



Photo: INALPROCES.

7. Rescuing Ancestral Varieties: Native Potato Innovations in Ecuador

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The native potato is an ancestral product historically rooted in the worldview of Ecuadorian Andean communities living above 3,000 meters. Used as an offering during ancient ceremonies, rites, and feasts, as medicine, as food or for barter, native potatoes contribute significantly to food security for the inhabitants of these communities. Paradoxically, from a commercial perspective, the native potato is considered as a new product, unknown outside its production areas. It was once thought that the bright colors of these potatoes were not natural, but rather due to damage or defects. Only 17 of the 350 known native potato varieties have had a marginal presence in the markets, placing them on the verge of extinction.

This case describes the process towards achieving technological, organizational and commercial innovations leading to the recovery of the native potato of Ecuador.

Technological innovations have been achieved with the support of the projects Andean Potato and InnovAndes, the International Potato Center (CIP, for its name in Spanish) and with partial funding from FONTAGRO. The Autonomous National Institute for Agricultural and Livestock Research (INIAP, for its name in Spanish), through participatory genetic enhancement, has improved the native potato varieties making them suitable for meeting market demands. The process began with a characterization of the different varieties found in the Ecuadorian hillsides, where groups of farmers from 19 communities provided samples of their native potatoes. These potatoes were grouped according to their morphological and agronomical characteristics, and their industrial, gastronomic and other uses. Agribusiness universities, chefs, gastronomy schools, supermarkets and other buyers participated in this process. The 11 varieties with the best organoleptic characteristics were selected. Through nutritional and functional characterization, it was demonstrated that these native potatoes are an excellent source of proteins, fiber, minerals, carotenes and polyphenols (natural antioxidants), compared with the improved variety marketed in the country.

In 2006, INIAP initiated the evaluation and selection of genotypes with colored pulps. Between 2008 and 2010, validation and production plots were established in the farmers' fields, by using Local Agricultural Research Committees (CIAL) in the Chimborazo province. Consequently, in 2011, the varieties INIAP-Puca shungo and INIAP-Yana shungo, found to be rich in polyphenols, potassium, iron and zinc, were officially launched.

Organizational innovations have highlighted a public-private system for seed multiplication and sales. This innovation was fueled by previous processes such as the project on Strengthening of Potato Seed Research and Production (FORTIPAPA), under which four local platforms were developed at the provincial level based on potato value chains, and the creation of the Consortium of Potato Producers (CONPAPA). By 2006,

CONPAPA could not satisfy the steady demand for seeds with their own production, and therefore entered into arrangements with their producer partners who would undertake some of the production. A system was established between the CONPAPA and INIAP to provide the partners with quality seed, in the required quantities and at the right time. The best farmers were trained to become seed producers, and became knowledgeable on the required phytosanitary and quality standards. Under this arrangement, CONPAPA obtains the seeds from INIAP and distributes them on credit to these seed growers, and also provides them with technical advice and follow-up during production. At harvest, CONPAPA recovers all the seed produced, and then it subtracts the price of the seeds provided. CONPAPA then stores the seeds, and in accordance with a marketing plan, these seeds are sent to the partners for further crop production. This closes the market-seed-potato-market cycle.

With respect to trade innovations, there is currently a partnership between CONPAPA and the Processed Food Industry (INALPROCES), a small, new and innovative processing company mainly dedicated to the Gourmet Snack market. Its main product is a Vegetable Mix made from an assortment of tubers. Through this partnership, CONPAPA brings together all the requests for assistance throughout the chain, ranging from sowing of the seeds, seed procurement, to production and compliance with trade agreements. As a result of the partnership, INALPROCES introduced a native potato flakes mix which expanded the market for the small farmers. Moreover, INALPROCES has invested in promoting the product internationally, as well as improved packaging and labeling to better suit the standards of these markets. INALPROCES has also received certification from HACCP, GMP, KOSHER, Non-GMO and CFS *Gluten - Free Product*.

At the end of 2010, INALPROCES and CONPAPA signed a marketing contract with social responsibility. This outlined the conditions for selling fresh native potatoes to INALPROCES, which subsequently processes and markets them as potato flakes under the KIWA brand.

The growth in the volume of sales of native potatoes was increased by 540% between 2011 and 2012. The sale price remained stable throughout the year and was 42% higher than the production cost. Native potato flakes have been exported to about 10 countries.

This initiative has received four national and international awards, including the *"Taste 11 Award for Top Innovations of Anuga-2011"*, competing with 6,500 participants in the largest international food fair, thereby enabling its entry into the new markets of Saudi Arabia, Singapore and Denmark.

These innovations have helped to place the native potato in a recognized position in international markets as a quality gourmet product.