Project Nicaragua

Project Nicaragua partners with institutions, communities, and people in both Nicaragua and The United States to cultivate sustainable projects in nutrition, socioeconomic development, public health, and education.

Through collaboration and dialogue, our organization works to understand local challenges and promote realistic solutions.
Project Nicaragua – Overview

2009: Founding of Ohio State University chapter
◦ Partnered with missionary Noemi Caiazzo to begin working in Rancho Grande

2010: First trip to Rancho Grande!
◦ Moved rocks to clear land, helped build Tierra Prometida

Now: OSU student organization
◦ Student-run
◦ Variety of majors
◦ Bi-annual trips to Rancho Grande
Our Partner: the Rancho Grande Community

Noemi Caiazzo

- Missionary in Rancho Grande for over 20 years; runs her own school program and feeding center
- Assemblies of God World Missions – Amor en Acción (Love in Action)
- Assists with on-site finances and coordination, project advisor

Students

- Ages 13-25 most involved
- Assist with stove installation, surveys, understanding community, contacting and educating families
- Primary points of contact for day-to-day project management in Rancho Grande
Identifying Issues in the Community

Conducted needs assessment - identified the open fire cooking structures as a hazard
- Difficulty breathing indoors
- Damage to homes
- Severe or fatal burns

Respiratory Health also identified as problematic by local medical authorities
- Respiratory disease in mothers and older women
- Asthma in children
ONIL Stoves

Structure of Stoves

Benefits – Health, Safety, Economics
Clean Cook Stove Initiative Pilot Program

*Launched Winter 2015*

10 families receive stoves every year; 30 families to date

Families pay 1000 cordobas (about $32), sign a contract, and fill out a survey of their health and economic status

Goals:
- Lower morbidity and mortality associated with open fire accidents
- Reduce fuel costs
- Decrease time spent looking for biomass to burn as fuel
- Shorten cooking time
- Improve general public health within Rancho Grande
- Resolve issues with project design before expanding
Funding and Partnerships
**Socializing the Idea**

**Families in Noemi’s program**

**Information sessions**

**Distribution of educational pamphlets**

**Word of mouth**

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**Stove Structure**

The Baldosa Combustion Chamber

- Durable
- Heat resistant
- Reusable
- Easily molded
- Allows the fire to burn hot enough to consume the oil vapor

When properly constructed and placed into the combustion housing, the combustion chamber provides a smooth entry for the wood and directs the hot gases up to the bottom of the pot. The combustion input and output ports are 5 x 5 inches (12.5 cm square).

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**Concrete Stove Body**

The concrete stove body is molded in a fiberglass mold, providing a fast low cost way of producing a long lasting, low cost stove body.

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**How it Works**

1) Burning the wood inside the insulated chamber creates a gas temperature that exceeds 1400 degree F. As a result, the gas vaporizes, thereby, adding more energy to the fire, and are then eliminated from the exhaust.

2) The square opening of the combustion chamber and also the rectangular slot along the back, collect the hot gases and vent them to the outside through the chimney.

3) As the gases pass back from the combustion chamber to the collection slot, they heat the plancha or metal stove top.

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**Safe & Easy**

**Risks With Traditional Stoves**

- Dangerous amounts of smoke from the stove can accumulate when the fuel is not burned properly
- Open fires can burn users and children
- Consumption of large amounts of smoke can cause health problems with the functions of the heart, brain and other vital body parts
Selection of Families

Baseline assessment to identify pilot families
- Conducted by the students

Demographics of selected families:
- Small children
- Respiratory health issues and illness
- Previous casualties from burns
- Single wood-burning stoves
- Stoves located inside homes
- Limited access to fuel resources
- Unstable incomes
Pilot Evaluation – Surveys

Pre and Post Evaluation Surveys:

- **Health questions:**
  - "Is there smoke in your home when you cook?"
  - "What symptoms do you experience after you cook at home? Coughing? Difficulty breathing? Nausea?"

- **Economics:**
  - "What type of fuel do you use on your current stove?"
  - "How many cordobas do you spend on fuel in a week?"

- **Safety:**
  - "Have you ever been burned by your current stove?"
  - "On a scale from 1-5, how worried are you about the safety of your stove?"
Survey Question - Do you or your children experience any of the following:

- Difficulty Breathing
- Frequent Headaches
- Itchy Eyes
- Nausea
- Sore Throat

**Pre-Assessment**
- n = 7

**Post Assessment**
- n = 6
Pilot Evaluation – Spirometer Testing

Incentive Spirometer Testing

- Initial rationale:
  - Quantitative measure of project's progress
  - Good correlation to respiratory health: higher values --> better lung function

- Challenges encountered:
  - Families move houses - unable to get long term data on respiratory health
  - Different members of family present in house depending on time of visit
  - Data itself inconsistent
    - Uncertainty in whether the families took the test correctly
    - Lack of training in administration and data evaluation
    - Test fluctuates by nature
Challenges

Survey language communication
- Not used to giving exact answers
- Wording to match the dialect

Poor chimney installation
- First installation closely supervised, others not

Incorrect stove usage
- Cleaning with water instead of oil
- Removing internal parts to fit more wood

Recruiting project managers from the community
- Competing responsibilities to family and other jobs
Solutions

Partnering with OSU faculty and staff:
- Survey revisions
- Air quality testing
  - Alternative to spirometer testing

Partnering with the Rancho Grande community:
- Focus groups for project feedback
- In-house information sessions to introduce stoves to more people
Sustainability and Empowerment

What happens when Project Nicaragua is no longer actively managing this project?
- Machines break and need repairs
- New families and households
- Incomplete understanding of health benefits

Project needs to be owned by the community!
- Training on installation, repairs, cleaning
- Understanding of health benefits to educate families
- Capability to obtain parts and stoves as needed

Encourages advocacy for individual and community health and wellness

Developing leadership roles for students in Noemi’s program
Other Organization Initiatives

- Education
- Sewing Center
- Bakery
- Cerro Verde School
- Nutrition
Contact Us

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