

# Community Seed Banks The Bolivian Experience

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# Origins and evolution

- The formation of CSB was driven by project initiatives (national and international funds)
- The first CSB were from individual crops (quinoa, cañahua, potato)
  - Implementation as part of an *ex situ–in situ* relationship strategy to promote local conservation
  - participatory selection and evaluation of varieties and seeds (CIALs)
  - seed multiplication and distribution to interested members of the community
- Then they evolved to become CSB of agricultural biodiversity (various crops)
  - Monitor agrobiodiversity and traditional knowledge (documentation)
  - Conservation of interspecific and intraspecific diversity of crops useful to people as food, medicine (including recovery of lost local varieties)
  - Ensure availability of seed to interested farmers (home consumption)
  - Spaces for training and dissemination of good agricultural practices: seed and crop health, soil fertility management, etc



# Governance and management

- Implementation of CSBs without formal governance elements:
  - CSBs are still strongly encouraged by external actors (projects)
  - CSBs are managed by custodian farmers
  - CSBs are recognized by local indigenous and municipal authorities
  - Some agricultural custodians are recognized by national authorities
- Management:
  - the roles played by men and women in the community are complementary in the management of agrobiodiversity, registration and documentation of traditional knowledge and activities of CSBs (seed selection, planting, cultural work, harvesting and storage)
  - PROINPA continues to accompany the operation of the CSB

# Technical aspects of CSB

- Selection of crop species and varieties
  - Initially promoted by project researchers (PROINPA)
  - Focused on local varieties and breeding lines with potential production (case quinoa and cañahua)
  - Selection according to the preference of farmers
- Collection of seeds and planting material
  - Seed of Andean grains was provided by the National Germplasm Bank
  - Seed of other crops from the custodian farmers



# Technical aspects of CSB

- Document, share and communicate
  - PROINPA supports the documentation of the varieties: books with photographs and information of the local knowledge and agromorphological data of each variety
  - Participation in seed fairs and diversity
- Storage, regeneration and seed distribution
  - Generally farmers store seed during a single crop cycle and regenerate seeds each year to distribute to community members
  - Traditional methods for storing seed and planting material
  - Custodian and community farmers' fields for seed regeneration / multiplication



# Technical aspects of CSB

- Characterization and evaluation
  - Cbba: with PROINPA support: identification of functional traits in the potato collection (Colomi varietal garden)



Late blight (*Phytophthora infestans*)



Frost damage



Plants affected by drought

# Political environment

- In Bolivia, the National Institute of Agricultural and Forestry Research (INIAF) is the entity in charge of the implementation and administration of the National System of Genetic Resources
- CSBs are strategic components of *in situ* conservation, but are not yet officially recognized by INIAF
- There is a favorable political context to support the CSB but nothing is achieved
- There is a contradictory seed policy that does not allow the sale of seed of varieties not registered in the national seed system. All local / native varieties are in that category



# Learned lessons

- CSBs are spaces that contribute to the recovery and restoration of the local diversity, although farmers prioritize potato as the most important economic and food security crop
- CSBs strengthen the relationship between *ex situ* and *in situ* conservation
- CSBs also act as learning spaces to appreciate the importance of diversity conservation and the implementation of good practices for conservation and cultivation
- After more than 10 years of work with CSB in Bolivia, we have not yet solved issues of:
  - governance (who should be in charge, only custodians farmers?, rotational charge?, a larger entity like the related germplasm banks?)
  - long-term operation (what happens if the projects finish?, role of the related genebank?, role of the National System of genetic resources?)

# Learned lessons

Relative acceptance of a community genebank by age group

Age group	Percentage acceptance	
	Men	Women
Young adults (20-34 years old)	30	25
Adults (35-60 years old)	80	70
Elderly (>60 years old)	50	45

NOTES: The respondents were 75 farmers from the communities of Rosapata, Antarani, Patarani and Coromata Media.

# Custodian farmers and CSB in Bolivia

**La Paz (Province Los Andes, municipality Puerto Pérez, community Cachilaya, altitude 3815 msnm)**



**Don Ricardo Vargas**

Potato (15)  
Oca (6)  
Quinoa (1)  
Barley (1)  
Forage (1)



**Doña Viviana Herrera**

Potato (90)  
Quinoa (11)  
Cañahua (2)  
Barley (1)  
Wheat (2)  
Bean (12)



**Don Elias Vargas**

Potato (38)  
Quinoa (3)  
Cañahua (3)  
Oca (9)

## Cochabamba (Province Chapare, municipality of Colomi, 3200 – 4200 m altitude):



**Don Teodoro Arroyo**  
**(community Pico Central)**

Potato (17)  
Oca (3)  
Papalisa (1)  
Isaño (2)  
Lupin (1)



**Don Martín Céspedes**  
**(community P'alta Loma)**

Potato (14)  
Oca (3)  
Papalisa (1)  
Isaño (2)  
Lupin (1)



**Doña Laurena Gonzales**  
**(community Kanko)**

Potato (23)  
Oca (4)  
Papalisa (2)  
Isaño (2)  
Lupin (3)  
Faba bean (2)

## Cochabamba (Province Ayopaya, municipality of Morochata, 2800 – 3400 m altitude):



**Don Casiano Ruiz**  
**(community San Isidro)**

Potato (35)  
Maize (4)  
Quinoa (2)  
Papalisa (3)  
Isaño (3)  
Lupin (4)  
Faba bean (1)



**Don Juan Alvarez**  
**(community Tuini Chico)**

Potato (3)  
Maize (6)  
Quinoa (6)  
Amaranto (1)  
Bean (1)  
Cucurbits (3)  
Barley (1)  
Wheat (1)  
Faba bean (1)  
Pea (1)

