties of native potatoes and these come, as De Haan (2009) states, in different shapes, colours and textures. Native potatoes are central to Andean peoples’ lives and the breeding (crianza), production of native potatoes is their most important activity. Andean peasants consider that their way of being in the world is based on the Andean Cosmo Vision and, as evidenced in this study, this is why they plan all activities through the festive calendar of native potatoes. It is according to their calendar of native potatoes that they carry out all agricultural practices and also follow all signs, or what other authors such as Hambly (1996b) has called ‘grassroots indicators’, in order to cultivate the potatoes. Potatoes in the Andes permit indigenous people to demonstrate their worldviews and culture. In the Andes, it is a belief that humans and potatoes are mutually nurturing.

This culture is based in the integrity of agricultural diversity, endogenous technologies and socio-cultural strategies utilized not only to achieve ecological equilibrium, but also to face poverty. Native potato (la papa nativa) is considered the woman, the one who is fertile and provides children to the world; the (la) potato is a mother who nurtures not only her offspring, but also the humans (runas). Therefore a woman has to nurture the potatoes in the same way potatoes nurture humans (Valladolid, 2011). The seeds in general are living humans for peasant people; they talk and share with the seeds. A seed is a mother who provides life (Valladolid et al. 2001). These are not simple academic statements but expressed in the everyday words of participants in the study: “Pachamama (madre tierra), la semilla y la mujer, son lo mismo”. (Land, Mother Earth, potatoes seed and a woman are the same).

When the plants emerge in the field, these are considered the daughters that require special care; at blooming time they are female siblings with whom people dance and celebrate life. During harvest time, potatoes are the first fruit and women who are in charge of taking the potatoes from the soil become potatoes because during the action of harvesting women have to nurture and handle carefully the tubers and the soil without causing pain to the soil. When the harvest is finished, the mother, a woman, nurtures the
seeds and takes them like babies to put in the blankets (called in Spanish mantas or mantadas) for their storing in sacks. When the potato seeds are placed in storage after harvest is finished, potatoes become mothers who feed humans as Valladolid (1995) states. The findings confirm that new varieties are sought and appreciated by women and men whether or not they are acquired by exchange, barter, purchase, gift or R&D support.

The regeneration and continuity of biodiversity in peasants’ lives depends totally on the everyday breeding of the species and varietal heterogeneity. It is not simply for their economic value; it is because this diversity ‘converses’ with extreme climate variations through mixing varieties in different parcels at different times and varied soil management techniques.

Second, the world is richer because of peasant or indigenous knowledge (saber campesino). Even though women and men share strategies and practices to maintain native potato diversity, peasant women play a key role in the cultivation, post-harvest storing and processing, culinary usage and commercialization of native potatoes. Women in the study demonstrated that they have long had their own perception of potato biodiversity. They consider seeds as own means of production. As Kuppe (2002) has also found, women are excessively concerned with their work and value their knowledge that has not only maintained the genetic diversity but has further developed it. Women have detailed knowledge of the value of local potatoes for food and health. As Kuppe (2002) cited by Wichterich (2009: 135) further concurs,

“Traditional knowledge in these reproduction contexts is a constitutive element of survival spaces and a central livelihood resource and peasant women therefore understand themselves as investors in the knowledge society/economy. Peasant women confer value to the plants and develop their productivity which in its turn contributes to that women enjoy esteem in the community” Kuppe (2002) cited by Wichterich (2009: 135).

Men in the study admitted that women possess profound knowledge of the native potatoes and transmit this knowledge generation after generation; thus, knowledge is shared inside the household, inter-households (Ayni), and community and between communities. As one of the community leaders expressed in the study, “my wife and I have shared information and seeds with other communities and we visit them when
harvest time is finished”. Traditional knowledge for female and male peasants in the highlands supports the reproduction of agricultural life even if there is also the strong influence of modern technologies or practices. Andean technologies are intimately linked to ecological, social and cultural conditions. Peasant people teach by demonstrating and narrating what they do. Peasant people’s knowledge is cultural since it is generated for and shared with their social group. Even though some of them may be more knowledgeable than others, nobody is or feels they must be an owner of that knowledge.

8.2.2 The Enabling Environment

In the COGEPAN group women and men feel that their conditions have gradually been improving because of the economic benefit of commercializing the main agricultural crop they cultivate in their fields as added value products in formal markets (national and international). For the most part, it is helping more women to slowly overcome entrenched cultural prejudices (racism, machismo and patriarchy) in comparison to those women in the NON-COGEPAN group. Women’s inclusion in COGEPAN activities and involvement in internships and participation in national, regional and provincial events like fairs and gastronomic events have contributed to certain individual changes, especially self-esteem. Women feel more accepted socially as they have been entering new spaces and relating to multiple actors. Female leaders and members represent the organization in Huancayo, Lima and elsewhere. Female leaders, together with men, also participate in forums and meetings where they have to communicate and relate with people who are outside their common surroundings.

In COGEPAN, women are assuming the power to make decisions on how to commercialize their products. Some of the women are participating in bids to supply their products to social public programs funded by national programs like Glass of Milk and the Popular Kitchen. Once women feel confident in their security of income, they invest in other agricultural activities to improve the livelihoods of their families.

The Papa Andina as a systemic initiative is acting as an ‘innovative broker’ and supports the generation of new spaces and relationships between female and male peasant producers with international and national formal markets. While the relations with the international market become stronger and sustainable due to the provision of good prices
and permanent but not continuous commercialization (quotas are provided every three months and not more than 20,000 kilos per quota), the perceptions in relation to formal markets are divided. Women producers report that some of the national market actors are responsible and respect agreements, while other groups that supply the native potatoes to industry do not create a safe and trusted environment because they do not respect contracts and agreements signed with peasant producers; collaboration and trust between these partners are very weak. Women in COGEPAN believe that, as they trust the international markets and some of the national formal markets, they have confidence to look for more land and resources to cultivate native potatoes. Women and men producers distinguish the markets that they trust and that value the ways they produce and cultivate the native potatoes (organically and according to their customs).

In the case of COGEPAN, there are other supportive stakeholders who are emerging and gaining confidence, trust and accountability. One case is the gastronomic and cooking sector grouped in the Peruvian Association of Gastronomy (Asociacion Peruana de Gastronomia – APEGA). Female and male producers feel that they have learned from this group and that the learning experience has been mutual and rich. It is a sector that has gained ground and has had the ability to approach producers based on a win – win strategy. Chefs and cooks in Lima visit the fields of producers and together choose the varieties whose characteristics are suitable for customers. Then producers visit the restaurants to discover the innovations achieved with the native potatoes and they learn what has been done with their products.

On the other hand, as the result of the nominal identification of actors and institutions, the findings of this study suggest that the Andean region, and specifically peasant communities, are neglected by the central government and the public sector and excluded from the political spectrum. Findings are supported by the literature stating that the historical process in Peru has considered the small-scale community-based farmer as the most traditional and backward group within Peruvian society (Escobal et al. 2006). Women and men living in peasant communities still are deficient in accessing basic services and other different resources and inputs in contrast to the vast biogenetic and natural resources they possess, which keeps them trapped in poverty and limits their ability to cope with diverse factors like commercialization, prices and climate change. As
demonstrated in the study, female and male producers from both groups (COGEPAN and NON-COGEPLAN) expressed anger and frustration that the government has all the power to control the resources and services for peasant people; yet it is passive when solutions have to be found. Peasant communities are at a disadvantage in relation to other areas in Peru due to the lack of access to basic services and infrastructure, limited access to and poor quality of rural education, distance to main towns and cities and cultural barriers.

The Peruvian state plays an active role in agricultural policy that directly affects men and women in the highlands and has the responsibility to protect producers in two specific areas. The first one is in the case of a subsistence crisis (drought, frost) that drastically affects and in some cases destroys all crops. Women and men from COGEPAN and NON-COGEPLAN stated that in 2010 they lost most of their crops due to the presence of a severe frost and there was no action taken by any public institution or the government. Second, the remoteness of the communities is another problem producers face, which is intimately linked to the lack of basic services, transportation, means of communication and access to markets. Women are more affected since they are in charge of household food security, product transportation to informal markets (NON-COGEPLAN) and formal markets (COGEPAN).

In Peru, policies have not been structured to consider the difference that exists between men and women. Failures to distinguish differentiations and inequalities (between men and women), generates a serious threat to the effectiveness of agricultural development policies (World Bank et al. 2009). At the same time, Quisumbing et al. (2006) states that although female farmers are primary contributors to the world’s food production and security, they are frequently underestimated and overlooked in development strategies. Practitioners, researchers and donors agree that gender inequalities and lack of attention to gender in agricultural development contribute to lower productivity, lost income, and higher levels of poverty as well as under-nutrition of the entire household. In Peru, some programs/policies/projects are including gender in the specific context of the highlands of Peru because of donors’ conditions. However, practitioners and professionals are not yet sensitized in relation to the real magnitude that gender inclusion can play in Andean agriculture. There is still a lack of knowledge in
relation to gender indicators in national policies and programs. It may be due in part to the strong sense of machismo that is still present in the society of Peru.

During the force field exercise, women and men from NON-COGEPAN affirmed that they are isolated, ignored and forgotten, although they also expressed hope that their leaders could be potential links to public institutions in order to be part of new market chains. The relations they have built through centuries are based on the informal connections with whom they trade and barter their products. Leaders are considered the best producers of native potatoes at the national level and continuously participate in the fairs organized by the government or public institutions. The results from the individual situation analysis of women who represented both groups (COGEPAN and NON-COGEPAN) show that the government does not pay sufficient attention to women in agriculture.

8.2.3 The Roles and Responsibilities at Macro Level

As mentioned earlier, the relations between peasant producers from COGEPAN and NON-COGEPAN and the majority of the stakeholders at the macro level lack accountability, trust and legitimacy as a result of the invisible roles these have in peasant communities. Peasant producers identified these institutions as key stakeholders but their inactions are affecting peasant production in the Andes of Peru. The absence of these entities limits producers (men and women) access not only to inputs and basic services like education, technology and information but also to important networks that can support producers. There is total absence of universities and academic institutions that could transfer technology to producers. The role of government programs in NON-COGEPAN like the program Together from Agro Rural is more social assistance than extension work.

8.3 The Meso Level:

The meso level deals with the gender sensitivity of the specific structures of the peasant communities and COGEPAN. This section focuses on these entities and institutions and their delivery systems. It also examines whether they reflect gender equality principles in their structure, in their culture, or in the services they provide.
8.3.1 The Relations at Organizational Levels

Men and women from both COGEPAN and NON-COGEPAN rely on their institutions for the production and commercialization of their products. These organizations are identified as key stakeholders because peasant communities and COGEPAN are enablers. The reason is that these entities facilitate producer access to different resources, inputs and facilities that individually would be impossible to get. At the same time, these institutions are considered as end users and beneficiaries because they also depend on the national system and the structure to function.

COGEPAN has supported the improvement of relations between women and men at organizational level. Female producers in COGEPAN are comfortable and happy participating in the organization because it is considering women as main actors of the organization. They believe that it sustains them to achieve leadership positions and, most important, assist women to attain membership status and involvement in formal organizations even though they are married women.

In NON-COGEPAN, however, women members still believe there are differences between women and men members and that male leaders still prefer men when they assign the land and other resources. Inequality does not only come from male leaders but also from male members who impose their ideas in meetings. There is a failure to exploit informal rules and overcome cultural issues (gender). Men’s behaviour transmits the imposed power differences established as a result of customary laws in peasant communities and the lack of trust in women’s knowledge.

8.3.2 Access to Resources, Services and Rights

In this section of the chapter, the focus shifts to how gendered relations are intricately linked to Andean livelihoods, particularly at the meso and micro level of peasant livelihoods. For that reason, an analysis of resource access and benefit sharing is needed as it relates to gender. Andean women’s egalitarian access to and control over resources are essential for the achievement of equitable and sustainable development and poverty reduction. Gender equality in the distribution of resources has positive multiplier implications for the achievement of some of the Millennium Development Goals. Cultural and traditional inequalities in the gender distribution of resources put Andean
women at a disadvantaged position relative to men. Rural women of the Andes, in
general, lack capacity to take part in development initiatives and to express their voice
and benefit from development processes. The majority of women have weak to no
representation and are largely absent from key decision-making processes, which
determine the allocation of resources and opportunities, therefore perpetuating gender
inequality. On the other hand, COGEPAN women have started to slowly overcome some
of the cultural and structural impediments to success that other women in the highlands
are still confronting.

**Access to Basic Services**

When referring to basic services, findings in this study suggest that the services are
intrinsically attached to each other and the absence or deficiency of one affects the others.
In rural Peru, and especially the highland areas, the access to basic services is restricted
or limited because of the long distances to the closest cities or towns. Heinrich (1997), in
his work with Machiguenga villages in the Urubamba basin in Peru, noted that the
location of the village in relation to the river system explicates most of the variation in
market integration. And the more isolated a community is, the more difficult it is to
integrate the community into the market (Peralta et al. 2008).

COGEPAN members stated that the lack of schools or the low level of education
their children receive in local schools obliges them to send their children to study in the
main towns or cities (Huancayo). Their economic improvement has provided them with
the advantage of offering their children better education. However, attention is drawn to
gender inequality. A father sends his daughter to the mountains to take care of the llamas
and alpacas they own. Male peasants still believe women should leave school and help in
the household and so this girl has to live by herself in the high mountains, exposed to
danger and isolation. Machismo is a patriarchal, cultural and psychological set of
attitudes and behaviour (Vindal Ødegaard, 2010) and is still embedded in peasant lives.
Producers from both groups perceive that the Peruvian government and policy-makers
have ignored gender inequality for decades and this action has left peasant households in
poverty and exclusion with high levels of illiteracy. As the study finds, the level of
education is very low; most of the female producers have achieved only grade three. In
the NON COGEPAN group, men are the highest illiterate group (40 percent in Racracalla), which indicates that both women and men had no or limited access to education. In both groups, there are no women or men who have achieved post-secondary education. Participants stated that people from Lima and politicians have not yet understood people from the highlands and what their world brings to Peru. Quechua women suffer more discrimination because they mostly speak their native language and cannot write and read. Not many programs are provided to educate adult people in their own language and few have access to radio and TV. Women and men leaders are provided with cell phones in order to receive and transmit daily information on prices, states of markets, and so on, but their communities still lack telephone services.

Findings point to communication as one of the reasons women still withhold from speaking in public. Women in COGEPAN and especially NON-COGEPLAN also feel afraid of being misunderstood because of their language. Women in the communities choose to keep quiet when they are in public or when strangers visit their own communities. Peasant women’s relationship with time, communication and information sharing are logically distinct from those of women living in urban areas. Women living in the communities have little or no access to information. Modern technology in communication is still absent in the lives of the majority of peasant women and men. If they have access to cell phones or computers (as women in COGEPAN may have), they have to receive training and technological support to guarantee effective use of these technologies, particularly in areas where electricity is unreliable.

**Access to Markets**

Linking female and male peasants to formal markets and commercializing native potatoes outside their immediate environment is one of the key innovations COGEPAN has achieved in the Central Andes of Peru. As NON COGEPAN members demonstrated, female and male peasants struggle to get access to formal markets that assure decent prices for their products. Peasant women from NON-COGEPLAN who have not had access to the formal markets; still sell the products in informal markets and town fairs. Business knowledge is said to be innate to peasant women and recognized by society in Peru. ‘Men do not know how to sell’ is a saying in the Andes. The relationship between
peasant women and potatoes as a staple food crop is well linked to their social status. If women know more about cooking preparation, diversity and conservation of potatoes, they are more respected and their reputation is well known inside and outside the communities. This is the case of female leaders in COGEPAN and older women in NON-COGEPLAN. Inside peasant communities, mothers-in-law give their consent to their sons to get married, only, future daughters-in-law know how to peel potatoes with thorny silhouettes.

From a gender perspective, the Papa Andina Initiative’s Participatory Market Chain Approach is reaching its stated potential to benefit small-scale male and female farmers by developing mechanisms to foster groups based on common interests and resources so that they can consider the economic feasibility of production and marketing. These COGEPAN groups have access to support from NGOs like FOVIDA and research institutions (CIP, INIA) but need support from additional governmental institutions so that they can fine-tune technologies to specific conditions. Agricultural innovation systems, the literature explains, should bring women the possibility of shifting their crops from subsistence to market-driven added value products in order to overcome poverty and social exclusion (Rajalahti et al. 2008; World Bank, 2012). A key feature of the agricultural innovation system of potatoes is that it brings together small farmers, market agents, and agricultural service providers who do not know each other or who may have distrusted one another (Bernet, et al. 2008). Inside this environment, women have the possibility of sharing their findings, customs and discoveries with other members of the system.

This study confirms that COGEPAN as part of the Papa Andina Regional Initiative is promoting the development of market niches and adding value to potatoes, particularly the native potatoes grown by female and male producers to stimulate pro-poor innovation within market chains for potato-based products (Devaux et al. 2009; Thiele et al. 2011). Papa Andina’s PMCA and Stakeholder Platforms are empowering peasant producers, especially peasant women, by expanding their knowledge and the social networks built up among producers, market agents, and service providers (Horton et al. 2011a). These have stimulated innovation, which in turn has encouraged technical and institutional innovation at the national level, and even at the international level.
In the particular case of COGEPAN, women producers are entering new territory, that of adding value to the potatoes instead of purely artisanal processing of potatoes. Women have learned that native potatoes are commercialized in many forms (seed production, fresh, cooked, frozen and in flakes). In the NON-COGEPAN group, women emphasized that their priority was to select native potatoes for household consumption because the access to formal markets is impossible and prices are very low and volatile. In COGEPAN, women were confident that increasing the production of native potatoes for commercial purposes would cover both household consumption and commercialization, bringing economic satisfaction in the end. Another important element is that women are negotiating prices because of the continuous information they have access to regarding prices, fluctuations and market conditions in the principal markets. On the other hand women in NON-COGEPAN are still selling the potatoes informally in spite of price instability and insecurity.

In COGEPAN, women have gained access to new formal markets (national and international) with potatoes in different presentations and different varieties (yellow and white flesh) as consumers have become familiar with native potatoes. FOVIDA and other national actors or stakeholders (supermarkets), including women and men producers, are trying to introduce varieties to the market that have been unknown to consumers. As the findings confirm, peasant producers are aware and encouraged because new markets are demanding red and purple flesh native potatoes and there is recognition of peasant producers in the gastronomic sector due to innovative programs highlighting Peruvian gastronomy (the gourmet and Novo Andean cuisines). Leading chefs are now lending their support to peasant producers and R&D for new varieties of native potato.

Access to Credit and Finance Services

Female and male peasant producers in COGEPAN have benefited from participating in the market chain of native potatoes. It was found that women have gained ground since they have acquired land that, in turn, supports their access to credit and microfinance services. However, most peasant people are still restricted from accessing credit services unless their community is recognized and registered in Peru’s public registers. Peasant
producers are closely linked to their land holdings and type of potatoes (commercial potatoes against native potatoes) (Hoff et al. 1990; Bell, 1990).

As members of COGEPAN, women have learned to use bank accounts, sign cheques and access credit; they have gained skills that allow them to diversify their activities. However, credit is still restricted to small amounts and to a small group of producers (some producers working in the market chain) because many rural producers and small- and medium- sized agribusinesses remain under-served. Their financial needs are usually “too large for microfinance, but too small for commercial banks” (KIT et al. 2010:2). Financial service providers generally consider the agricultural sector in the highlands as too risky, with high transaction costs because of constant climate stress and price volatility. In addition, Vignery and Holmes (2009), as cited by Vargas Hill et al. (2009:8), state that, “institutional bias towards providing financial services to the head of the household owning title deeds discriminates against women who are not head of the household”.

Access to Technology and Extension

Gender, agriculture and innovation clearly go hand in hand if interventions are planned and implemented with attention to gender issues. The findings of this study reveal that the contribution of female and male peasant producers of native potatoes to innovation systems is promising.

In NON-COGEPAN contexts it is clear that decisions on applying a new technique or a new form of cultivating the native potatoes still have to be approved by the peasant community council, influenced mainly by male leaders and members. Women are in charge of most of the production but if a new disease is found, it is the community in assemblies that tries to find solutions to that specific problem. This finding is consistent with the literature that finds that extension services often leave women producers aside (Doss, 2001; Doss et al. 2001; Quisumbing, 1994; Saito et al. 1994). Even though, female producers most frequently demand for these services (Saito et al. 1994). For example, in Racracalla peasant producers were concerned about a new disease (Paco Luma) that has been affecting the production of native potatoes for the last three years. They are forced to find relevant information from their extended informal networks since
they have little support from public or research entities. They are trying different ways to overcome the disease (high tilling, construction of canals inside the plots, use of ashes in order to repel the disease). Everything is done collectively and it is an important aspect of women’s lives for extension services to take into account.

Communication events, like national displays, internships, gastronomic fairs, and innovation fairs, focus on how women in the Andes have cultivated native potatoes for subsistence and possess the knowledge and experience of cultivating more than 400 varieties. Recognition of women’s contributions to varietal adaptation within different ecosystems and their detailed knowledge of different phenotypes could help to counteract gender bias. In recent years, women farmers in some regions of Peru (in particular in Junín and Huancavelica) have established profitable businesses supplying national and/or international markets.

In summary, from a gender perspective, the market chain has three innovative elements that have strengthened the innovative capacity of female peasant producers.

1. The first innovative element is “that the PMCA and stakeholder platforms make possible women to share their findings and customs with other members of the AIS through events and activities that highlight women’s knowledge of genetic diversity” (Sarapura, 2012: 599). When women participate in events such as family competitions, their roles in the farming household, the wider community, the market chain, and the agricultural innovation system are recognized and reinforced.

2. The second innovative element is that the empowerment of women farmers has resulted in systemic changes. Through the PMCA, women’s involvement and the involvement of different groups of women are systematized in the following ways:

   a. **Representation.** Smallholders, female and male, representing their communities at events return to their communities and share their findings and innovative ideas.
b. **Replication.** Initial farmers, now acting as representative farmers, work with R&D partners to replicate knowledge-sharing events and activities with more farmers in their area who grow native potatoes. For example, a woman peasant producer in Chicche shared information with representatives of 12 communities in the Mantaro river basin. In this way, innovative ideas for making coffee from dried potato and adding value to freeze-dried potato products spread to at least 10,000 peasant producers in those areas.

c. **Communication and recognition.** Native potato product ideas and technologies were also shared between women farmers in Peru and women’s groups and R&D institutions in Uganda, Bolivia, and Ecuador (Horton *et al.* 2010; Kaganzi *et al.* 2009).

3. The third innovative element is that Papa Andina purposefully demonstrated the value of women’s involvement in the AIS. The initiative showed that it is possible to involve resource-poor women farmers as key stakeholders in the potato value chain. The participating R&D institutions demonstrated the value added by gender analysis and investing in women’s innovation; and the donor agencies played an important role in establishing the need for gender assessment and the integrated involvement of women farmers in R&D as key stakeholders.

**Access to Land**

From a gender perspective, peasant women in the AIS is gradually gaining a visible position inside all levels of the market chain and one of the main influences to achieve it is their effective control over land. Women in Peru have acquired the right to jointly own private land outside the peasant community with their husbands if they are legally married. As NON-COGEPLAN members have demonstrated, married and single women are not eligible to hold communal land inside the communities because the person representing the household in the community is the husband. Peasant women and men have access to community land but, in the majority of cases, married women do not have any control over it. Men make decisions about what, when and how land is going to be cultivated. Peasant men and women have to look for private land outside the community
if both of them are legally married and not in a common-law relationship (women in common law relations do not have any inheritance right over the land if the husband is deceased (Deere et al. 2001a).

As NON-COGEPAN members demonstrated, married and single women are not eligible to hold land inside the communities because the person representing the household in the community is the husband. In COGEPAN, in addition to having access to community land through their husbands or male relatives women as titular members, have gained control over land holding through different means:

1. Buying the land privately (solely or jointly with husbands) strengthens women’s control over the land and provides women *de jure* power over the land. During the study, women demonstrated that they are buying land individually or jointly with husbands. They have also indicated that they make decisions on what they are going to do with it. This particular form of acquiring land empowers women to generate income from land (Agarwal 2003; Blumberg et al. 1995; Engle 1995).

2. Renting or leasing the land, in which women have to sign contracts on the length and conditions of the lease. Peasant women did not do it before because husbands usually took action for women. One of the female leaders in COGEPAN mentioned that she has learned to rent the land from peasant people who cannot cultivate the land for economic or health reasons. In most cases, women rent the land from people immigrated to the cities but still have some land in the communities. Peasant women have learned to sign agreements under conditional sale, which means that after a period of time and determined amount of money, they become the owners of land legally.

3. Sharecropping the land with people possessing the land and living in the community or outside. There are two possibilities. First, the landowner provides the land and the female producer provides the seeds, the inputs and labour; at the end, the harvest is equally divided in half for both. In this case, the owner of the land takes the potatoes or the equivalent in money. Second, the landowner provides the land and the women the seeds; the inputs and
labour are equally divided between the owner and the woman. At the end, the harvest is distributed equally (number of rows or plants). On the other hand, female heads of the household still struggle to acquire control over the land. In COGEPAN, single mothers are only cultivating the land in the communities in which they have control and access. Individual or sole rights to land holding improves the position or options of women in order to improve their bargaining position inside the household. On the other hand, some women, primarily female single parents or widows, still rely only on the communal land to which they have access. Some women demonstrated that they contribute economically to the household but their fathers or male relatives administer the income generated from potato production. In this case, women encounter structural realities that seriously constrain the possibility of land control and their empowerment.

The majority of female and male peasant producers still cultivate small portions of land (no more than a half a hectare) and the access or control over them does not demonstrate any difference between men and women. This finding differs from the findings of a study carried out by Orge et al. (2009) in Ayacucho, Peru, in which she found a great gender land gap, men possessing more and larger plots than women.

8.3.3 Gender Program Benefits and Leadership

It is important to note that women from COGEPAN and NON-COGEPAN bring practices to the groups carried out for generations. Women’s actions in their communal context are marked by their sense of solidarity, collective action and cohesion and especially for disadvantaged women.

The Role of the Papa Andina Initiative and the International Potato Centre as an Innovative Broker at the Meso Level

Throughout the study, NON-COGEPAN and COGEPAN participants expressed their needs and concerns in relation to CIP’s involvement in production, protection and conservation of native potatoes and developing technology. NON-COGEPAN members have admitted that, in the past and sporadically in the present, CIP had a more active presence in the communities and worked with peasant producers in an array of research
and extension efforts. Peasant communities like Racracalla and Achin benefited with the repatriation of disease-free germplasm as in-vitro samples and seedlings in 2002, varieties they still cultivated and maintained in their communities. COGEPAN now benefits from the Papa Andina initiative that utilizes two approaches (Participatory Market Chain Approach and Stakeholder Platforms) to foster innovations through communication and collective action among different and large networks (Devaux et al. 2009). As an organization and function, this innovation brokering differs from traditional extension and R&D because it represents the institutionalization of the facilitation role, with a broad systemic, multi-stakeholder or actor, innovation systems perspective (Klerkx et al. 2012). These features support the integration of peasant producers in the native potatoes market chain in participatory and collaborative ways, which in the end will bring commercial, technological and institutional innovations. However, the impacts have been minimized by two main factors: 1) little or no presence of public sector, ministries, universities and private sector as “innovative brokers” mostly at meso level and 2) the adequate integration of gender tools in the Papa Andina initiative came only after coordinators and researchers realized that a concrete tool was needed to convert strategy into practice. To fill this gap, a new tool was introduced by Papa Andina to trigger gender and women’s participation in innovation-promoting methodologies (Aviles et al. 2010). The focus on gender differences and inequalities during program and project planning, design, implementation, monitoring, and evaluation illuminated the social organization of gender in the highlands. Power relations and roles between men and women were found to influence the implementation of activities. It is essential that projects and activity planners focus on these issues continuously (USAID, 2012). Conducting a gender analysis and/or gender assessment initially would have helped the PMCA to mainstream gender analysis in the program from the start.

Women have developed different techniques and forms of acquiring the sub-products that need to be protected. Peasant women have extensive interaction with the native potatoes genetic base and it is through their knowledge, passed down through many generations that women develop and carry on a deep understanding of their environment, and in particular biological diversity. Indigenous women and small-scale farmers who are part of COGEPAN state ‘we do not want patents; we do not know
patents’. Patents and intellectual assets characterize a model of property ownership that is inconsistent with their ideas. Peasant people are used to sharing out information in open ways (Urday, 2010). But proprietary rights can sometimes involve legal agreements that lay new claims to intellectual assets that may reside in women’s individual and collective knowledge. The implications can be far-reaching; the agreements over these potatoes may be the first legal sign of the restoration of rights that indigenous people once had (IIED, 2012). It may also present a risk that is yet to be known to farmers and stakeholders in the market chain.

Complicating this situation further is the recognition that Peru and Andean communities will need to utilize the diverse genetic pool of potato to break new ground and open new international markets; investments made in the Andes as a genetic centre of origin and also the official centre of the world research on potatoes cannot be abandoned. Aside from the economic importance of investments to date, potatoes are important for the region not only as a staple food, but also as a cultural symbol. Historically, Andean communities have co-evolved with potatoes and their efforts have made the potato ubiquitous throughout most of the world today; locally, potatoes are essential in matrimony and sacred rituals. Potatoes have a significant meaning to Andean customs and images or symbols that dates back thousands of years.

The new agreements mean that Andean communities, and the female farmers who play such a key role in the potato market chains, will be central to unlocking the potato gene bank and repatriating, restoring and monitoring the agro-biodiversity of native potatoes to farming communities and the natural environment for local and global benefits. Though excluded and often oppressed, indigenous peoples are the traditional custodians of biodiversity, and the agricultural innovation system addressed by Papa Andina, and its subsequent agreements acknowledge that the importance of biodiversity (IIED, 2012). At the same time, the trend of privatizing genetic resources and ignoring indigenous knowledge or allowing research bodies and corporations to operate without accountability for local livelihoods and cultural ways of life will not be part of the agricultural innovation system for potatoes (Schurrah et al. 2009).
The Papa Andina Initiative and other agricultural innovation efforts need to recognize that loss and piracy of biological diversity are endangering women’s and men’s knowledge and resources, including the deterioration of its diverse resource base. The lack of property rights and control over land and resources together with restricted access to education and services is a major obstacle. In 2002, the Peruvian government was the first country to promulgate a national law to protect, preserve and develop the collective knowledge of the peasant or indigenous population. Through this law, external actors who want to use the resources and knowledge of indigenous populations have to obtain signed consent (Argumedo, 2010). Peru also signed the International Convention on Biological Diversity and Convention169 of the International Labour Organization. Both agreements may provide some protection for indigenous peoples, and some benefits from the commercial use of traditional knowledge. On the other hand, Peru still needs to implement Peru’s Law 27811, the Law for the Protection of the Collective Knowledge of Indigenous Peoples Related to Biological Diversity promulgated in 2002. Furthermore, the Andean Communities’ Decision 391 has not been implemented, which determines a Common Access Regime to Genetic Resources (October 21, 1993) and “recognizes the rights of indigenous peoples over knowledge, innovations, and practices; establishes prior informed consent requirements for indigenous communities; and guarantees monetary and non-monetary benefit-sharing” (IIED, 2009:3).

However, the genetic material that producers possess is dispersed along the Central Andes of South America and there are not proper in situ registers to determine the importance (uses, qualities, characteristics and properties) of each variety and the emic female knowledge of peasant production of native potatoes. This issue is crucial for women’s knowledge in order to develop more spaces and opportunities for peasant women to express, apply, and share their knowledge because as the study has demonstrated it is women collectively who hold the bulk of knowledge about the native potatoes.

Women in COGEPAN are just getting used to being a part of formal networks of diverse stakeholders. This is a new experience for women since they have to deal with multiple stakeholders. It is their level of education, the command of the language and their traditional customs that gives women certain disadvantages in relation to men when
developing the capacities and skills to be part of networks within and outside COGEPAN. Women have not yet fully developed or strengthened formal ways of networking with market chain stakeholders or outsiders. As women in the NON-COGEPAN group demonstrated, they have created informal networks to barter, exchange and commercialize native potatoes and sub-products. These relationships have been maintained for generations.

The appearance and dress of peasant women and men influence the way people see peasant producers. A man can easily overcome the barrier of culture since his dress and behaviour are similar to those of male citizens in towns or cities in the Central highlands. Peasant women, on the other hand, can be easily distinguished because of their skirts (polleras or faldillines), hats and braids.

Women at COGEPAN, as the findings reveal, have acted in ways that have helped them to gain a solid position in the organization. Gender relations and innovation are continually changing and shaping innovation that can benefit women. Three spheres of innovation were identified in COGEPAN: 1) technology use, 2) social norm change or social innovation, and (3) economic resilience.

1. **Technology Use:**

Women in COGEPAN have become familiar with much of the technology (agricultural and ICT) available for them in the market chain that has enhanced their innovative capacities in production, post-production and commercialization. Both agricultural-related innovations have resulted in positive impact on women in assisting them to scale up very rapidly from local to national and international markets.

For example as the findings reveal, the use of cell-phones and the internet had a visible benefit and successfully enhanced women’s control over strategic, fundamental interests—real and present prices in the markets, and movement of native potatoes in main markets (national and regional).

2) **Social Norm Change or Social Innovation:**

Even though, innovations in the market chain and COGEPAN are very localized and benefit a small number of peasant producers, the initiative is promising because it is
changing structural social norms in peasant communities and rural highlands in Peru. The market chain of native potatoes emphasizes the opportunities that innovations bring to the stimulation of social change by integrating different actors, engaging peasant women and men in innovation processes and assisting women’s social advance and economic improvement. This definition complements the concept of ‘social innovation’ that both highlights enterprise development with social change and assumes social justice as an essential component. Phills et al. (2008:34) recognizes that social innovation is, “a novel solution to a social problem that is more effective, efficient and sustainable, or just than existing solutions and for which the value accrues primarily to society as a whole rather than private individuals”.

The findings also demonstrate that innovations can significantly reform gender norms that limit women within their social, economic and political surroundings. COGEPAN is addressing peasant people and peasant communities’ needs, valuing women and men’s creative or innovative actions toward a more equitable and just society. It can be viewed as a process of identifying opportunities, organizing resources, and supporting women and men to build up leadership to change underlying dynamics and generate social value. Social innovation supported in sustainable ways offers a pathway for transformative change – genuine social change. A better understanding of the role of innovative brokers informs COGEPAN-related initiatives and contributes to building a solid and realistic case for what social entrepreneurship in agriculture means.

3) Economic Resilience:

In their strategies, methods and techniques, traditional Andean communities have exhibited a high degree of resilience and adaptive skills. Strategies of adaptation to the local ecological, social and political conditions have the objective of reducing the vulnerability of environments and communities. Peasant men and women’s strong adaptive capacities have supported them to develop ways of adapting to the changing weather conditions inherent in the multiple climate systems that exist in the highlands.

Agricultural innovations support women’s economic resilience and stimulate a more equitable flow of financial and non-financial opportunities and benefits. In the case of COGEPAN, the innovations include adding value to the native potatoes and the entrance
to new markets, generating peasant women’s access to and control over the land, credit
and savings, and legal and social strategies.

8.4 Micro Level Implications of the Study

The micro-level findings help to identify major constraints and opportunities faced
by women at the household level, which will of course have repercussions on the meso
and macro levels.

Form a gender perspective; this study provides evidence of the changes that have
been experienced in the household level. Perhaps women in COGEPAN have become
aware that they are considered as ‘helpers’ although they have performed all activities at
home and most of the activities in the fields, processing and provision of household food
security. Women producers have become what Freire (1989; 1974) called ‘conscientized’
by participating in COGEPAN, which has awakened and strengthened their abilities.
However, there is some tension and resistance to this change. While some men are
becoming conscious that women’s work is benefiting the household economically, others
resist these changes. Feminist literature is clear that it takes time to persuade men that
sharing responsibilities for domestic chores is not easy (Whitehead, 1981). Men express
their resistance by saying that they ‘are helping’ women in the household chores, while
others value women’s contribution to the economic well-being of the household.

COGEPAN and FOVIDA programs have introduced time-saving tools and
procedures to facilitate women’s empowerment and learning. Women usually have more
time to participate in events and training during the months after they have finished all
agricultural, post-harvest and commercial activities (June – August) in the agricultural
calendar. The NGO schedules internships, events and training for those months, which
demonstrates its gender responsiveness. In addition, the NGO offers day care for the
children. Another important aspect to consider is that husbands or male partners are being
integrated in the activities so they become familiar with the work women do and, in
addition, they become aware of the workload and responsibilities women undertake in
COGEPAN.

Women from both groups (COGEPAN and NON-COGEPAN) demonstrated that
the reproduction side is very pronounced in each activity they do inside the household
and the fields. Women transmit this strong sense of nurturing and respect to the potatoes just as they do with family members, especially children. They take care of the potatoes as they do with their children. Potatoes are the centre of their lives and that is transmitted in the way women have maintained potato biodiversity and genetic variety through their traditional ways of knowing for centuries. This is not an ideological concept like eco-feminism (Mies, 1989) but a practical agenda of action.

In COGEPAN, women have become aware of their rights because they participate in different events that congregate professionals specialized in different subjects. There are different means to inform peasant producers of their rights. During the time the study took place, FOVIDA organized a Regional Forum on “Economic Rights of Women in the Government Planning of the Political Parties in the Region Junin” in which one of the female leaders was invited to participate. They also published a book on “Women’s Labour Rights in the Junin Region” – Agricultural Female Workers. These types of consciousness-raising help women to become aware of their rights as wives and heads of households. Although, obstacles such as discriminatory practices and traditions in peasant communities are mostly socio-cultural rather than legal, Fernandez et al. (2000) and Trigoso (2007a) argue that these structural factors may restrain women from getting rights over the land.

In COGEPAN women understood that they feel FOVIDA supports and encourages women and especially women leaders to participate in trainings and events. It helps women to gain respect at the household level from their children and relatives. From a gender perspective the economic benefits for women at COGEPAN translate into providing their children better education and making available money to diversify their activities. They also stated that the earnings are designated for their husbands’ activities. And there is the danger that men could feel somewhat devalued. Fuller (2000:111) in the context of Peru, comments

“…work is ... represented as a masculine space par excellence because it is where the male accumulates the social, symbolic and productive capitals that are their contribution to their families”.

In Latin America, when it is perceived socially that men are losing ground as the primary income earners, it has been stated that this is a reflection of a ‘crisis of
masculinity’ in the region (Chant, 2000; Kaztman, 1992). This type of crisis may be expressed through violence. Women in the study stated that sometimes men do not want them to go to the meetings or participate in events (Escobar Latapí, 1998). Having access to resources is not the same as controlling them. Control over resources like land and credit directly translates to bargaining power (Gomáriz, 1997). It is then tempting to pronounce that enlarging women's access to new opportunities and acquiring income and assets would weaken men's dominance. However, the relationship between women’s increased earning capacity, women’s bargaining power and women’s status at the household level is both complex and location-specific (Quisumbing et al. 2010).

In one of the focus group discussions with women and men from COGEPAN, the final decision for one group was that even if women are the ones registered in COGEPAN, it is still men who control the money and the earnings that are generated as a result of the commercialization of native potatoes. The explanation was that men are the only ones making decisions because women’s lack of education and language limit them in dealing with other people. Men members still resist changing, even though they are working and interacting with other women in the group.

On the other hand, most of the women spoke of how they enjoy more respect and support from their husbands, though they still see problems with domestic violence for many of their female peers. Moreover, women's increased earning capacity does not de facto mean that women control income directly, or enjoy respect in their homes. Critical gender issues like domestic violence and discrimination still remain present in peasant communities; it is the “whispered, shameful and secret” truth as one of the female leaders once reported in this study.

In summary, the findings have pointed to a number of barriers to women’s participation in NON-COGEPA and COGEPA activities, many of which have also been have been identified in the literature. It has been noted that systemic gender bias exists in the form of,

1. Customs, beliefs and attitudes that confine women mostly to the domestic sphere (NON-COGEPA).
2. Women’s economic and domestic workloads that impose severe time burdens on them (COGEPAN and NON-COGEPLAN) and,

3. Policies and customs that obstruct women’s access to credit, production inputs, education and control over the land (NON-COGEPLAN).

Many authors studying Andean producers have assumed equality exists inside peasant communities because in the Andean Cosmo Vision men and women are “equal. However, roles of women in both groups (COGEPAN and NON-COGEPLAN) reveal certain subordinated status that is a product of the social, cultural processes and mostly structural relations among women and between women and men in Peru. The realities of peasant women are different from those in the cities and in Lima. Women’s realities are diverse and heterogeneous within the country.

**Summary**

In this chapter, the discussion of the findings examined the reality of women and men peasants in the highlands of Peru and their interaction with different levels from the macro (system) to the meso and micro levels of change occurring in part for the COGEPAN participants due to the Papa Andina initiative. There is no doubt that there are some substantive changes and opportunities that women producers have gained from becoming members in COGEPAN. The discussion also recognized that there are other gender issues that are still entrenched and embedded in the wider Peruvian agricultural innovation system and specifically the native market chain.
CHAPTER NINE

FINAL SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

9.1 Introduction

The purpose of the thesis was to deepen the understanding of the native potato market chain system and its processes in the Central Andes of Peru from a gender perspective, through a comparative analysis of women's traditional production and commercialization of native potatoes and women's recent experiences in the promotion of innovative native potato market chains in the Central Andes of Peru. The focus of that process permitted the researcher to identify triggers, drivers and hindering factors in relation to what women have accomplished (or not) as a result of their inclusion on the native potatoes market chain. These results allow the researcher to present some of the recommendations for future policy actions in the last section of the chapter.

9.2 Final Summary

This section allows the researcher to emphasize the key aspects arising from the findings (Chapters 5, 6 and 7) and the discussion of results (Chapter 8) in relation to the objectives and the conceptual framework of the study.

The findings suggest that some drivers, triggers and hindering aspects of the market chains of native potatoes have been identified and analyzed by female and male peasant producers from both groups (COGEPAN and NON-COGEPAN). The participatory tools in the study utilized by female and male peasant producers allowed them to look at their own reality in order to identify and examine from their own perspectives and experiences not only what they have achieved but also what they have not accomplished. As the researcher mentioned before and on many occasions “I am transmitting worldviews, concerns, needs, hopes and experiences of female and male peasant producers in relation to the production and commercialization of native potatoes” (quoting what a member of the Advisory Committee advised the researcher before going to the fieldwork).
9.2.1 Drivers of Agricultural Innovation from a Gender Perspective

1. Leadership and Facilitation of the Papa Andina Initiative

The role of the Papa Andina Initiative as an “innovation broker” and its participatory and collaborative nature has been crucial to achieve the integration of women and men in agricultural innovation systems. It has integrated married peasant women into organizations in which they act and perform in similar conditions to men. The Papa Andina Initiative has integrated peasant women with different and diverse group of stakeholders and actors who have different views and are influenced by social and cultural perceptions, interests and power relations. It is the pro–poor prospect that notably has included the poorest population and the most disadvantaged and voiceless group: married peasant women. These groups are overrepresented in their communities and also in the political and social actions and decisions of the entire country.

2. Innovation Champions

The inspiration that native potatoes can be utilized as means to improve their economic situation and overall improvement of households and livelihoods motivates women to continuously innovate the production and commercialization of native potatoes. In the study it was found that women (NON-COGEPA) have been selecting and classifying the tubers according to their traditional knowledge and that they have been processing the native potatoes in sub-products utilized at the household level (chuño, tunta, tocosh, shampoo and coffee, among others). However, women in COGEPA have been incorporating their traditional knowledge to upgrade the native potatoes and sub-products for market purposes by applying technological practices learned both from the training with FOVIDA and its allies and also what they have learned from internships outside their communities and associations. They have assumed the role of ‘replicators’ when they come back to their communities.

3. Private Sector Involvement

The involvement of some formal markets (national and international) has brought innovative ideas to women in order that these stakeholders are satisfied with their products. Women and men producers (NON-COGEPA) organically produce the native po-
tatoes because they know these practices are economical and sustainable (the *Mama-pacha* does not get tired and sick). Women in COGEPAN understand that these traditional practices produce native potatoes that can be commercialized at good prices if they add value to the products (selection of damaged tubers, size of tubers optimal for consumption and presentation of the product – bags or containers – with pictures that display how the native potatoes are cultivated (*criadas*). The interaction between the gastronomy sector and women and men from peasant communities in order to achieve mutual learning has been prompting women to learn new practices and uses of the potatoes they produce.

4. **Partnerships and Alliances**

Partnerships and alliances are becoming stronger and sustainable in the market chain of native potatoes, as explained earlier. The gastronomic sector in Peru is blooming and as part of the market chain of native potatoes, it is fiercely supporting the creation of restaurants and gastronomic schools in Peru and worldwide. It is a special interest of young people and youth to enter gastronomy careers. Though it was not mentioned in the study, young women from peasant communities and rural areas are trying for culinary careers. Fairs and events like displays and internships allow women to create alliances and networks that support them to acquire new varieties and accessions of native potatoes that they do not cultivate in their communities.

5. **Peasant Women's Emic Knowledge on Genetic Biodiversity of Native Potatoes**

The genetic biodiversity of native potatoes is immense and women are its main guardians. Female producers (NON-COGEPLAN and COGEPAN) safeguard the traditional information, knowledge, traditions and practices of producing and reproducing the Andean potatoes. The traditional knowledge they possess has been verbally transmitted from one generation to another, from person to person (mothers to daughters). It is based on the *saber campesino* (spiritual, ecological, geographical knowledge) sense and wisdom. It is entrenched in the Andean Cosmo Vision in which the differences between elusive knowledge and physical things are frequently imprecise and vague. Peasant knowledge cannot be separated from the natural and cultural contexts from which
it has emerged, including long-established lands (agrocentric belief) and resources, relationships (kinship) and community relations. It is not an inactive fact; it is continuously developing with modifications in the internal and external natural world of the peasant community.

6. Adaptive Capacity to Strengthening Innovative Capacity

As indicated in the discussion of results, three different areas or spheres of innovation interconnect with the utmost essential and most original opening points for recognizing advancement in peasant women - 1) technology use, 2) social norm change or social innovation, and (3) economic resilience. Female members from NON-COGEPAN possess an innate adaptive capacity to maintain, manage and preserve the native potatoes. In the study it was demonstrated that it is women’s role to nurture and take care of the native potatoes. They have known how to adapt the native potatoes to different climatic conditions, pathogens and plagues. However, it is women in COGEPAN who have strengthened their innovative capacity not only for the production and commercialization of the native potatoes, but also for other activities, collective work and retrieving information through the ICT tools they have access in order to achieve better prices for their products. Their work in the market chain empowers them individually. The empowerment of women in COGEPAN has not come easily; it is the work of ‘brokers in innovation’ at the macro level (Papa Andina Initiative) and the meso level (FOVIDA) as well as of providers of information.

9.2.2 Triggers of Agricultural Innovation from a Gender Perspective

1. Market opportunities and constraints

Women and men in COGEPAN are accessing markets at different levels as they recognize the types of products that are optimal for the consumer. They have learned to evolve from specific Andean farming systems to commercial and extensive farming systems while sustaining and conserving traditional practices and maintaining the genetic biodiversity of native potatoes. The options for the commercialization of their products
are helping peasant producers to switch from subsistence production to market-oriented production.

2. Principles of Andean Cosmo Vision

Particularities and inequalities in gender relations are connected to Andean values and morals and are more visible in peasant communities. These attitudes and actions have negative repercussions on women’s lives since they cannot define and position themselves because of the contradiction between equality and complementarity, reciprocity and interdependence between women and men. The relative sexual subordination of women producers involves the structural and macro limitations that stress the identity of femininity (age, ethnicity, education, language, etc). These limitations have started to be challenged by female producers in COGEPAN. Women have demonstrated that this sub-ordination can change. Women’s contributions to the preservation and conservation of biodiversity and natural resources, leadership roles, land tenure, economic generation and contribution in the market chains are doors to sexual parity and equality. The control of material aspects of social life, cultural adaptation to economic systems, technologies, new roles and the sexual division of work, are keys to overcoming hierarchical relations and achieving more egalitarian relations between women and men.

9.2.3 Hindering Factors of Agricultural Innovation from a Gender Perspective

1. Gendered Policy and Bureaucracy

The lack of clear, specific and appropriate policy directions in relation to women and gender in agriculture undermines the visibility of peasant women in agriculture. Policies emphasizing the development of capacities, skills and rights are unknown to most peasant women. In COGEPAN women have the chance to participate in forums and conversations as they become aware of their rights and obligations. However, additional policy intervention is needed to support peasant women. There has been a pronounced lack of political support and public policy for the benefit of peasant women in agriculture.

2. Market and Commercialization

Poor markets (and even the absence of markets) have created adverse conditions for peasant producers. Peasant producers and especially women producers in NON – CO-
GEPAN have to face unfavourable market conditions and inadequate transportation in their efforts to sell their produce.

3. Capacity and Skills

NON-COGEPLAN women possess sufficient capacity and skills for them to advance. They enjoy limited access to institutional support. The agricultural and social-based programs sponsored and financially sustained by the government and public sector in which they are involved help them to get information. They get a sense of working in formal organizations and learn different skills to prepare the food, nutritional tips and health issues. On the other hand, women in COGEPLAN do not participate in these programs because they perceive the programs as paternalistic and reflect patriarchal forms of controlling peasant communities. As a result of the capacities and skills women have acquired in COGEPLAN, they want to work and produce in order to have economic returns in sustainable ways.

9.3 Conclusions and Recommendations

Objective 1: To compare women's traditional production and commercialization of native potatoes with women's recent experiences in the promotion of innovative native potato market chains.

Similarities and differences arose from the study when comparing women’s traditional production (subsistence production) with women’s innovative production of native potatoes. The fundamental relationship between women in peasant communities and women in the innovative market chain is that they are all peasant or indigenous women who live in peasant communities and practice core mandates of the Andean Cosmo Vision.

The findings of the study recognize the importance of native potatoes and their genetic biodiversity not only in men’s and women’s lives, but also in the peasant communities that live and act on their Andean Cosmo vision or indigenous worldviews (defined here as buen vivir, reciprocity, collectivity, complementarity and duality).

Agricultural policies, governments and institutions have considered the context as homogeneous without considering women’s and men’s traditional knowledge, forms of
community organization and the validity of customary law. Their knowledge and Andean ways of adapting and innovating are part and parcel of their innate capacities to maintain the biodiversity of native potatoes. Producers have preserved the potatoes’ genetic biodiversity and coped with adversities like climate change, globalization and food scarcity in the course of adaptation and resilience. However, as a result of both consuetudinary and customary laws, women have faced structural barriers and the access and control to different resources, even the basic ones.

The respect women and men have for nature and its natural resources support their agrocentric perspective on life. On small plots (chacras) they maintain biodiversity through different activities (multi cropping, weather prediction, interbreeding, soil fostering, native potatoes multiple use and communal and collective action practices).

The management of thousands of native varieties of potato (Solanum tuberosum), each one with its own inimitable savour, nutritional significance and climate-resistant qualities, has great significance worldwide. One of the explanations in the wake of the existing food crisis and climate change is that human beings’ continued existence presently relies on a small number of crops. Women from the Andes are more knowledgable than men on the cultivation and utilization of each potato variety. Post-production, women have assumed the responsibility for the sustained preparation of traditional dishes, but their role in the potato production process goes even further than agriculture, into the realm of cultural transformation.

Women, from both groups in the research are still living and practicing under the principles of the Andean Cosmo Vision. They are still committed to communal work and life, a practice that implies the generation of invisible subordination where men are dominant. In the Andean Cosmo Vision, it is seen as natural and also justified by duality, reciprocity (Ayllu, Minka and Ayni) and complementarity between both sexes; women do their work and men do theirs. Many activities and responsibilities are ‘unspoken’, established according to customary sex roles.

The study does not disprove or refute those customs; they are part of culture and nobody has a right to disrupt and disrespect traditions. The principle of the Andean Cosmo Vision must be used as a means of integrating women and men in agricultural
policies. It can also serve as an instrument to transform the attitudes toward peasant women inside the households and communities.

At macro and meso levels, more work is needed to bring women a more equal share in men’s roles in agricultural innovation. Interaction and mutual learning – sharing of knowledge- are essential to support women’s advance and transformation. Women need to be included in formal or institutionalized groups in which capacity development is promoted at all levels (from macro to individual). Their nurturing capacities are the foundation for building other capacities that are still absent. Papa Andina is supporting the development of commercial, economic and technological skills for women producers but these have to go in hand with capacities that support women’s transformation. “Equality is not mechanically perpetuated. It is negotiated, disputed and ultimately changed through the conscious actions of individuals” (Bourque et al. 1981:48).

Women in COGEPAN have individually demonstrated, especially as leaders, that transformations are possible. Opportunities have to be there for them. Sustainable innovative agricultural projects and programs that consider, respect, complement and integrate traditional to modern capacities are needed to support women’s access to resources like land and technology. The development and strengthening of individual capacities will not only help to integrate the culturally complex country, it will also transfer values to families and communities that will support women and men of peasant communities in building stronger institutions. The most important is the transformation of the ‘self’, in other words women’s self.

**Objective 2:** To offer women the opportunity to document by themselves their worldviews, combining practices, levels of participation, perceptions and beliefs in their own terms, to explain what the production of native potatoes is for them.

Giving priority to the use of participatory tools in the study, peasant women and men had the opportunity to document their views, participation, perceptions and beliefs in relation to the native potatoes. Native potatoes have been an important part of their lives throughout history. Peasant people’s food security and nutritional intakes have depended largely on different varieties of native potatoes. As found in the study, peasant people’s
basic daily food consumption is the native potato. Potatoes are consumed in many forms, from fresh product to processed food.

The study has demonstrated not only differences between women’s and men’s perceptions and worldviews, but also differences among women which positions peasant women at a disadvantage in comparison to other women in Peru. In both groups, COGEPAN and NON-COGEPAN, women lack formal education and are unfamiliar with their gendered rights, thus predisposing them to be trapped inside their traditional roles. Cultural and traditional discriminations in the gendered allocation of resources situate peasant women in a disadvantaged position in relation to men in their capacity to participate in, contribute to and benefit from agricultural development. Women have not yet integrated their efforts into new ways of becoming part of key decision-making processes to ensure more equitable allocation of resources and opportunities, which in turn will uphold other forms of social justice.

Peasant women participating in the Papa Andina initiative have slowly overcome some of the cultural and structural impediments that other women in the highlands are still confronting. High levels of poverty accentuate the restricted access to education, information and basic services. The Andean population is disadvantaged in comparison to the rest of the Peruvian population. As the study reveals, men and women in the study from all groups manifest dissatisfaction and anger as a response to the state. They feel ignored and neglected by the governments.

From a gender perspective, the market chain approach benefits small-scale male and female farmers by developing mechanisms that foster the enhanced economic feasibility of production and marketing. These groups have support from research institutions but also need support from governmental institutions. Market chains offer women the possibility of moving from subsistence to market-driven added value products in order to overcome poverty and social exclusion. A key feature of this agricultural innovation system is that it brings together small farmers, market agents, and agricultural service providers who do not know each other or who may have distrusted one another (Bernet, et al.; 2008). Inside this environment, women have greater possibilities to share their findings and discoveries with other members of the system.
Objective 3: To analyze the patterns of asset use and access, roles, types of gendered relationships, and how the enabling/disabling environment contributes to the patterns detected and to assess these realities through collaborative mapping of the strengths and weaknesses of the market chains in which they participate.

The analysis of Andean peasant women’s relations and roles in agricultural innovative systems reveals that they are characterized by a lack of education, men’s dominance, inaccessibility to and absence of control over resources (land, extension services, education and inputs), nil political action and limited access to markets. To improve this situation, The Papa Andina regional initiative promotes social, institutional, technological and economical innovations that lead to the development of market niches and value addition for the native potatoes through two principal approaches: the Participatory Market Chain Approach and the stakeholder platforms as innovation brokers in order to support farmers in the identification of new opportunities to collaborate and innovate. Women producers benefit from the initiative through greater access and control over resources (land, credit, technology, extension services, networking and capacity strengthening) and through opportunities developing inside and outside the consortium.

Several gender-related lessons have emerged from Papa Andina. However, the benefits of innovations generated by the stakeholder platforms remain localized and it is reaching a relatively small number of peasant producers. Producers are also warned not to consider this success story as a stimulus to grow just one or two varieties of potato. Consequently, the different varieties of native potatoes can be maintained inside their communities ‘in situ’, and also consumers will benefit from the countless number of varieties still unknown in the markets. The maintenance of potato diversity and traditional knowledge needs to remain central to the innovation system. Unquestionably, indigenous women farmers have passed a wealth of knowledge to market chains and agricultural innovation; they struggle to guarantee that their knowledge benefits themselves, their households, and their communities. Investment strategies that establish
networks of information and knowledge sharing can enhance the influence of locally developed and innovative practices and strengthen the abilities of women and their communities to meet their agricultural and economic needs in a culturally appropriate and environmentally sensitive manner. Despite women’s critical role in the potato market chain, subsistence production, in which women are usually involved, receives less institutional support than cash crop production. Female agronomists or extension officers are still not visible in the Andes. And not many extension services have accommodated their services to peasant women.

Through this research, peasant producers had the opportunity to express their views in relation to governmental institutions. Their anger and frustration were evident when complaining that an inattention and neglectful government has all the power to control the resources and services for peasant people. They were critical not only of the government but also of the political system in the country. Female and male producers believe that there are no laws that support and protect their communities and organizations. They think that public and private sectors do not support peasant people in their struggle to have a decent life. They mistrust the inconsistency and lack of collaboration from the different levels of government and the public sector.

**Objective 4: To provide assessment of the appropriateness of the conceptual and methodological framework used, its usefulness for future research and suggest effective policies identified in the research study for future work.**

The integration of quantitative and qualitative (participatory and collaborative) methods allowed participants to identify and deal with sensitive gender issues that emerged as a result of the strengthening of their collective action research process. The emphasis on these methods would have been impossible to come up using more structured methods, which do not allow for the voice of the marginalized (campesina women) to be heard. It was not only resource-poor, female peasant producers who were empowered by the methodology; men also were empowered throughout the interaction. Group dynamics based on collaboration among participants facilitated group cohesion and provided a safe space for all to freely express their needs, limitations, views, perceptions and concerns. The different methods of discussion and visualization employed in this study
allowed participants to develop a shared vision of their specific context. The effectiveness of these methods captured gender differences inside peasant communities and the agricultural innovation intervention: the market chain of native potatoes. The nominal identification of actors provided insights into both social relations and power relations and it was a particularly valuable tool for acquiring a deeper understanding of the different actors and stakeholders. The participatory video approach allowed women to communicate openly as an action learning process. This was ‘experiential learning’. They learned as they were doing. Women and men identified and became aware of the decision-making processes, political life and how these actions have had an impact on their communities, associations and livelihoods. They articulated the importance of the social relationships, power relations and roles inside their communities and associations. The modified forced field exercise (from the SAS2 toolkit) promoted group cohesion, and elicited greater participation of reticent group members. It also provided an opportunity to reflect on and endorse aspects of the natural setting and social situation which participants may otherwise have felt reluctant to discuss. Women were especially accepting of this activity and their engagement generated valuable data.

Some of the tools used in this study and in particular the survey, was a time-intensive exercise and required that the researcher and participants were committed to the process. Ranking and scoring techniques were somewhat complicated for the participants. They needed more assistance and examples to complete this exercise. The survey and ranking techniques were useful to sex-disaggregate awareness attitudes and knowledge of native potatoes for production, consumption and commercialization.

As a result of the study, some observations of the research process are shared as recommendations for future research in which peasant populations, gender analysis and agricultural innovation systems may be involved.

1. Promote, support and facilitate intercultural dialogue among peasant producers’ organizations and stakeholders that are part of the agricultural innovation system. Facilitate dialogue and decision-making inside and outside organizations and among all stakeholders in their own terms and perspectives.
2. Consider and take a holistic approach to the specific context where the intervention will take place. This implies the affirmation of respect and reciprocity to cultural beliefs, customs and nature through rituals, regenerate knowledge about the behaviour of nature, strengthen the collective responses of community organizations, revitalize relations of reciprocity to ensure and preserve the principles of food security, rescue mechanical technologies and traditional practices.

3. Give emphasis and consider the local concept of gender and development. Do not impose modern beliefs in order to transform the communities or the way peasant people think about the household dynamic and relationship between women and men.

4. From the results of this research, it is recommended the use of participatory and collaborative approaches in research. The use of the participatory action research nature of this research procured female and male peasant producers to take responsibility of the ownership of the research study.

5. Through the process of the research, at the same time, participants became involved and were able to share their views and experiences, they also empower themselves through some of the SAS2 tools applied in the study as these are participatory and collaborative by nature. It is recommended to utilize three main steps when integrating women and men in the study (action, training and research).

6. The participatory video approach supported peasant people to build their skills and capacities at the same time as transmitting information for the research (De Lange et al. 2008). Women especially benefited from this tool since it helped them to express their views openly.

As a result of this study, seven key policy recommendations are offered:

- Further policy analysis and research is needed to identify, monitor and evaluate the entire market chain system that includes the use of gender
analysis to recognize women’s roles and gender relations in production and decision-making. Indispensable tools for this gender analysis are sex-disaggregated data related to women and men’s access to resources such as labour, land, capital, and knowledge and the outcome analysis of women involved in capacity-building activities (See Appendix 7a for a proposed framework and 7b for a gender-related assessment example).

- Research support is required to increase productivity, maintain and improve or innovate new products to adapt to climate change, water scarcity, etc. The importance of enlivening and merging traditional or local knowledge appropriately with modern knowledge will result in a more continued and sustained impact for women producers.

- Government and R&D institutions like CIP and INIA should ensure that the full range of women’s and men’s activities, resources, and benefits is reflected in the assessment of the innovation system and in the continuing activities. These agencies should identify suitable technological and institutional innovations from a strategic gender perspective. In particular, a review of the suitability of technologies or institutional arrangements available in other market chains that have become successful and sustainable for women farmers is needed.

- Institutions and stakeholders (government, R&D, universities) should identify and respond to socio-economic factors that may affect the adoption of proposed technological or institutional innovations (for example, security of resources; tenurial arrangements for land or credit; access to inputs such as, seed, and fertilizer; and membership in producer groups). They should also identify activities that are particularly time- and/or energy consuming for women and address them with targeted investments and supporting interventions.

- Stakeholders in the chain, including producer groups, need to be involved in increasing and sustaining the supply of information, technologies, and facilities to which women may not have had access
because of social exclusion (examples include market information, transport, appropriate tools and equipment).

- Peasant women have demonstrated that they can ensure sustainable development and biodiversity conservation. In order to make an agricultural innovation system successful and sustainable, structural obstacles have to be addressed by implementing policies and legislation that facilitate peasant women’s advancement. Women’s capacities have to be enhanced to promote social transformation, agricultural innovation and economic development. By focusing on women’s social needs and empowerment, participation in community organizations and in political processes will be feasible.

- The design and implementation of policy and legislation (tenure, benefit-sharing, intellectual property rights, etc.) need to acknowledge that communities are not homogeneous and that mechanisms need to be established in a context-specific approach to provide equitable representation of women and allow for transparency, accountability and conflict resolution. Mechanisms need to be developed to ensure that the rights and interests of peasant women are protected, without jeopardizing the prospective achievements of others.
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APPENDIX

Appendix 1: Invitation to Producers to Participate in the Research Study

INVITACION A LOS AGRICULTORES

Silvia Sarapura, Universidad de Guelph
Invita a los actores de las cadenas productivas de papa nativa de la región central a participar en el estudio “Análisis de las Cadenas Productivas de Papa Nativa con una Vision de Genero”

Aprende a hacer entrevistas y participa en la producción de videos

Las(os) participantes al estudio serán divididos(as) en dos grupos

1.- Veinte (20) mujeres que serán entrenadas en el uso de la video cámara, lo cual servirá para que Uds. grabe las impresiones de sus colegas.

2.- Cien (100) participantes de las regiones de Comas y Huancavelica, que incluira hombres y mujeres representantes de los diferentes eslabones de las cadenas.

Como producto del intercambio de conocimientos, la investigadora y los participantes aprenderemos mutuamente sobre diferentes aspectos que serán considerados en el estudio:

El estudio revelara experiencias y las limitaciones que Uds. tienen como agricultores de papa nativa.

Te capacitaremos en desarrollo de capacidades, liderazgo, desarrollo de organizaciones

Aprende nuevas técnicas para trabajar en grupo y aprende a organizarte.

UNIVERSIDAD DE GUELPH, CANADA.
INSTITUTO DE INVESTIGACION PARA EL DESARROLLO - CANADA
APoyo: 
Centro Internacional de la Papa

El cultivo de papas nativas y la creación de las cadenas productivas en el Peru son un paso muy importante para crear organizaciones sólidas, nuevas instituciones y leyes que separen el desarrollo rural de la población de Peru.

Los métodos participativos serviran para desarrollar y fortificar capacidades de los participantes, creara dialogo e intercambio de conocimientos.

Los daremos fiambres y bebidas mientras participemos en el estudio

Ayudenos a Ayudarnos
Appendix 2: Cover Letter

Letter of invitation to the women to participate in the study

Dear Mrs (s):

By this letter I would like to invite you to participate in a research study titled "An Analysis of the Innovative Market Chain of Native Potato from a Gender Perspective: The Innovative System Revolutionizing Agriculture in Developing Countries". This study is carried out with the purpose of getting information for my thesis to obtain the Doctorate Degree in the University of Guelph, Canada. The project is undertaken with the financial support of the Canadian Government provided through the International Development Research Center (IDRC).

This study will examine the links of sustainable livelihoods of small-scale female producers in the native potato market chain in the Altiplano and Andes of Peru. The purpose of the study is to confer women producers (YOU) the opportunity to document for yourselves, your views and experiences in the market chain of native potato in order to analyze the roles and relationships that enable you to gain more control over your livelihoods. This study has the objective of conferring you who are involved in the native potato market chain the opportunity to document for yourselves in holistic terms your views, by combining practices, levels of participation, perceptions and beliefs in your own terms. Then, to begin to dig deeper into patterns of asset use, roles, types of gendered relationships, and how the enabling/disabling environment contributes to the patterns detected and finally to verify the findings by converting observations into a video product that communicates to you what I learned from you so you can verify if your world has been understood.

I really appreciate you voluntarily consider to participate in the study. I guarantee you; this will be a learning experience for you and me and an exciting journey to gain together knowledge and power.

Sincerely

Silvia Sanapura
PhD Candidate, University of Guelph
Appendix 3: Methods for Collecting the Data

The following methods were used to collect the data:

1. Semi-structured Interviews
2. Focus groups Discussions
3. Mediated Video (Description of women and men’s stories and experiences)
4. Participant Observation – Reflective Journal
5. Individual Situation Analysis
   - Modified Force field (Supported Analysis of the Meso Level- Driving and Restraining Forces)
   - Timeline (Understand Changes experienced by female and male leaders)
   - Social Analysis C.L.I.P (Helped to understand the power relations and roles at macro level)
   - Nominal Identification (Supported Identification of Actors and analysis at Macro Level)
7. Focus Groups Discussions
8. Agricultural Calendars
9. Survey (Allowed to obtain sex- disaggregated data of Socio-Economic and Demographic Information)

The data collection process followed in the research also considered the following guidelines:

1. In order to define the context, community leaders, under the supervision of practitioners working in the region (Eng. Jesus Amaya Cubas – Ministry of Agriculture, Eng. Guillermo Malpartida Lagos – Agro Rural and Eng. Flavia Felix Huanca, identified direct
and/or indirect actors involved in the production and commercialization of native potato for both groups (COGEPAN and NON-COGEPAN members).

2. Based on the information, participants were able to identify stakeholders who at certain degree influence the functioning of the associations and for instance the production of native potatoes. Then, they constructed a mental map identifying and naming all groups/stakeholders. Then, participants were asked to provide their own concepts on stakeholders, power, interests, legitimacy, collaboration and conflicts in order to generate the brainstorming questions.

3. Concepts were defined before starting the research study: **Stakeholders** are the groups/people whose **interests** may be affected by the production and commercialization of native potatoes. They also include the groups/people who can influence the production of native potatoes, using means at their disposal, such as **power**, **legitimacy**, and existing **ties of collaboration and conflict**. Power is your ability to influence others and use the resources you control to achieve your goals. These resources include economic wealth, political authority, access to information (knowledge and skills), and the means to communicate. **Interests** are the gains and losses that you will experience based on the results of existing or proposed actions. These gains and losses affect your access to power, legitimacy, or social relationships (including group memberships). **Legitimacy** is when other parties recognize by law or by local customs your rights and responsibilities, and the resolve you show when exercising them. **Social relations** involve existing ties of collaboration and conflict (including group memberships) that affects you in a certain situation and that you can use to influence a problem or an action.

**Brainstorming Questions used during this process:**

- Do the groups/stakeholders have any economic power to influence the production and commercialization of native potatoes? (Production includes the process from acquiring and accessing inputs/resources to post harvest activities). Economic power means facilitating the access to resources (credit, technology, inputs, extension, programs/projects and markets).
• What is the level of political authority that the groups/stakeholders have on the context of the production of native potatoes? Do the groups/stakeholders have an influence at other levels to support the associations that are cultivating the native potatoes?

• What is the level of information (knowledge and skills) and communication do you obtain from the group/stakeholder? Do information continuously flow or not? Is the information credible and accurate for you?

• Following the brainstorming exercise, a power relations’ matrix was structured. The matrix of double entrance identified the level of power and resources each group involved attained. In the first column, the factors of power were registered (economic wealth, political authority, ability to use power, information and means of communication). In the first row, actors and groups were identified. Each factor was valued under the scale of high power, middle power and low or non-power. And also, participants identified stakeholders according to the type of power, role of stakeholder and type of relationship.

Once values were assigned to each group, participants reviewed results to assure the description was adjusted to the real situation. Questions were left to their consideration to assure their grading was accurate and just.

Interests (categories of losses and gains) – in order to construct the matrix for interests, participants used the factors of power mentioned above and then analyzed gains and loses of all groups. They used a range of high net losses, low net losses, neutral, low net gains and high net gains. Gains and losses relate to the benefits producers obtained as a result of the intervention/presence of the groups/stakeholders in their communities and activities. It means the influence the groups/stakeholders presence or absence have had in the gains and losses producers may have attained.

Legitimacy - In order to know the level of legitimacy of the involved groups from the perception of the small-scale farmers, we used a double entrance table, in the first column; the scales of legitimacy were registered (high, low and non legitimacy). The groups involved were noted in the first row.
Question considered – The question was utilized to fill out the matrix

Is it (the group) enough accountable and transparent to be legitimate for the farmers’ interests and needs?

Collaboration and Inconsistence – Participants established a relation of cooperation and/or inconsistence of their groups with the groups identified.

Question provided to fill out the table

Is this group in some ways cooperating with you in your community so you feel its support is helping you to improve the production and commercialization of native potatoes and your livelihoods? Or is this group ignoring your organization or members of the community or the groups involved? Is this group helping you to find solutions to the problems/needs you face in the community or association?

At the end, all data were stored and analyzed in the software for Social Analysis C.L.I.P to determine the categories each stakeholder/group falls (dominant, forceful, influential, dominant, respected, vulnerable and marginalized), and also to determine the type of relationships they maintain (strong or some conflict and also strong or some collaboration).
Appendix 4: Household Survey

ENCUESTA NUMERO

NOMBRE DE PRODUCTOR (A)
Nombre de la Cadena Productiva – Communidad Campesina
Nombre de la Empresa

FECHA

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<td>Limpieza de Datos por Silvia Sarapura</td>
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ENCUESTA PARA DETERMINAR EL IMPACTO DE LAS CADENAS PRODUCTIVAS PARTICIPATIVAS EN LOS MEDIOS DE VIDA

Grupo de Muestreo/Condición del participante

Antes de iniciar confirmar nombre y condición del Participante

Área: 1= AREA # 1: CHUQUITAMBO  2= AREA #2: CHICCHE

3= AREA # 3: POMAMANTA  4= AREA # 4: RACRACALLA  5= AREA # 5: ACHIN

AREA # 6: MARIANYOC

(Hora de presentarse; Explicar el propósito de la encuesta y la naturaleza voluntaria de la entrevista)
En caso de haber preguntas en relación al cuestionario, informar al participante(s) en el desarrollo de la entrevista.

313
NIVEL INDIVIDUAL: INFORMACION BASICA

1a. Ha sido UD. Siempre miembro de la Organización: ________________ y del programa?    
   1 = Sí            0 = No  
   (Ir a #1b)       (Ir a #2)  

1b. En caso de Sí, Desde cuando ha sido UD. Miembro de la Institución? (numero de años)  
(Chequear la information con la obtenida en la lista al inicio)  

2a. Actualmente, recibe Ud; algun tipo de soporte para su integración en la cadena productiva.  
   1 = Sí            2 = No  

2b. De que fuente?  
   1 = ONGs          2 = Centro Internacional de la Papa  
   3 = Gobierno      4 = Otro programa     5 = Otros ________________  

3. Cual es su Edad? (Años)  
   99 = No sabe  

4. Actualmente, cual es su condicion civil? (Lea las respuestas y de solo una respuesta)  
   1 = Casada/ convive  2 = Separada/divorciada  
   3 = Viuda           4 = Soltera/nunca casada  

5. Cuantos años estuvo Ud. En la escuela?  
   (numero de años)  
   99 = No sabe  

6. Sabe Ud leer y escribir?  
   1 = Si            0 = No            99 = No sabe  

A NIVEL DEL HOGAR: INFORMACION BASICA

7. Cuantas personas conforman su familia (Incluidos los que viven y se alimentan al menos una vez en su casa)  
   Numero de personas  
   Adultos – 18 años o mayores  

   Niños de 17 años o menores  

314
8a. Cuántas personas de su familia trabajan – Perciben salarios o productos?

Numero económicamente activo

8b. Cuántas personas de su familia tiene salario y trabajo fijo?

Numero de personas asalariadas

9. Quien toma las decisiones en la familia? (Cabeza del hogar)

1 = Ud
2 = Cliente y esposo equitativamente
3 = Familiar Femenino (madre, hermana tía, abuela, suegra)
4 = Familiar masculino (esposo, hermano, tío, abuelo, suegro, cuñado)

EDUCACION DE LOS HIJOS (Edad escolar desde Inicial hasta Universidad)
10a. Número de personas en edad escolar (5 a 25 años)

# de personas en edad escolar

10b. Cuántos de ellos (as) en la escuela actualmente

# personas en el colegio

10c. Cuántos de sus hijos no van a la escuela?

Numero Total

10d. Cual es el nivel más alto de educación de sus hijos

Nivel más alto en número de años

11a. Cuál es la cantidad en dinero gastada para la educación de sus hijos este año en comparación al año anterior?

1 = Disminuyo
2 = Igual al año anterior
3 = Incremento

11b. Porque, razón?
## INGRESO INDIVIDUAL

12a. (Solo miembro de cadena productiva) Ha Ud. obtenido algún préstamo bancario/financiero?

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<th>0 = No</th>
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12b. (Solo Miembros de la cadena) Como invirtió el último préstamo/dinero disponible?

(Respuestas múltiples)

___ 1. Producción de Papas nativas
___ 2. Procesamiento (incluye procesamiento de alimentos)
___ 3. Comercio y venta ambulatoria
___ 4. A Servicios (Incluye restaurantes, lavado de ropa y trabajo fuera de la actividad Agrícola)
___ 96. No invirtió el préstamo en ninguna actividad
___ 99. No sabe

12c. (Solo Miembros de la cadena) Uso Ud. alguna porción del dinero en............?

(Lea cada pregunta. Respuestas múltiples. Una pregunta por cada cuadrado)

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<th>0 = No</th>
<th>99 = No Sabe</th>
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1. Compro comida para la casa?
2. Compro ropa o utilicé el dinero en artículos Para el hogar?
3. Da o presta el dinero a su esposo(a) o a otra persona
4. Mantiene el dinero para emergencias o para otros gastos
5. Para pagar otra deuda
6. Para mejorar o comprar terrenos de cultivo
7. Para gastar en celebraciones
13. En los últimos 12 meses, su ingreso en el hogar ha…?
(Lea las preguntas y responda)

1 = 2 = 3 = 4 = 5 = 99 =
Disminuido Disminuido Igual Incrementado Incrementado No sabe
Grandemente Igual bastante

14a. En los últimos 12 meses, sus ganancias han…?
(Lea las preguntas y responda)

1 = 2 = 3 = 4 = 5 = 99 =
Disminuido Disminuido Igual Incrementado Incrementado No sabe
Grandemente Igual Notablemente

(Vaya a 14.b) (Vaya a 14.b) (Vaya a 15.a) (Vaya a 14.c) (vaya a 14.c) (Vaya a 15.a)

14b. (Si disminuido grandemente) Porque este disminuyo?
(No lea las respuestas. Respuestas múltiples. Llene una pregunta por cuadrante. Luego vaya a #15)

1. Miembro del hogar ha estado enfermo/muerto 1 = Si 0 = No

2. Estoy/estuve enfermo(a) 1 = Si 0 = No

3. Desastre natural (sequia, terremoto) 1 = Si 0 = No

4. Temporada Agrícola Pobre 1 = Si 0 = No

5. Ventas Pobres 1 = Si 0 = No

6. No tuve dinero para la campaña agrícola 1 = Si 0 = No

7. Otro (especifique) __________________________________________

99 = No sabe
14c. (Si se incrementó notablemente) Porque cree que se incrementó el ingreso?
(No lea las respuestas. Respuestas múltiples. Rellene cada cuadrante)

- a. Incremento la actividad 1 = Si 0 = No
- b. Creo otra nueva empresa 1 = Si 0 = No
- c. Buena campaña agrícola 1 = Si 0 = No
- d. Venta de productos en nuevos mercados 1 = Si 0 = No
- e. Incremento en las ventas 1 = Yes 0 = No
- f. Otro (especificar) ________________________________

99 = No sabe

---

NIVEL EMPRESARIAL: Ingreso, Labour y Ganancias

15a. En las últimas cuatro semanas, ha Ud. trabajado para otros por salario?

1 = Si 0 = No

15b. En las últimas 4 semanas, ha Ud. Trabajado en sus campos, su actividad Agrícola y la cadena productiva?
(incluya trabajo n otro lugar)

1 = Si 0 = No

(Vaya a 16a)  (vaya a #20)

16a. (Si es si vaya a 15b) En las ultimas 4 semanas, cual de sus actividades le prove mas ingresos?

Actividad #1 ____________________________________________
16b. ¿Esta actividad? (lea las respuestas y solo de una respuesta)

1 = Actividad 2 = Actividad de la familia 3 = Una actividad en sociedad con otros

16c. ¿Cuál es el ciclo de producción de tu actividad? – Cuánto tiempo toma desde que Ud. compra los insumos hasta el tiempo que Ud., vende el producto? Por ejemplo, Ud. compra la semilla de papa hasta vender la semilla o procesar el producto. ¿Cuánto tiempo le toma ganar algo de dinero?
(Lea las respuestas posibles)

1 = Semanal 2 = Cada 2 semanas 3 = Mensual 4 = Otros

(especifique)______________

16d. Cuáles y cuántos fueron los costos para el último ciclo de su actividad? (Pruebe con todos los gastos de la actividad incluido insumos, transporte, labor, agua, luz u otros gastos para procesar el producto. Liste los gastos y costos.

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<th>GASTOS</th>
<th>COSTO POR SEMANA</th>
<th>COSTO POR MES</th>
<th>COST POR CAMPAÑA</th>
<th>GASTOS POR OTROS PERIODOS: ESPECIFICAR</th>
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16e. Ventas: para la misma actividad Agrícola, Cuáles fueron sus ventas totales? (Dinero y crédito?)

(ingrese la cantidad en el cuadrante apropiado)

<table>
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<tr>
<th>VENTA SEMANAL</th>
<th>VENTA POR UN MES</th>
<th>VENTA ANUAL</th>
<th>VENTAS POR OTRO PERIODO DE TIEMPO: ESPECIFICAR</th>
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16f. Ganancias: Por la misma actividad, Cuáles son las ganancias totales. (Efectivo y crédito)?

(Entre la cantidad exacta en el cuadrante correcto)

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<th>GANANCIA SEMANAL</th>
<th>GANANCIA MENSUAL</th>
<th>GANANCIA ANUAL</th>
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16g. Cuál es el cálculo matemático de la ganancia usando los números de ingreso y costos dados por el participante?

(16e- ventas mensuales - total de costos mensuales = ganancia mensual)

16h. Cuál es la diferencia entre la ganancia estimada por el cliente en 16f y la ganancia calculada por el cliente en relación de ventas y costos en 16g.      (16f menos 16g)

17a. En las 4 últimas semanas, cuál de sus actividades le dio el ingreso en segundo lugar?

(NOTA: Si no hay una segunda actividad resuelva la pregunta # 18.)

Actividad # 2

17b. Es esta actividad? (lea las respuestas y solo de una respuesta)

1 = Actividad        2 = Actividad de la Propia
2 = Actividad de la familia
3 = Una actividad en sociedad con otros
17c. Cuál es el ciclo de producción de tu actividad – Cuanto tiempo toma desde que Ud. Compra los insumos hasta el tiempo que Ud., vende el producto? Por ejemplo, Ud. compra la semilla de papa hasta vender la semilla o procesar el producto. Cuanto tiempo le lleva ganar algo de dinero?  
(Lea las respuestas posibles)

1 = Semanal  
2 = Cada 2 semanas  
3 = Mensual  
4 = Otros

(especifique) ______________

17d. Cuáles y cuantos fueron los costos para el último ciclo de su actividad?  
(Probar con todos los gastos de la actividad incluido insumos, transporte, labor, agua, luz u otros gastos para procesar el producto. Liste los gastos y costos.)

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(ingrese la cantidad en el cuadrante apropiado)

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17f. Ganancias: Por la misma actividad, Cuáles son las ganancias totales. (Efectivo y crédito)?

(Entre la cantidad exacta en el cuadrante correcto)

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17g. Cuál es el cálculo matemático de la ganancia usando los números de ingreso y costos dados por el participante?

\[ \text{(17e - Venta mensual - menos total de 17d-costos mensuales) = ganancia mensual} \]

17h. Cuál es la diferencia entre la ganancia estimada por el cliente en 17f y la ganancia calculada por el cliente en relación de ventas y costos en 17g. (17f menos 17g)

18. (Si participante respondió # 16) Investigador: Considerar la habilidad del cliente para estimar sus ganancias, costos, y ganancias. Registre las observaciones como un observador)

1 = Muy difícil  
2 = Algo difícil  
3 = No es difícil
19. (Si contestó #16) En las últimas 4 semanas, cuántos niños le ayudaron en su actividad agrícola? (Debe incluir TO-DOS los niños tanto de la familia como de otro lugar)

<table>
<thead>
<tr>
<th>19a. NUMERO DE NIÑOS</th>
<th>19b. NUMERO DE NIÑOS QUE PERDIERON LA ESCUELA EN LAS ÚLTIMAS 4 SEMANAS O NUNCA ESTUvierON EN LA ESCUELA PARA TRABAJAR (CON CUALQUIERA DE LAS 2 ACTIVIDADES)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Menores de 11 años</td>
<td>.ai</td>
</tr>
<tr>
<td>2. 11 a 17 años</td>
<td>.ai</td>
</tr>
</tbody>
</table>

20. En los últimos 12 meses, en qué uso Ud. El dinero Ganado en su actividad (es). Mencione en la actividad que uso más dinero

1 = Comprar comida  
2 = Compro ropa  
3 = Paga gastos de escuela  
4 = Gastos médicos  
5 = Compro cosas para la casa  
6 = Invierto en la actividad agrícola  
7 = Ahorro  
8 = Crianza de animales  
9 = Otro (especifique)  
99 = No sabe  
98 = No aplica
**NIVEL DE LA EMPRESA: Ingreso, labor y Ganancia**

21. Durante los últimos 12 meses, Ud. ha realizado los siguientes cambios en su actividad agrícola? (Lee la lista de cambios posibles. Marque el cuadrante apropiado con una X) | 1 = Si | 0 = No | 99 = No Sabe
---|---|---|---
| a. Incremento el negocio/la actividad |  |  |  |
| b. Aumento nuevos productos |  |  |  |
| c. Contrato nuevos trabajadores |  |  |  |
| d. Mejoro la calidad del product/adiciono valor al producto |  |  |  |
| e. Redujo costos comprando insumos en gran volume o en precios de descuentos |  |  |  |
| f. Redujo costos con un préstamo con menos intereses |  |  |  |
| g. Desarrollo una nueva empresa |  |  |  |
| h. Vendio producto a nuevos clientes |  |  |  |

22. Durante los últimos 12 meses, compró Ud o invirtió en alguno de estos activos para su actividad agrícola? (Lee la lista de cambios posibles. Marque el cuadrante apropiado con una X) | 1 = Si | 0 = No | 99 = No Sabe
---|---|---|---
| 1. Compro pequeños accesorios (Picos, palas, ollas) |  |  |  |
| 2. Compro herramientas grandes (equipos, tractores, bueyes, maquinarias) |  |  |  |
| 3. Compro medios de transporte (bicicleta, burros, llamas) |  |  |  |
| 4. Invirtio en un lugar para almacen |  |  |  |
| 5. Hizo una inversión menor en su lugar de venta/ lugar donde procesa el producto |  |  |  |
| 6. Invirtio en estructuras para su actividad (acequias, techos, cuartos) |  |  |  |

**NIVEL INDIVIDUAL: AHORROS Y HABILIDADES DE NEGOCIO**

23. Tiene Ud ahora algunos ahorros que mantiene para casos de emergencia o porque quiere hacer mejoras en su actividad? | 1 = Si | 0 = No | 99 = No Sabe
---|---|---|---
| (Vaya a #24) | (Vaya a # 25) | (vaya a #25) |
24. Durante los últimos 12 meses, sus ahorros personales…?

(Lea las respuestas y responda)

1 = 2 = 3 = 4 = 5 = 99 =
Disminuyeron    Disminuyeron    Se mantuvo    Incremento    Incremento    No Sabe
Notablemente    poco              igual         un poco        Notablemente

25. Cuando Ud. Decide empezar una nueva actividad, Que factores considera?

(No lea las respuestas. Y pregúntese algo más?)

1 = Trabajo con  2 = Si la actividad o el producto  3 = Cuanto capital se necesita
El que estoy es rentable por la y si dispongo de ese capital
familiarizado gran demanda

4 = Si puedo dedicarme  5 = Diversificar mis actividades/
A la actividad y cuidar de mi familia o los ingresos

6 = Otro (especificar) ______________________  99 = No sabe

26. Cuando administra su actividad…

26a. marque la respuesta apropiada con una X

26b. Ud. Ha adoptado esta práctica desde que pertenece a la cadena productiva?

<table>
<thead>
<tr>
<th></th>
<th>1= Sí</th>
<th>0= No</th>
<th>99=No Sabe</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Mantiene Ud. El dinero de la actividad Agrícola separada del dinero personal o de gastos del hogar?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Calcula Ud. Los ingresos basado en sus records de sus costos y de sus ganancias?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Sabe Ud. Cuáles son los productos que le dan más ingresos?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Percibe Ud. Un salario por su trabajo en su actividad agrícola?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Tiene Ud. Un almacén con protección del sol, el frío, la lluvia para almacenar, y vender sus productos?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Tiene Ud. Un local para procesar y guardar sus productos diferente a su casa o lugar donde Ud vive con su familia?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
NIVEL DEL HOGAR: RECURSOS

27. Ahora tenemos preguntas acerca de tu hogar y las cosas que este puede tener (Lista apropiada de los recursos debe ser creado en cada lugar.) Yo leeré la lista de accesorios y Ud. tiene que indicar si alguien en tu hogar tiene estos accesorios).

<table>
<thead>
<tr>
<th>Accesorio</th>
<th>a. En su casa alguien es dueño de este accesorio? (Lea y cheque el cuadrante si es “Sí”)</th>
<th>b. Cuantos estan en buenas condiciones (trabajan bien)</th>
<th>c. Fue este accesorio adquirido en los ultimos 2 años? Marca con una X</th>
<th>d. (solo clientes). Cuando adquirio este accesorio, era ya Ud. Miembro de la cadena?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1= Sí 0 = No</td>
<td></td>
<td>1= Si 0 = No</td>
<td>1= Si 0 = No</td>
</tr>
</tbody>
</table>

| Propiedad del Participante de modesto valor – Valor menor de 100 soles |
|---------------------------|================================================================================|
| Radio o grabadora         |                                                                               |
| silllas/bancas/mesas      |                                                                               |

| Propiedad del Participante de valor medio – Valor mayor de 100 soles pero menor de 1000 soles |
|----------------------------|---------------------------------------------------------------------------------|
| Bicicleta                  |                                                                               |
| Cama con colchon           |                                                                               |
| Cocina/refrigerador        |                                                                               |
| Television                 |                                                                               |

| Propiedad del Participante de alto valor – Valor mayor de 1000 soles |
|---------------------------|================================================================================|
| Motocicleta               |                                                                               |
| Carro/pick-up/taxi        |                                                                               |
| Tractor                   |                                                                               |

NIVEL DEL HOGAR: BIENESTAR: MEJORAS EN LA CASA

28a. Durante los 2 ultimos años, hizo Ud. Algunas reparaciones, mejoras en su casa que costaron más de 50 soles

1 = Sí 0 = No 99 = No sabe

(Vaya a #28b) (Vaya a # 30) (Vaya a #30)

28b. Los fondos para estas mejoras provienen de su actividad agricola?

1 = Sí 0 = No 99 = No sabe

29. (Si es si vaya a 28a) Ha hecho algo de esto Ud. En los 2 ultimos años?

<table>
<thead>
<tr>
<th>Reparación de la casa, mejoras o incorporaciones</th>
<th>a. Lea y cheque si es “Sí”</th>
<th>b. (solo clientes) Fue ud miembro de la cadena cuándo estos cambios se realizaron? (Marca con una X)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Reparación de la casa ( por ejemplo, arreglo del techo, el piso o las paredes)</td>
<td>1= Sí 0 = No</td>
<td></td>
</tr>
<tr>
<td>b. Expansión de la casa ( por ejemplo, construyo un nuevo cuarto, ático o defensa)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Instalo/Mejoro el sistema de agua (por ejemplo, agua potable, acequias, letrinas, ducha)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Luz/electricidad</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
NIVEL DE BIENESTAR DEL HOGAR: DIETA Y MANEJANDO TIEMPOS DIFICILES

30. durante los últimos 12 meses, su dieta en el hogar ha...

(Lea las repuestas e indicar las respuestas.)

1 = Empeoro  2 = Lo mismo  3 = Mejoro  99 = No sabe

(Vaya a #31a) (Vaya a #32a) (Vaya a #31b) (Vaya a #332a)

31a. (Si es peor) Cuanto ha empeorado? ________________________________

(Vaya a #32a.)

31b. (Si mejoro) Cuanto ha mejorado (No lea las respuestas. Respuestas multiples. Preguntese algo mas?)

1 = Pude comprar  2 = Pude comprar  3 = Pude comprar
Cereals, maiz, arroz condimentos, vegetales, carne/ leche
Legumbres con cereales queso, huevos

4 = Puedo comprar  5 = Puedo comprar  6 = Puedo comer mejor
Mas alimentos comida cocinada durante la epoca de hielo/sequia
Como fideos

7 = Puedo comer tres veces al dia  8 = Otro (especificar)  99 = No sabe

(Vaya a #32b) (Vaya a #33a) (Vaya a #33a)

32a. Durante los últimos 12 meses, fue necesario en tu hogar comer menos porque falto dinero para comprar los alimentos o falto comida?

1 = Sí  0 = No  99 = No sabe

(Vaya a #32b) (Vaya a #33a) (Vaya a #33a)

32b. Cuanto duro esto?
(especifica numero de meses?)  99 = No sabe
32c. Que hicieron los miembros de tu hogar para superar esta situación difícil?

1 = Me preste dinero  
2 = Me preste dinero con intereses  
3 = vendí una propiedad/terreno agrícola  
4 = Yo/otro miembro de la familia emigró para trabajar  
5 = Yo/otro miembro de la familia consigue trabajo local  
6 = Otro (especifique)  
99 = No sabe

33a. Durante los últimos 12 meses, Alguna vez Ud., no tuvo dinero para desarrollar su actividad?

1 = Sí  
0 = No  
99 = No sabe

33b. Por cuánto tiempo?

(Diga el numero de meses?)  
99 = No sabe

34a. Ha Ud. Enfrentado una situación muy difícil en su actividad en los últimos 12 meses?

1 = SI  
0 = No  
99 = No sabe

34b. (Afirmativo) Que causo ese problema?  (No lea las respuestas, pruebe)

1 = la actividad no es rentable  
2 = Otros miembros de la familia han estado enfermos  
3 = No hay venta/demanda/ comercialización  
4 = El clima fue malo  
5 = Problema de comercialización  
6 = Muerte en la familia  
7 = Celebración familiar  
8 = desastre (natural, robo, sequía)  
9 = Otro (especifique)  
99 = No sabe
35. Nombre TRES aspectos que a Ud le agrada mas de pertencer a la cadena productiva

(No lea las preguntas)

1 = Apoyo de organizaciones

2 = Puedo comercializar mi producto facilmente

3 = Solidaridad en el grupo o el grupo

Como CIP, FOVIDA es dinamico

4 = La participación es igual para todos

5 = mi producto tiene Valor agregado

6 = Mi grupo es eficiente y comercializo mis productos rapido

7 = Tengo oportunidad

8 = Otro (especificar)

99 = No sabe

De nuevos mercados

36. Nombre tres cosas que no le gustan a Ud de la cadena productiva

(No lea las preguntas)

1 = No tenemos apoyo de ninguna organizacion

2 = No se puede comercializar el producto

3 = La cadena enfrenta problemas (con los lideres o en las reuniones)

4 = Los miembros no participan en las reuniones

5 = No mejoro en la produccion/calidad

6 = Mi grupo es lento nadie quiere trabajar

7 = No hay programas de apoyo

8 = No hay leyes dificultad grande

9 = Transporte de productos una dificultad grande

10 = No me gusta la conducta/actitud de algunos lideres/actores

11 = No se tiene prestamos ni dinero para invertir

12 =faltan vías de comunicación

13 = Otro (especifica)

14 = Nada

99 = No sabe
ACCESO A TERRENOS

37. Ud tiene acceso a la tierra que cultiva?  
1 = Si  
0 = No  
99 = No sabe

38. Que tipo de acceso tiene a la tierra que cultiva  
1 = Comunidad  
2 = Al partir  
3 = Rento  
4 = Propio  
5 = Todos

39. Que extension de terreno Ud. Cultiva aproximadamente?  
1 = menos de 5,000m2  
2 = 5,000m2  
3 = Entre 5,000-10,000m2  
4 = 10,000m2  
5 = + de 10,000m2

40. Si Ud. Puede cambiar algo dentro de la cadena productive para hacerla mayor, cual seria el cambio?  
__________________________________________________________________________________  
__________________________________________________________________________________  
__________________________________________________________________________________

*************** Muchas gracias por contestar el cuestionario***************
### Appendix 5: Example of the Thematic Grouping of the Data and Selective Coding

#### Dimension – BELIEFS AND PERCEPTIONS

<table>
<thead>
<tr>
<th>WOMEN</th>
<th>MEN - CODING</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DISCUSSION 1: COMMERCIALIZATION OF NATIVE POTATOES – CONTROL GROUP – NON-COGEPEAN</strong></td>
<td></td>
</tr>
<tr>
<td>Bartering of Native potatoes – Female Participant</td>
<td></td>
</tr>
<tr>
<td><strong>We exchange</strong> native potatoes and other Andean crops with communities that live in lower altitudes. The exchange is basically with products we cannot cultivate in our lands such as coffee, cacao, oranges and tropical crops. When harvest and selection of seeds is done, we take their <strong>llamas as means of transportation</strong> to carry out their products. They usually travel days to reach their destinations and stop “<em>descanso</em>” (rest) in the <em>descansos</em> (stops) build by the Incas.</td>
<td></td>
</tr>
</tbody>
</table>

| **DISCUSSION 2: ACTIVITIES PERFORMED BY MEN AND WOMEN SEPARATELY – CONTROL GROUP** |  |
| Preservation of varieties over time: |  |
| Female Participant |  |
| In the discussions women agreed that when they **select the seeds it is the role of women** to do that activity. They also established that women have a better knowledge of the phenotypic and qualitative characteristics of the many varieties they cultivate. They affirmed women take care ‘*cuida*’ and ‘*cria*’ the potatoes better than men because they are like their ‘*wawas*’. They perform this task generation after generations. |  |

| Land Distribution: |  |
| Female Participant |  |
| Each year, members of the community in assembles (in August), they designate and distribute the small parcels or *topos*. They work in the community in “*Ayni*”. In Racracalla, they usually get 2 to 3 *topos* for household and are given to the head of the household, which is a man. |  |

| **CONTROL GROUP** |  |
| **Women’s Group** |  |
| Negative Aspects |  |
| The most negative aspect was climate change and how it is affecting all the crops they cultivate. Last season, most of the days the temperature was higher than normal and humid (this environment is propitious for *rancha* – late blight. During the nights, the weather becomes colder and freezing so we have “*heladas*” – frost. **We have to burn llama’s manure posta to control it**. Otherwise, our crops and potatoes die |  |

| **CONTROL GROUP** |  |
| **Women’s Group** |  |
| Negative Aspects |  |
| Women Participant |  |
| We also have problem with wild animals and they can eat all the production in one night (Pumas). **We cultivate Oxalis or (olluco) and Tarwi so the insects do not come to our fields** |  |

<p>| Positive Aspects |  |
| The most important activity for the farmers is <strong>Guaje or AYNI community shared work</strong>. They say that the well being of the community depends on this activity. It is the <em>communal work</em> that allows the members to share their work for free. |  |</p>
<table>
<thead>
<tr>
<th>Dimension – BELIEFS AND PERCEPTIONS</th>
<th>WOMEN</th>
<th>MEN - CODING</th>
</tr>
</thead>
<tbody>
<tr>
<td>A reason, they save money in workers. (Today for you, tomorrow for me).</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Ayni* is a system of reciprocal family work among members of a community in the Andes. This is performed in exchange for farm work and construction of houses. It consists in that a group of community members provide work to a family or family members of one household, provided that the applicable equals when they need it, as they say, "for you today, tomorrow for me" and in return community members are served meals and beverages during the days they perform the work.

Reflective journal

*Peasant people live inside the ‘campesino’ community and they carry out all activities communally. They elect a president and he is the head of the general assembly of ‘comuneros’. This body decides on all activities that are related to the community and its members. The assembly has a board of directors, with executive members, which is responsible for approving the decisions taken in community’s assemblies. People living inside the communities still speak Quechua and practice the communal work called (AYNI OR GUAJE)

Potatoes are diverse; peasant communities cultivate different varieties of potatoes. These are bitter, sweet, starchy and bitter potatoes. All the varieties are transported on llamas y alpacas to the Puna. Women in the houses classified the varieties and they know the specific place where the potatoes are going to be planted. For example, we saw that bitter potatoes are cultivated in the highest plots and starchy varieties close to homes.

When we went to the distribution of land, a family unit gets the land (plot/plots) on the hills. They do not have canals or irrigation in these areas. They only rely on rain. In the distribution of land, they take care that the soil and plot has rested ‘descansado’ for at least eight years. Peasant people call this action "layme".

The *topos* are very small and one of them is close to 2,000 square meters. A family gets 2 to 3 topos depending on their status inside the community.

Reflective Journal
### Dimension – BELIEFS AND PERCEPTIONS

<table>
<thead>
<tr>
<th>WOMEN</th>
<th>MEN - CODING</th>
<th>OBSERVATION</th>
</tr>
</thead>
</table>
| **WOMEN’S PARTICIPATION IN THE NATIVE POTATOES PRODUCTION**

Female participant

After we take the tuber seeds from the storage, and reselect them, men transport the seeds and the food with our llamas to the puna (highlands). We go after the llamas to be sure everything goes okay. We have to leave home early in the morning (around 4:00 am.). When we arrive to the fields, we rest a little bit and chew COCA LEAVES, to ask our mother earth to help us and give us a good year. Then, men open the soil with Chaquitaclla, women store the seed inside the whole. Men come after us to apply the fertilizer (manure from llama and cuy).

Men and women work together and cultivate the potatoes. When the plants are ready to cultivate (plow) or till, women do the work with men. Women also have to make the food for activities in the field. We have to bring the food with the seeds and tools depending on the activity we have to perform at that day.

Most of the time, we eat soup with cancha (toasted dry corn) and mote (boiled dry corn). We eat lots of charqui (dry meat from llama and lamb) with oca, olluco and mashua. In the evenings we eat calla (dry oca) a dessert with cinnamon and starch and chuño (another dessert from tunta or chuño). Men do all the hard work (lifting the sacs and handling the tools – chaquitaclla). We do the work in the field and post harvest tasks.

Female participant

I love cultivating native potatoes for own consumption. I do it with my husband. We have to work together in the fields and my husband with other men brings the potatoes to the house for storing.

While the tubers are in the field, my husband is responsible for them. Men and women harvest the potatoes and men are in charge of transportation. My responsibility begins at home "Once the potatoes are delivered by the men then I take care of it. We select them, all women in my community must know how to separate and how to fix it." Helping my mother I learned to choose the native potatoes. We got up very early in the morning and I learned to select the tubers very well.

Female participant

Before, we store the potatoes; I selected the

| Male Participant
We have to visit the fields all the time, so the papitas feel our voices and love. My wife talks to the plants and they are happy when we talk to the plants. We also know when we have to cultivate the potatoes. When the clouds are low and heavy “cargadas” it means we will have rain in the next days. So we can cultivate the potatoes and the rain comes after.

If the sky is blue and red and it is hot, we will have problems. We do not move the land otherwise a frosty night will destroy all the drops. When we are going to have frost, we can see the position of the moon and the stars are shiny.

| Male Participant
For us, the production of native potatoes is to take care of the Mamapacha. We respect the soil, the land, the climate, water, animals and mountains. All our nature has to shine. It is the native potatoes and the plants that grow around them that warns and communicates us of some events, which in turn help us the campesinos, to know what type of weather we will have during the production season.

| Observation
In this regard, women are very communicative and demonstrate the care and selection are strictly female tasks. The women mothers, the grandmothers are prolific in this regard and they are the ones that explain the practice “of three and five seeds” pointing fingers.

In addition to playing a special role in the production process, the woman is responsible to assure the transmission of knowledge to new generations. It secures the continuity of the technological tradition necessary for the survival of the family. A woman learns how to select the seeds, care or distribution and conservation of seeds through their mothers and grandmothers.

It is done by watching and doing. Grandmothers, mothers and girls say they learned to choose, separate the seeds and care for "helping their mother, in the early
tubers according to their use and purpose. We consume all the production (chuño, starch and fresh – fry, boil), because we have not sold our products to processors or other companies. I know which varieties are good for each specific purpose. I have varieties that are good for chuño (small and little bit bitter – papa shiri) for starch (papa amarilla – Solanum goniocalyx); fresh (papa amarilla and papa huayro – Solanum chaucha); fry – papa ccompis and papa huamantanga Solanum tuberosum ssp. Andigena morning.

### Dimension – BELIEFS AND PERCEPTIONS

<table>
<thead>
<tr>
<th>WOMEN</th>
<th>MEN - CODING</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>tubers according to their use and purpose. We consume all the production (chuño, starch and fresh – fry, boil), because we have not sold our products to processors or other companies. I know which varieties are good for each specific purpose. I have varieties that are good for chuño (small and little bit bitter – papa shiri) for starch (papa amarilla – Solanum goniocalyx); fresh (papa amarilla and papa huayro – Solanum chaucha); fry – papa ccompis and papa huamantanga Solanum tuberosum ssp. Andigena</strong></td>
<td><strong>The knowledge and skills that a woman have should be starting with the need to know to use the criteria of “separation”, “fix”, “collect and hoard,” “accommodating,” according to the different expressions that refer to knowing how to handle classification criteria of the fruits of harvest and divided, grouped according to the needs of the families.</strong></td>
</tr>
<tr>
<td><strong>Female participant</strong></td>
<td><strong>Male participant</strong></td>
</tr>
<tr>
<td>Most of our production is exchanged or bartered for other crops that we do not cultivate here in the highlands and these are mostly tropical products. In my case, my husband, my sons, my father in law and I pack the llamas (40 adult llamas in total) with native potatoes, mashua, oca and olluco the day before. Llamas can carry out no more than 25 kgs as average. The next day, early in the morning (3 a.m. to 4 a.m.) we pay our tribute to the gods and lead to Pariahuanca where farmers cultivate cocoa, coffee, aji, maize and other tropical and sub-tropical products. The journey takes us up to three days to reach our destination. The good thing is that we stop in our “chozas” or “descansos” for resting and eating. These places are the places where the pastors sleep when they take care of the llamas and alpacas that those members of our communities and surrounding communities have up in the mountains and after are utilized for meat and cargo. We raise the animals there because in the mountains we have more water and natural pastures. When we reach our destination, we visit our acquaintances and friends that we see every year. This is the time where we exchange the goods and return with the animals with our merchandise.**</td>
<td>we have to visit the fields frequently because the plants need to be observed, changes present overnight. It is said that in the “Chacra” a musical conversation takes place among the potatoes, the chacra and us. If we talk to the nature and we speak to the chacra, the plants grow beautiful and strong. Young producers do not know it and they think their potatoes will grow alone, they do not visit the fields the plants cry and get sick because the plants think their owner is dead and they cry. It is when we have low production and low quality.</td>
</tr>
<tr>
<td><strong>Female participant</strong></td>
<td><strong>Male participant</strong></td>
</tr>
<tr>
<td>We also barter with people from other communities especially those who produce maize, coffee, cacao and other tropical food. We usually go to Pariahuanca and Masma and take the products by llamas. We have to walk two to three days to reach our destination.**</td>
<td><strong>Our organization is conservationist, so we have to cultivate the potatoes accommodating these to climate change and type of soil. The varieties we produce are the have specific positive and negative characters and based on these we conserve the native potatoes. You know there are some varieties that have overcome the danger of biotic and</strong></td>
</tr>
<tr>
<td><strong>Male participant</strong></td>
<td></td>
</tr>
</tbody>
</table>
**Dimension – BELIEFS AND PERCEPTIONS**

<table>
<thead>
<tr>
<th>WOMEN</th>
<th>MEN - CODING</th>
</tr>
</thead>
<tbody>
<tr>
<td>The weather has changed a lot and we can notice it in the production of potatoes. We do not have the same production that we had years ago. The climate has been very taught in the highlands, but now we have new diseases and the periods of drought, rain and humidity are longer than before</td>
<td>abiotic factors so these are very important for their environmental capacity.</td>
</tr>
<tr>
<td><strong>We know if the season is going to be good or not.</strong> For example, If the ants lay their eggs on the surface of the soil, the season is going to be dry, but if they place their eggs inside the soil it is going to be humid and rainy.</td>
<td>“Llamas are very important in our lives, they keep us alive. They are the only source of work and transportation. We would not be able to barter and commercialize our products, if we did not have llamas</td>
</tr>
<tr>
<td>Female participant</td>
<td>Male participant</td>
</tr>
<tr>
<td>We believe that the stars, the forms of the moon, the sunset and sunrise indicate the occurrence of rain, frost and hail. When we have lots of stairs in the sky, we are going to have “heladas” frost.</td>
<td>For us, the native potatoes are a sacred food with high nutritional value. These have high percentage of dry matter, calories, vitamins and proteins. The native potato is complete for that reason it has contributed to the survival of the people in the Andes.</td>
</tr>
<tr>
<td><strong>If the moon’s shape</strong> looks sharp one month after approximately we are going to have hail.</td>
<td>Male participant</td>
</tr>
<tr>
<td>Another thing is when the clouds become reddish in the evenings, next time we will have hail.</td>
<td></td>
</tr>
<tr>
<td><strong>When the sun is very intense</strong> and fires in the morning and we do not have any cloud in the sky, we will have hail in the afternoon.</td>
<td></td>
</tr>
<tr>
<td>When we see the big star ahead of time in the sky, the season will be excellent but it shows only its half part, the season will be regular and if it shows late the season will be bad, we will have poor harvests.</td>
<td></td>
</tr>
<tr>
<td>If there is too windy, the season will be good because we will be plenty of rain.</td>
<td></td>
</tr>
<tr>
<td><strong>The moon also indicates how the weather will be,</strong> if it is yellow and surrounded by clouds, we will have rain, but if it looks white and does not have clouds, the month will be very dry.</td>
<td></td>
</tr>
<tr>
<td>When the stars shine very strongly and dance in the sky, we will have rain. One week before Saint John’s eve (June 24th), if we see the 7 stars or “cabrillas”, the season will be optimal for us. If we only see 6 stars, the year will be very bad.</td>
<td></td>
</tr>
<tr>
<td>When the southern cross star is visible before May 3rd, we have to plant the potatoes early, if the “muña” produces white flowers and ahead of time, and the flowers appear first on the top to the bottom, the year will be good and we will have good production. If, the muña produces few flowers from the bottom to the top and late, the year will not be good.</td>
<td></td>
</tr>
<tr>
<td>Male participant</td>
<td></td>
</tr>
</tbody>
</table>
## Dimension – BELIEFS AND PERCEPTIONS

<table>
<thead>
<tr>
<th>WOMEN</th>
<th>MEN - CODING</th>
</tr>
</thead>
<tbody>
<tr>
<td>it shows on the 3rd of May, it will be regular season,</td>
<td></td>
</tr>
<tr>
<td>Female participant</td>
<td></td>
</tr>
<tr>
<td>We use to talk to the Earth; our agricultural practices help us to</td>
<td>Peasant communities continuously adapt to face climate change. They have</td>
</tr>
<tr>
<td>achieve better production: we build andenes or terraces, we rotate</td>
<td>developed diverse reciprocity strategies to preserve the native potatoes</td>
</tr>
<tr>
<td>our crops, we mix all varieties we have to cultivate these in</td>
<td>through the vertical collectivity of ecological steps or zones</td>
</tr>
<tr>
<td>different plot, we include in our crops plants that can help to</td>
<td>“pisos ecologicos” such as the Ayni, barter and “manka”.</td>
</tr>
<tr>
<td>repel insects and plagues.</td>
<td>Reflective Journal</td>
</tr>
<tr>
<td>Maria, female participant</td>
<td></td>
</tr>
<tr>
<td>We nurture the soil through the application of natural fertilizers,</td>
<td></td>
</tr>
<tr>
<td>the rotation of crops, building natural fences or pircas to avoid</td>
<td></td>
</tr>
<tr>
<td>soil degradation.</td>
<td></td>
</tr>
<tr>
<td>Female participant</td>
<td></td>
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Table 1: Respondents in the Study (by Sex) (n=220)

<table>
<thead>
<tr>
<th>Respondent Group</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Native Producers - COGEPAN Chuquitambo</td>
<td>5</td>
<td>8</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>2.3</td>
<td>3.6</td>
<td>5.9</td>
</tr>
<tr>
<td>Native Producers - COGEPAN Chicche</td>
<td>6</td>
<td>10</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>2.7</td>
<td>4.5</td>
<td>7.3</td>
</tr>
<tr>
<td>Native Producers - COGEPAN Pomamanta</td>
<td>5</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>2.3</td>
<td>0.9</td>
<td>3.2</td>
</tr>
<tr>
<td>Sub-total COGEPAN</td>
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<td>20</td>
<td>36</td>
</tr>
<tr>
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<td>7.3</td>
<td>10.0</td>
<td>17.3</td>
</tr>
<tr>
<td>Control (NON-COGEPLAN) Peasant Community Achin</td>
<td>25</td>
<td>10</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>11.4</td>
<td>4.6</td>
<td>16.0</td>
</tr>
<tr>
<td>Control (NON-COGEPLAN) Peasant Community Racracalla</td>
<td>60</td>
<td>18</td>
<td>78</td>
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<td>27.3</td>
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<td>35.5</td>
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<td>Control (NON-COGEPLAN) Peasant Community Maraynioc</td>
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<td>2</td>
<td>71</td>
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<tr>
<td>Sub-total Non - COGEPAN</td>
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<td>30</td>
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<td>70.0</td>
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<td>220</td>
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Table 2: Age of Male and Female Respondents – COGEPAN

<table>
<thead>
<tr>
<th>Representing Group</th>
<th>Gender</th>
<th>Age</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Native Potatoes Producers - Chuquitambo</td>
<td>Female</td>
<td>20 - 30</td>
<td>2</td>
<td>5.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>31 - 40</td>
<td>3</td>
<td>8.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>41 - 50</td>
<td>2</td>
<td>5.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>60 and older</td>
<td>1</td>
<td>2.8</td>
</tr>
<tr>
<td>Male</td>
<td></td>
<td>20 - 30</td>
<td>1</td>
<td>2.8</td>
</tr>
<tr>
<td></td>
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<td>31 - 40</td>
<td>2</td>
<td>5.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51 - 60</td>
<td>2</td>
<td>5.6</td>
</tr>
<tr>
<td>Native Potatoes Producers - Pomamanta</td>
<td>Female</td>
<td>41 - 50</td>
<td>1</td>
<td>2.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51 - 60</td>
<td>1</td>
<td>2.8</td>
</tr>
<tr>
<td>Male</td>
<td></td>
<td>41 - 50</td>
<td>5</td>
<td>13.9</td>
</tr>
<tr>
<td>Native Potatoes Producers - Chicche</td>
<td>Female</td>
<td>20 - 30</td>
<td>4</td>
<td>11.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>31 - 40</td>
<td>2</td>
<td>5.6</td>
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<td></td>
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<td>60 and older</td>
<td>1</td>
<td>2.8</td>
</tr>
<tr>
<td>Male</td>
<td></td>
<td>20 - 30</td>
<td>3</td>
<td>8.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>31 - 40</td>
<td>1</td>
<td>2.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>41 - 50</td>
<td>2</td>
<td>5.6</td>
</tr>
<tr>
<td>TOTAL (all respondents)</td>
<td></td>
<td>36</td>
<td>100.0</td>
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</table>
### Table 3: Age of Male and Female Respondents – Non-COGEPA

<table>
<thead>
<tr>
<th>Representing Group</th>
<th>Gender</th>
<th>Age</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peasant Community of Achin</td>
<td>Female</td>
<td>31 - 40</td>
<td>3</td>
<td>1.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>41 - 50</td>
<td>3</td>
<td>1.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51 - 60</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>60 - older</td>
<td>3</td>
<td>1.6</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>20 - 30</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>31 - 40</td>
<td>2</td>
<td>1.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>41 - 50</td>
<td>12</td>
<td>6.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51 - 60</td>
<td>6</td>
<td>3.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>60 - older</td>
<td>3</td>
<td>1.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Does not know</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>Peasant Community of Racacalla</td>
<td>Female</td>
<td>20 - 30</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>31 - 40</td>
<td>7</td>
<td>3.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>41 - 50</td>
<td>7</td>
<td>3.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51 - 60</td>
<td>2</td>
<td>1.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>60 - older</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>20 - 30</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>31 - 40</td>
<td>12</td>
<td>6.5</td>
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<td></td>
<td></td>
<td>41 - 50</td>
<td>25</td>
<td>12.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51 - 60</td>
<td>10</td>
<td>5.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>60 - older</td>
<td>7</td>
<td>3.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Does not know</td>
<td>7</td>
<td>3.8</td>
</tr>
<tr>
<td>Peasant Community of Maraynioc</td>
<td>Female</td>
<td>51 - 60</td>
<td>2</td>
<td>1.1</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>20 - 30</td>
<td>3</td>
<td>1.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>31 - 40</td>
<td>13</td>
<td>7.1</td>
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<td>51 - 60</td>
<td>17</td>
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<tr>
<td></td>
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<td>60 - older</td>
<td>10</td>
<td>5.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Does not know</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>TOTAL (all respondents)</td>
<td>184</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

### Table 4: Respondents’ Marital Status – COGEPA

<table>
<thead>
<tr>
<th>Representing Group</th>
<th>Gender</th>
<th>Marital Status</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Native Potatoes Producers - Chuquitambo</td>
<td>Female</td>
<td>Married</td>
<td>7</td>
<td>19.4</td>
</tr>
<tr>
<td>Native Potatoes Producers - Pomamanta</td>
<td>Male</td>
<td>Married</td>
<td>5</td>
<td>13.9</td>
</tr>
<tr>
<td>Native Potatoes Producers - Chicche</td>
<td>Female</td>
<td>Married</td>
<td>2</td>
<td>5.6</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Married</td>
<td>5</td>
<td>13.9</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>Single Mother</td>
<td>1</td>
<td>2.8</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Single Mother</td>
<td>3</td>
<td>8.3</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>Widow</td>
<td>1</td>
<td>2.8</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Widow</td>
<td>1</td>
<td>2.8</td>
</tr>
<tr>
<td></td>
<td>TOTAL (all respondents)</td>
<td>36</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
### Table 5: Respondents’ Marital Status – Non – COGEPAN

<table>
<thead>
<tr>
<th>Representing Group</th>
<th>Gender</th>
<th>Marital Status</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peasant Community of Achin</td>
<td>Female</td>
<td>Single Mother</td>
<td>4</td>
<td>2.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Widow</td>
<td>6</td>
<td>3.3</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Married</td>
<td>25</td>
<td>13.6</td>
</tr>
<tr>
<td>Peasant Community of Racacalla</td>
<td>Female</td>
<td>Single Mother</td>
<td>13</td>
<td>7.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Widow</td>
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<td>2.7</td>
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<td></td>
<td>Male</td>
<td>Married</td>
<td>60</td>
<td>32.6</td>
</tr>
<tr>
<td>Peasant Community of Maraynioc</td>
<td>Female</td>
<td>Single Mother</td>
<td>2</td>
<td>1.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Widow</td>
<td>4</td>
<td>2.2</td>
</tr>
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<td></td>
<td>Male</td>
<td>Married</td>
<td>65</td>
<td>35.3</td>
</tr>
<tr>
<td><strong>TOTAL (all respondents)</strong></td>
<td></td>
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### Table 6: Respondents’ Education – COGEPAN

<table>
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<th>Gender</th>
<th>School Time</th>
<th>Number</th>
<th>Percent</th>
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</thead>
<tbody>
<tr>
<td>Native Potatoes Producers - Chuquitambo</td>
<td>Female</td>
<td>None</td>
<td>1</td>
<td>2.8</td>
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<tr>
<td></td>
<td></td>
<td>Grade 1 - 3</td>
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<td>13.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Grade 4 - 6</td>
<td>2</td>
<td>5.6</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Grade 1 - 3</td>
<td>1</td>
<td>2.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Grade 4 - 6</td>
<td>3</td>
<td>8.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Completed High School</td>
<td>1</td>
<td>2.8</td>
</tr>
<tr>
<td>Native Potatoes Producers - Pomamanta</td>
<td>Female</td>
<td>None</td>
<td>1</td>
<td>2.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Grade 1 - 3</td>
<td>1</td>
<td>2.8</td>
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<tr>
<td></td>
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<td>Grade 4 - 6</td>
<td>2</td>
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<tr>
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<td>Male</td>
<td>Grade 1 - 3</td>
<td>1</td>
<td>2.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Grade 4 - 6</td>
<td>4</td>
<td>11.1</td>
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<td>Completed High School</td>
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<td>2.8</td>
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<tr>
<td>Native Potatoes Producers - Chicche</td>
<td>Female</td>
<td>None</td>
<td>1</td>
<td>2.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Grade 1 - 3</td>
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<td>11.1</td>
</tr>
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### Table 7: Reading and Writing Abilities of Male and Female Respondents – COGEPAN

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### Table 14: Respondents' Type of Extension Support - COGEPAN

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### Table 17: Access to Farmland – Non – COGEPAN

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### Table 21: Area of Land Cultivating – NON-COGEPA
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### Table 22: Respondents’ Access to Credit – COGEPA

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<td></td>
<td>Male</td>
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<td>4</td>
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<td></td>
<td>No</td>
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<tr>
<td></td>
<td>Male</td>
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<td>4</td>
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### Table 23: Respondents’ Access to Credit- Non - COGEPA

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<td></td>
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<td>2.8</td>
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<td>2.8</td>
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**TOTAL (all respondents)**: 36  100.0

### Table 25: Respondents’ Access to Savings – Non – COGEPAN

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**TOTAL (all respondents)**: 184  100.0

### Table 26: Number of Years as Members in COGEPAN

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<th>Percent</th>
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**TOTAL (all respondents)**: 36  100.0
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<td>Male</td>
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Appendix 7a: Suggested Conceptual Framework to Implement Gender in Agricultural Innovation Systems

[Diagram showing the conceptual framework with various components and interactions.]
## Appendix 7b: Phases of the Participatory Market Chain Approach and Gender Assessment and Related Activities in Each Phase

<table>
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<th>Phase</th>
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<th>Gender - related Assessment and Activity</th>
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</thead>
</table>
| **Stakeholder Identified** | - Get to know the market chain actors and other stakeholders - their activities, interests, ideas and problems and so forth.  
  - Step 1: Conduct a 3- to 6-week rapid assessment of the market chain and identify key stakeholders.  
  - Step 2: Hold a one-day workshop to define impact groups using the impact filter.  
  - Step 3: Hold a final event for phase 1 to share information and secure stakeholders’ continued involvement. | - Integrate gender sensitivity training into R&D organizations as they begin their stakeholder identification activities.  
  - Include women farmers as a stakeholder group in the rapid assessment of the market chain. R&D partners, including investors, reinforce the need to address women’s specific needs in PMCA.  
  - Initiate family and community competitions for innovation to recognize women’s contribution to the value chain  
  - Among the stakeholders, identify women’s groups and male and female leaders who support gender equity and empowerment; encourage them to highlight or discuss issues and benefits for women farmers in workshop events. |
| **Phase I: 2-4 Months** | **Stakeholder platforms engaged** | **Phase 2: 3–5 months** | **Implementation of joint market innovations** | **Phase 3: 4–6 months** |
| | - Platforms bring together female and male small-scale farmers from different communities in the region, market agents, and agricultural service providers to share findings and customs, with support from R&D institutions. Many of these stakeholders will be unfamiliar with each other.  
  - Identify and involve NGOs engaged in related gender analysis and women’s empowerment programs. Their involvement may be the key to the success of these platforms.  
  - Gender equity (participation of women representing different ages, classes, and ethnic groups) is included in the platforms and in the selection criteria for the thematic groups. | - Using the following tools, each thematic group analyzes potential business opportunities: rapid market appraisal; quantitative market survey; focus groups. | - Implement joint market innovations: work in thematic groups of 10–20 persons; R&D organization involved provides facilitator to assist groups.  
  - Each thematic group uses marketing concept development and business plan to test or implement, monitor, and evaluate their innovations. If necessary, phase 2 activities can be revised (for instance, by adding focus groups to clarify consumer preferences). | - Analyze continued knowledge sharing by women farmers and gender roles and relations within the stakeholder platforms for further technical and institutional innovation at the national and international levels.  
  - Women and men continue to participate in fairs and events outside their communities (regional and national) to demonstrate their knowledge and stimulate participation in stakeholder platforms.  
  - R&D partners monitor/evaluate how individual women farmers have gained confidence to join new and extended networks and to exchange varieties cultivated in other areas of the Andes.  
  - R&D partners monitor/evaluate how male and female farmers have gained individual and collective capacities and skills for communication, negotiation, facilitation, and teamwork.  
  - Encourage ongoing discussion within the project of how market chains empower disadvantaged farmers who otherwise have little opportunity to participate and make decisions.  
  - Encourage ongoing discussion within the project of how women have the chance to interact with other market chain actors and professionals from R&D organizations, thereby increasing their access to knowledge, innovation, contacts, and self-development. |

Source: Sarapura S (2012)

a. The activities in each phase of the PMCA (described in detail in the “User Guide”; see Bernet, Thiele, and Zschocke 2006) occur consecutively over 9–15 months.
## ANNEXES

### Table 1: Identification of Resources in the NON-COGEPA N and COGEPA N Groups

<table>
<thead>
<tr>
<th>Resources</th>
<th>NON - COGEPA N</th>
<th>Observations</th>
<th>COGEPA N</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Men</td>
<td>Women</td>
<td>Men</td>
<td>Women</td>
</tr>
<tr>
<td>Water</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Water to Irrigate the fields</td>
<td>a,1,2,3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Canals or ducts connecting natural springs</td>
<td>a,1,2,3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Potable water for the houses in the communities</td>
<td>a,1,2,3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Sewage system in the community</td>
<td>a,1,2,3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Water to Irrigate the fields</td>
<td>a,1,2,3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Canals or ducts connecting natural springs</td>
<td>a,4,5,6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Potable water for the houses in the communities</td>
<td>a,4,5,6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Sewage system in the community</td>
<td>a,4,5,6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information and Communication</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Means of Communication and Information (Radio, television)</td>
<td>a,1,2,3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Communitarian telephone centre–evening service</td>
<td>c,1,2,3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Local and Community meetings/faenas</td>
<td>b,1,2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Means of Communication and Information (Radio, television)</td>
<td>a,1,2,3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Communitarian telephone centre–evening service</td>
<td>c,1,2,3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Community meetings and Community based programs meetings/faenas</td>
<td>b,1,2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Means of Communication (Radio, television, cellphone)</td>
<td>b,4,5,6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Communitarian telephone centre–evening service</td>
<td>a,4,5,6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Local and Community meetings/faenas</td>
<td>b,4,5,6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Access to radio through FOVIDA’s Programs*</td>
<td>b,4,5,6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* FOVIDA’s meetings and Training</td>
<td>b,4,5,6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roads and Means of Transportation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Absence of roads to transport native potatoes to the markets within the area and outside the area (Concepcion, Comas)</td>
<td>a,2,3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Precarious and dangerous small roads to the fields</td>
<td>a,1,2,3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Use of llamas and alpacas as means of transportation</td>
<td>b,1,2,3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Roads/highways to transport native potatoes to the markets within the area and outside the area</td>
<td>c,4,5,6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Precarious and dangerous small roads to the fields</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Use of llamas and alpacas as means of transportation</td>
<td>b,5,6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Healthcare services</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Health centre in our community</td>
<td>a,2,3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* In the community but not a permanent physician</td>
<td>c,1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Health centre in our community</td>
<td>a,4 (c,5,6)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* In the community but not a permanent physician</td>
<td>(c,5,6)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Have primary and secondary school in the community</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* No school in the community. Children have to walk at least two hours to school</td>
<td>12,3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Community has access to primary and secondary school</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* No school in the community. Children have to walk from one to two hours to school</td>
<td>12,3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* No school in the community. Children have to walk at least one hour to school</td>
<td>4,5,6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Health centre is not accessible to us. Far from our community</td>
<td>a,4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* In the community but not a permanent physician</td>
<td>(c,5,6)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Health centre is not accessible to us. Far from our community</td>
<td>(c,6)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* In the community but not a permanent physician</td>
<td>(c,6)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Absent
* In place and have full access
* Limited access
* Papa Andina intervention

1. Producers Association-Chuquitambo
2. Producers Association-Chicche
3. Producers Association- Pomamanta
Table 2: Sources of Information and Communication Technologies Accessible to Native Potatoes Producers (COGEPAN)

<table>
<thead>
<tr>
<th>Sources</th>
<th>The way it operates</th>
</tr>
</thead>
</table>
| Radio           | 8 FOVIDA rents spaces in four radio stations in the Region  
|                 | a. AgroJunin Program - Sundays (6:00 - 7:00 am- Radio Escala de Oro” (Jauja) and 97.1FM (Concepcion” (Concepcion-Pomamanta and Chicche)  
|                 | b. Tierra profunda Program -Sundays (9:00 - 11:00 am- via Radio Gigante 99.1 FM  
|                 | c. Prensa Local Program – Monday-Sunday (7:00 - 8:00 am via Radio Heroica-Comas 102.3 FM |
| Internet        | - FOVIDA shares information from different institutions with producers through internet:  
|                 |  - www.minag.gob.pe  
|                 |  - www.agrojunin.gob.pe  
|                 |  - www.emmsa.com.pe  
|                 | - FOVIDA sends producers weekly information through emails on:  
|                 |  - Current Prices of commercial native potatoes varieties (Ex Maltería y Racz Patiño , Huancayo and MM N°1 La Parada – Lima)  
|                 |  - Market analysis and prices  
|                 |  - Weather Forecast  
|                 |  - Freight Prices (S/ per kilo approx)  
|                 |    - Huancayo - Lima: (0.15)  
|                 |    - Pazos - Lima: (0.18)  
|                 |    - Jauja - Lima: (0.15)  
|                 |    - Comas - Lima: (0.18)  
|                 |  - Labour – Varies according to the area  
|                 |    - Mantaro Valley S/. 20 per day (women) – S/. 30 (men)  
|                 |    - Highlands S/. 20 - 25 (Same for both sexes)  
|                 |  - Prices of fertilizers  
|                 |    - News  
| Cellphones      | 2. Tex messaging  
|                 |  - Consult market prices, freight prices and fertilizers prices via text messaging  

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