Breeding Pipeline:
PROINPA Quinoa 1997-2017

Moises, a farmer from Joco Pampa, presents the quinoa varieties he has been testing and says "now I don't just plant and harvest, I want to know."
Photo credit: Claire Nicklin

Los Andes
Community of Practice

Project Partners

PROINPA

Non-Governmental Organization

New context

2014-2016: **Large drop in the quinoa price** from $7.27/ kilo to $5.48 USD mostly due to increase in conventional production in Peru that is sold on the black market in Bolivia and resold as organic. There is growing **concern among consumers about the organic, including sustainable, qualities of quinoa,** as well as growing global competition.

Integrate global and local

Promote specific niches

The **demand for seed has decreased. Certified seed** vendors say they have had the most luck selling to **State** agencies. The demand for mildew resistant seeds is especially depressed because mildew attacks in less traditional areas, where farmers don't tend to plant if prices are not good.

Incentivize, support & reinforce farmer participation to ensure responsiveness to farmers' needs, knowledge, problems, concerns & constraints

More appropriate variety testing and release systems that test varieties under targeted conditions

2014: Follow up with select farmers who had bought or received quinoa seed showed that the **performance** of the varieties was between good and very **good** depending on the presence of frost and late sowing (yields ranged from 780-1230 kg/ ha using a combination of 6 varieties in 9 sites). Different improved varieties and landraces did will in different areas.

Multi-environment trial methodologies and protocols

2015: Project created a **Quinoa monitoring network** of 323 representative quinoa growers across 190 communities in the the southern and central altiplano, in order to monitor the diversity of quinoa management to help inform **options x context decisions.** In 2016 the number of members in the network went down to 245 and in 2017 down to 220, of these, 54 are involved in an active **Farmer Research Network**, the rest just respond to **phonecalls** asking for monitoring information.

The lack of interest in the network is because there is **no benefit perceived by farmers,** like training and technical assistance. In 2018 it is hoped that an **APP** will be better able to provide **useful information to farmers.**

Reciprocity: build trust based on shared interests & honest interactions

Value heterogeneity: build on and enhance diversity

Achieve detectable, heritable variation for traits of interest among progeny generated

2015: 27 genotypes and 18 lines were evaluated. **Combining of mildew resistance and precocity traits has proved elusive.**

PROINPA has **generated 8 varieties of quinoa** mostly with mildew resistant or **early maturing** varieties

Farmer access to high quality, diverse seed varieties

2004-2014 **18 T of quinoa seed** was produced of 14 varieties by **communities** and research stations in 3 eco-zones, which will cover 3000 ha. **Variety x location** information is provided.

Take an integrated long-term perspective while producing short- and medium-term results

Context

2003-2014: The **quinoa "boom"** saw this marginal crop transform into a major export, with resulting increased income for farmers but also **negative externalities** from intensive quinoa **monocultures,** mainly loss of soil health.

Avoid doing harm

LEGEND:
Results
CCRP Principles

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Availability of characterized diversity from inter/national collections

PROINPA saved the national germplasm collection of quinoa during a reform period in the late 90s when agencies were being dismantled, and added to it to build a collection with 3700 accessions, which was delivered to the new NARI, INIAF in 2010. Proinpa has maintained a **germplasm collection** of 800 landraces.

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