

Techno-Links

How YOU gave farmers
a helping hand



Techno-Links (Technology Links for Improved Access and Incomes) allows 20 agriculture input suppliers in Peru and Nicaragua to better reach 5,000 small farmers with technology-based agricultural products, enabling them to increase yields and gain new income opportunities. As a result, their household members – over 20,000 people – are benefitting. This three-year project is funded by the Canadian International Development Agency (CIDA) and by generous donors like you. Take a look to see how your donation is making a life-changing difference in the operations of two suppliers in Nicaragua, Burke Agro and Tecnosol, and the lives of nine farmers they work with.



Burke Agro

One of the grant recipients, Burke Agro, strives to add value to organic fruits with the use of renewable energy. Thanks to your generosity, Burke Agro now exports solar-dried bananas, pineapple, dragon fruit and mango to American markets under the label Sol Simple. Burke Agro identifies, organically certifies and works directly with its 114 small-scale farmer clients. Providing a guaranteed buyer, a fixed price and assisting in the organic conversion, Burke Agro is now contributing to a more sustainable livelihood for small rural farmers in Nicaragua.



Santos Maria, one of Burke Agro's farmers, has been growing organic dragon fruit for two years. She likes growing the organic fruit and says that she can see the difference it makes when you stop using chemicals. As a recent widow, Santos Maria is also in the midst of building a new house and paying for her four children's education with her dragon fruit income. Thanks to your support, her dreams are becoming a reality.



This dragon fruit tree has just begun to bear fruit. Burke Agro's product line, Sol Simple, will soon reap the rewards of this farmer's hard work. The packages of dried fruit are available for sale in the United States at select Whole Foods supermarkets and on a smaller scale in Nicaraguan markets such as grocery stores and airports.



Burke Agro agronomist Jose Manuel Zambrana, left, works with a farmer to further explain how this chimney works to create wood vinegar – a learning opportunity created through your gift to Techno-Links. This technique produces a potent liquid that can be used as both an effective organic pesticide and fertilizer.



Farmer Marta Blandon shows her mineral salts, which have been a big help in improving her dragon fruit crop. The mineral salts were recommended by Burke Agro agronomist Jose Manuel Zambrana as an effective means of improving soil quality and health.

She currently trades portions of her fruit and receives mineral salts to add nutrients to her soils. Some of the micro-nutrients include: zinc sulfate, copper sulfate, magnesium sulfate and phosphorous sulfate.

Another organic technique promoted by Burke Agro agronomist Jose Manuel Zambrana is a pest trap made from a plastic pop bottle. An opening is made at the top of the bottle, then pineapple juice or sugar water is added. Then the bottle is hung around the dragon fruit plot. Bugs and pests are attracted to the sugar scent in the bottle, where they gorge themselves on the juice and are unable to escape.

Here, farmer Jose Aguirre Mercado shows one of these homemade pest traps. With your donation, you have helped Jose to find a solution!





One of Burke Agro's farmers, Adilio Hernandez (right), stands with his two daughters, granddaughter, and nephew in front of the house he was able to buy in part due to his dragon fruit income.

Hernandez now has experience with organic farming and prefers it. "I was scared to use the pesticides," he said. "I knew that it was harmful to our health and I do not want my children using insecticides."



TecnoSol

Another grant recipient, Tecnosol, sells renewable energy sources in Central America. Established in 1998, Tecnosol works with wind, hydro and solar power, in addition to biogas from manure. With support from people like you, Tecnosol is now working to reach 105 farmers in Nicaragua to increase their access to sustainable energy sources by means of biodigesters. Tecnosol's biodigester, seen above, is called a *biobolsa*, which is Spanish for "bio bag."



Animal manure is a key ingredient for the biodigester system. Cattle manure is collected daily and mixed with water before being added to the biodigester. Inside the vessel, a process called *methanogenesis* is created to produce *biogas*, a cooking gas suitable for a small gas kitchen stove, and *biol*, a concentrated organic fertilizer.



Juan Nicaragua is about to start walking on his *biobolsa* to agitate the bladder containing the manure and water mixture so it continues to effectively produce *biogas* and *biol* fertilizer. Periodically moving the bladder around ensures effective methane gas production to feed the line to the kitchen, seen in the upper left of the photo. “Less costs, less work,” he says about Tecnosol’s *biobolsa* – a realization made possible with your help!



Many rural Nicaraguan kitchens have a traditional firewood-fueled stove such as this one. The system involves collecting firewood, a much lengthier cooking process, smoke in the house and a lot of extra cleaning from the stains left on the pots and pans. Tecnosol's biogas solution improves the ease of use and air quality in the kitchen.

María Gertrudis Rugama Alvarez smiles as she lights her new biogas stove – a smile your donation has brought to her face.

With the direct gas line to the kitchen from the Tecnosol biodigester outside, cooking has become more convenient. Maria is now able to quickly heat up a little milk for her grandchild or a small batch of coffee in the morning for herself and her husband. Time-consuming activities required when using wood for fuel have now become much simpler tasks.





Maura Rigby stands in front of her biodigester system in Laguna de Perlas, RAAS, Nicaragua. Living in a very isolated region, Maura finds the new system extremely helpful, as she no longer needs to venture into town to purchase propane gas or worry about how much firewood is left. Maura also uses the *bio*/fertilizer produced by the biodigester to its full potential – she is now part of a women's co-op that grows organic produce with hopes of expanding and exporting to larger markets. We can't wait to see what new opportunities lay ahead!



Mario Aragon Mendoza, a dairy farmer from Rio Blanco, Nicaragua, stands with his new stove from Tecnosol and dairy producer PROLACSA.

The stove is fueled with methane gas produced by manure from his livestock and Tecnosol's biodigester technology. We know he appreciates your generous gift!