

Preserving biodiversity of Andean roots and tubers: working with women

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PROINPA, CIP-Papa Andina Initiative, and the Bolivian Ministry of Agriculture have worked together in promoting women's participation in producers' associations. Those associations try to increase their member's income through the use and promotion of the biodiversity of Andean roots and tubers, highlighting their nutritional and medicinal properties. Traditional knowledge, especially from women, in relation to the different uses of roots and tubers such as *achira* (*Canna edulis*) and *arracacha* (*Arracacia xanthorrhiza*) was combined with new information on additional uses of such products. Results were presented at several food fairs and other events, thus disseminating the knowledge to other communities. The project has contributed not only to increase the income of the whole family, but in particular to increase women's income since they were the ones commercializing the products. It has also contributed to improve women's social capital including self esteem and increased recognition from other community members.

Keywords: Rural Women, Biodiversity, Andean Roots and Tubers.

Background

Rural women while pursuing food security for their families have been contributing since ancestral times to the preservation of native roots and tubers. They have passed on to their children their knowledge and skills on resources management, seeds selection and use of several agricultural products (Estrada, 2000; Tapia and de La Torre, 1997).

However in most of the cases, rural women have been performing their duties in silence, without properly recognition. In Andean communities, women's participation in decision-making face barriers imposed by a world predominantly governed by men, in which female members play a subordinate role. Those women can often only communicate in their native language, which limits further their possibilities.

It is therefore a challenge to implement actions with female community members for strengthening the use and conservation of biodiversity. PROINPA and Ministry agriculture Bolivia, with the support of CIP-Papa Andina Initiative have accepted this challenge involving **the participation of women** in various experiences in the area of genetic resources aiming at recovering the important role of Andean roots and tubers in food diet and at generating possibilities of additional family income with these products.

Areas of intervention

Activities were implemented in 3 Bolivian zones: Coroico and Cariquina Grande (in La Paz) and Colomi (in Cochabamba). In total, approximately 700 families have benefitted from PROINPA's activities in the 3 zones (direct and indirect beneficiaries).

Strategy

Even if biodiversity loss in countries with ancestral cultures such as Bolivia is considered not as dramatic as in other countries (Sevilla, 2006), such loss still takes place. In order to stop this process, the strategy has been based on the development of social and economic incentives for in situ conservation of the agrobiodiversity in microcenters with high biodiversity. Rural women played a key role in this process.

The strategy included following actions:

- Selection of microcenters with high biodiversity of Andean roots and tubers (Coroico and Cariquina Grande in La Paz, Colomi in Cochabamba). Microcenters are geographical areas whose environmental and socio-cultural characteristics contribute to the existence and conservation of a diversity of species and varieties (García et al, 2003a).
- Identification of communities and families, particularly women, with extensive traditional knowledge in the use of Andean roots and tubers.
- Use of participatory methodologies for the characterization of Andean roots and tubers as well as for emphasizing their properties. These methodologies are useful to better understand people's interaction in their own context (Almanza et al, 2003).
- Campaigns (local radio, workshops and lectures) to point out the importance of the use and conservation of Andean roots and tubers both to improve family nutrition and for generating additional family income.
- Workshops with female community members for the recovery of traditional uses and for promoting innovations in the use of Andean roots and tubers. Elaboration and diffusion of food recipes. At this stage emphasis was laid on the role of preserving biodiversity for food security (Terrazas and Iriarte, 2009). According to Fries (1997), training is a key element to improve nutrition and to promote and encourage wide use of edible species.
- Promotion and organization of biodiversity and nutritional fairs with the participation of health and local education representatives. In recent years, local fairs have become an important element to promote the conservation of genetic resources (Tapia and De la Torre, 1997; García et al, 2003b; PROINPA, 2005).
- Promotion of women's active participation in Producer Associations, in order to open up their market opportunities. Currently there is a large demand for non traditional and organic products, providing a good opportunity for products such as roots and tubers (Hermann and Heller, 1997). As Tapia (2006) points out, market links may provide an incentive for conservation.

Achievements

Andean roots and women in Coroico (Yungas of La Paz)

The Coroico municipality located at 95 kilometers from La Paz has as a tradition production and consumption of several Andean roots, such as the achira (*Canna edulis*), ajipa (*Pachyrhizus tuberosus* and *P. ahipa*), walusa (*Xanthosoma saggitifolium*), aricama or yacon (*Smallanthus sonchifolius*) and racacha (*Arracacia xanthorrhiza*) (Figure 1). This tradition has however been neglected in recent years by the widespread of commercial products such as coffee and orange.



Figure 1 Andean roots grown in Coroico

Thanks to the persistence of some farming families in which women play a leading role to maintain their natural resources and to the support of several institutions during this last decade, these roots are being rescued, reincorporated in the diet of the family and generating additional income.

The project identified interest groups (producers associations) and local promoters to work in the rescue of available knowledge on management and use of the roots. Men showed little or no interest in the experience.

Women on the contrary showed a high personal commitment and actively participated in the associations. One of three associations in the area is currently composed exclusively by women.

Work with those women has contributed to recover the traditional uses of those roots and to introduce innovations for culinary purposes.

Participating women told PROINPA, that they are proud of their achievements. They mention that before the project, the use of the roots was limited to a couple of recipes and their families were tired of them. However nowadays, they are more aware of their nutritional value and have learned to use them in different ways. Women participate also actively in local and regional fairs selling their products and thus improving their own income and the family income.

Andean roots and Women in the subtropics Cochabamba

In the subtropics Cochabamba, the town of Tablas Montes in Colomi is located at approximately 100 km from the city. The economic basis is agriculture, particularly the cultivation of locoto and papa, although there are a variety of other Andean crops.



The objective in this area was to promote local use of biodiversity. The strategy was to engage teachers, school students, local health center and the women associations of Tablas Montes. The project developed and implemented biodiversity and nutrition fairs with those actors (Figure 2). Training workshops on traditional and innovative uses of those products were conducted. Women from Coroico came to the area to share their knowledge and experiences performing as trainers. This further contributed to the empowerment of women improving their knowledge and self esteem.

Figure 2. Biodiversity and Nutrition Fair with the participation of the health and education sector in Tablas Montes (2007.)

During the fair, female community members and students gathered together for preparing with their own hands traditional and innovative uses of the roots (Figure 3). They developed own recipe booklets and shared their knowledge to members of neighboring communities.



Figure 3. Women making products out of Andean roots

Participants are currently selling the products, in other regional fairs to raise funds for their organization. At the same time, through the training, they are better endowed to plan and conduct other business, such as provision of snacks for the school breakfast in Colomi.

Andean tubers and women in Cariquina Grande (Highlands of La Paz)

Cariquina Grande is an Aymara community in the northern highlands of La Paz, close to Lake Titicaca. Cariquina has a large variety of native potato and other Andean tubers as the oca (*Oxalis tuberosa*), papalisa (*Ullucus tuberosus*) and isaño (*Tropaeolum tuberosum*), which since ancient times coexist in the community. Their conservation is strongly linked to food security and to cultural relations among people, and between people and nature (mother earth).

PROINPA worked with local women searching for incentives for increased consumption of Andean tubers, especially among younger generations. Traditional, but also innovative, forms of consumption were promoted such as cakes baked from native potatoes, and bread out of oca (Figure 4). Recipes included also new ingredients such as quinoa (*Chenopodium quinoa*) and tarwi (*Lupinus mutabilis*). It is currently being explored the feasibility of delivering such products to local schools as part of the breakfast school.



Figure 4. Native potato cake and oca “qayapalala” bread

The project promoted also women’s participation in the producers association. Currently, female members are actively engaged in production and marketing of native potatoes.



Figure 5. Planning the production in the Producers Association at Cariquina Grande

Lessons

- Rural women in the Andes seem to be better informed than men in relation to use and properties of agrobiodiversity.
- Working with rural women to promote the use and conservation of biodiversity seems to be a right approach since they are motivated and interested partners.
- Engaging other sectors in the Project, such as the health sector and the education sector contributes to further promote the use and conservation of Andean roots and tubers.

- Rural women have increased their income through the marketing of roots and tuber's products. This has contributed to improve women's social capital including self esteem and increased recognition from other community members.
- Rural women appear to be willing to try technological innovations. Through women's participation, it is also possible to call the attention and engage male community members.

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