

# CASSAVA PROJECT FINAL REPORT (in Depth)

TechnoServe Project in Honduras Funded Partly by MBCC

By MBCC Social Action Board (Jim Duffy) June 2012

## SUMMARY

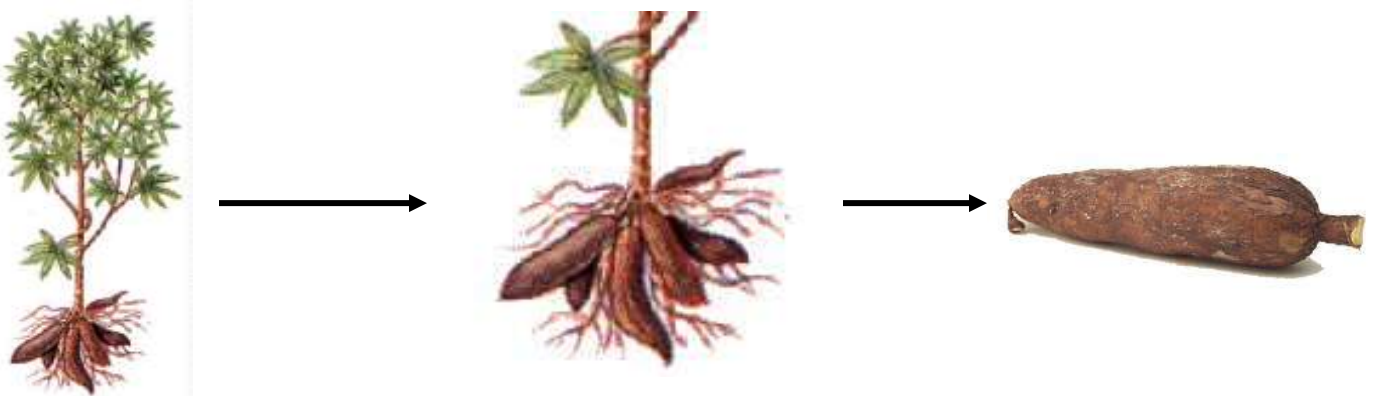
TechnoServe has now completed an MBCC-funded project to upgrade and modernize the production of cassava bread, one of the three key staples of the diet in many poor rural communities of Honduras. Equipment installation and operator training was completed late last November for three of the five selected cassava processing sites and in late February for the last two sites. The impact of these improvements has been the elimination of tedious manual tasks, a much higher production rate, and a more uniform and higher quality cassava bread, creating new markets including the establishment of an export market. This, in turn, is starting to improve the well-being and economies of these communities.

## BACKGROUND

In December 2010, MBCC contributed \$10,000 to a TechnoServe project to upgrade the cassava production in five coastal Garifuna communities in north eastern Honduras. The Garifuna people are descendants of west African peoples enslaved by Europeans and shipped to the Caribbean region beginning in the year 1635. They then intermarried with local Indians who were fleeing subjugation by Spanish conquerors in central America. The resulting people, the Garifuna, developed their own language (an amalgam of these cultures) and eventually settled on the Caribbean coast of Honduras (approximately 98,000 people) and neighboring Belize.

The Garifuna people are among the most impoverished ethnic groups in the region with most of the men and women trapped in cycles of subsistence farming. Schools are lacking and most are only K thru 3 with the remainder being K thru 6. Sanitary conditions are poor, and medical facilities and health clinics are scarce. According to TechnoServe, 72% of these people are illiterate or semi-literate, 78% are malnourished, and 30% of the children die before age 2. The communities are isolated and very stable, change has been slow, and most people have low or modest expectations.

Cassava\* is a woody shrub grown in the tropics and subtropics for its starchy, potato-like roots, which are the third largest dietary source of carbohydrates in the tropics. The cassava roots are a major staple food in the developing world, providing a basic food for around 500 million people. The plant is drought tolerant and grows in marginal soils.



The typical diet of the Honduran Garifuna communities consists of three staples - - cassava bread, plantains (similar to bananas), and locally-caught fish. Fishing is performed mostly by the men, while women grow, harvest, and process the cassava. Cassava bread is a flat, crisp, unleavened tortilla-like wafer, usually made in a very large circular disc

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\* The **cassava** root in some cultures goes by other names, including mogo, manioc, or yuca (not to be confused with yucca, a desert plant in southwestern deserts of the United States).

(typically 24 inches in diameter) and is the primary way in which the cassava root is consumed in Honduras, including in the Garifuna communities.

The method by which the Garifuna people (usually women) process the cassava plant roots into cassava bread has not changed for the last 200 to 300 years and is very labor-intensive and time-consuming, typically requiring two days to complete. As such, their cassava bread is not price-competitive with other staples produced by more modern, efficient methods. Its market is further limited because the bread is not homogeneous and its quality varies considerably. All this contributes to the weakness of the economy in the local Garifuna communities.

TechnoServe recognized this opportunity for improvement and sought MBCC's financial support.

### PROPOSAL MADE TO MBCC BY TECHNOSERVE

The traditional method of processing cassava roots into cassava bread consists of the following manual steps:

- 1) Peel away to outer skin
- 2) Grate the roots (coarsely)
- 3) Squeeze out the poisonous liquid
- 4) Leave the resulting paste exposed over night in order to dry it out
- 5) Grate finely into small particles
- 6) Sift the particles to filter out impurities; result is a uniform powder
- 7) Form the powder into thin large wafers (often 3 mm thick, 24 inch diameter), adding water as required
- 8) Bake the wafers on a large grill, producing crisp tortilla-like wafers

After analysis of the options for improvement of the process, and the likely resulting impacts, TechnoServe determined that the most cost-effective improvement they could recommend is to upgrade to modern equipment to perform the currently-manual steps 2 thru 5 (above). TechnoServe then determined sources for the new equipment and other required infrastructure, and they developed a plan for operator training and equipment maintenance.

Rather than work with individual farmers, Technoserve's standard policy is to offer assistance to farmer groups, typically organized into farmer co-operatives. In Honduras, TechnoServe identified and focused on the following five cassava-producing co-operatives in Garifuna communities in or near the municipality of Iruya in the Colon region of northeastern coastal Honduras: Binadu Uwenedu, Darara, Amupade, Iseri Lidawamari, and Lucha y Esperanza co-operatives. These five co-operatives have a combined membership of 106 farmers, 90 percent of whom are women. As standard policy, TechnoServe requires that each co-operative to pay a share of the costs of any improvements so that they are committed, have a sense of ownership, will become properly trained, and will take full responsibility for these improvements, including future maintenance issues.

In June 2010, TechnoServe submitted a \$10,000 proposal to MBCC to help fund the modernization of the cassava-producing facilities at the five Garifuna farmer co-operatives listed above. Each of the five co-operatives was required to contribute an additional \$1,000 as a partial match for MBCC funding. A fund-raising effort was then begun at MBCC, and the goal was reached in December 2010. MBCC sent a \$10,000 check to TechnoServe in January 2011.

### IMPLEMENTATION OF THE CASSAVA PROCESSING MODERNIZATION PROJECT

At each of the five sites, the following equipment was bought (or in several cases, used equipment was re-furbished):

- Mill (motor-driven) - - used for grating / shredding the peeled cassava roots
- Heavy-duty press with a fine mess sieve - - used to remove liquids (including toxic cyanide) from cassava
- Electric Generator (diesel-powered) - - used to power the press and the mill. (These communities have no electricity.)



Three Cassava Mills (Graters)



Three Cassava Presses with Sieves

This equipment provides a processing capacity of 500 pounds of cassava per hour, much faster than previous processing, which had included an over-night drying step.

Before beginning operation, the members of each of the five co-operatives received operator training, and several members additionally received training to perform preventive maintenance. Typically at each site, two people (on a rotating basis) work a day-long shift. Preventive maintenance is performed periodically by the trained members of the co-operative, and corrective maintenance is performed as required by nearby contract technicians. Many co-operatives in Honduras lack sufficient business skills to run their small enterprises. Accordingly, in each of the five co-operatives, several workers were given training in book-keeping, accounting, basic business planning, and business operation. As much as possible, an entrepreneurial spirit is being instilled.



Diesel Generator

At three of the five sites, installation and training was completed by late November 2011, and production began shortly thereafter. Installation at the remaining two co-operatives was delayed while the co-operatives gradually raised the funds required to pay their share of the costs. These last two sites were completed and put into operation in late February 2012.





Processing has been improved by installing motor-driven grating mills and liquid-removing presses.

### IMPACT UPON THE COMMUNITY

As of early June 2012, the following early impacts of this modernization effort are being seen:

The available market in surrounding communities has increased dramatically because of the product's higher consistency, quality, and lower cost. Wal-Mart is test-marketing cassava bread from the co-operatives in 30 affiliated stores in Honduras. International export is occurring through Wabagari Distribution, an export company. A small amount of export is sold in the greater New York City area.



Traditional plain cassava bread



At a Wal-Mart affiliate, first delivery of 200 boxes of dry cassava chips, each box containing 24 packets of flavored and unflavored baked chips.



Flavored and unflavored crispy, baked cassava chips

Other farmers in the Garifuna communities who are not members of the co-operatives are paying to have their cassava roots processed at these new mills. Currently this averages around \$300 (gross) per month at each co-operative.

With their increased capital, resulting from the greater cash flow and profits, the co-operatives have begun to extend micro-loans to their members. Also, TechnoServe has helped the co-operatives to establish community banks, through which they have begun to provide short term micro-loans to others in their local communities, typically for business initiatives and community-driven development projects. Previously there was almost no local source for such loans.

As a result of this project, farmers like Digna Bernárdez, a member of the Binadu Uwenedu co-op, have significantly increased their income, used almost totally to meet their families' daily needs. This increase has enabled many to set aside some funds with the hope for a better future for their children.

Binadu Uwenedu co-op member, Digna Bernárdez, is shown next to a new diesel generator. The co-op, located in the small rural town of Irióna in the eastern Colón region, produces about 1,500 large wafers of cassava bread a week. Digna's customers are in the cities of La Ceiba and Trujillo, and she also sells through Honduran stores affiliated with Wal-Mart. Digna is not only a charismatic leader, but also an incredibly engaged, energetic, and warm woman.



Mirna (2<sup>nd</sup> from right) and other members of the Darara co-op

At a recent training session, TechnoServe's country director in Honduras, Victor Ganoza, chatted with Mirna, a member of the Darara co-operative. She said "I take pride in what we have managed to do. Some of the women working in the processing facility have now become independent and are able to provide for their children. We have together formed an association (co-op) having 25 members". When Victor asked about her 5-year goal, without hesitation she said "I want to become the biggest and best cassava processor in Honduras".

Honduras has many more Dignas and Mirnas ready to benefit from similar opportunities. With the help of friends like MBCC, TechnoServe will continue to help them acquire the tools they need to capitalize on opportunities for themselves, their families, and their communities.

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#### REFERENCES

1. TechnoServe's Proposal to MBCC (4June2010): "Enhancing Entrepreneurship of Garifuna Women in Honduras"
2. TechnoServe's PowerPoint Presentation (July2010): "Enhancing Entrepreneurship of Garifuna Women in Honduras"
3. TechnoServe's Progress Report to MBCC (Jan2012): "Enhancing Entrepreneurship of Garifuna Women in Honduras"