Gender relationships in production and commercialization of potato seed with small-scale farmers in the Central Andes of Ecuador

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Abstract

A gender analysis was conducted in the central Andes of Ecuador with the following objectives (i) to identify and analyze gender relationships and benefits in potato seed producers of the farmers' organization CONPAPA (*Consorcio de la Papa*) and (ii) to propose recommendations to improve the relationships among the actors of CONPAPA's seed system. A rural participatory diagnostic with gender approach was used to gather information about general characteristics, participation in community activities, potato-related activities, decision making, and personal, family and unpaid activities. This method promoted reflection among farmers about their roles according to gender. Main conclusions were the following: first, women are a critical component for seed production in CONPAPA; second, women are being empowered by becoming part of CONPAPA seed producers groups; third, becoming part of the CONPAPA seed producers groups might be overloading women capacity; and fourth, men are still attending the most important events and are in charge of taking the most important decisions. Several recommendations were made. (i) take extra care on using training materials adapted for women and doing the training events in their native language; (ii) promote women access not only to knowledge, but also to other resources, mainly credit, so they can run their own businesses; (iii) practice affirmative action and promote women leadership; (iv) be aware that new activities could be overloading women capacity and, therefore, start the intervention with few and simple activities; and (v) make explicit the contribution made by women to specific activities.

Keywords: Andes, women, gender analysis.

Introduction

Potato is the main source of energy in the Central Andes of Ecuador, especially for low-resource farmers. Nearly 80,000 families depend on this crop for food and income. Yields are low and farmers' organizations are weak. In 2003, the National Agricultural Research Institute of Ecuador (INIAP) with the support of the Papa Andina project at the International Potato Center (CIP) and funding from the Swiss Agency for Development and Cooperation (SDC) started the construction of multi-stakeholder platforms which helped to develop the *Consorcio de la Papa* (CONPAPA), a farmers' organization aimed at strengthening the entrepreneurial capacity of potato producers (Cavatassi et al, 2009).

One of the strongest points of CONPAPA is the implementation of a seed system. This includes using high quality seed from INIAP, training of farmers on how to re-use their own seed, and an internal quality control protocol (Montesdeoca et al., 2006). Women participate actively in CONPAPA's seed system and, therefore, INIAP and CIP-Papa Andina agreed to implement a study to analyze gender relationships. This document presents the results of the analysis.

Gender analysis helps to explain the mechanisms and dynamics of agricultural research and extension problems in a certain context, in order to understand them and obtain sustainable and equitable results. The objectives of

this study were (i) to identify and analyze gender relationships and benefits in seed producers of CONPAPA and (ii) to propose strategies to improve the relationships among the actors of CONPAPA's seed system.

Methodology

This study was done in the provinces of Cotopaxi, Chimborazo and Tungurahua located in the central Andes of Ecuador. This region concentrates 55% of potato production of Ecuador and is among the poorest in the country. One location was sampled in Cotopaxi (Cumbijín), two in Chimborazo (Calerita and Ballagán), and three in Tungurahua (San Andrés and Pilahuin). All these locations are located between 2500 and 3600 m.a.s.l.

Farmers were selected using the following criteria: producers of potato seed and belonging to the CONPAPA association of seed producers (hereafter referred to as 'CONPAPA seed producers'). In addition, a group of potato seed farmers not belonging to the CONPAPA seed producers was selected (hereafter referred to as 'individual seed producers'). In the CONPAPA seed producers, 21 families (17 represented by women and 4 by men in the association) and 118 of their family members (64 women and 54 men) were included in the study. In the individual seed producers, 21 families and 114 family members (58 women and 56 men) were included in the study.

A rural participatory diagnostic with gender approach (Adamo et al., 1998) was used to gather information about general characteristics, participation in community activities, potato-related activities, decision making, and personal, family and unpaid activities. This method promoted reflection among farmers about their roles according to gender. Several techniques were used: interviews, workshops and direct observation. Descriptive statistics were used to analyze the information (Mayorga et al., 2004).

Results

Table 1 shows the main characteristics of the families included in this study. Gender is balanced in the CONPAPA seed producers and in the individual seed producers. Distribution across age shows that most members are between 18 and 56 years old. Most family members have incomplete primary education, and the percentage of illiteracy is relatively low in both groups. There are three sources of income: potato seed production, off-farm employment and agriculture in general. In the CONPAPA group, potato seed production is the most important one, followed by off-farm employment and agriculture in general. A remarkable 18% of women participate in potato seed production, while off-farm employment is dominated by men. In the individual seed producers, there is no formal business of producing potato seed and, therefore, agriculture in general is the main source of income. As in the CONPAPA group, off-farm employment is dominated by men.

In average and in both groups, women participation in general community activities is higher than men participation (Table 2). General activities are for example, ***assemblies, election of authorities and task groups***, ***strikes, and*** *mingas* (collaborative ***community work traditional in the Andes). In the CONPAPA seed producers group, election of task groups, strikes and*** **mingas** ***are attended mostly by women, while assemblies and election of authorities are attended mostly by men, though women participation is high. In the individual seed producers group, women participation is higher than men participation in strikes and*** **mingas**, ***while there is no clear trend regarding gender about participation in assemblies and election of authorities and task groups. In specific activities for the CONPAPA seed producers group, men dominate participation (Table 2).***

In the CONPAPA seed producers group, women tend to decide on topics related to food, clothing, vegetable and animal management, while men tend to decide on children education, selling products, cash management, input use and nearly all activities related to potato production as organized group (Table 3). In the individual seed producers group, all decisions are taken mostly by men.

In the CONPAPA seed producers group, most potato-related activities are done mostly by women (Table 4). Exceptions are soil preparation, pest control and selling the production. In the individual seed producers group, all potato-related activities are done mostly by men. It is remarkable that women in the CONPAPA seed producers groups participate much more on pest control and especially in selling the production that their peers in the individual seed producers group.

Family and unpaid activities in the CONPAPA seed producers groups are done overwhelmingly by women (Table 5). Men do one activity at a time, while women do several activities simultaneously. For example, women take care of babies while shepherding and spinning wool. This explains why women spend 46 hours per day on these activities, while men spend 24 hours.

Finally, qualitative information showed that most women are not able to fully understand the training they receive from INIAP and other OGs and NGOs, as women prefer to communicate orally in Quichua and not in written Spanish, as eventually occurs in training events. Women also complained about low access to credit.

Discussion

Although the sample size was relatively small and the data was mostly qualitative, this study suggests the following conclusions. First, women are a critical component for seed production in CONPAPA. They attend events such as assemblies, training workshops, etc. (Table 2), decide on important aspects related to seed production (Table 3) and, more importantly carry on most of them (Table 4). As result, this activity is becoming the single most important source of family income, displacing off-farm employment by men (Table 1). Second, women are being empowered by becoming part of CONPAPA seed producers groups. For example, they decide in higher proportion and in more topics than women who do not belong to the CONPAPA groups (Table 3). They also sell the production almost as often as men do and nearly twenty-fold higher that their peers who do not belong to CONPAPA (Table 4). Third, becoming part of the CONPAPA seed producers groups might be overloading women capacity. It is staggering the activities that women do, which seems not be compensated by men (Table 5). Finally, men are still attending the most important events (Table 2) and are in charge of taking the most important decisions (Table 3).

Taking as a whole, the intervention of INIAP of training women to become seed producers seems a good decision. However, several recommendations could be made. (i) take extra care on using training materials adapted for women and doing the training events in their native language; (ii) promote women access not only to knowledge, but also to other resources, mainly credit, so they can run their own businesses; (iii) practice affirmative action, as 'treating unequals as equals is to perpetuate inequality', and promote women leadership; (iv) be aware that new activities could be overloading women capacity and, therefore, start the intervention with few and simple activities (e.g., growing small potato plots); and (v) make explicit the contribution made by women, if not to all activities, at least to those related to potato production.

The capacity of CONPAPA to organize farmers and to provide access to markets was not part of this study, but this is a critical point to understand the success of women seed producers. CONPAPA provides access to new technologies, training, technical support, credit, and markets that demand high quality tubers. Seed is produced only by demand, it is checked by an internal quality control process, and is sold to other CONPAPA's farmers at a convenient price for both parties. In that manner, seed producers are encouraged to produce high quality tuber seeds, because they are rewarded with a good price. In addition, seed producers are seeing as top potato producers within their communities, which in turn increase their self esteem.

Table 1. General characteristics (%) of family members from CONPAPA seed producers and individual seed producers

Characteristics	CONPAPA seed producers (*n* = 118)		Individual seed producers (*n* = 114)	
	Women	Men	Women	Men
Gender distribution	46	54	51	49
Age				
Between 1 and 11 years	15	10	4	9
Between 12 and 17 years	7	3	6	8
Between 18 and 56 years	21	27	36	24
Older than 56 years	8	9	4	9
Education				
Adult literacy courses	7	1	3	3
Primary incomplete	24	25	13	18
Primary complete	8	9	8	16
Secondary incomplete	2	3	12	12
Secondary complete	4	5	5	3
Undergraduate	0	2	1	0
None	6	4	3	3
Source of income				
Potato seed production	18	25	0	0
Off-farm employment	2	29	3	33
Agriculture in general	15	11	35	29

Table 2. Participation by gender (%) in community activities for two groups of potato seed producers in the central Andes of Ecuador

Community activities	CONPAPA seed producers (*n* = 21 families)		Individual seed producers (*n* = 21 families)	
	Women	Men	Women	Men
General activities				
Assemblies	43	57	76	24
Election of authorities	43	57	62	38
Election of task groups	71	29	29	71
Strikes	81	19	71	29
*Mingas**	76	24	76	24
Mean	**63**	**37**	**63**	**37**
Specific activities for CONPAPA seed producers				
Training workshops	38	62	N.A.**	N.A.
Assemblies	43	57	N.A.	N.A.
Meetings with authorities	48	52	N.A.	N.A.
Task groups	43	57	N.A.	N.A.
Field visits	43	57	N.A.	N.A.
Mean	**43**	**57**		
Total mean	**53**	**47**		

***** Collaborative ***community work traditional in the Andes.***
** N.A. Not applicable

Table 3. Participation by gender (%) in decision making for two groups of potato seed producers in the central Andes of Ecuador

Topic to be decided:	CONPAPA seed producers (*n* = 21 families)		Individual seed producers (*n* = 21 families)	
	Women	Men	Women	Men
Family decisions				
Children education	38	62	33	67
Food	67	33	52	48
Clothing	67	33	43	57
Vegetable and animal management	62	38	43	57
Selling products	43	57	33	67
Cash management	14	86	40	60
Input use (manure, water, etc.)	5	95	22	78
Mean	**42**	**58**	**38**	**62**
Decisions related to seed production as organized group				
Area planted and seed	38	62	N.A.	N.A.
Variety	28	76	N.A.	N.A.
Planting date	26	74	N.A.	N.A.
Pest control	29	71	N.A.	N.A.
Harvest	67	33	N.A.	N.A.
Selling seed	29	71	N.A.	N.A.
Cash management	24	76	N.A.	N.A.
Income distribution	24	76	N.A.	N.A.
Mean	**33**	**67**		
Total mean	**38**	**62**		

Table 4. Participation by gender (%) in potato-related activities for two groups of potato seed producers in the central Andes of Ecuador

Potato-related activities	CONPAPA seed producers (*n* = 21 families)		Individual seed producers (*n* = 21 families)	
	Women	Men	Women	Men
Soil preparation	24	76	23	77
Buying inputs	76	24	1	99
Planting	73	27	43	57
Hilling and weeding	75	25	38	62
Pest control	24	76	0	100
Harvesting	76	24	38	62
Selling	43	57	2	98
Mean	**56**	**44**	**21**	**79**

***** Collaborative ***community work traditional in the Andes.***

** N.A. Not applicable

Table 5. Time dedication per day (hours) by gender in personal, family and unpaid activities for CONPAPA seed producers in the central Andes of Ecuador

Activities	Women	Men
Sleeping	7	7
Personal care	0.5	0.5
Milking*	1.5	1
Preparing and serving breakfast*	1.5	0
Breakfast	0.5	0.5
Off-farm employment	0	8
Housekeeping*	1	0
Shepherding*	8	0
Send children to school	0.5	0
Babycare*	10	0
Cutting forage*	1.5	0
Feed small animals*	1.5	0
Feed large animals*	2	0
Preparing and serving lunch*	1.5	0
Lunch	0.5	0.5
Receive children from school	0.5	0
Laundry and sewing clothes, spinning wool*	1	0
Managing vegetable garden*	6	2
Homework with children	0	1
Rest	0.5	0.5
Supper	0.5	1
Commuting	0	2
Total	**46**	**24**

***** Activities done by women simultaneously with other activities

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