



# Semilla Nueva



2015  
ANNUAL  
REPORT

Magdalena Lopez Perez, a mother of six from the village of Andres Giron, represents one of 5,000 families to plant nutritious seed thanks to our work in 2015

# Letter from Our Executive Director

Smart farmers always hedge their bets, planting different crops to ensure that something works out. Semilla Nueva began with the same approach, hedging our bets by developing a number of new farming techniques in the areas of soil conservation, fertility, crop diversification, and more. We were always a jack of many trades, but master of none. As 2015 came to a close, we realized that we had developed a number of amazing, effective technologies—but that expanding from a thousand families to tens of thousands or millions would require our whole organization to focus on maybe just one.

At the end of 2015, we reflected on our successes and failures with the leaders of our partner communities and our field staff, most of whom are life-long farmers themselves. We presented some of our ideas for where we could focus, and we asked them to tell us where they thought Semilla Nueva could make the biggest impact in their communities. The consensus was simple. Farmers loved the programs that provided more nutritious, biofortified seeds. They knew they couldn't be provided for free forever, but they asked if we could find a way to produce them at an accessible price. One farmer explained, "The best thing you can do for us is to provide us seeds that cost less and yield the same—and if they are more nutritious for our children—then it really works."

Every year, an estimated 160,000 families buy commercial corn seeds and sell their corn in the market. The corn they produce is the primary food source for most of Guatemala's 16 million people. Developing competitive and more nutritious seeds for that demographic could change the base of the country's diet, and if we do it in the right way, it will help them make more money as well. In addition, over 500,000 more families grow corn and bean varieties, with seeds they replant year after year. These farmers represent the majority of Guatemala's poorest, and new seeds for them could improve the nutrition of the populations who most need it. Our goal for the next five years is to make more nutritious seeds the norm for both groups.

2015 marked a massive change for us at Semilla Nueva, the moment when we decided to truly begin our dream of changing not just a few villages, but the country to which we have dedicated so much of our lives.

For all of you who have helped us get here, please know we appreciate you immensely and wouldn't be here without you.

-Curt



*Curt was recognized in 2015 as one of Forbes 30 under 30 for Social Entrepreneurship and as an Ashoka Fellow. He lives full time in Guatemala, bouncing between Guatemala City and our Experimental and Training Center in the southern coast.*

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## What is Biofortification?

Biofortification is the process of conventionally breeding crops to increase their nutritional content.

# Honing our Mission through Biofortification

Ask the average Guatemalan farmer about the biggest barrier to escaping poverty and they probably won't mention nutrition.

Yet the data is conclusive. Malnutrition is the world's greatest cause of ill health, poverty, and underdevelopment. Guatemala tops the list of malnourished countries in the Americas, and, despite millions of dollars invested by the government and international aid groups, has crept from the fourth to the third highest rate on earth in the past year. Malnutrition and childhood stunting costs rural Guatemalans years of school and puts them at twice the risk for diabetes and obesity – robbing them of more than 46% of their potential lifetime earnings.

Semilla Nueva has taken on nutrition in our programs, teaching women how to incorporate crops like chaya, a native leafy green with twice the nutrients of spinach, and pigeonpea, a legume with nutritional and agricultural benefits, into traditional recipes. Yet these crops alone will not solve the problem, especially if families are unsure about incorporating something new into their daily routine. So how can Semilla Nueva help the traditional Guatemalan diet provide families with the nutrition they need, without changing what they eat?

At the end of 2015, we reflected with partner farmers, leaders in their communities, and our field technicians – all life-long farmers themselves – on our past successes and failures to see how we could make the greatest impact in improving rural livelihoods. We asked these farmers to tell us what they wanted and needed to get ahead. The answer was unanimous: better seeds. Seeds to sell and to plant for their families that cost less and yield more. They showed us that while technologies like no-till or pigeonpea gave a significant boost to farmers' fields, our energy would be most effectively spent working with the technology with the greatest potential for impact: biofortified crops. With years of research and farmer support behind us, we decided to hone our focus toward improved varieties of the crop that every Guatemalan farmer plants and feeds their family: corn.

# Reviving High Protein Corn: Collaboration on a New & Improved Seed Reaching Thousands

Corn is at the heart of Guatemalan culture, stemming from ancient Mayan tradition. Roughly 800,000 families farm it, and the average rural family eats 5.4 pounds a day. With this in mind, Semilla Nueva has spent four years testing more nutritious corn - known as Quality Protein Maize (QPM) - as a potential tool to combat malnutrition and boost incomes in rural Guatemala. This biofortified crop provides more than two-and-a-half times the available protein of regular corn, and farming families love the slightly sweeter taste and softer texture of QPM tortillas.

Yet tasty tortillas and higher nutrition are not enough for farmers to plant a new corn seed. Previously available QPM seeds were not commercially available and failed to offer farmers the agronomic qualities they seek, generally yielding far lower than normal corn, making the seeds economically unfavorable. After years testing hundreds of improved corn seeds in partnership with the Guatemalan Institute of Agricultural Science and Technology (ICTA) and the International Maize and Wheat Improvement Center (CIMMYT), in 2015 we discovered the first QPM seed that could effectively meet these needs.

Formally known as ICTA B9, this seed is changing the way farmers view QPM. ICTA B9 is an open pollinated variety, meaning that struggling farming families can save and replant their seed--no longer needing to worry about how they will purchase new seed every year. ICTA B9 yields slightly higher than most commonly planted native varieties, and showed excellent resistance during 2015's devastating drought that burdened hundreds of thousands of Guatemalan families with lost harvests.

The promise of this seed has stirred interest in QPM all across the country, with over a dozen organizations looking to bring it to farmers in 2016. Even more hopeful for us, ICTA B9 represents the first new corn variety released by the Guatemalan government in almost a generation - a key example of what Semilla Nueva works towards. Instead of writing off the complicated or slow process of working with the government, we work to make it better. We believe that within every broken bureaucracy, there are always several people striving to make a difference. Semilla Nueva does our best to connect with them, because in the end it will not be a single seed that makes the difference for Guatemala, but rather the cohesion of communities, policies, and institutions working toward a bigger goal after years of painstaking work on the ground.

The average Guatemalan family consumes 5.4 pounds of corn daily.



If they replace normal corn with QPM they will consume  
30 eggs' worth of protein every day!





ICTA B9: The first new corn variety released by the Guatemalan government in 15 years

After 4 years of research, close to 5,000 families can access a better QPM.

## QPM OF THE PAST

- Low yield prevented farmer buy-in
- Not commercially available
- Farmers must purchase new seed each year
- Not promoted by Guatemalan agricultural organizations
- Low production in drought conditions

## THE NEW & IMPROVED QPM

- Yield comparable to commercially available, open pollinated varieties
- Available throughout the country
- Farmers can save, replant, & share seed year after year
- Recognized & shared by Semilla Nueva partner organizations
- Resilient in unpredictable climate events



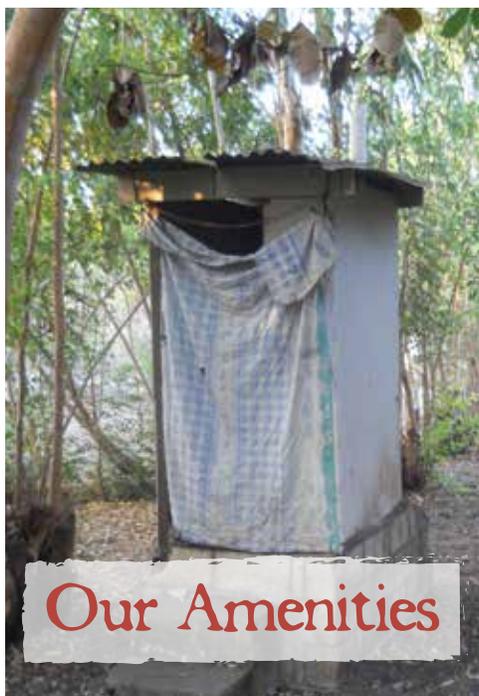
# Our Field "Offices"

Semilla Nueva has never strayed far from our grassroots beginnings



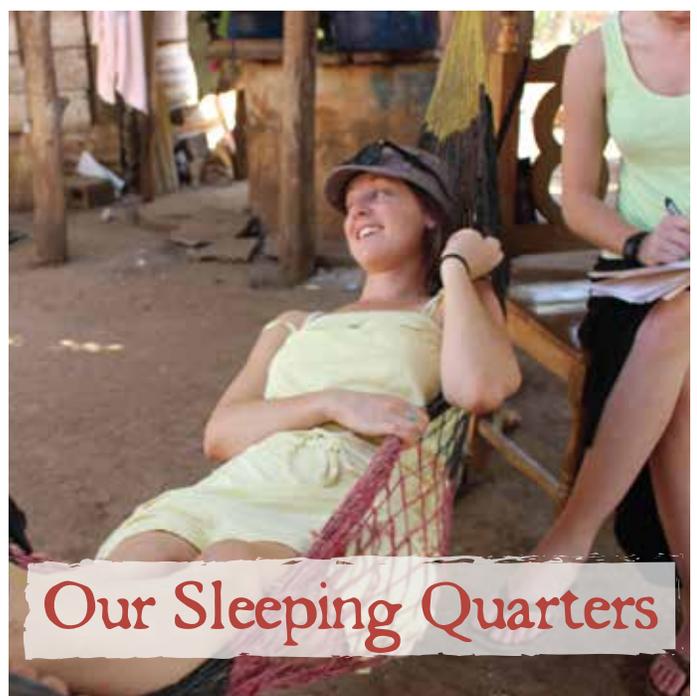
**Our Old Office**

*Trinidad Recinos, Semilla Nueva co-founder and Assistant Country Director, demonstrates fertilizer measurements in a makeshift "office" with field technicians Juan Manuel, Hugo, Juanito, and Chepe*



**Our Amenities**

*When you gotta go...*



**Our Sleeping Quarters**

*Hammocks in the southern heat*

## A Space to Learn

Semilla Nueva staff gather at our new Experimental & Training Center in La Maquina, Suchitepequez, Guatemala.



As a young organization, Semilla Nueva always prided itself on grit. Our team worked from “offices” of mango trees and plastic tables in cornfields on everything from designing research protocols to analyzing experimental data in hundred-degree heat without shade, electricity, water, or even a real bathroom. We had a thriving experimental farm, but trainings meant hours in the blazing sun and classes always had to be short. Though it was a labor of love, sweat, and dirt, these harsh conditions proved to be a major limitation. The Semilla Nueva Experimental and Training Center was designed to change all of this, providing a comfortable place for farmers to learn new practices, scientists and researchers to develop new techniques, and our staff to have a home base for day-to-day operations.

Located in the heart of corn country in southern Guatemala, and within minutes of Semilla Nueva partner communities, our Experimental and Training Center is the only building of its kind. The dormitories, conferences rooms, and deck have already hosted hundreds of visiting farmers and staff from partnering organizations who participated in multi-day courses in the field. The offices and rooms have hosted four residencies of scientists and social marketers who have lived comfortably while having our test fields and partner communities nearby. With the ecological construction keeping the building cool (and saving thousands annually on AC!) and the beautiful and functional interior keeping us focused, the center is a bridge between worlds, bringing together the curiosity of farmers, the ingenuity of experts, and our team’s dedication to developing new agricultural technologies to reach thousands of families.

We owe immeasurable gratitude to the supporters who made the Experimental and Training Center possible: Steve and Cecelia Hodges, Miracles in Action, the Haughie family, and the Inter-American Foundation.



# Welcome to the Experimental & Training Center



# Farmer to Farmer Achieves Government Support

Semilla Nueva has always envisioned farmer to farmer education becoming truly sustainable—and not dependent on us.

To this end, Semilla Nueva helped partner farmers take the lead of their farmer to farmer groups in 2015. These farmers elected leaders and made the groups official by writing them into the village government as the official agriculture commission, or ComAgro. ComAgros are designed to take over the responsibility of all the activities Semilla Nueva has traditionally led: choosing new technologies to test, training farmers on how to do experiments, and hosting community field days and trainings. No one knows how much work this requires better than Semilla Nueva, and so we proposed that the leader of each group receive a small stipend to do all of the work that Semilla Nueva normally does. The system is growing, and now all 25 of our partner communities having formed their ComAgros, elected a leader, and put them to work! The farmer groups helped hundreds of families try new types of rice (see page 12), chaya, pigeonpea, and high protein corn in 2015.

The accomplishments of these groups were impressive enough to interest one of the few actors who has the power to make the farmer to farmer groups truly sustainable. 2015 was a year of elections, and newly elected municipal governments were looking for the most cost-effective way to help thousands of their citizens (and stay in office). Convinced by the voices of dozens of leaders from all of our communities, many with years of experience with Semilla Nueva, two municipalities - Santo Domingo and Champerico - are now paying the stipends of the leaders in 18 of the 25 groups!

**“We do not ask that you come to our village bringing us water, but support and opportunity. We are teaching each other how to better our crops... setting an example for our children through what we are doing together.”**

*Semilla Nueva Partner Farmer Reyna Margarita Ramirez advocates for ComAgros before the mayor of her department of Champerico*

Local governments win by getting a lot of impact for their small budgets, and farmers win by getting to take over the leadership of their farmer to farmer groups, plus ensuring their presence for the long-term. These kind of win-win results stem from years of hard work supported by Rotary, the Inter-American Foundation, the Conservation, Food and Health Foundation, and many others. We hope that this new model of development continues to grow and set an example for local institutions.

**Truly  
Sustainable  
Development**

**It's all about  
Feedback Loops**



*"We are very content to see farmers getting involved more and more over time. We want the program to be theirs. We have had a bad habit of [giving handouts] and to get out of that will be hard. But it is worth it, and there are many things we can do to help the families in our municipality together."*

**The Mayor of Champerico, Guatemala**

## QPM Effectiveness Study

An effectiveness study in nutrition takes a food or supplement already proven successful under clinical conditions and tests it in daily conditions, taking into account non-biological factors such as community acceptance, culture, and food preparation.

# Proving Potential to Fight Malnutrition

Quality Protein Maize (QPM) is a powerful tool in the fight against malnutrition, but few people – from corn farmers to policy makers – are fully aware of its potential. No one had ever proved its impact quantifiably before in Central America, but years of building connections with corn farming families, top research institutions, and the Guatemalan government placed Semilla Nueva in a prime position to change that. In early 2015, with support from Harvard's T. H. Chan School of Public Health and Texas A&M's Center for Conflict and Development, we designed and launched the world's largest study ever undertaken to prove the effectiveness of QPM to combat malnutrition and improve health.

The study involved over 1,000 eligible families with children under the age of two in nearly 40 villages in the southern coast of Guatemala, reaching beyond Semilla Nueva's existing program areas to ensure a sample size large enough to provide conclusive results. Jennifer Brito, our Food Security and Nutrition Program Coordinator, Lucia Siquin, a leading expert in anthropomorphic measurements, nearly a hundred local leaders, and our entire field staff worked tirelessly to carry out the study successfully. They recruited families and delivered seed to provide enough corn for the family's consumption for a year (either QPM or normal corn). Families weren't told whether they received QPM or normal corn, and as they consumed what they grew, their children were measured quarterly for a year to quantify the impact. A direct challenge to the study was one of the most severe droughts in decades, severely decreasing farmers' yields.

Strong evidence that QPM is a viable solution to combat malnutrition for rural families can help spur large-scale change in Guatemala. Our hope is that by reinforcing the existing international studies on QPM with a locally implemented study we will begin to see far more support for QPM from farmers, other development organizations, local companies, and the government. This could entail including QPM in national nutrition or food aid programs, developing public awareness campaigns to heighten consumer demand, or even incentivizing seed companies to produce and sell QPM to the public.

Special thanks to the Texas A&M Conflict and Development Center for making this work possible. We are eager to release the results of our study at the end of 2016!

The Semilla Nueva, Harvard T. H. Chan School of Public Health-backed QPM Effectiveness Study is a double-blind study measuring the impact of eating QPM vs. normal corn on the growth and development of children under 2 years of age.

**Photo: Lucia (left) and Jenn (right) measure 16-month-old Jefferson with his mother Idalia as she holds his hand.**

47% of Guatemalan children are stunted in growth



Parents don't know their children are malnourished



Institutions have no proof that QPM will help citizens

# A National Collaboration to Reach Every Family with Biofortified Crops

Despite years of work, hundreds of projects, and billions of dollars, Guatemala has risen from the 6th to the 3rd most malnourished country in the world since Semilla Nueva was founded. It is time to ask, how can we utilize the knowledge and resources spread around the country to make a more efficient impact on families' nutrition? How can we unite the various players in rural development to tackle an increasingly pressing problem?



In 2015, after two years of cultivation and discussion, Semilla Nueva and 13 partner organizations launched the Plataforma BioFORT, an alliance dedicated to sharing information and ideas to scale biofortified crops across Guatemala. The goal: inform and train participating organizations on the benefits of biofortified crops and help them reach farmers with seeds and ideas across the country. Partner organizations include local universities, international NGO's, and the Guatemalan Ministry of Agriculture, with the Guatemalan Institute of Agricultural Science and Technology (ICTA) and HarvestPlus providing years of experience and leadership.

Members meet quarterly, some donning suits while others arrive in jeans and sombreros. The meetings are filled with analysis of new seeds, strategies for distributing them, and even talks about new public policies and strategies to achieve them. By the beginning of 2016, the Platform had helped launch ICTA B9 (mentioned on page 4), a new high iron bean seed, and a new orange sweet potato high in vitamin A. The seeds will reach close to 5,000 families over the course of the year.

Guatemala has 780,000 families who produce the corn and beans that feed 16 million people. We will never be able to reach them alone. The Platform is an example of Semilla Nueva at its best, helping create the opportunity where many others can find new solutions and make a powerful difference. Through these collaborations we have a chance to do something that we never could do alone—give every family in Guatemala access to the kind of diet that enables a healthy and full future.

## Partner Organizations



Learn more about the project at [Facebook.com/biofortguatemala](https://www.facebook.com/biofortguatemala)

# How Quick-Growing Rice is Turning Lost Land into Profit

In 2014, Semilla Nueva Experimental Farm Coordinator Noé Estrada noted a problem. Every year, certain lower parts of our farm flooded, destroying our sesame crop. Nearly 100,000 farmers in southern Guatemala grow sesame in the second half of the rainy season, and recognizing that sesame cannot tolerate such wet conditions, Noé began to consider the potential of an alternative crop that could fit in this three-month window and could survive these waterlogged conditions. Then it hit him. Noé had just heard of a new variety of rice that grew in just 90 days - far less time than normal rice. Testing the crop proved a major success, and brought in hundreds of dollars of revenue on a piece of land we would otherwise have abandoned. After discovering these promising results, nine farmers tried the strategy on their land in 2015.

Andres Abelino is a leader in his community, and like nearly all of the regions' farmers, had never grown rice before. However, when he visited the Semilla Nueva Experimental and Training Center and saw rice growing on boggy, previously abandoned land, he saw something his community could use. With the support of Semilla Nueva's field technician Hugo, he decided to take the risk and try the new idea himself, planting 13 pounds of seed in August of 2015. By Christmas time, he had hundreds of pounds of extra food, and \$80 profit to pay for three months of schooling for his son.

Rice is not just additional income, but an insurance policy. When tropical storms destroyed much of farmers' sesame crops in 2015, farmers like Andres had an extra crop that could thrive in excess water. With increasingly unpredictable climates faced by rural communities, crop diversification strategies like our fast growing rice can not only improve rural livelihoods but guarantee food will be on the table. In 2015, eight other farmers converted previously idle marshlands into extra earnings between \$50 and \$250! With Semilla Nueva staff teaching farming families to promote seed sharing, we expect hundreds of families to get access to this new technology in the coming years.

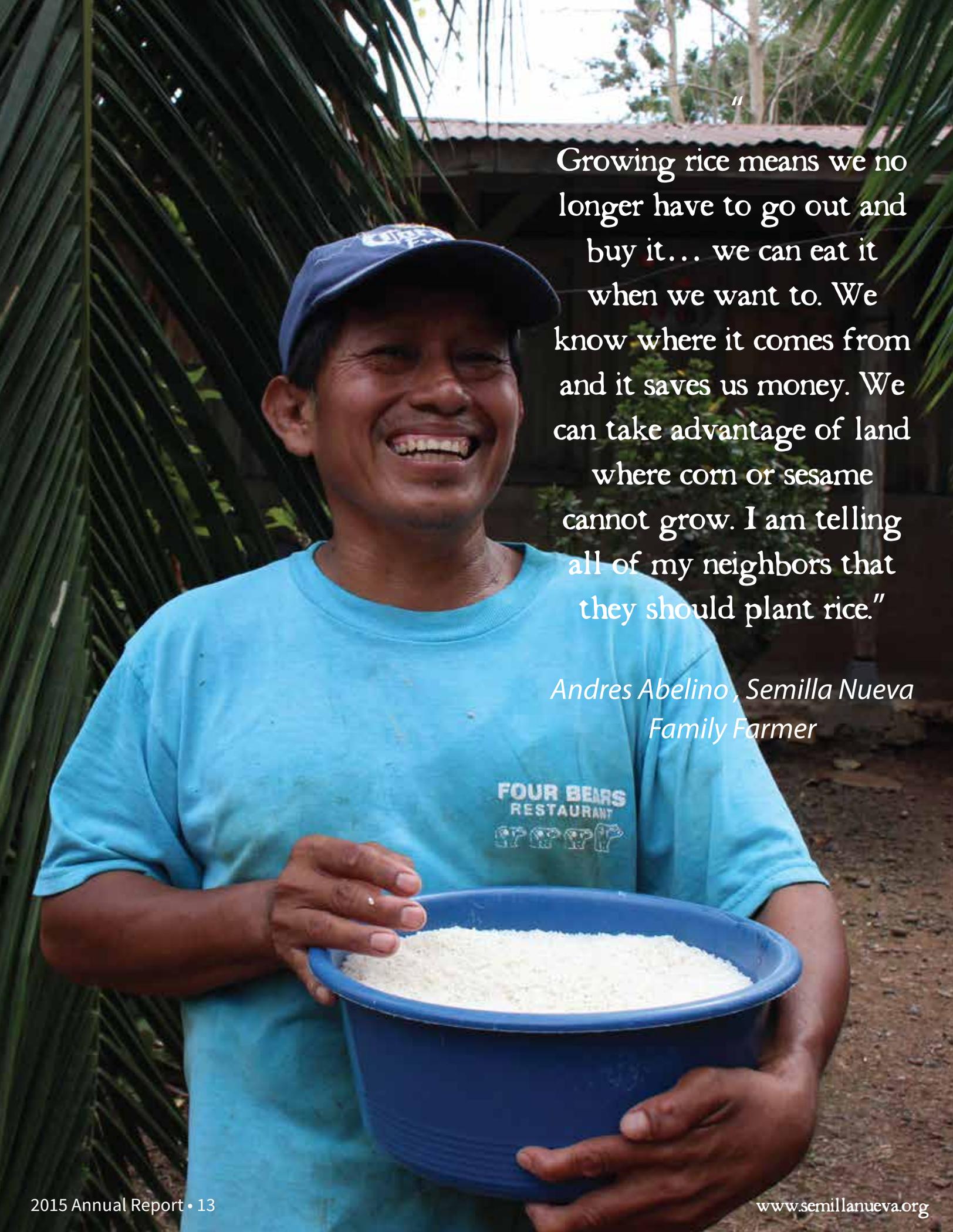


## Discovering Rice at the 2015 National Conference

Farmers from across southern Guatemala and participants from across the country gathered to learn about the benefits of short-duration rice and see the crop firsthand.



**IN 2015  
QUICK GROWING  
RICE  
EARNED  
THE AVERAGE  
FARMER  
AN EXTRA  
\$150  
IN INCOME**



“

Growing rice means we no longer have to go out and buy it... we can eat it when we want to. We know where it comes from and it saves us money. We can take advantage of land where corn or sesame cannot grow. I am telling all of my neighbors that they should plant rice.”

*Andres Abelino, Semilla Nueva Family Farmer*



# Partners & Supporters of the Year

## INDIVIDUALS

Steve Hodges  
 Bill English  
 Jennifer Paterson Weisenthal  
 John Davis  
 John Gulley  
 Cory Brestler  
 John & Jan Wilczynski & Chavez-Wilczynski  
 Mike Sieler  
 Andrea Thornton  
 Terry Jung  
 Joe Bowen  
 Janet & Gary Worthington  
 Moorea Seal  
 A J Balukoff  
 Don & Cecelia Lojek  
 John Trone  
 Paula & John Warren  
 Vicki & Greg Wonacott  
 John Lodal  
 Jerry Brady  
 Laurie Zuckerman  
 Terry & Julia Bowman  
 Todd & Karry Fischer  
 Michael Jones

Kelly Olson  
 Judy & Frank Lara  
 David & Lynn Devaney  
 Laura DeVargas  
 Andrew Gunther  
 Bryan Lubbers  
 Oliver Russell & Associates  
 Daniel Scott  
 Russ Stoddard  
 Ronda Doperalski  
 James Bowen  
 John Bowen  
 Kathleen & Ben Simko  
 Mark Masarik  
 Thomas Halbach  
 Ken Howell  
 Donna Jacobs  
 Neil & Gail Summers  
 Dawn Hickman  
 James Bowen  
 Michael Markley  
 Ruth & Mike Paquin  
 Gwen & Jim Brandstetter  
 Ric & Kathy Gale  
 George Weissbeck  
 Noah Bronstein

Greg Simonds  
 Kevin & Pam Storms  
 Lauren McEwen  
 Mowbray & Teresa Brown  
 Matt & Michelle Parella  
 Ryan Shea  
 Marshall Baker  
 Debra & Gustav Barkett  
 Katrina Barlow  
 Janet & Russell Buschert  
 Malena Doyle  
 John Farrell  
 Anne Flickinger  
 Marvin Henberg  
 Richard Keisker  
 Sally & Con O'Keeffe  
 Michael J. Sieler Jr.  
 Katherine Stearns  
 Pamela Thibeau  
 Robert Vestal  
 Darren Yondorf  
 Abigail McCoy  
 Jacqueline McGeorge  
 Liz Hall  
 Jennifer Deroin  
 Joseph Dondero

Sharlene Green  
 Marty Leach  
 Bill Mauk  
 Dana Stokes  
 Erin Vranas

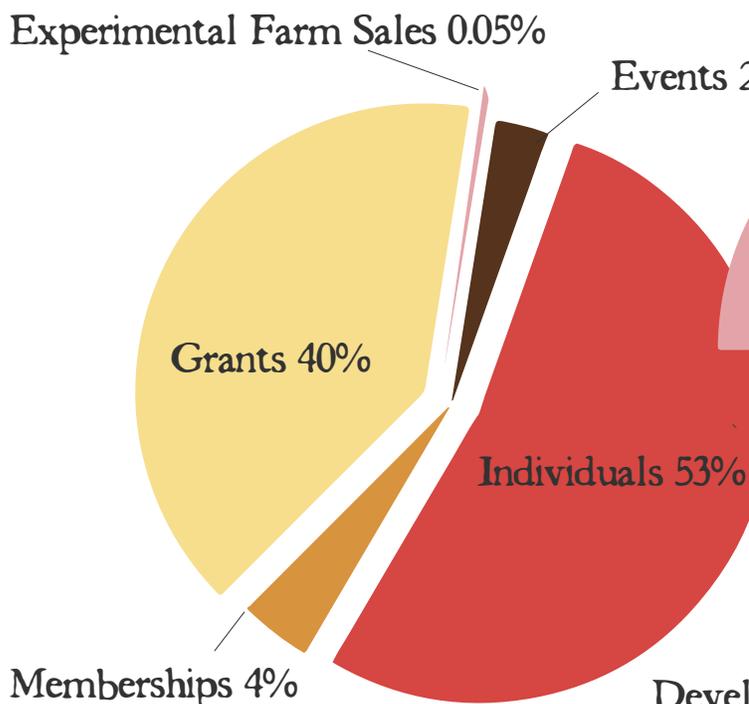
## PARTNER ORGANIZATIONS

Inter-American Foundation  
 Rotary International  
 Miracles in Action  
 Conservation, Food & Health Foundation  
 Texas A&M Conflict & Development Center  
 HarvestPlus LAC  
 Ashoka  
 Guatemala Hope  
 Presbyterian Hunger Program  
 Idaho Women's Charitable Foundation  
 Guido & Elizabeth Binda Foundation  
 Trinity Episcopal Church

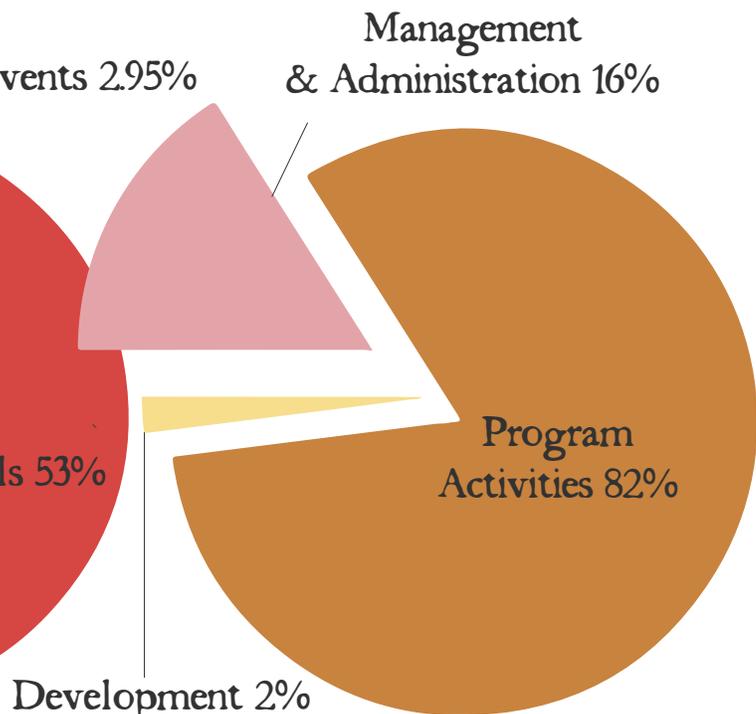
# Financial Summary

Use of Operating Funds	2013	2014	2015
Management & Administration	\$22,181	\$21,669	\$62,903
Program Activities	\$125,685	\$137,378	\$322,640
Development	\$26,215	\$17,756	\$6,257
<b>TOTAL EXPENSES</b>	<b>\$174,081</b>	<b>\$176,803</b>	<b>\$391,800</b>
Operating Revenue	2013	2014	2015
Individuals	\$27,733	\$43,919	\$201,321
Events & Campaigns	\$20,313	\$22,771	\$11,081
Grants	\$123,124	\$225,830	\$148,874
Memberships	\$6,824	\$8,846	\$14,162
Experimental Farm Sales	\$1,509	\$1,012	\$184
<b>TOTAL REVENUES</b>	<b>\$179,503</b>	<b>\$302,378</b>	<b>\$375,622</b>

## Operating Revenue



## Use of Operating Funds





We fight for more nutritious crops - a better start for the next generation of Guatemala

Thank you for making this possible.

