

Basic Information

Grant title

Better Corn Guatemala

Type of Project

Humanitarian Project

Address community needs and produce sustainable, measurable outcomes

Primary Contacts

Name	Club	District	Sponsor	Role
Erin Yturri	Boise Southwest	5400	Club	International
Edward Farrington	Guatemala de la Ermita	4250	Club	Host

Committee Members

Host committee

Name	Club	District	Role
Paolo Melini	Guatemala de la Ermita	4250	Secondary Contact
Alvaro Gonzalez	Guatemala de la Ermita	4250	Secondary Contact
Hubert Hirschi	Guatemala de la Ermita	4250	Secondary Contact

International committee

Name	Club	District	Role
John Verity	Boise Southwest	5400	Secondary Contact International
John Hanrahan	Boise Southwest	5400	Secondary Contact International

Do any of these committee members have potential conflicts of interest?

No

Project Overview

Tell us a little about your project. What are the main objectives of the project, and who will benefit from it?

This project will work to increase the income of 10,000 farmer families through access to higher yielding, more nutritious corn seed, and increase the incomes of 30 farmer families through assisting them in producing this seed. This project will support three local organizations, social enterprise Semilla Nueva and two farming cooperatives, ATESCATEL and APALH, in training farmers in the production of biofortified corn seed, purchasing, processing, and bagging this seed, and then selling it to farmers. Through the sales of seed, the project will be sustainable in the long-term, as each organization will use funds from sales to reinvest in more seed production in the years after the project ends.

Areas of Focus

Which area of focus will this project support?

Economic and community development

Measuring Success

Economic and community development

Which goals will your activity support?

Building the capacity of entrepreneurs, community leaders, local organizations, and community networks to support economic development in impoverished communities; Developing opportunities for productive work; Reducing poverty in underserved communities

How will you measure your project's impact?

Measure	Collection Method	Frequency	Beneficiaries
Other Income for Farmer families producing Corn	Surveys/questionnaires	Every year	2500+
Other Improve nutritional Consumption	Surveys/questionnaires	Every year	2500+
Other Income for farmer Families producing seed	Grant records and reports	Every year	20-49
Other Farmer Families trained in corn production	Grant records and reports	Every year	500-999

Do you know who will collect information for monitoring and evaluation?

Yes

Name of Individual or Organization

Semilla Nueva

Phone

Email

Address

Briefly explain why this person or organization is qualified for this task.

Semilla Nueva has already developed a methodology for evaluating increased yields and income from new seeds through a combination of digital recall questionnaires and participatory yield trials. Semilla Nueva's staff visit farmers who have planted both the biofortified seeds promoted through this project on part of their field, and their previous seeds on other parts of their field. Staff visit at different stages of corn growth to ensure that both seeds were planted at the same time and given the same treatment, as well as to determine the costs for growing the corn. At harvest, samples of both fields are harvested to determine the difference in seed yield. All data is statistically analyzed to ensure proper collection and investigate statistical anomalies. A similar practice is used to visit farming families who have purchased seed to determine the amount of more nutritious corn they will consume over the course of the year after harvest.

Location and Dates

Humanitarian Project

Where will your project take place?

City or town

Guatemala (Rural areas)

Country

Guatemala

Province or state

When will your project take place?

2019-10-15 to 2021-10-14

Participants

Cooperating Organizations (Optional)

Name	Website	Location
Semilla Nueva	www.semillanueva.org	7a avenida 14-44, zona 9, Guatemala Guatemala Guatemala
Cooperative Agricola Integral Atescatel RL		Barrio La federal Z. 0 Atescatempla Guatemala
Association de Productores Agricolas Laguna del Hoyo (APALH)		Aldea Los Terrones Monjas Guatemala

Supporting Documents

Do any committee members have a potential conflict of interest related to a cooperating organization?

No

Why did you choose to partner with this organization and what will its role be?

Semilla Nueva is the first organization in the world to sell high protein quality and high zinc corn seed. Their vision is to help change the diets of all of Guatemala, and increase farmer incomes in the process. They are a non-profit organization, and their goal is to get all of Guatemala’s seed producers to help farmers make more money and improve their nutrition. They demonstrated that they aren’t just focused on their own goals, by having helped ATESCATEL and APALH, Non/profit organizations as well, begin to produce and sell biofortified seed as well—which they’ve done without charging the organizations anything. Instead they provide more assistance based on the two farming cooperatives ability to reach more farmers and improve their seed quality. Over 2016-2018, Semilla Nueva was the partner for a Rotary Global Grant to reach over 2,000 families with more nutritious corn seed, and surpassed Rotary goals. For a Global Grant that was \$99,000, improving the incomes and health of over 2,000 families means that the cost per family affected was less than \$50, which is very cost effective compared to other international grants.

ATESCATEL and APALH were the first grassroots farmer cooperatives to begin competing with private companies by growing and selling commercial corn seed in Guatemala. They’ve sold corn seed since 2009, reaching up to 3% of the seed market in their peak years. Both organizations have direct relationships with the communities they serve and function similarly to a cooperative. Members receive inputs on credit and technical support, and then produce corn and bean seeds that they sell to the organization, who then markets the final product. ATESCATEL and APALH have internal volunteer committees (i.e. credit committee, administration committee, education committee, etc.) which help manage the farming members, along with volunteer leadership who are all experienced members of the community and elected by the organization. Currently, ATESCATEL is comprised of roughly 74 members covering 5 communities, APALH has 92 members from 4 communities. Additionally, ATESCATEL employs 12 female community members, as they were founded by two women, to work at their processing plant to package and treat the seed that they sell. With the addition of new community farming organizations with the implementation of this project, the impact on local organization and local communities will continue to expand.

Semilla Nueva will be the lead implementing partner. Semilla Nueva will:

- Produce, market, and sell biofortified corn seed, with seed production costs covered through this project. They will then reinvest all of their sales revenue into additional seed production the following year, and continue this practice going forward as specified in the MOU.
- Their production team will provide parental seed to ATESCATEL and APALH to allow them to also produce commercial biofortified seed. Semilla Nueva will provide quality control assistance to ATESCATEL and APALH
- Semilla Nueva will lead monitoring efforts for the grant, providing data and reports to the Ermita and Boise Southwest committees.

Partners (Optional)

List any other partners that will participate in this project.

MAGA—The Guatemalan Ministry of Agriculture will certify the quality of the seed produced by all three organizations, and ensure it is produced with best practices and in an environmentally responsible way.

Rotarian Participants

Describe the role that host Rotarians will have in this project.

The committee from the Rotary Club of Ermita will provide direct supervision of the project, reviewing costs quarterly, and reviewing milestones and goals biannually. It must be noted, however, that due to the highly technical nature of this grant, activities will be highly delegated to the three cooperating partners. The club will host presentations from Semilla Nueva, ATESCATEL or APALH every six months in the club’s board of

directors or general meetings for updates on the project, and the committee will review reports and provide summaries to the rest of the club. The Ermita committee will also obtain information to fill out all reports to Rotary international. Members of the club and the committee will visit the project at a minimum of every 6 months, meeting with farmers producing seed and farmers purchasing seed, as well as supervise, audit, and/or review the progress of the three partner organizations. The committee will meet quarterly with the committee of international Rotarians from Boise Southwest.

Describe the role that international Rotarians will have in this project.

Boise Southwest Rotarians will visit the project once, visiting seed production sites, farmers who are purchasing seed, and all three implementing partners. They will also participate in biannual meetings with the implementing partners and Ermita Rotarians to review budgetary expenditures, progress towards goals, and will be available as needed should problems arise.

Budget

What local currency are you using in your project's budget?

The currency you select should be what you use for a majority of the project's expenses.

Local Currency	U.S. dollar (USD) exchange rate	Currency Set On
GTQ	7.4	06/06/2019

What is the budget for this grant?

List each item in your project's budget. Remember that the project's total budget must equal its total funding, which will be calculated in step 9. Every global grant includes a match of at least \$15,000 from The Rotary Foundation's World Fund. Project budgets, including the World Fund match, must be at least \$30,000.

#	Category	Description	Supplier	Cost in GTQ	Cost in USD
1	Personnel	Production Coordinator	Semilla Nueva	300000	40541
2	Travel	Vehicle Lease	Codaca	115000	15541
3	Travel	Fuel	Versatel	84000	11351
4	Supplies	Unprocessed seed	(Varios)	990000	133784
5	Operations	Transportation	(Various)	85500	11554
6	Supplies	Labels	MAGA	33000	4459
7	Operations	seed storage	(Varios)	34000	4595
8	Operations	Seed Processing	Proseca	96250	13007
9	Personnel	Sales technicians	APALH & ATESCATEL	192000	25946
10	Personnel	Production Oversight	Semilla Nueva	120000	16216
11	Operations	Seed Transport	VERSATEC	48000	6486
12	Travel	Fuel	APALH & ATESCATEL	72000	9730
13	Supplies	Various Materials	(Varios)	16000	2162
14	Operations	Publicity	(Various)	8000	1081
15	Operations	Radio Publicity	(Various)	12000	1622
Total budget:				2205750	298075

Funding

Tell us about the funding you've secured for your project. We'll use the information you enter here to calculate your maximum possible funding match from the World Fund.

#	Source	Details	Amount (USD)	Support*	Total
1	Cash from Club	Guatemala de la Ermita	1,000.00	50.00	1,050.00
2	Cash from Club	Boise Southwest	44,885.00	2,244.25	47,129.25
3	Cash from Club	Boise Sunrise	7,000.00	350.00	7,350.00
4	Cash from Club	Meridian	500.00	25.00	525.00
5	Cash from Club	Salmon	750.00	37.50	787.50
6	Cash from Club	McCall (Payette Lakes)	1,000.00	50.00	1,050.00
7	Cash from Club	Santa Fe	14,400.00	720.00	15,120.00
8	Cash from Club	Fort Collins	5,000.00	250.00	5,250.00

*Whenever cash is contributed to the Foundation to help fund a global grant project, an additional 5 percent is applied to help cover the cost of processing these funds. Clubs and districts can receive Paul Harris Fellow recognition points for the additional expense.

How much World Fund money would you like to use on this project?

You may request up to 37,268.00 USD from the World Fund.

Funding Summary

Cash contributions:	74,535.00
Financing subtotal (matched contributions + World Fund):	74,535.00
Total funding:	74,535.00
Total budget:	298,075.00

Sustainability

Humanitarian Projects

Project planning

Describe the community needs that your project will address.

This project will address Guatemala's most pressing barrier to development: rural poverty. Guatemala is one of the most populous countries in Central America with a GDP per capita roughly half the average for Latin America and the Caribbean. Moreover, more than half the population is below the national poverty line, and 23% of the population lives in extreme poverty. Unfortunately, corn farmers are among the most affected by rural poverty but struggle to find a way to improve their income. While corn is the basis of the diet and one of the highest yielding crops to grow, it is also one of the cheapest crops to sell: making profit margins slim.

The vast majority of corn farmers are not part of cooperatives or any formal group, although a large percentage were part of cooperatives once that failed. There is a general aversion to organized selling of maize as a result. Income levels of corn farmers are low--farmers will break even or lose money during bad years, while profits of \$200-2,000/yr can be expected during the best years, depending on the economic level and land size of the particular farmer. More than half of farmers supplement their farm earnings with some kind of other employment or business, whether a family store, tortilla stand, or working as a laborer in

plantations, or as unskilled labor in other local businesses. Farmers principal complaints are the low price of corn, the high price of inputs (seeds and fertilizers), and climate change. While small scale irrigation systems are used by approximately 10% of farmers, many have irrigation systems but don't use them, given that the cost of gasoline fuel for the irrigation pumps is more than the profit from additional corn they could grow.

Guatemala's poorest populations are dependent on corn as a dietary staple, often accounting for over 50% of daily caloric intake. Corn's low levels of nutrients lead nearly half (49.8%) of Guatemalan children to suffer from chronic malnutrition, trapping them in poverty and illness. Inadequate diets early in life have long-term and permanent consequences for children both physically and cognitively. Research shows that chronically malnourished children spend less time in school, earn 20% lower incomes later in life and are more susceptible to illness.

Hundreds of NGOs and international development organizations have spent decades fighting poverty and malnutrition in Guatemala—and yet it is currently the world's fifth most malnourished country. Additionally, with a growing population that is not expected to slow, market demand for corn continues to rise year after year, with an average annual production increase of 2.5% over the last decade. Although hundreds of millions are spent annually on crop diversification efforts in Guatemala, corn is still the country's most important crop and this trend is unlikely to change as the population continues to grow. Even with Guatemalan farmers increasing production of corn, Guatemala continues to be an importer of corn. Additional production of corn could help raise farmer incomes and keep money in the local Guatemalan economy.

Testing of new, commercial, biofortified seeds in 2015-2017 showed that these seeds could help farmers increase their incomes by more than 13%, or \$168 on average. Yield data from more than 30 farmers who purchased conventional seeds and also tried the new improved seed showed a 11%-13% increase in yield on average. A pilot in 2016-2018 with implementing partner, Semilla Nueva, showed that these seeds could be produced and sold through local agrostores, creating a sustainable model to get these seeds into the hands of thousands of farmers. With this proof of concept, this project will focus on helping additional organizations sell these seeds, and reach a total 11,250 farmers in the process.

How did your project team identify these needs?

Over the course of 2019, three separate visits were made by Ermita and Boise Southwest Rotarians to visit corn farmers who purchased seed from Semilla Nueva, ATESCATEL, and APALH, visit community leaders, and meet the teams of all three implementing organizations. A community needs assessment was completed, and is included with this proposal. Additional research was provided by Semilla Nueva—and meetings were held between the international club committee and Rotarians who sit on the Semilla Nueva board of directors and have overseen the organizations growth. The combination of field visits and additional information were used to create this grant application.

How were members of the benefiting community involved in finding solutions?

This project was designed with input from the farmer groups supported by previous Global Grants. In 2013-2015 (25984 and 1414787), farmers ran over 350 experiments on new agricultural technologies supported by Semilla Nueva. Several of these technologies, such as adoption of the crop, Chaya, or ending the practice of field burning, were adopted by over 1,000 estimated farmers. But the technology that most interested farmers were trials of new seeds. In December 2015, the farmer leadership committee was asked where new projects should focus. With each community having just completed a trial of new potential seeds, all of which were biofortified and several of which increased yields ~10% over similar seeds in the market, the recommendation was a unanimous. New projects needed to find a way to bring access to better seeds into the communities. Seed companies were perceived as not focusing on the interests of farmers, and the leadership committee asked to participate in building a nonprofit seed company to serve farmers' needs better. The income from better seed provided a far more tangible and direct impact for the communities than the environmental and nutritional focus that previous Global Grants had provided up that point.

Through a 2016-2018 Global Grant, new seeds were tested, produced, piloted through hand-out programs, and then finally sold commercially to build a self-sustaining project. Since then, several members of the community leadership committee have used their trainings from the first Global Grant to become directly involved in contracted seed production, earning commission from sales, and leading marketing efforts. Coordinator, Romulo Gonzalez, for example, is one of two community leaders who have now opened stores

primarily to sell Semilla Nueva's brand of seed. Coordinators also led numerous marketing surveys and focus groups, which led to the creation and launch of Semilla Nueva's Fortaleza brand as well as decisions on pricing of the seed. By keeping participating farmers deeply involved, the 2016-2018 Global Grant (1527733) tried to maintain the spirit of the original decision to launch a seed venture—providing the best service to help farmers escape poverty and malnutrition. Through the grant, Semilla Nueva launched sales in December 2017, and by May 2018 sold 1,058 bags, completely exhausting their inventory and capturing approximately 1% of Guatemala's total seed market.

Beyond the historical involvement of farmers in the creation of the methodology of this project, the project was also negotiated between both involved Rotary clubs, Semilla Nueva, and new partners ATESCATEL and APALH. The leadership of both ATESCATEL and APALH is entirely made up of local farmers. Both organizations had nearly a decade of experience in producing and selling non-biofortified seeds and strong relationships with local farmers and agricultural stores. Both ATESCATEL and APALH expressed interest in providing a higher yielding seed to the farmers they serve, as well as their association members. In the past two years, in partnership with Semilla Nueva, these two farming associations produced and sold 12.5 mt of biofortified seed—increasing their sales by nearly 20% and improving the diets of an estimated 41,021 people.

How were community members involved in planning the project?

ATESCATEL and APALH leadership selected the seeds to be used in the project after two years of their own testing. They also determined their sales goals, strategies, and price points—as well as determined the funding that would most assist them in reaching those goals. During visits from Boise Southwest and Ermita Rotarians in 2019, these goals and budgetary needs were re-established with multiple members of their board of directors, member farmers, and seed processing staff. In terms of Semilla Nueva—multiple farmers were visited and their needs were recorded in the Community Needs Assessment. In the region of the southern coast, the need for a secondary seed with larger grains and a whiter color was made explicit. Farmers also requested that the project ensure that more seed is produced and placed on the market earlier. Other than that, farmers deeply appreciated the model that was supported in the previous Global Grant, and requested that Rotary ensure that the project could continue into the long-term.

Project implementation

#	Activity	Duration
1	Contracted seed production Coordinator visits potential seed producing farmers, train farmers on seed production and supervises planting, growth and harvest	9 months
2	Contracted seed production technician and seed production coordinator supervise planting, management, and harvest of ATESCATEL and APALH seed	9 months
3	ATESCATEL, APALH, and Semilla Nueva sales technicians plant demonstration parcels and host field days	5 months
4	Seed transportation, processing, bagging and shipping of final product to distributors and agro-dealers	3 months
5	Off-season production of basic seed and preparation for following year's seed production	5 months
6	Surveys of farmers planting seed to determine impacts on family economics and consumption	3 months
7	Contracted seed production coordinator visits potential seed producing farmers, trains farmers on seed production, and supervises planting, production, and harvest of seed for Semilla Nueva	7 months
8	Contracted seed production technician and seed production coordinator supervise planting, management, and harvest of ATESCATEL and APALH seed	7 months
9	ATESCATEL, APALH, and Semilla Nueva sales technicians plant demonstration parcels and host field days	5 months
10	Seed transportation, processing, bagging and shipping of final product to distributors and agrodealers	3 months

Will you work in coordination with any related initiatives in the community?

Yes

Briefly describe the other initiatives and how they relate to this project.

There can be value in working with other groups including governments, nonprofit organizations, and private companies.

Yes—there are two kinds of corn seeds. Commercial hybrids have higher yields, but must be purchased annually. About half of Guatemala’s corn is produced using commercial hybrid seed, which can offer far higher incomes for farmers. Subsistence farmers normally use open-pollinated seed, which can be replanted year after year, but has far lower yields. A new government program from the Ministry of Agriculture, called Seed for All, is helping local municipal governments produce open-pollinated seed to hand out to subsistence farmers. This government program will target a different demographic of farmers, and will require continued government funding to be successful. Given that the project already has full funding for the coming years, negotiations were done between leaders of Semilla Nueva, ATESCATEL, APALH, and the scientists who designed the more nutritious seeds used in the projects from CIMMYT and Harvest Plus. In 2017, a commitment was made from the Guatemalan government to change the program to only focus on more nutritious, biofortified seeds. In this way, our grants efforts will help commercial farmers who need high yielding, commercial seeds to increase their incomes and improve their health, while the government program will focus on improving yields and nutrition for subsistence farmers.

Please describe the training, community outreach, or educational programs this project will include.

1) Farmer Training and Outreach: The Global Grant administered in 2016-2018 showed that the most effective means to increase farmers' adoption of new biofortified seed was through sales techniques used by large international seed companies. Seed companies work with community leaders to run demonstration parcels on their fields. Farmers try a new seed as well as their existing seed. When the corn reaches maturity and during harvest, community members are invited to walk the parcel and see both seeds. Semilla Nueva will host at least 40 demonstration parcels per year, and an equal number of field days—totaling 80 of each over the span of the project. ATESCATEL and APALH will host a total of 14 demo parcels and 14 field days over the course of the project to educate local farmers on the potential of the new seeds. These demo parcels and field also provide opportunities to train farmers on new growing techniques, adequate use of inputs, strategies for confronting droughts and climate change and other relevant issues. In total, 2,150 farmers should be educated through these methods during the two years of the project.

2) Training for ATESCATEL and APALH Seed Production: ATESCATEL and APALH have produced open-pollinated varieties before, but have very limited experience producing commercial hybrid seed, which is much more technically challenging. After purchasing and testing the seed sold in the previous Global Grant, both organizations requested to visit a Semilla Nueva production site. Upon seeing the technical complications in producing the seed, both organizations requested technical assistance during the seed production process. This project will cover a seed production technician who will work full-time to assist ATESCATEL and APALH in gaining this technical ability as well as a seed production coordinator who will oversee technical quality of Semilla Nueva's seed production and provide additional assistance to ATESCATEL and APALH during times of high need. Trainings will be done directly in the field with members of the ATESCATEL and APALH farming associations.

How were these needs identified?

As mentioned above, the 2016-8 Global Grant showed that farmers' biggest motivator is increased income, and that seeing a new seed's yield and learning about its price are the most important steps to lead them to purchase the seed. Semilla Nueva led surveys in 2018 to ask farmers who purchased the new seed where they learned about it, 94% commented they learned about the seed through a field day, a sales technician or a friend or family member who had learned about it from one of those two sources. As such the project will work to maximize the number of demo parcels and field days, allowing more than 2,000 farmers to be trained on the new seed and other related agricultural techniques. Farmers also expressed that their biggest reason for migrating to cities or the US was due to lack of income. Farmers' required additional income for medical expenses, education (given the lack of public high school education in Guatemala), and for increased business investments. Corn was nearly all farmers' primary income source and food source.

What incentives (for example, monetary compensation, awards, certification, or publicity), will you use, if any, to encourage community members to participate in the project?

The most important aspect of this project is how our new seed (HB18 or F3, depending on if ATESCATEL, APALH, or Semilla Nueva is selling it) can increase farmer income, since this is what will drive farmers to use the new seed. To understand the potential increased income and the scale of adoption, we will use market segmentation information provided by Semilla Nueva and data on increases in income provided from their last three years of experimentation and sales in the previous Global Grants. These numbers were largely congruent with the farmers interviewed during the community needs assessment. Farmers who buy seed can be divided into three groups, high-segment, medium segment, and low segment, based on their income and farm yields. High segment farmers purchase the best seeds in Guatemala (often at costs of \$170/bag) and have far higher levels of income. They will not be the focus of this project. Instead this project will focus on medium and low-segment farmers, since they represent the poorer and most in need families who buy seed. 68% of Guatemala's commercial maize is produced by low and mid-segment farmers.

Low-Segment Farmers

- Average landholding: 1.1 Ha
- Average income: < \$1,000
- Average investment: \$278/Ha
- Percentage of low-tier seeds in total hybrid market: 27%
- Average cost per seed bag: \$52.08 (vs. \$69.44 for Fortaleza F3)

Low-segment farmers typically use low-tier hybrid seed but may use open-pollinated seeds during times of

economic stress. The current low-tier seeds are all based on ICTA HB-83, an inexpensive to produce, double-hybrid launched 35 years ago in 1983. In trials with farmers using current seed HB18/F3, yields were 10% higher, and in scientific trials under controlled conditions yields were 14% higher. Given average yields for low-segment farmers, this additional yield translates to 350-525kg of additional corn/ha. F3/HB18 costs \$17.36 more than the average low tier seed bag for one-hectare worth of seed. Switching to F3/HB18 increases farmers' net income by \$90-149 per bag of seed purchased. This represents a strong value proposition in the segment given its comparative price and higher yields. There are an estimated 30-50,000 low-segment farmers in Guatemala, with incomes of lower than \$1,000/yr, with most being either classifiable as poor or extremely poor.

Mid-Segment Farmers, Mid-Tier Seeds, F3/HB18 Competitive Advantage

- Average landholding: 1.7 Ha
- Average income: \$1-2,000
- Average investment: \$556/Ha
- Percentage of mid-tier seeds in total hybrid market: 41%
- Average cost/bag seed: \$87 (vs. \$69.44 for F3/HB18)

Mid-segment farmers typically use mid-tier seed. The current mid-tier seeds are largely based on genetically improved versions of ICTA HB-83 produced by local seed companies, with some local seed companies selling more recent seeds bred by CIMMYT. Local seed companies include Semillas de Tropic and Valle Verde, which sell 7,000 and 18,000 bags of seed annually, respectively. The mid-segment also includes 10-15,000 bags of seed sold by the former Guatemalan company, Cristiani Burkard, now a Monsanto brand produced in Mexico. Semilla Nueva and partnering organizations' current seed HB18/F3 has yields 5% higher versus the best seed in this tier (CB HS-5G) in controlled scientific trials and 13% higher than average mid-tier seeds in trials with farmers. Further, HB18/F3 had significantly lower rates of disease, ear rot, drought susceptibility, and lodging. Given average yields for mid-segment farmers, this additional yield translates to 188-501 kg of additional corn/ha. HB18/F3 costs \$17.56 less than the average bag of mid-tier seed. Switching to the projects new seed can increase farmers' incomes \$81.5-177.5/ha. Farming families in this segment are estimated with incomes of \$1,000-\$2,000/yr, placing them below the poverty in most cases.

List any community members or community groups that will oversee the continuation of the project after grant-funded activities conclude.

ATESCATEL and APALH are both governed by an elected group of farmers from their communities. They will oversee the continued production and sale of biofortified corn seed from this project after project end. Semilla Nueva will also continue to expand sales of biofortified seed after the end of the project.

Budget

Will you purchase budget items from local vendors?

Yes

Explain the process you used to select vendors.

Unprocessed seed produced by all three implementing partners will be purchased at a standardized an already negotiated rate from small farmers. This rate was reviewed during the February 2019 visit to the project site. The only items purchased from local vendors are the fertilizers and inputs used for promotional parcels by ATESCATEL and APALH. These products have market standard prices with little variations. Semilla Nueva's seed bags, seed transportation costs, and seed transport costs were established before the project through a competitive process in 2018. Invoices for all three services were shared with the Ermita Rotary committee to show that the lowest costs bids were used.

Did you use competitive bidding to select vendors?

Yes

Please provide an operations and maintenance plan for the equipment or materials you anticipate purchasing for this project. This plan should include who will operate and maintain the equipment and how they will be trained.

No equipment will be purchased through this grant. Seed produced through the project with Semilla Nueva will be stored in Semilla Nueva's storage facility before being transported to distributors based on sales demand. Seed produced through the project with ATESCATEL and APALH will be stored in ATESCATEL's storage facility at their processing plant before being transported directly to agrodealers for sales.

Describe how community members will maintain the equipment after grant-funded activities conclude. Will replacement parts be available?

No equipment will be purchased through this grant

If the grant will be used to purchase any equipment, will the equipment be culturally appropriate and conform to the community's technology standards?

No

Describe how the project team will help community members adopt the technology.

No equipment will be purchased through this grant

After the project is completed, who will own the items purchased by grant funds? No items may be owned by a Rotary district, club, or member.

No equipment will be purchased through this grant. As per the MOU signed with each cooperating organization, the funds generated from sale of seed during the period of the project will be reinvested in further seed production or promotion in future years and may not be used for other purposes.

Funding

Have you found a local funding source to sustain project outcomes for the long term?

Yes

Please describe this funding source.

Sales of seed will be used to sustain the project in the long-term. By selling seed to farmers, this project will generate revenue that will be re-invested in the production of additional seed in future years and continue the growth of the project in the long-term. As the table below shows, in the case of Semilla Nueva, the organization will be able to produce and sell 3,000 bags the first year of the project, 5,500 the second year (2,500 produced by the grant, plus 3,000 using funds reinvested from the previous year), for a total of 8,500 bags. By reinvesting the funds generated from sales in the second year, after the global grant, Semilla Nueva will sell an additional 5,500 bags annually—continuing to reach thousands of families without additional support. In the case of ATESCATEL and APALH, given the cooperative model they use, the organizations' primary limitation is not due to capital for production of seed, but rather the need to create demand and produce quality seed. Through the sales staff and promotion funded with the project, they project sales of 1,500 bags of seed in 2020, and 2,500 bags of seed in 2021. By building reputation of the seed they will sell their final year, and will use revenue generated to increase production to 3,520 bags in the final year.

Will any part of the project generate income for ongoing project funding? If yes, please explain.

Yes--the goal of this project will be to help three local organizations produce and sell higher yielding seed to small farming families. All income from the sale of seed will be reinvested in additional production for the year following the grant.

Authorizations

Authorizations & Legal Agreements

Legal agreement

Global Grant Agreement

I confirm and agree to the following:

1. All information contained in this application is, to the best of our knowledge, true and accurate.
2. We have read the Terms and Conditions for Rotary Foundation District Grants and Global Grants ("Terms and Conditions") and will adhere to all policies therein.
3. The grant sponsors ("Sponsors") shall defend, indemnify, and hold harmless Rotary International (RI) and The Rotary Foundation (TRF), including their directors, trustees, officers, committees, employees, agents, associate foundations and representatives (collectively "RI/TRF"), from and against all claims, including but not limited to claims of subrogation, demands, actions, damages, losses, costs, liabilities, expenses (including reasonable attorney's fees and other legal expenses), awards, judgments, and fines asserted against or recovered from RI/TRF arising out of any act, conduct, omission, negligence, misconduct, or unlawful act (or act contrary to any applicable governmental order or regulation) resulting directly or indirectly from a Sponsor's and/or participant's involvement in grant-funded activities, including all travel related to the grant.
4. The failure of the parties to comply with the terms of this Agreement due to an act of God, strike, war, fire, riot, civil unrest, hurricane, earthquake, or other natural disasters, acts of public enemies, curtailment of transportation facilities, political upheavals, acts of terrorism, or any similar cause beyond the control of the parties shall not be deemed a breach of this Agreement. In such an event, the Agreement shall be deemed terminated and the Sponsors shall refund all unexpended global grant funds within 30 days of termination.
5. TRF's entire responsibility is expressly limited to payment of the total financing amount. TRF does not assume any further responsibility in connection with this grant.
6. TRF reserves the right to cancel the grant and/or this Agreement without notice upon the failure of either or both of the Sponsors to abide by the terms set forth in this Agreement and the Terms and Conditions. Upon cancellation, TRF shall be entitled to a refund of any global grant funds, including any interest earned, that have not been expended.
7. The laws of the State of Illinois, USA, without reference to its conflicts of laws principles, shall govern all matters arising out of or relating to this Agreement, including, without limitation, its interpretation, construction, performance, and enforcement.
8. Any legal action brought by either party against the other party arising out of or relating to this Agreement must be brought in either, the Circuit Court of Cook County, State of Illinois, USA or the Federal District Court for the Northern District of Illinois, USA. Each party consents to the exclusive jurisdiction of these courts, and their respective appellate courts for the purpose of such actions. Nothing herein prohibits a party that obtains a judgment in either of the designated courts from enforcing the judgment in any other court. Notwithstanding the foregoing, TRF may also bring legal action against Sponsors and/or individuals traveling on grant funds in any court with jurisdiction over them.
9. This Agreement binds and benefits the parties and their respective administrators, legal representatives, and permitted successors and assigns.
10. If any provision of this Agreement is determined to be illegal, invalid or unenforceable, the remaining provisions of this Agreement shall remain in full force and effect.
11. Sponsors may not assign any of its rights under this Agreement except with the prior written consent of TRF. Sponsors may not delegate any performance under this Agreement without the prior written consent of TRF. Any purported assignment of a Sponsor's rights or delegation of performance without TRF's prior

written consent is void.

12. TRF may assign some or all of its rights under this Agreement to an associate foundation of TRF. TRF may delegate any performance under this Agreement to an associate foundation. Any other purported assignment of TRF's rights or delegation of performance without the Sponsors' prior written consent is void.

13. Sponsors will comply with all economic and trade sanctions, including those implemented by the Office of Foreign Assets Control (OFAC) of the United States Department of Treasury, and will ensure that they do not support or promote violence, terrorist activity or related training, or money laundering.

14. This Agreement constitutes the final agreement between the parties. No amendment or waiver of any provision of this Agreement shall be effective unless it is in the form of a writing signed by the parties.

15. Rotary International (RI) and TRF may use information contained in this application and subsequent reports to promote the activities by various means such as The Rotarian, Rotary Leader, rotary.org, etc. Unless indicated otherwise in writing, by submission of the photos, the parties hereby grant to RI and TRF the worldwide right to publish and use the photos, including but not limited to, in RI and TRF publications, advertisements, and Web sites and on social media channels and to license use to others, including, but not limited to, media outlets and its partners and through RI's online image database, for the purposes of promoting Rotary. By submitting the photos, the parties represent and warrant that all persons appearing in the photos have given their unrestricted written consent to use their likenesses and to license use to third parties.

16. The Sponsors agree to share information on best practices when asked, and TRF may provide their contact information to other Rotarians who may wish advice on implementing similar activities.

17. The Sponsors will ensure that all individuals traveling on grant funds have been informed of the travel policies stated in the Terms and Conditions and have been made aware that they are responsible for obtaining travel insurance.

Primary contact authorizations

Application Authorization

By submitting this global grant application, we agree to the following:

1. All information contained in this application is, to the best of our knowledge, true and accurate, and we intend to implement the activities as presented in this application.
2. The club/district agrees to undertake these activities as a club/district.
3. We will ensure all cash contributions (as detailed in the grant financing) will be forwarded to The Rotary Foundation (TRF) or sent directly to the global grant bank account after Trustee approval of the grant.
4. Rotary International (RI) and TRF may use information contained in this application to promote the activities by various means such as The Rotarian, the RI international convention, RVM: The Rotarian Video Magazine, etc.
5. We agree to share information on best practices when asked, and TRF may provide our contact information to other Rotarians who may wish advice on implementing similar activities.
6. To the best of our knowledge and belief, except as disclosed herewith, neither we nor any person with whom we have or had a personal or business relationship are engaged, or intend to engage, in benefiting from TRF grant funds or have any interest that may represent a potential competing or conflicting interest. A conflict of interest is defined as a situation in which a Rotarian, in relationship to an outside organization, is in a position to influence the spending of TRF grant funds, or influence decisions in ways that could lead directly or indirectly to financial gain for the Rotarian, a business colleague, or his or her family, or give improper advantage to others to the detriment of TRF.

All Authorizations & Legal Agreements Summary

Primary contact authorizations

Name	Club	District	Status
Erin Yturri	Boise Southwest	5400	
Edward Farrington	Guatemala de la Ermita	4250	

District Rotary Foundation chair authorization

Name	Club	District	Status
Marianne Barker	Blue Lakes-Twin Falls	5400	
Julio Villalta Rivera	Real de Minas-Tegucigalpa	4250	

DDF authorization

Name	Club	District	Status
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Legal agreement

Name	Club	District	Status
Erwin Obando Muñoz	Guatemala de la Ermita	4250	
Janet Worthington	Boise Southwest	5400	