St. Michael – Cary | Sister Parish Honduras

Agriculture Overview

Introduction

Since its inception, our agricultural program in Honduras has made significant strides, focusing on hands-on student learning and supporting local farmers in rural communities. Originally concentrated at the Colegio (Vocational Institute) and small community garden plots, the program has grown to serve farming families across remote areas near Nueva Palestina. This expansion aligns with the principles of FAO-PESA (Food and Agriculture Organization – Program for Education, Services, and Agriculture).

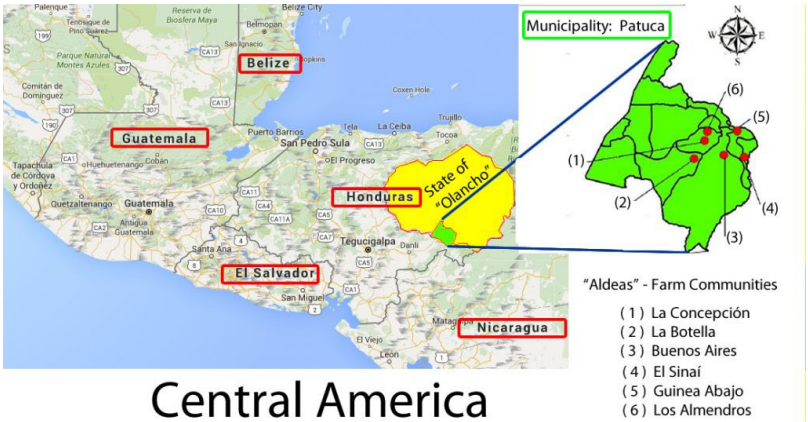
The program aims to foster community leadership and improve agricultural practices, with a broad focus on:

- Family financial savings and management
- Diversified sources of family income
- Safe agricultural chemical use, among other key topics

Our efforts extend beyond agriculture, also supporting education, family health, and infrastructure improvements in these communities. By integrating these areas, we aim to create lasting, impactful changes.

Location of Our Projects:

- **Country**: Honduras (Central America)
- **State**: Olancho
- **Municipality**: Patuca
- **Sister Parish**: Nuestra Señora de Suyapa, Nueva Palestina
- **Vocational School (Colegio)**: Nueva Cholulteca Middle and High School
- **Farm Communities (Aldeas)**: La Concepción, La Botella, Buenos Aires, El Sinaí, Guinea Abajo, Los Almendros



Central America

Agriculture Programs Overview

Projects:

1. **Infrastructure (Water Harvesting):**
   We have developed systems for capturing and storing rainwater, ensuring a sustainable water supply for agriculture in remote communities. This initiative helps farmers irrigate crops during dry seasons and enhances overall productivity.

2. **Vegetable Garden:**
   Our vegetable garden program promotes self-sufficiency, improves nutrition, and offers additional income. The gardens are carefully planned to ensure the best variety of crops suited to the local climate.

3. **Corn Field:**
   Corn, a staple crop, is central to our efforts to improve production techniques. This includes better seed varieties and modern farming methods to increase crop yields and provide both food and income for families.

4. **Chickens:**
   We introduced chicken farming as a way for families to diversify their income and improve food security. Raising poultry not only provides eggs and meat but also creates new economic opportunities.

5. **Pigs:**

   Pig farming contributes to the program by providing an income-generating activity for families. Families can either consume or sell the pigs, improving food security and financial stability.

6. **Soil Erosion Problem:**
   Addressing soil erosion is crucial for sustainable farming. Through methods like terracing, crop rotation, and soil conservation practices, we help farmers protect their land and ensure future productivity.

Key Infrastructure Projects at the Colegio

The Colegio plays a vital role, offering hands-on agricultural education and serving as a hub for local farmers. Key infrastructure initiatives include:

- **Rainwater Harvesting:** Systems to collect rainwater for irrigation and other school needs, ensuring a reliable water source.
- **Well Construction:** Providing a sustainable water source for agricultural and domestic use at the Colegio.
- **Water Tanks & Drip System:** To store and distribute water efficiently, particularly in dry seasons, increasing agricultural productivity.

Rainwater Harvesting:

- Implementing rainwater harvesting systems to collect and store rainwater for use in irrigation and other needs at the Colegio. This project helps ensure a sustainable water supply, particularly during dry seasons.

Well:

- Constructing a well at the Colegio to provide a reliable water source for both agricultural and domestic use. This helps reduce dependency on external water sources and improves the overall water availability for the community.

Corn Field:

- The corn field is part of the Colegio's agricultural program, using water resources effectively to irrigate crops, including corn. This project aims to enhance local food production while providing students with hands-on learning experiences in sustainable farming.

Water Tank:

- Installing water tanks to store harvested rainwater and well water. These tanks ensure that there is a constant water supply available for various needs, particularly during periods of low rainfall.

Drip System:

- Setting up a drip irrigation system to optimize water usage for crops, particularly in the corn fields and other garden areas. This system reduces water waste, ensures efficient irrigation, and increases crop yields by delivering water directly to the plant roots.

Collection of Roof Water

Well

Water Tank

Dripping System

Improvements

Farmers – Water Harvesting system

In response to community demand, we began implementing water harvesting systems in 2014. Farmers in two communities were provided with the necessary supplies to build water storage tanks. As a result, the initiative expanded to additional communities, with some Colegio students participating in construction to gain valuable skills in sustainable farming practices.

Student Involvement – Agricultural Education at the Colegio

Students play a vital role in many of our agricultural projects. Since 2011, St. Michael Parish has supported the Promesa Project at the Colegio, giving students practical agricultural training. The gardening program launched in 2012, where students learned to care for crops, minimize soil erosion, and develop hands-on agricultural skills.

Community Garden – Farmers

We have expanded the program to include community gardening initiatives in several farm communities (Aldeas). These projects, initiated by the UNA (National University of Agriculture), help local families grow their own crops and support their livelihoods. We continue to support their efforts by providing seeds, fertilizers, and training in advanced farming techniques.

This initiative has helped to improve water access for farmers, demonstrating the power of community-driven solutions and knowledge-sharing among students and local farmers.


Water









VEGETABLE GARDEN – SCHOOL

Students – Vegetable Garden

In 2011, St. Michael Parish began supporting the Promesa Project, which aimed to help the students of Colegio Nueva Cholulteca Middle and High School develop practical agricultural skills. The goal was to provide students with the knowledge they needed to apply sustainable agricultural practices at home and within their communities.

Program Implementation (2012):

In 2012, the Gardening Program was launched, where students, around 14 years old, were taught how to care for crops, prepare soil, plant, harvest, and replant crops while minimizing soil erosion.

Key Crops:

- Tomatoes
- Chile
- Cilantro
- Corn
- Sweet Potato
- Pumpkin
- Lettuce
- Radish
- Banana

Initially, the program was implemented on a small plot at the school. As it grew, students began collaborating with the National University of Agriculture (UNA), gaining access to larger fields where they could further develop their skills.

St. Michael has been instrumental in financing the program, while Drs. Sabella, Davis, and Naderman have contributed significantly to the development of the Promesa Project. Many other individuals and partners have also played a key role in helping the program thrive and flourish.

COMMUNITY GARDEN – FARMERS

In mid-2014, we supported the second UNA thesis project, which focused on community gardening demonstrations in several of the aldea communities. Encouraged by interest from local farmers and families, these communities decided to continue the gardening initiatives on their own.

We continue to support their efforts by providing seeds, a small amount of fertilizers, and pest control materials. Additionally, we donated a variety of fruit tree transplants, including avocado, mango, and guava, to several communities.

To further enhance their farming knowledge, we send aldea farmers for training at the UNA (Agrarian University). The training includes grafting techniques for fruit trees like avocado, mango, and guava, as well as methods for producing garden crops.

This ongoing support empowers the aldea communities with the skills and resources needed to improve their farming practices and strengthen their local economies.






Key Areas of Focus in Agriculture:

1. Seeds

Seeds are the foundation of any agricultural endeavor. They are the starting point for growing crops, and selecting the right seeds is crucial for a successful harvest. The quality of seeds determines the health and productivity of plants. Different types of seeds are suited for specific climates and soil types. In agricultural programs, farmers are taught how to choose high-quality seeds, store them properly, and plant them in optimal conditions to ensure strong and healthy crops.

2. Fertilizers

Fertilizers provide essential nutrients to plants, helping them grow and thrive. They replenish the nutrients in the soil that may have been depleted by previous crops. There are two main types of fertilizers:

- **Organic fertilizers**: These are derived from natural sources like compost, manure, and plant materials. They improve soil structure and increase its water retention.
- **Inorganic (synthetic) fertilizers**: These are chemically manufactured and typically provide nutrients in more immediate quantities. They are often rich in nitrogen, phosphorus, and potassium, which are vital for plant growth.

Farmers are trained to understand the nutritional needs of their crops and use fertilizers accordingly to avoid overuse, which can harm the environment.

3. Pest Control

Pest control is essential for maintaining healthy crops. Pests can damage plants, reduce yield, and spread diseases. Effective pest control methods include:

- **Chemical pesticides**: These are used to kill or repel pests. However, overuse can lead to resistance and environmental harm.
- **Biological pest control**: This method uses natural predators or parasites to control pest populations.
- **Integrated Pest Management (IPM)**: A more sustainable approach, IPM combines several pest control strategies, including cultural practices, biological control, and chemical treatments when necessary.

Farmers are trained in safe, environmentally friendly pest control techniques that balance effectiveness with sustainability.

4. Transplanting

Transplanting is the process of moving young plants from one location to another, usually from a nursery or seedbed to the main field. This is a common practice for crops like tomatoes, peppers, and trees. The main benefits of transplanting are:

- **Better growth control**: By starting plants in a controlled environment, farmers can ensure they grow strong before moving them to a field.
- **Improved yields**: Transplanted crops typically have a higher chance of survival and productivity.
- **Early harvest**: Starting plants indoors or in a nursery allows for an earlier harvest since plants are already established when moved to the field.

Transplanting requires careful timing and technique to minimize shock to the plants and ensure they adapt well to their new environment.




Corn Field Initiative



Expansion of Corn Production – Community Growth

The corn production initiative began in five aldeas (farm communities) and has expanded to include two more, reflecting growing interest and commitment. This growth reflects the increasing interest and commitment from local farmers to implement sustainable agricultural practices.

Current Progress and Development

As of now, these seven communities are actively involved in the project, and they are now starting with their second crop. The initial success of the first round of planting has encouraged more families to participate, and the knowledge gained through FAO training is being passed along to new participants in the program.

This expansion not only increases the reach of the program but also helps create a broader network of farmers working together to improve agricultural practices, share resources, and support one another in their efforts to implement sustainable farming techniques.





Chicken Initiative

In mid-2014, we supported the Broiler Chicken Thesis Project from the Universidad Nacional de Agricultura (UNA) to introduce students to poultry farming, focusing on raising chickens as a source of income for families.

Support and Financing

The Promesa Project provided financial assistance for the project itself, covering key expenses like room and board for the university student involved in the program. This partnership allowed the students to gain hands-on experience while also learning about the practical aspects of poultry farming.

Impact on Students and Community

By supporting this initiative, students were able to learn about raising chickens, which not only teaches them practical agricultural skills but also provides them with the knowledge to potentially implement similar projects in their communities. The project's success offers a promising avenue for diversifying family incomes, as poultry farming can be a sustainable and profitable activity.

Table# 10 of Thesis - Benefit / Parcial Cost Relationship

#	Description	Unit	Treatment 1 (Vitaengorde)	Treatment 2 (Aliengordé)	Treatment 3 (Broiler)	Treatment 4 (Alimentos)
1	Initial Weight	Lb	0.1	0.1	0.1	0.1
2	Final Weight	Lb	5.3	5.1	5.43	5.11
3	Weight Gain	Lb	5.2	5	5.33	5.01
4	Weight of the "la canal"	Lb	4.12	4.11	4.26	4.1
5	Sale Price	Lps/Lb	24	24	24	24
6	Income	Lps	98.88	98.64	102.24	98.4
7	Feed Price	Lps/Lb	6.95	6.6	5.975	5.975
8	Feed consumption	Lps/Pollo	10.24	10.1	10.49	9.79
9	Feed Cost	Lps	71.17	66.66	62.68	58.49
10	Unit Cost	Lps	17.27	16.22	14.72	14.27
11	**Profit Magin**	Lps	6.73	7.78	9.28	9.73
12	**Relationship-Benefit/Parcial Cost**	Lps	1.39	1.48	1.63	1.68

Post-Project Development

After the initial project concluded, the Colegio carried out a somewhat larger broiler chicken project. This included the full cycle of growth, processing, and marketing of the chickens, all taking place within the Colegio's facilities. This allowed students to further develop their skills and gain more comprehensive experience in all stages of poultry production, from breeding to selling the final product.

Pig Farming Initiatives


The students at the Colegio have some experience with raising animals through their families, but the Promesa Project aims to expand their knowledge by helping them learn all aspects of raising pigs for sale production. The project encourages the use of young pigs for breeding with locally owned pigs, which could improve the growth rate and health of the local hog population.


Project Support and Goals

The Promesa Project purchased a sow and a boar hog, which are currently producing piglets at the Colegio. The second litter from the sow, for example, produced 11 piglets. This initiative provides a valuable learning opportunity for students to study aspects of biology, animal care, and pig production. By using superior genetics from both the sow and boar, students are able to observe the benefits of quality breeding.

The project also focuses on practical skills, such as giving at-birth injections (likely vitamins or disease immunizations), which helps the students gain hands-on experience with veterinary care.

Breeding and Distribution

Once the piglets are weaned and about 1/4 grown, they are either given or sold to community members, potentially even reaching the outlying aldeas. The goal is for these pigs to be used in breeding programs to improve the genetic quality and production efficiency of pigs within the communities.

Challenges and Successes

While the project is progressing well, the primary limiting factor remains the economics of feeding the pigs. This includes the availability of feed sources locally versus purchasing commercial feed, which is currently used at the Colegio. To date, 21 young pigs have been sold or distributed to the community, helping to improve the local pig farming efforts.

The sow is once again pregnant, with a gestation period of about 3.5 months, so new piglets are expected to arrive in late March. This ongoing cycle of breeding and raising pigs offers the students continued learning and a sustainable method of supporting local agriculture.

The project has seen significant progress, though challenges persist, and we continue to work toward solutions that will benefit the entire community.

THE ENVIRONMENT – WEATHER AND SOIL EROSION

How are we helping the environment?

Climate and Topography

The climate in the region is characterized by two main seasons:

1. **Summer:** Dry and hot.
2. **Winter:** Very rainy, with annual precipitation ranging from 6.5 ft to 7.2 ft.

Temperatures typically fluctuate between 28°C (82°F) and 32°C (90°F). The topography of the area is irregular, with much of the farming being done on hills.



Farming Practices and Soil Protection

In the past, farmers would burn the residue from old crops, believing it was beneficial for the soil. However, this practice led to significant soil erosion, which damaged the fields.

To address this issue, we are teaching farmers new methods to protect the soil and manage crop residue more sustainably. The current focus is on:

- **Irrigation** techniques.
- **Agricultural methods** that prevent harmful practice of burning, which contributes to soil erosion.

By promoting these changes, we aim to help the Aldea communities improve their farming practices while protecting the environment and enhancing crop yields.



The family's harvested white corn ears; their daily food!

Family food is grown with family labor, in small, often hilly fields

The farmer's reward -- now more and larger ears of corn!

Tilapia fish harvest -- students at local college

Home gardens -- boy is learning to apply "a pinch" of fertilizer below each cucumber plant!

Harvest of garden vegetables -- healthy family food, maybe for sale, too!

Farmer's vegetable marketing - beside parish church!

Aldea Communities

Aldeas que finalizaron el proyecto

NOMBRE DE LA ALDEA	Terminación de proyecto	Número de Agricultores
LA MALASIA	Noviembre 2016	15
Guineo numero 1	Junio 2016	5
La batalla	Junio 2016	5
La concepción	Junio 2016	4
Buenos aires de apacilagua	Junio 2016	5
El Sinaí abajo	Junio 2016	5
Los almendros	Junio 2016	6
Las flores tepemechín	Junio 2018	7
La unión tepemechín	Junio 2018	5
EL Porvenir	Junio 2018	7
Palestina	Junio 2018	2
Arenas blancas	Junio 2018	1
Cabeceras de guineo N 2	Noviembre 2018	6
EL Encanto	Noviembre 2018	7
El gualiqueme	Noviembre 2018	6
El Rosario	Noviembre 2018	6
Las delicias de los laureles	Junio 2020	6
EL coyolito	Junio 2020	7
Las Camelias	Junio 2020	6
Palestina	Junio 2020	1
Nueva Choluteca	Junio 2020	1
	TOTAL	113

NOTA: el beneficio del proyecto tiene una duración de 2 años, es decir 4 cosechas de maíz, siempre y cuando se cumplan las normas establecidas.

INGENIERO **MANUEL FLORES GOMEZ** COORDINADOR DE PROYECTO PROMESA PATUCA

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How You Can Help

Your donation will fund essential improvements for families in the Aldea communities of Honduras, including safe housing, water systems, and agricultural training.

💙 **Support 50 People** – $500

Transform a village by funding housing and water access.

Add in memo: For 50 People

Donate Today: Click Here.

Questions? Contact Luis Hernandez at mailto:sisterparish@stmcary.org