

# **Semilla Nueva Standard Report**

## **Second Semester July – December 2021**

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### **Table of Contents**

<b>EXECUTIVE SUMMARY</b>	<b>2</b>
<b>IMPACT EVALUATION</b>	<b>3</b>
<b>SALES, MARKETING, AND PRODUCTION</b>	<b>13</b>
<b>PUBLIC POLICY – COLLABORATIONS</b>	<b>20</b>
<b>RESEARCH AND DEVELOPMENT</b>	<b>24</b>
<b>FINANCE/ADMINISTRATION/HUMAN RESOURCES</b>	<b>27</b>



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## EXECUTIVE SUMMARY

2021 was our fourth year selling biofortified maize seed in Guatemala. It was a critical transition year. On one hand, it showed that our investments in creating strategies to scale are paying off. We've made significant progress in the development of new seeds that will be competitive in the Guatemalan market and elsewhere, successfully incentivized Guatemala's leading national seed company to sell biofortified seed, laid the foundation for public policy with the Guatemalan government, and received positive results from our first third party, nutritional impact study. Continued progress will be the key to substantial growth in the next five years—making possible our goal of saturating the Guatemalan market with biofortified maize and significantly decreasing nutritional deficiencies throughout the national population.

On the other hand, while we reached over 12,000 families with biofortified seed and beat our internal goals by 17%, we continued to see limitations in both our first biofortified seed, F3, and the sales and marketing efforts that we've used to promote it. These limitations may cause a decrease in the rate of our growth in 2022 while we work to launch new biofortified seeds and improve our sales and marketing strategies. Progress in these areas will be critical for our growth over the next two years.

### **Impact Evaluation:**

- Semilla Nueva directly reached a total of 12,663 families with biofortified seed, exceeding our goal by 17%. These numbers do not include the 29,500 families reportedly reached by the Guatemalan government's efforts.
- Farmers who planted Semilla Nueva biofortified seed produced enough grain to make 1.27 billion nutritious tortillas.
- Semilla Nueva's new seed, Fortaleza F5, showed a 148% increase in per area income for farmers in our target farmer segments (\$109 per farmer on average).
- Semilla Nueva's first third party impact evaluation of families using our biofortified seed showed 62-100% of zinc deficient mothers and 0-55% of zinc deficient children under five eliminated zinc deficiency (depending on whether farmers received seed or purchased).
- 64% of farmers who received seed for free reported F3 to be more climate resilient than their traditional seeds vs. 8% who said their traditional seeds were more resilient. For commercial farmers, 48% said F3 was more climate resilient while 44% believed more expensive seeds on the market were more resilient to drought and excessive rain.

### **Sales, Marketing, and Production:**

- Semilla Nueva sold 3,637 bags of our F3 biofortified seed in 2021, a 22% increase over 2020 sales. This was 91% of our 2021 target of 4,000 bags.
- Semilla Nueva's Fortaleza F5 hybrid completed its pre-launch phase. Fortaleza F5 showed 5% higher yield than F3, a 19% reduction in rot and a 35% reduction in atypical plants. F5 will be a modest improvement over F3, and sales will launch in early 2022.
- Semilla Nueva's promotional efforts are still targeting inappropriate farmers, with 47% of field day participants from the incorrect farmer segments.
- Only 39% of farmers who purchased seed in 2020 repurchased in 2021. This was due to a combination of farmers not being able to find our seed in agrodealers, low brand recognition



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and farmers from higher segments of the market purchasing the seed and not being pleased with performance.

- For Semilla Nueva to continue expanding sales we must offer higher yielding biofortified seeds with lower rates of rot. Introduction of our new F5 seed will help to some extent in the short term. Improvements in farmer targeting and better marketing will also generate significant improvements. Making this possible has required significant changes in operations staff and sales systems for 2022.
- Semilla Nueva planted 36.7 hectares with F5 and F3 in September of 2021, in order to have 5,000 bags of F3 and 500 bags of F5 ready for sales in March/April 2022.

#### **Public Policy and Collaborations:**

- The Guatemalan government invited Semilla Nueva to write the first national policy for biofortified crops. The first draft was written by Semilla Nueva and allies, underwent a legal review in December 2021, and is currently under Ministry-wide review.
- Semilla Nueva reached 3,004 subsistence farmers through partnerships with local NGOs.
- Guatemala's largest national seed company, Valle Verde, sold 1,129 bags of subsidized biofortified seed, beating our goal by 13%.
- With Semilla Nueva's leadership, the BioFORT Platform launched an initiative to reach at least 50,000 families, one of every 20 farming families in Guatemala, with biofortified seeds in 2022.
- Catholic Relief Services signed an agreement with Valle Verde to purchase one million lbs. of biofortified grain annually to supply feeding programs in 330 schools for 66,000 children.

#### **Research and Development:**

- Semilla Nueva's micronutrient lab expanded output from 180 samples a week in late June 2021 to 465 samples per week in November and December 2021. Semilla Nueva will incorporate protein analysis in 2022.
- Semilla Nueva's seed conversion project (backcross) passed its second major proof point, with backcrossed seeds maintaining nutrition after being replanted and analyzed.
- Semilla Nueva has created over a dozen new hybrid seeds with the potential to be competitive in all levels of Guatemala's seed market. Seeds will be tested in 2022, with potential for commercial launch in 2024.
- Semilla Nueva's Advisory Board guided the creation of a strategy to develop new molecular markers to significantly increase the effectiveness of backcrossing seed. This strategy is being implemented but has not yet yielded results.

#### **Finance/Admin/HR:**

- Semilla Nueva's budget will expand from US\$1.96M in 2021 to US\$2.3M for 2022. 47% of the 2022 budget is on hand or committed, 33% is likely renewals, and 20% is pending.
- Successful ERP implementation reduced 50% of staff financial reporting time.
- Semilla Nueva completed its third external audit with no findings.



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## IMPACT EVALUATION

### Summary:

- In 2021, a total of 12,663 families planted biofortified seed, exceeding our goal of 11,000 families by 1,663 (17%) and reaching 27% more families than in 2020. Our impact numbers do not include the 29,500 families reportedly reached by the Guatemalan government's efforts since we were unable to verify their reported impact numbers.
- Farmers who planted biofortified seed produced enough grain to make 1.27 billion nutritious tortillas.
- Farmers who purchased seed in Semilla Nueva's target market segments (those who buy low and mid segment seed and farmers who normally do not purchase seed) made on average \$109 more with F5 biofortified seed and \$62 more with F3 biofortified seed compared to conventional seed. This represents a 148% increase in income per hectare for those who planted F5 and 92% increase in income per hectare for those who planted F3.
- Semilla Nueva's efforts to achieve a representative sample of farmers for economic analysis were not successful due to poor execution by the field team. Changes in personnel and systems are in place for 2022.
- The International Center for Nutrition of Central America and Panama (INCAP) presented initial results of our first third party impact evaluation. Among zinc deficient families who purchased seed, biofortified maize allowed 62% of mothers and 55% of children to reach their recommended daily zinc intake. Among zinc deficient families who received seed for free, 100% of mothers and 0% of children were moved into full zinc sufficiency. Impacts on iron deficiency were far more modest. We are still waiting on additional analyses and final results.
- 64% of farmers commented that their maize crops were impacted by climate shocks, most frequently drought. 64% of farmers who received seed for free reported F3 to be more climate resilient than their traditional seeds vs. 8% who said their traditional seeds were more resilient. For commercial farmers, 48% said F3 was more climate resilient while 44% believed more expensive seeds on the market were more resilient to droughts and rains.
- Using Innovations for Poverty Action's (IPA) Poverty Probability Index (PPI), we found that 52% of farming families live on less than \$5.00/day and 36% live below the national poverty line. Comparing our PPI study to the INCAP nutritional gaps study above led to an interesting conclusion. Commercial farmers who purchase seed had lower PPI poverty rates than subsistence farmers who received seed for free, but had *higher* rates of nutritional deficiencies, possibly due to not receiving food assistance from NGOs and the Guatemalan government.
- A survey among farmers who received donated hybrid seed in 2020 found that 37.5% of them re-planted the seed in 2021. Farmers reported positive results in terms of second year yields. Semilla Nueva's impact models to date do not account for farmers replanting seed, and there could be a significant increase in Semilla Nueva's actual impact due to this practice.

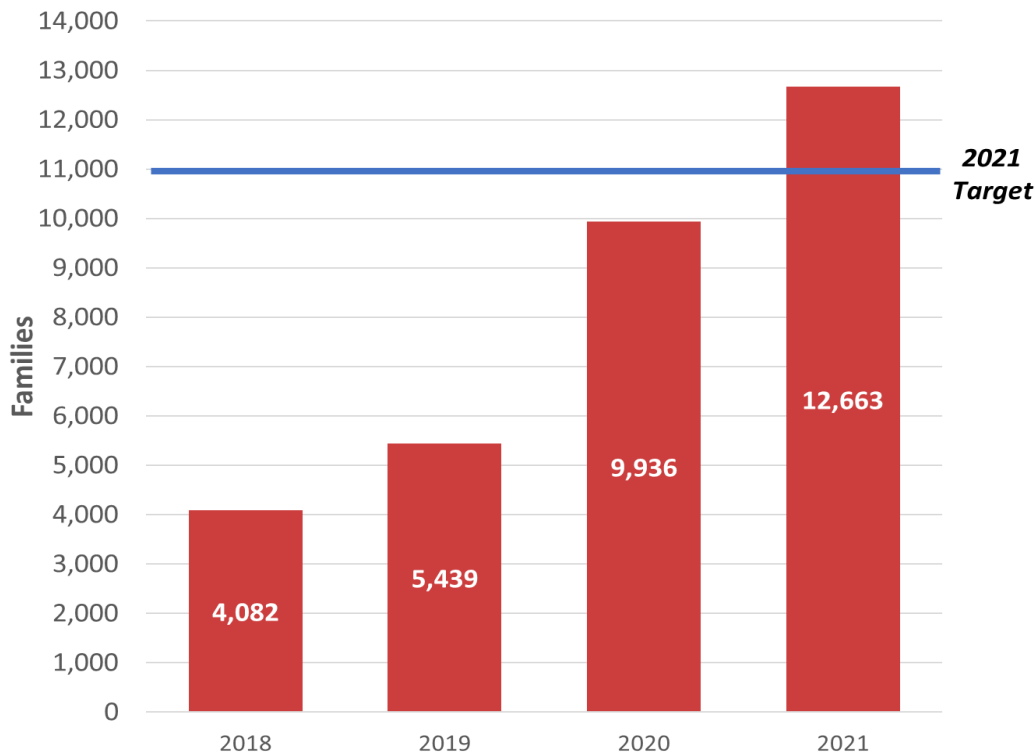
**Semilla Nueva exceeded its 2021 goal of 11,000 families using biofortified maize, reaching 12,663 families. This number does not include the 29,500 farmers the government estimates it reached with biofortified seed**

In 2021, 12,663 families planted biofortified seed provided by Semilla Nueva and its allies, exceeding our goal of 11,000 families for the year by 17%. Those families produced enough biofortified grain to

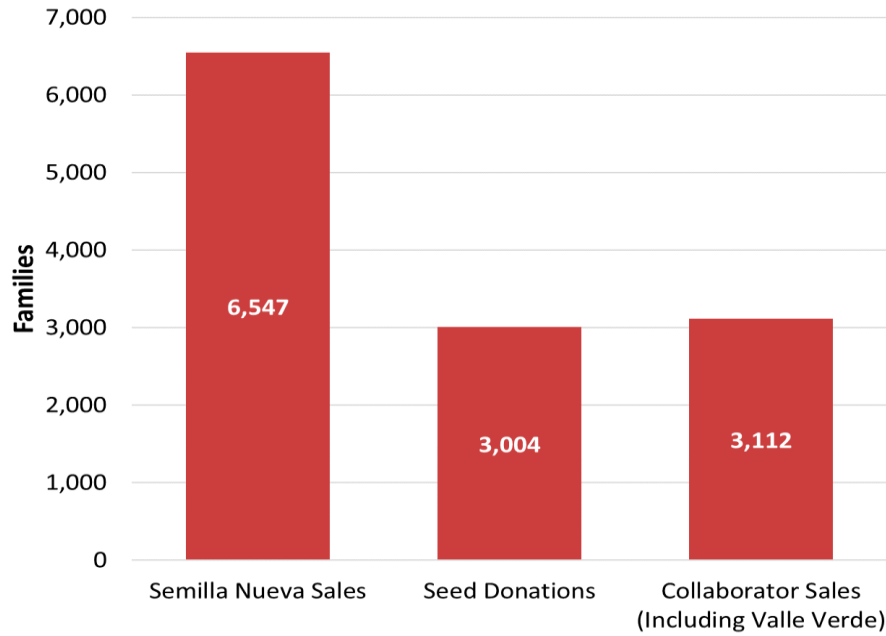


feed their family members (86,108 people) and feed over 295,600 consumers across the country. Compared to 2020, we increased the number of farmers buying biofortified seed from Semilla Nueva by 7%, the number of farmers buying seed from partners by 39%, and the number of farmers who received free seed through our other NGO partners by 60%. Semilla Nueva reached 3,004 subsistence farmer families through donations from partners such as the NGOs World Vision, Techo and others. Our partner seed producer, Valle Verde, and two allied farmer cooperatives reached a total of 3,112 families through their sales.

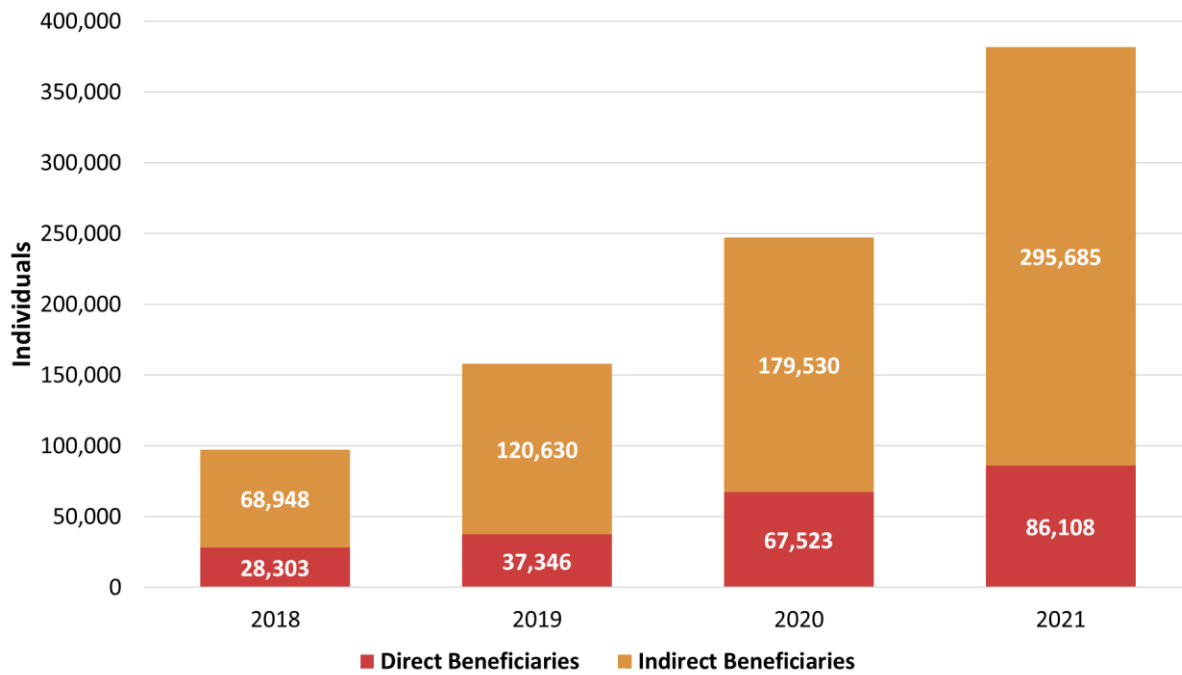
It is important to note that these figures do not include the many families reached through the new governmental programs to distribute biofortified maize launched in 2021, which was estimated to have reached 29,500 families by the Guatemalan government. The efficacy of these programs has yet to have a third-party verification, although work is in progress to do so (see *Policy - Collaborations* below).



**Figure 1: Families that planted Fortaleza biofortified maize (2018 - 2021)**



**Figure 2: Breakdown of families planting biofortified maize in 2021 by source of seed**



**Figure 3: Number of direct<sup>1</sup> and indirect<sup>2</sup> beneficiaries per year**

<sup>1</sup> Direct beneficiaries are the farmers who planted Fortaleza F3 seed and their families.

<sup>2</sup> Indirect beneficiaries are the estimated number of individuals who consumed biofortified maize by buying from the market.



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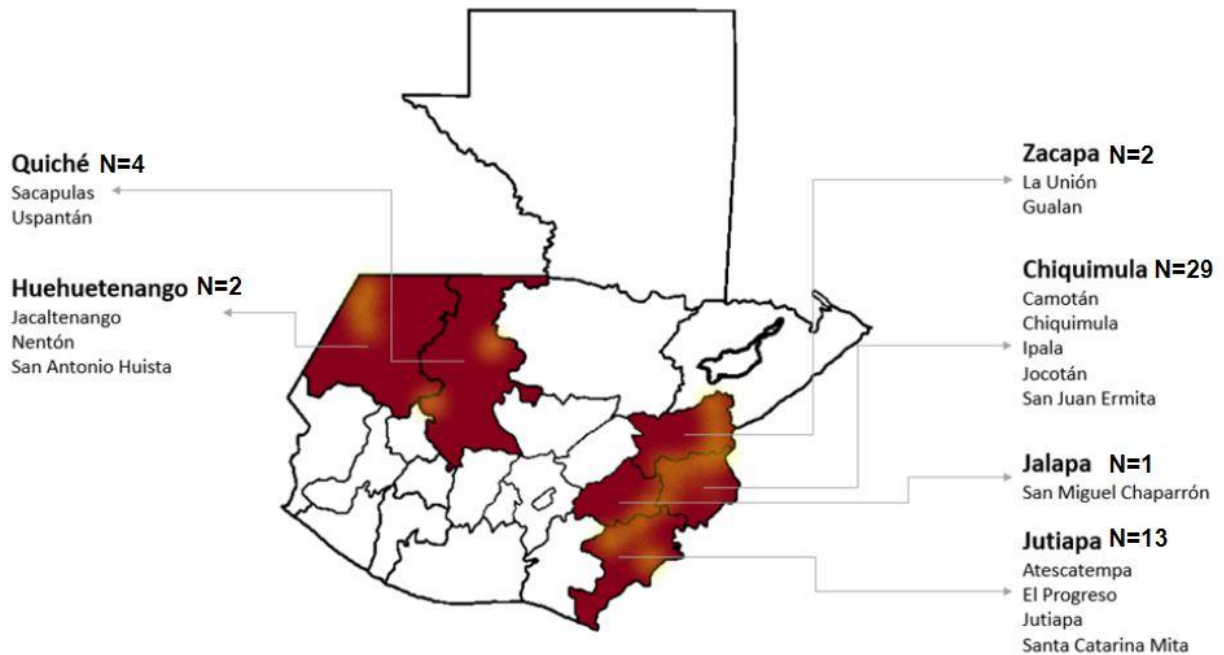
### **Successful collaboration with NGOs**

In 2021, Semilla Nueva expanded our NGO collaborations program working with five associations and nonprofits to distribute seed to 3,004 subsistence farmers. These partnerships were chosen to include local indigenous groups, NGOs with very high visibility and popularity, and well trusted international NGOs (See *Policy - Collaborations* section below). In all cases, NGOs partnered to collect impact data and shared lists of farmers with Semilla Nueva for the impact studies mentioned below.

### **INCAP nutrition gaps study**

In November of 2020, Semilla Nueva started conversations with Central America's leading nutrition research center and think tank, INCAP, to launch a third-party nutritional gaps impact study. The goal of the study was to understand the diets of farmers who plant biofortified maize and determine the amount that biofortified maize contributes to their consumption of key nutrients (zinc, iron, and protein). We received approval from INCAP's Institutional Review Board in April 2021 and INCAP started data collection that same month. The study focused on 51 farming families (93 evaluated individuals) in the Guatemalan highlands and Guatemala's dry corridor who had purchased seed (67% of farmers) or had received seed from partner NGOs (33% of farmers). The Guatemalan highlands was chosen due to its status as Guatemala's most malnourished region and eastern Guatemala was chosen because the majority of Semilla Nueva's farmers live in this region. The study evaluated the iron, zinc, and protein nutritional gaps present for men, pregnant women, lactating women, and children under the age of 5, and the level those nutritional deficiencies decreased due to consuming F3 biofortified maize.

INCAP has not yet submitted their final report, but based on preliminary findings, the participants' diets are not diverse and are largely devoid of animal-based protein. The children's diets presented greater diversity compared to that of adults. However, the amount of food consumed was so small that the diversity did not contribute much to their overall nutrient intake. For both adults and children, maize and beans contribute more than 40% to their nutritional intake.



**Figure 4. Departments and municipalities from the study, N=families, INCAP, 2022**

The INCAP researchers found that all participants had a deficit in estimated iron consumption, which was greatest for women and children. They found that maize contributes the most to iron intake (>30% in adults (compares to other foods), and biofortified maize reduces the nutritional gap for iron by 6% for fathers and 4% for mothers. Biofortified maize reduces the iron consumption gap by 2% for children, which is lower in part because children under five eat much less maize than adults. They also found that fathers' zinc deficiency was reduced by 19 percentage points (on average from a 21.9% gap to 2.9% gap) when consuming biofortified maize. The fathers interviewed in the study had a less diverse diet which might explain why they were more likely to have a zinc deficiency. Among zinc deficient families who purchased seed, biofortified maize allowed 62% of mothers and 55% of children to reach their recommended daily zinc intake. Among zinc deficient families who received seed for free, 100% of mothers and 0% of children were moved into full zinc sufficiency. Those who were still deficient also reduced their nutritional gaps, but the exact numbers are still pending.

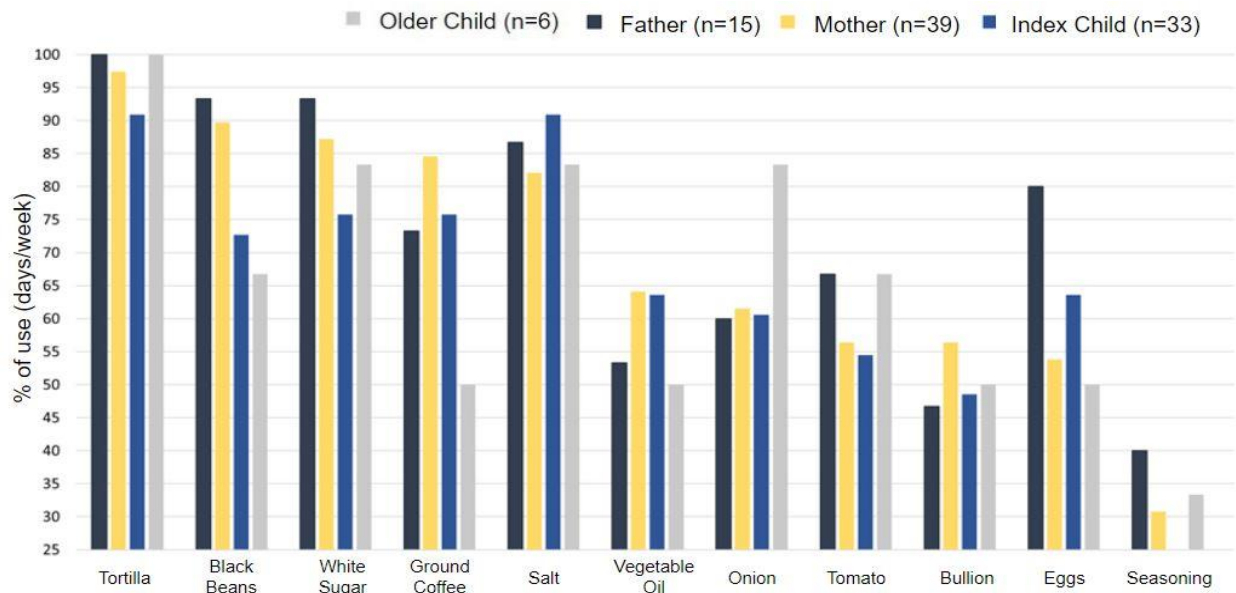




**Table 1: Percent of persons with zinc deficiency among consumers of biofortified maize compared to conventional maize, by farmer type**

Farmer Type	Mothers (N=39)			Children (N=39)		
	% with Zinc Deficiency Consuming Conventional Maize	% with Zinc Deficiency Consuming Biofortified Maize	% who Eliminated their Zinc Deficiency with Biofortified Maize	% with Zinc Deficiency Consuming Conventional Maize	% with Zinc Deficiency Consuming Biofortified Maize	% who Eliminated their zinc Deficiency with Biofortified Maize
Subsistence	23	0	100	8	8	0
Commercial	31	12	62	33	15	55

In addition to the nutritional gaps analysis, INCAP collected important food security and caloric intake data. INCAP used the Latin America Food Insecurity Scale from FAO and found that more than half of the households interviewed face food insecurity. This data is underscored by the high rates of poverty, nutritional vulnerability, and drought conditions in the regions, all of which have been exacerbated by COVID-19. The research found that corn tortillas account for over 50% of the mothers' and fathers' daily calorie intake. For children under five (index children below), maize accounts for 27% and for older children it accounts for 34%. Tortillas are the most frequently consumed foods (eaten seven days a week) followed by beans (six days a week).



**Figure 5. Foods most frequently consumed by fathers, mothers, and children 2-7 days a week, INCAP, 2022**



We are still waiting for additional results and analyses from INCAP and hope to share more detailed information after they finish their report. INCAP recommended that for future studies we increase the sample size, conduct the 24-hour recall survey twice, include anthropometric and biochemical markers to determine nutritional status, and include more socioeconomic variables to better contextualize the study. In November 2021, we began planning the next impact study that we will undertake in 2022 with INCAP and World Vision. We hope to include biomarker analysis to more deeply understand the biological impact of biofortified maize on nutritional deficiencies in partner farmers.

### Economics

During the main planting season, Semilla Nueva’s sales team set up 32 demonstration parcels to measure the economic impact of biofortified maize compared to conventional maize. Farmers who had demonstration parcels received technical advice and agricultural inputs if needed from Semilla Nueva technicians. Farmers planted Fortaleza F3, our newest biofortified seed Fortaleza F5, and either a low segment hybrid seed or a non-hybrid seed depending on local customs. On average, biofortified seed increased incomes for low segment hybrid farmers by \$62 for Fortaleza F3 and \$109 for Fortaleza F5. For non-hybrid farmers the increase with F3 was \$73 and for F5 \$92. On average, farmers who plant F5 saw an almost \$40 economic increase compared to farmers planting F3. Both seeds provided a significant improvement in income vs. local control seeds. Overall improvements in seed quality control improved F3 performance which had dipped in 2020 partially due to production problems.

**Table 2: Comparison of farmer income per .49 hectares by segment, year, season and hybrid**

Segment	F3 2019 Rainy Season	F3 2019/20 Irrigation Season	F3 2020 Rainy Season	F3 2020/21 Irrigation Season	F3 2021 Rainy Season	F5 2021 Rainy Season
Mid	46	-2	-75	-49	-	-
Low	37	48	-70	218	62	109
Non-Hybrid	-	43	229	-	73	92

**Table 3: % Change in farmer income when planting biofortified maize, 2021**

Segment	% change with F3	% change with F5
Low Segment Farmers	74	130
Non-Hybrid Farmers	233	294

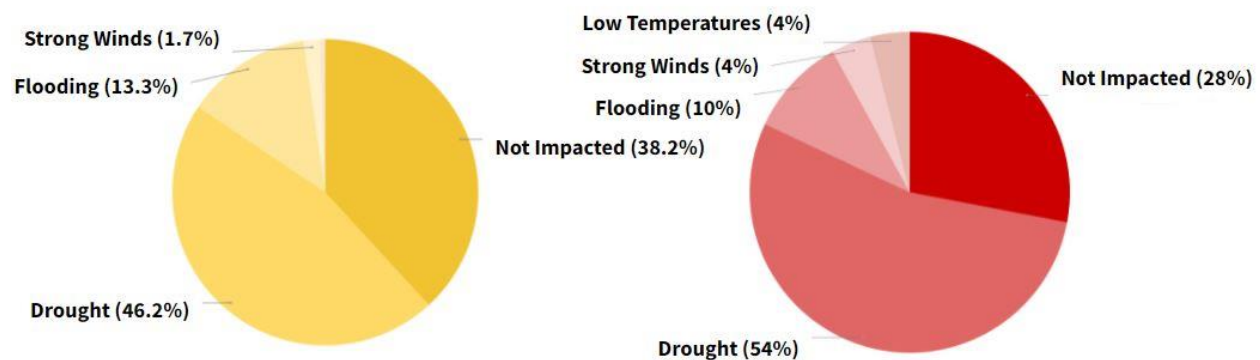
While Semilla Nueva successfully implemented nearly all of its major goals for impact evaluation, there was one significant failure. In 2021, Semilla Nueva planned to move from measuring economic impact on controlled parcels with farmers to measuring economic impact from a random selection of farmers who had planted F3 and a competitor’s seed. In 2020, this was achieved with 17 farmers. In 2021, it was



achieved with only two, out of a goal of 63. The failure was largely due to poor implementation by the field team, and to some degree communication between the operations team and the M&E team. Semilla Nueva has made several changes in staffing and quality control systems to address the failure and has set a goal of measuring economic impacts with at least 50 representative farmers in 2022.

### Climate Change

For years, farmers have mentioned that F3 is more resistant to climate shocks like high winds and drought. In 2021, we conducted a geographically representative survey of 242 farmers who had planted F3 (69 who received seed for free and 173 who bought seed) to understand which climate shocks our farmers commonly face and how F3 fares compared to other varieties. 64% of all farmers surveyed reported that they were impacted by climate change. 75% of that population said that they suffered from drought during the maize growing season and 55% confirmed that F3 resisted the drought conditions well. Among farmers who received seed for free, 61% said that F3 is more climate resilient than seeds they have previously used, while 8% said that the seed that they normally plant is more climate resilient than F3. Among farmers who purchased F3, 48% said that F3 is more climate resilient than other seeds on the market, while 44% said that there are other seeds on the market that are more climate resilient than F3.



**Figure 6. Main climate shocks reported by farmers, commercial farmers in yellow, subsistence farmers in red, (n=145), 2021**

### Poverty

To better understand the economic situations of farmers using biofortified maize, we conducted a poverty survey using Innovation for Poverty Action's (IPA) Poverty Probability Index (PPI). We found that 36% of our farmers live below the national poverty line, 52% live on less than \$5.00/ day, and 14% live on less than \$2.50/day. To put this into perspective, in 2020, 47% of all Guatemalans were living below the national poverty line (\$3.64/day). The majority (79%) of the subsistence farmers who received biofortified seed for free live under the national poverty line, while only 19% of commercial farmers live under the national poverty line. In 2022, we hope to continue collecting poverty data alongside our other key surveys like nutrition and farmer income in order to explore the relationship between poverty and our other key indicators. A regional breakdown of the data is presented below. What was most



surprising to us was that the INCAP’s nutritional gaps study showed that nutritional gaps are higher in farmers who purchased seed, even though their relative poverty levels are far lower than subsistence farmers who received seed for free. Maize farmers may be different from other segments of the populations where income directly correlates to dietary diversity. If this is the case, this discovery could lead to changes in which segment of families should be prioritized in assistance programs--and simultaneously make a significant argument for continuing the commercial promotion of biofortified maize seeds to commercial farming families.

**Table 4: % of Farmers living under each poverty line by region and farmer segment**

Poverty Line	North		East		South	Highlands		Overall
	Subsistence	Commercial	Subsistence	Commercial	Commercial	Subsistence	Commercial	
National Poverty Line <sup>3</sup>	74	21	85	17	19	59	24	36
\$5.00/day	88	40	95	33	39	89	42	52
\$2.50/day	34	3	0	3	2	12	5	14

### Replanting of harvested biofortified maize

In 2020, Semilla Nueva received several reports that farmers who received and purchased hybrid maize seed replanted the seed the following year. Farmers who received and planted Fortaleza F3 in 2020 were surveyed to determine if they replanted their F3 in 2021, as they would do with non-hybrid seeds. These farmers were also asked if they purchased and planted new F3 seed this year. Semilla Nueva’s End of Year M&E survey found that 37.5% of farmers who received free seed in 2020 saved a portion of their biofortified maize seed to plant again in 2021. Of farmers who did, 12% (2/16) of farmers saw a difference in grain size and 1 farmer (6%) saw a lower yield with their re-planted F3 than with their traditional seeds. Farmers reported that they decided to re-plant the biofortified seed because the seed “withstands climate change well”, it “[grows] fast and efficiently”, and “is of good quality and yields well”, among other reasons. We also found that 64% of farmers who received biofortified seed in 2021 plan to save a portion of their seed to plant again in 2022. This information is important for two reasons. First, it means that many more farmers may be using biofortified seeds than our current impact estimates predict, given that they are only based on seed purchased or given to farmers in a specific year. Semilla Nueva will need to provide follow up with farmers to determine how replanting the seed affects its agronomic and nutritional traits. Secondly, Guatemalan NGOs and the Guatemalan government primarily focus on handing out open-pollinated seed, as opposed to hybrid seed, because they believe farmers do not, and should not, save hybrid seed. Our data may indicate otherwise and may also indicate that the economic and nutritional impact for farmers using hybrids in seed donation programs may be higher than using traditional open-pollinated seeds.

<sup>3</sup> The Guatemalan National Poverty Line is \$3.64/day



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## SALES, MARKETING, AND PRODUCTION

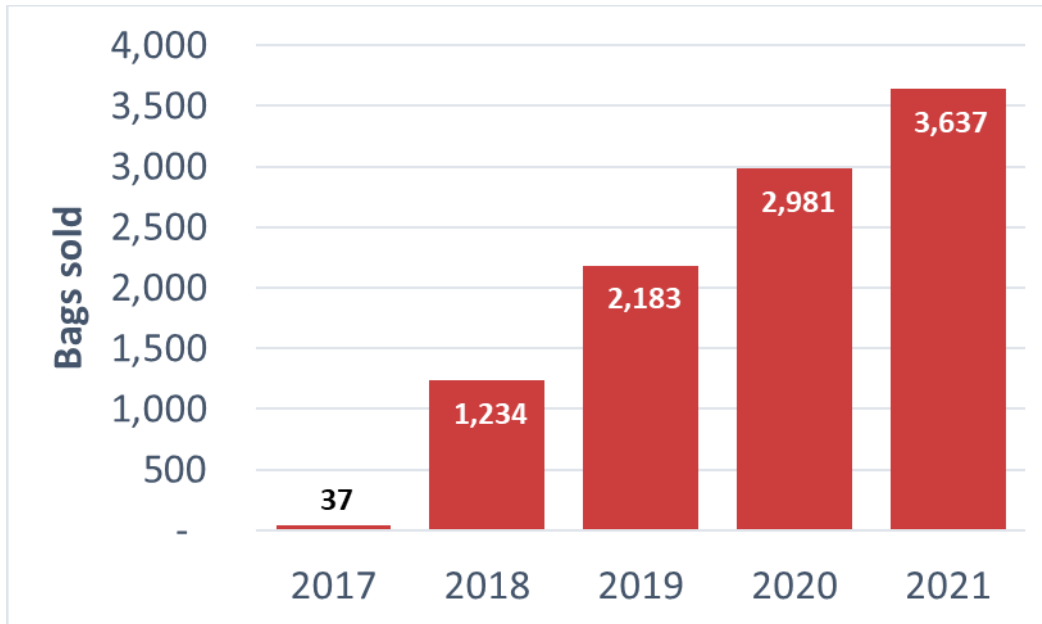
### Summary:

- Semilla Nueva sold 3,637 bags of our F3 biofortified seed in 2021, a 22% increase over 2020 sales. This was 91% of our 2021 target of 4,000 bags.
- Semilla Nueva's Fortaleza F5 hybrid completed its pre-launch phase, with 32 farmers completing side by side tests with F5, our current F3 seed and local low segment hybrid or non-hybrid seeds. Fortaleza F5 showed 5% higher yield than F3, a 19% reduction in rot and a 35% reduction in atypical plants. These were lower yield results than in our more controlled breeding trials over the previous two years, and data will need to be confirmed in 2022. Regardless, F5 will be at least a modest improvement over F3, and sales will launch in early 2022.
- Semilla Nueva completed a detailed study of farmers' perception of F3, surveys of agrodealers, and reviewed data on our promotional efforts. We concluded that Semilla Nueva's promotional efforts are still targeting inappropriate farmers, with 47% of field day participants from the incorrect farmer segments.
- Only 39% of farmers who purchased seed in 2020 repurchased in 2021. This was due to a combination of farmers not being able to find our seed in agrodealers, low brand recognition and farmers from higher segments of the market purchasing the seed and not being pleased with performance.
- For Semilla Nueva to continue expanding sales, we must offer higher yielding biofortified seeds with lower rates of rot. Introduction of our new F5 seed will help to some extent in the short-term. Improvements in farmer targeting and better marketing will also generate significant improvements. Making this possible has required significant changes in operations staff and sales systems for 2022.
- Semilla Nueva planted 36.7 hectares with F5 and F3 in September of 2021, in order to have 5,000 bags of F3 and 500 bags of F5 ready for sales in March/April 2022.

### **2021 sales summary: 91% of the year's goals reached**

*Note: Over 80% of Semilla Nueva's sales take place in the January-June period. A breakdown of our results and learnings by region from this period were presented in our previous, *January-June 2021 Standard Report*.*

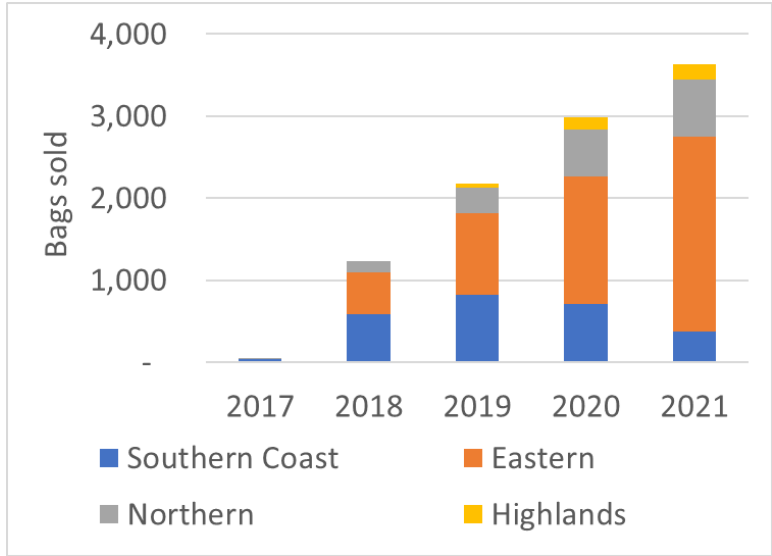
Semilla Nueva achieved a 22% increase over 2020 sales and reached 91% of sales goals for 2021. During the year, there were important external factors that affected sales. First, in our primary sales region of Eastern Guatemala, which was still recovering from Hurricanes Eta and Iota, planting times were delayed, and many farmers simply did not plant maize at all. Second, there was a 10-30% increase in the price of agricultural inputs due to inflation, which also led many commercial farmers to not plant maize. Nevertheless, we believe that the most significant reasons for the modest increase in sales was due to the performance of F3 seed and weaknesses in our sales and marketing efforts, which are discussed below.



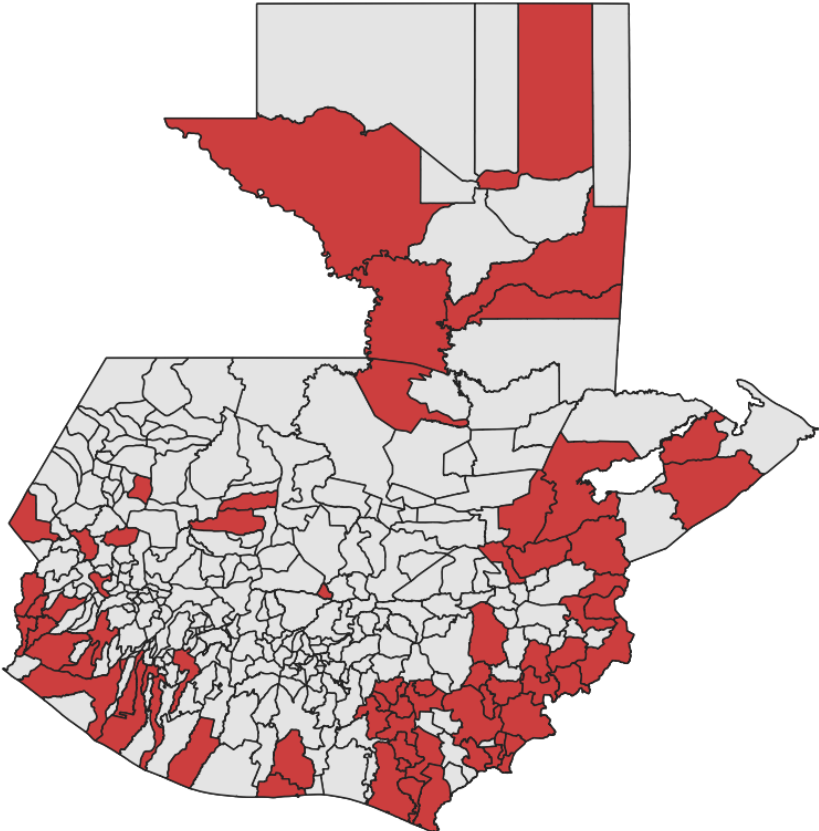
**Figure 7: Fortaleza F3 bags sold by year**

**Table 5: Fortaleza F3 bags sold by region and year**

	2017	2018	2019	2020	2021	
Region	Total	Total	Total	Total	Total	2021 vs 2020 (% change)
<b>Southern Coast</b>	34	583	826	712	373	-48
<b>Eastern</b>	-	512	985	1,556	2,391	54
<b>Northern</b>	3	139	315	572	688	20
<b>Highlands</b>	-	-	57	141	185	31
<b>Total</b>	<b>37</b>	<b>1,234</b>	<b>2,183</b>	<b>2,981</b>	<b>3,637</b>	<b>22</b>



**Figure 8: Comparison of sales by region and year.**



**Figure 9: Semilla Nueva 2021 sales map**



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### Launch of F5

During the second semester, the production, sales, marketing, and R&D teams did a full review of 32 side-by-side trials led by local farmers. F5 beat local control seeds in 29 of the 32 parcels, averaging 25% higher yield, 130% higher net income for low segment farmers, and a 294% increase in net income compared to non-hybrid seeds. F5 also shows a modest improvement in some of the areas that farmers' most dislike about F3, with 19% less rot and 36% less atypical plants than local low segment and non-hybrid seed. Given the positive results, Semilla Nueva made the decision to launch F5. The operations team planted 23 demonstration parcels and created a new campaign for the launch, focusing on the slogan: Sowing Hope, Harvesting Future (*Sembrando Esperanza, Cosechando Futuro*).

### Market Analysis

During the months of July to September, Semilla Nueva performed a market intelligence survey with 151 agrodealers that have sold F3 in the past years. The survey produced the following results:

- 70% of the agrodealers interviewed sold Fortaleza during the main planting season, with a total of 2,995 Fortaleza F3 bags sold out of the 38,442 bags of hybrid maize seed agrodealers sold in total (8%).
- Agrodealers confirmed that Fortaleza competes well within the low segment hybrid market. Fortaleza represents over 30% of the low segment market, and agrodealers see significant opportunity for Fortaleza to continue expanding sales and replace more low segment seeds.
- The Fortaleza F3 seed maintained its farm level price of US\$51.51 per bag, which is still 12% higher than our main competitor in the low segment hybrid market and higher than our US\$41.10 price goal.

### **Semilla Nueva's biggest area of opportunity in the field is increasing our seed repurchase rate. Only 39% of farmers who purchased in 2020, repurchased in 2021.**

Between November 2021 and January 2022, Semilla Nueva conducted its annual Net Promoter Score study (NPS) of farmers who planted Fortaleza F3. The NPS survey breaks customers into three categories, based on their enthusiasm for a brand: detractors, neutrals, or promoters. The study was conducted by a third-party business intelligence company via telephone interviews using Semilla Nueva's farmer database. 173 farmers were interviewed, made up of 33 farmers in the North, 107 in the East, 13 in the South, and 20 in the Western Highlands. The study has a 95% confidence level and a standard error of +/- 10.2%.

Semilla Nueva's typical farmer is predominantly male, 40+ years old, has an elementary education, has 3+ children, plants an area no larger than 1.4 hectares and has grown maize for most of his productive life. 48% plant maize for home consumption only, 38% do so for mostly at-home consumption, and 15% plant for mostly commercial and income generation purposes.

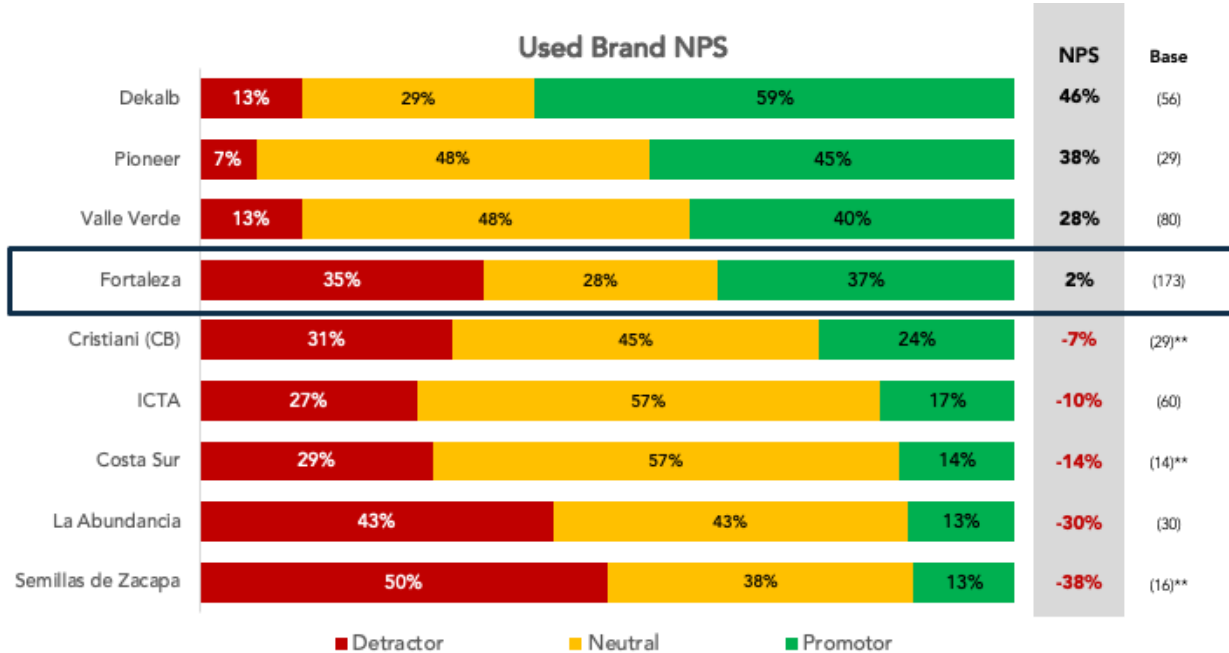
During 2021, 64% of our farmers were first-time buyers. Of the farmers who purchased in 2020 and were surveyed, only 39% had repurchased. This indicates that we are converting new farmers at a good pace but need to significantly improve retention rates. This study allowed us to understand which farmers





we must avoid if we want to increase our repurchase rates and which farmers are a natural fit and need better targeting.

Fortaleza promoters, of which 74% only planted Fortaleza, chose our seed because of positive yields, drought tolerance, and good tortilla quality. This can be interpreted as evidence that when the right farmer plants our seed for the right reasons (primarily home consumption), their expectations on investment and food security are fulfilled. At the same time our detractors (in red) are mainly farmers from the East (-6) who have planted Valle Verde (-19) or another (mostly mid or high segment) brand (-14). These same farmers also associate Fortaleza with rot, low yields and poor plant or crop characteristics.



**Figure 10: Comparison of NPS across Guatemala's leading seed brands**

**Table 6: Most frequent comments on Fortaleza by farmers, (%)**

Detractor (35)	Neutral (28)	Promoter (37)
The grain rots (43)	The maize is not white (20)	Good yields (56)
The cob/grain is small (25)	The grain size (12)	It held up to the drought (3)
Low yields (23)	Good yields (13)	Good harvest/brand (17)
Weevils infect the grain (10)	More technical support (11)	It does not need many inputs (17)
The color is too yellow/creamy (10)	The grain rots (8)	Good grain size (13)
Small stalk (10)	It held up to the drought (7)	It worked well for their needs (13)
It is hard to sell (10)	The stalk is short/little growth (7)	Good stalk size (10)



It does not do well in the rainy season (10)	It is hard to sell (7)	The tortilla is soft (10)
It does not adapt to climate changes (10)	It does not yield well (6)	The tortilla is white (10)
It does not adapt to the terrain (7)		It held up to the wind/strong roots (9)
There was no technical support (6)		It is inexpensive (7)

The survey also provided us with other useful insights. Of farmers who didn't repurchase F3, 37% did not because they could not find it in their local agrodealer or because they did not remember the name of the brand. This means that we can potentially rescue over a third of non-repeat customers by improving our brand recognition and distribution network.

Second, this data can be compared to the segments of farmers attending our field days. We know that farmers who normally buy mid and high segment seeds are the primary farmers who don't repurchase F3 and become detractors. We also know that 77% of farmers who attended our field days purchased seed. Unfortunately, in 2021, 47% of farmers who attended field days were from the mid and high segments of the market. These farmers may buy once but will then be dissatisfied with the brand later.

**Table 7: % of farmers attending field days who belong to different segments**

Segment	Semester 1	Semester 2	Overall
Non-Hybrid	31	22	28
Low	25	24	24
Mid	24	25	24
High	20	29	23

Regarding plans to buy and plant F3 in the future, 23% of farmers who purchased in 2021 will not be planting Fortaleza and 24% are still undecided, claiming reasons such as rot and low yields as their primary concerns.

**2022 action plan: for farmers who don't like our seed, we need better seeds. In the meantime, we must improve targeting of farmers who will repurchase our seed, make our seed more available, and improve brand recognition**

Semilla Nueva's sales and marketing teams currently represent our weakest area of performance. There is a significant challenge given the performance of F3 as a seed, but it is precisely because of this that Semilla Nueva needs far better execution from the operations team. After several years of recognizing the problem, our field days still continue to significantly target the wrong farmers. The sales team



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achieved slightly above half of the demonstration parcels for upcoming 2022 promotion and established fewer monitoring parcels for M&E than in 2020.

The first step for Semilla Nueva is to recognize that there is a significant problem. At its root, the leadership team believes that we have failed to implement adequate training, quality control, and feedback systems that will generate results. Operations leadership in 2021 was unable to design and implement improvements based on results and problems identified in previous years. As a result, we have made some significant changes, replacing two sales technicians, our marketing coordinator, and hiring a COO with extensive marketing and sales experience in Central America and a background in agriculture. With this new team, Semilla Nueva is working to transition in the following areas:

Significant investments will be made to hone our understanding of our target customers and ensure weekly feedback on whether sales efforts are reaching these customers.

New sales protocols and marketing activities are being put into place, in order to achieve higher brand recognition and loyalty among our target farmers. Our commercial team will also be charged with implementing more grassroots tactics, such as Fortaleza Days, an activity meant to highlight our better tortilla aimed specifically at the key decision maker for meals, mothers. Operations leadership will create strong financial incentives for sales technicians to reach the correct farmers and significantly tie bonuses to this change; we simply cannot do more of the same and expect better results.

Because 90% of farmers decided to plant F3 due to peer recommendations, word of mouth promotion from our sales team, or recommendations by our seed distributors, we will launch a formal ambassador program alongside our pilot conversion program to better take advantage of this marketing tool. In addition, we will conduct a deeper analysis of what communication channels we need to keep or drop to assure that we get the highest return on our direct marketing investments. In 2022 our marketing communications will further incorporate messages emphasizing that F3 and F5 seeds yield softer, tastier, and more filling tortillas and why Fortaleza tortillas provide above average value for money.

Despite the positive association of producing the best tortilla, our key attribute, nutrition, was not mentioned in the 2021 study. Further studies are being designed to gain insights on the feasibility of using nutrition as a motivator for our farmers, including studies that more deeply target mothers.

Finally, product availability issues will be addressed with strategies that will increase availability (being at the point of sale at the right time) and agrodealer coverage, and ensure lower prices are passed onto farmers in 2022. In addition, a brand visibility program at the point of sale will allow our farmer to find and purchase our seed easily.

We have high hopes that our new COO will help to streamline and institutionalize key processes so that we are able to reach our goals for 2022. A revitalized sales team and commercial strategy will help us reach our target farmers, improve market acceptance, and increase repurchase rates. Combining improved execution in sales and marketing with the launch of a new and improved biofortified seed, F5, should allow 2022 and 2023 to continue to show growth, while we wait for our next significant step: the launch of biofortified seeds that are fully competitive in all segments of Guatemala's seed market.



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## PUBLIC POLICY – COLLABORATIONS

### Summary:

- The Guatemalan government invited Semilla Nueva to write the first national policy for biofortified crops. The first draft underwent a legal review in December 2021 and is currently under Ministry-wide review.
- Semilla Nueva joined several of the most important national work groups responsible for informing and designing national food and nutritional security policy.
- Semilla Nueva expanded partnerships with five local and international NGOs and provided 3,004 subsistence farmers with donated seed. Partnerships included data capture, advocacy, and exposure for biofortified seeds.
- The BioFORT Platform launched an initiative to reach at least 50,000 families, one of every 20 farming families in Guatemala, with biofortified seeds in 2022.
- Guatemala's largest national seed company, Valle Verde, sold 1,129 bags of subsidized biofortified seed, beating our goal by 13%. They plan to expand sales in 2022 but warn that significant scale will require better biofortified seeds.
- Catholic Relief Services signed an agreement with Valle Verde to purchase one million lbs. of biofortified grain annually to feed 66,00 students at 330 schools. It is the first significant purchase of biofortified grain in Latin America.

### **The Guatemalan Ministry of Agriculture requests that Semilla Nueva create the first draft for a national policy on biofortified crops**

After heavy lobbying from members of the BioFORT Platform and other parties, the Guatemalan Ministry of Agriculture began exploring the possibility of creating and passing a law for agricultural seeds which would include a section for biofortified crops. Their exploration resulted in universal feedback that the current Congress and political climate would not favor any new large agricultural laws. The Ministry decided to scale back its goals and instead propose a policy for biofortified crops that could become the legal umbrella for all future initiatives and a basis for a future law. To our delight, they asked Semilla Nueva to identify and oversee a consultant and write the first draft. Semilla Nueva responded by bringing together our closest allies from the BioFORT Platform and writing the document as a group. In December 2021, we presented this draft. It passed its first legal review and is now under direct consideration by the Ministry of Agriculture. The policy would direct the Ministry of Agriculture to prioritize biofortified crops in purchases for relief programs, prioritize biofortified seed in social support programs, direct additional funding to support government seed development, improve data collection and publications, and explore a subsidy program for biofortified seeds as well as work with other ministries to prioritize biofortified seeds. If passed, this policy will create an institutional precedent and a political framework which will serve as the foundation for congressional budgeting, programmatic collaborations, and eventually a law.



**Figure 11: Semilla Nueva presents draft of national policy for biofortified crops to Ministry of Agriculture, December 2021**

### **Semilla Nueva is positioned within several of the most important nutrition and agricultural development work groups in Guatemala**

Semilla Nueva’s policy team is now an active member of several influential workgroups including: Scaling Up Nutrition (SUN); Institutional Support Group of the Government’s Secretariat of Food and Nutritional Security (SESAN); and most importantly the NGO sector workgroup within INCOPAS<sup>4</sup>. The latter group works directly with the government to create national food and nutritional security policy. Semilla Nueva has participated in six meetings to date in the three workgroups and has been able to include biofortified crops as a priority in the Crop Monitoring System led by SESAN and the Ministry of Agriculture. SUN also included biofortified crops as a priority in their national recommendations.

Based on this participation, Semilla Nueva was invited to participate in a national review of Guatemala’s National Food Security and Nutrition Policy with SESAN. We have presented recommendations and shared Semilla Nueva’s biofortification strategy with the SESAN General Secretary and three Congressional technical teams involved in the Food and Agriculture legislative agenda.

Semilla Nueva’s continued media presence has contributed significantly to earning a place in these work groups, four articles and publications in the second semester and six in the first semester.

### **Semilla Nueva worked with five NGO partners to donate seed to 3,004 subsistence farm families**

Semilla Nueva brought together a wide group of allies to donate seed to Guatemala’s poorest farming populations. These collaborating NGOs were important because of their reach and relationships with extremely poor communities and helped to raise the profile of biofortified crops in Guatemala. Partners included:

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<sup>4</sup> Consulting and Participation Instance of the National Food Security and Nutrition System (Instancia de Consulta y Participación Social del Sistema Nacional de Seguridad Alimentaria y Nutrición)



- *Techo para mi País*, which builds homes for extremely marginalized people and supports them for several years after. Most Guatemalan college students volunteer with *Techo*, making it one of the country's most beloved nonprofits. *Techo* is working to provide biofortified seeds in the majority of their households post-construction.
- *World Vision*: one of Guatemala's most visible international NGOs. World Vision has purchased seed and accepted donated seed. They have participated in all of our impact evaluation efforts, including doing economic studies on farmers themselves and have participated in creating drafts of new policy and presenting it to the Guatemalan government.
- *FEDECOVERA*, one of Guatemala's largest cooperatives of small farmers who export coffee, spices, and cardamon.

These partners have become involved in publicity and impact studies. Both World Vision and FEDECOVERA are working on models that would make their use of biofortified seeds commercially sustainable. Most advantageous for Semilla Nueva is that the seed used for these projects is almost entirely seed that typically is discarded by seed companies during seed processing. These seeds are still competitive and advantageous for subsistence farmers, but generate significant economic, nutritional, and political impacts, while creating almost no additional costs for Semilla Nueva.

### **BioFORT Platform launches a new campaign: 1 in 20 farmers will use biofortified crops in 2022**

Led by Semilla Nueva, several NGOs, the Guatemalan Ministry of Agriculture, UN agencies, and cooperatives have set joint goals for use of biofortified seed. With just over 1,000,000 small farmers in Guatemala, if 50,000 farmers use biofortified seed, it would represent 1 in 20 small farmers at the national level. Pledges from different organizations to sell or distribute seed reached a total of 66,000 families for 2022, making it feasible that the goal will be met. Semilla Nueva has agreed to provide resources for publicity and work with the group to use this campaign as an opportunity to create national pride and awareness about biofortified crops in Guatemala. It is important to note that over 95% of the biofortified crop use is expected to be maize.

This effort was sparked after the BioFORT Platform convened an online event as part of the Independent Dialogue of the UN's Food Systems Summit. The Vice Minister of Agriculture and the lead nutritionist of HarvestPlus attended as keynote speakers. The Vice Minister shared the Ministry's plans, recognized the importance of biofortification as a leading public policy to combat malnutrition, and requested participation from the BioFORT Platform for future events.

### **Semilla Nueva and the Guatemalan government take initial steps towards a national monitoring and evaluation system**

In 2021, the Guatemalan government launched its biggest promotion of biofortified seed to date. According to their figures, they produced and provided seed to over 29,500 families. Unfortunately, there is very little documentation concerning the impact of this program. There are doubts about what percentage of the seed was actually biofortified, whether it was delivered on time to farmers, and if they actually planted and harvested it. Semilla Nueva worked with the Guatemalan Government's Institute for Agricultural Sciences and Technology (ICTA), the primary government protagonist in biofortified crops, to design a survey system. ICTA has the legal mandate to review the Ministry of Agriculture's programs. Using Semilla Nueva's M&E systems as a foundation, ICTA would implement and Semilla Nueva would fund annual visits to determine the nutritional and economic impact of the Ministry's donated seed. The Ministry's willingness to participate has been limited, but the first steps have been



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taken, with the Ministry agreeing to provide the ICTA with a list of participating farmers in December 2022.

### **Collaborating seed company Valle Verde beats goals in seed subsidy pilot**

2021 was the first implementing year of Semilla Nueva's seed subsidy pilot program with Guatemala's largest national seed company, Valle Verde. Valle Verde produced, processed, and sold 1,129 bags of Semilla Nueva's F3 under their own brand. They beat the 2021 sales goals of 1,000 bags by 13%. All our surveys showed that Valle Verde reached the agreed low retail price for farmers, doing better than Semilla Nueva in this regard. Instead of their normal seed retail price of \$71.42 per bag, Valle Verde's biofortified seed retailed for \$38.96. After receiving sales receipts, Semilla Nueva provided \$32.46 per bag to cover this difference. As a result of Valle Verde's success, Semilla Nueva and Valle Verde negotiated a second-year contract to incentivize production and sales of 500 bags of F3 and 1,500 bags of F5 under Valle Verde's brand and seed name.

Overall Valle Verde feedback echoes a similar sentiment to our sales team. We can continue growing sales slowly, but some of Valle Verde's clients were unhappy with the combination of moderate yields, small and dark grain, and susceptibility to the tar spot disease (a much more important problem in Valle Verde's main sales regions). Significant expansion in the commercial use of biofortified crops will require better seeds. To this end, Valle Verde is partnering with Semilla Nueva in testing new advanced biofortified seeds coming from our breeding program. This will not only build more buy-in from Valle Verde, but also allow them to test the seeds in their conditions and move to commercialization by 2024, similar to Semilla Nueva's timeline.

The economics of the subsidy program are compelling. Valle Verde generated 16% of the total impact of Semilla Nueva's program in 2021, but it did so with a total subsidy cost of only \$36,656. In other words, 2% of Semilla Nueva's 2021 budget generated 16% of our impact. This subsidy will become far cheaper as we develop better biofortified seeds which are competitive enough for seed companies to sell at typical prices. Ultimately, seed subsidies may be both one of the best paths to scale, as well as one of the best ways to quantify the barriers to scale. We should be able to measure our progress in improving biofortified seeds and changing market dynamics based on the subsidy necessary, per family, to get the seed sector to produce, market, and sell biofortified seeds locally. Thanks to Innocent Foundation and Light a Single Candle for funding this pilot.

### **Catholic Relief Services (CRS) agrees to purchase one million lbs. of biofortified maize grain from Valle Verde to feed at risk children in over 330 schools**

Semilla Nueva worked to facilitate a partnership between two long standing allies, Catholic Relief Services and the seed company Valle Verde. Valle Verde has large extensions of land where it sometimes grows maize for grain when not producing seed. Valle Verde now has significant experience with biofortified maize seeds. CRS was interested in using biofortified maize in their school feeding programs. After 9 months of negotiations, CRS signed a deal with Valle Verde to purchase one million lbs. of biofortified grain per year for meals in 330 schools. This is the largest biofortified grain purchase in the western hemisphere and will hopefully show other interested actors that there is now sufficient supply, not only of seeds but also of biofortified grain, for use in other projects.



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## RESEARCH AND DEVELOPMENT

### Summary:

- Semilla Nueva is on track with our seed breeding plan. Semilla Nueva is simultaneously developing both the technology to more quickly convert and develop more nutritious maize seeds as well as seeds that will be competitive in all segments of the Guatemalan seed market.
- Semilla Nueva's new micronutrient lab continued to expand output, from the initial 180 samples a week in late June 2021 to 465 samples per week in November and December 2021. Semilla Nueva used this lab to evaluate 9,000 different maize lines in 2021, 30 times more nutritional evaluations than we had done between 2015-2020.
- Our effort to develop a protein quality lab in partnership with a regional research partner was not successful. Semilla Nueva will instead purchase additional equipment to do protein quality analysis in our lab in 2022.
- Using information developed in our micronutrient evaluation lab, Semilla Nueva continued our backcross process to convert highly competitive maize seeds to have higher levels of nutrients. New seed lines maintained their nutritional levels in subsequent generations. Using these new lines, Semilla Nueva is now forming new commercial hybrids for field testing in May 2022.
- In addition to our backcross work, Semilla Nueva launched a mix-match program, forming new hybrids with existing biofortified and non-biofortified lines. Two new hybrids showed nutritional levels comparable with our existing biofortified seeds and yields that were competitive with the leading seeds offered by international seed companies. Several other hybrids hold promise to show similar results if Semilla Nueva incorporates a single backcrossed line. New hybrids will be tested again in 2022 and potentially could be ready for pre-launch in 2023 and full sales in 2024.
- Semilla Nueva's Advisory Board guided the creation of a strategy to develop new molecular markers to significantly increase the effectiveness of backcrossing seed. This strategy is being implemented but has not yielded results yet.

### **Micronutrient lab fully operational and sampling 465 samples a week. Semilla Nueva will have to develop protein quality measurement qualities internally, due to technical difficulties in our collaborative lab**

Semilla Nueva purchased an additional mill and hired a second full time employee for our micronutrient lab. Combined with improved data management systems and protocols, the lab nearly tripled output to 465 samples tested per week. Overall, the lab tested more than 9,000 samples for micronutrient content during 2021. By late December 2021, Semilla Nueva had tested all experimental seeds produced in the last three years of our breeding efforts, and the lab is currently running below capacity while awaiting more seed to test. This additional capacity will allow us to continue expanding our breeding efforts, including beginning development of seeds for Sub-saharan Africa.

In 2020, Semilla Nueva began to co-develop a protein quality laboratory with the regional nutrition research center, INCAP. The effort was significantly hampered due to the COVID-19 pandemic. When staff returned for in-person work, Semilla Nueva resumed work on the lab, but technical difficulties with the methodology have proven difficult to overcome. After significant troubleshooting, Semilla Nueva and INCAP decided to cease joint efforts. Instead, Semilla Nueva will purchase lab equipment





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to use a Near-Infrared Spectrometry (NIR) methodology. This technology only requires the same kind of ground samples that are currently used in our micronutrient lab. While representing a significant additional cost, it will streamline our testing processes and allow Semilla Nueva to work independently.

Semilla Nueva's lab will continue to expand in 2022, with a goal of reaching 600 samples per week for micronutrients and 100 samples per week for protein quality. The system will be fully integrated, with high zinc samples passed for a second round of evaluation for amino acid quality, allowing the same staff to manage the process. Overall, this lab already represents the backbone of Semilla Nueva's breeding efforts and has enabled the advances in backcrossing and new hybrid development mentioned below.

**Backcross efforts pass another major milestone, with partially backcrossed seeds (75% converted) maintaining zinc levels in subsequent generations**

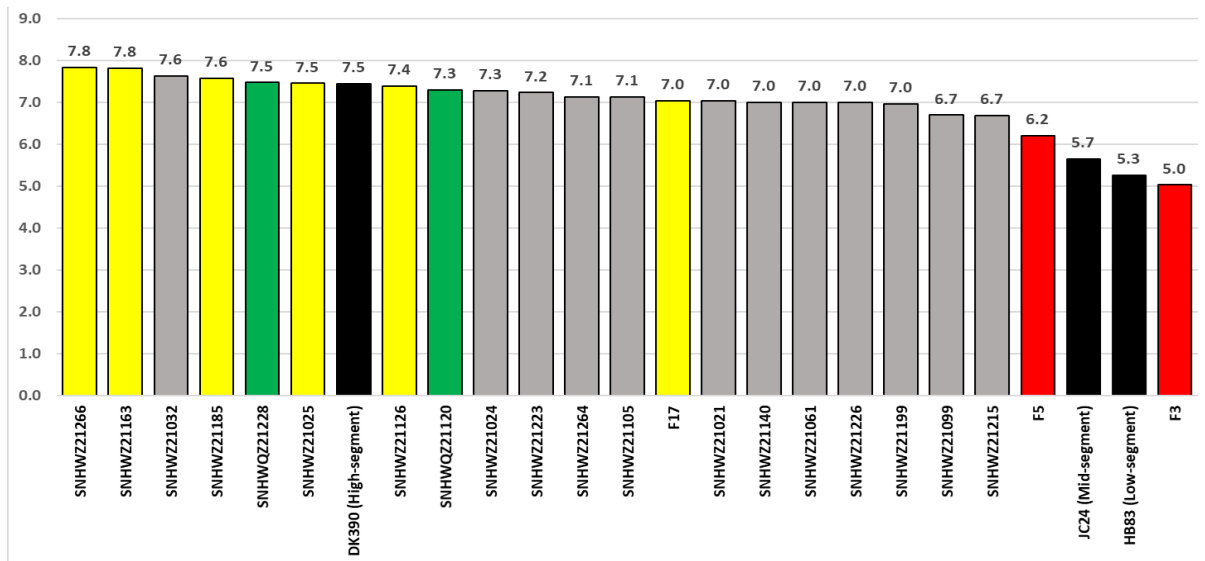
In our previous report, we described that Semilla Nueva had identified non-biofortified maize seeds which were fully competitive in the Guatemalan seed market, and had successfully reached the first milestone, maintaining 75% of their original DNA while converting them to have high zinc levels. In July-December 2021, this work was verified, by replanting those same seeds and ensuring that zinc levels were maintained in the subsequent generation. Semilla Nueva is simultaneously using these seeds to form new commercial hybrids while beginning a process to reach 93% of the original DNA. This level of proof of concept was enough for us to feel comfortable to begin dialogues with partners in Sub-Saharan Africa to begin developing seeds for their programs.

**Hybrids from CIMMYT discontinued after they failed to show increased nutrition**

In early 2021, Semilla Nueva began testing two new hybrids from the international research center CIMMYT, which had higher yields than our current biofortified seeds. These hybrids were tested in six sites throughout Guatemala and failed to show higher zinc levels than common local seeds.

**New hybrids identified and beginning new evaluation**

Semilla Nueva finished testing of 272 new experimental hybrids in November 2021. These materials used new combinations of biofortified and non-biofortified lines that had not been previously created by our international scientific partners. Testing these new combinations was highly successful. Two new hybrids (labeled below in green) showed yields that were competitive with the best seeds in the Guatemalan seed market (DK390, labeled in black) and had similar nutrition levels to our existing seeds. These hybrids will be evaluated in additional trials in 2022, and if successful will undergo farmer trials in 2023 and commercial launch in 2024.



**Figure 12: Semilla Nueva new hybrid program, select hybrids by yield (mt/ha)**

The figure above showing yields per hectare provides an overview of the current status of biofortified seed development in Guatemala. F3 and F5 (in red) are Semilla Nueva’s current biofortified seeds. The three black bars represent the leading seeds in the low, mid, and high segments of the seed market. New hybrids created by Semilla Nueva using one non-biofortified line and several biofortified lines (in yellow) showed excellent field performance. In all cases the non-biofortified line in question is already being converted to higher levels of nutrition, and new biofortified versions of these hybrids are currently being produced. These experimental biofortified hybrids will undergo additional testing in 2022 with a potential commercial launch in 2024.

F3 is normally slightly higher yielding than low segment seeds, and our new commercial material, F5 shows higher yields than the most popular mid segment seed (results for F5 from the R&D team are far more promising than the testing done by the sales team in the 2021 rainy season mentioned above). But no biofortified seeds available from international scientific partners have come close to the yields of the high segment seeds (DK390 in black) that are most sought after by farmers in Guatemala.

Semilla Nueva’s immediate breeding efforts (represented by the green bars) and intermediate efforts (represented by yellow bars) show initial results that may be able to bridge this yield gap in Guatemala. While some of these seeds may not continue to produce similarly high yields in our second year of testing, breeding is a numbers game. Having a higher number of hybrids showing the performance trends that we need is an encouraging indication we are most likely on the right track.

### **Plan for advanced backcrossing with advisory board**

Semilla Nueva benefits from the experience of several prominent scientists from the private sector on our Advisory Board. Working with Dr. Ray Riley and Dr. Michel Ragot, Semilla Nueva developed an initial plan to find the genetic regions (and eventually the genes) responsible for higher zinc in our maize seeds. Seeds with different levels of zinc have been selected and are currently being prepared to be sent for genetic analysis to begin this effort. More results will be included in the next report.



## FINANCE/ADMINISTRATION/HUMAN RESOURCES

### Summary

- Cost saving practices allowed Semilla Nueva to spend only 86% of its 2021 budget. Residual funds are being moved to 2022 to allow continuous expansion in R&D and M&E with a US\$2.3M budget. For 2022, 47% of this budget is covered with existing and committed funds, 33% with likely renewals, and 20% still needs to be raised.
- Successful ERP implementation reduced 50% of staff financial reporting time.
- Semilla Nueva completed its third external audit. A full review of US and Guatemalan 2021 finances produced no findings.
- Whistleblower, conflict of interest, child and vulnerable populations safeguarding, and anti-bribery policies were approved and implemented.

### 2021 was under budget; saved funds will allow an expanded budget in 2022

As of December 31<sup>st</sup>, Semilla Nueva executed 86% of the total approved budget (US\$1,965M). The 14% underspend was due to unfilled positions and savings in several departments. These savings will be used to expand the 2022 budget to US\$2.3M.

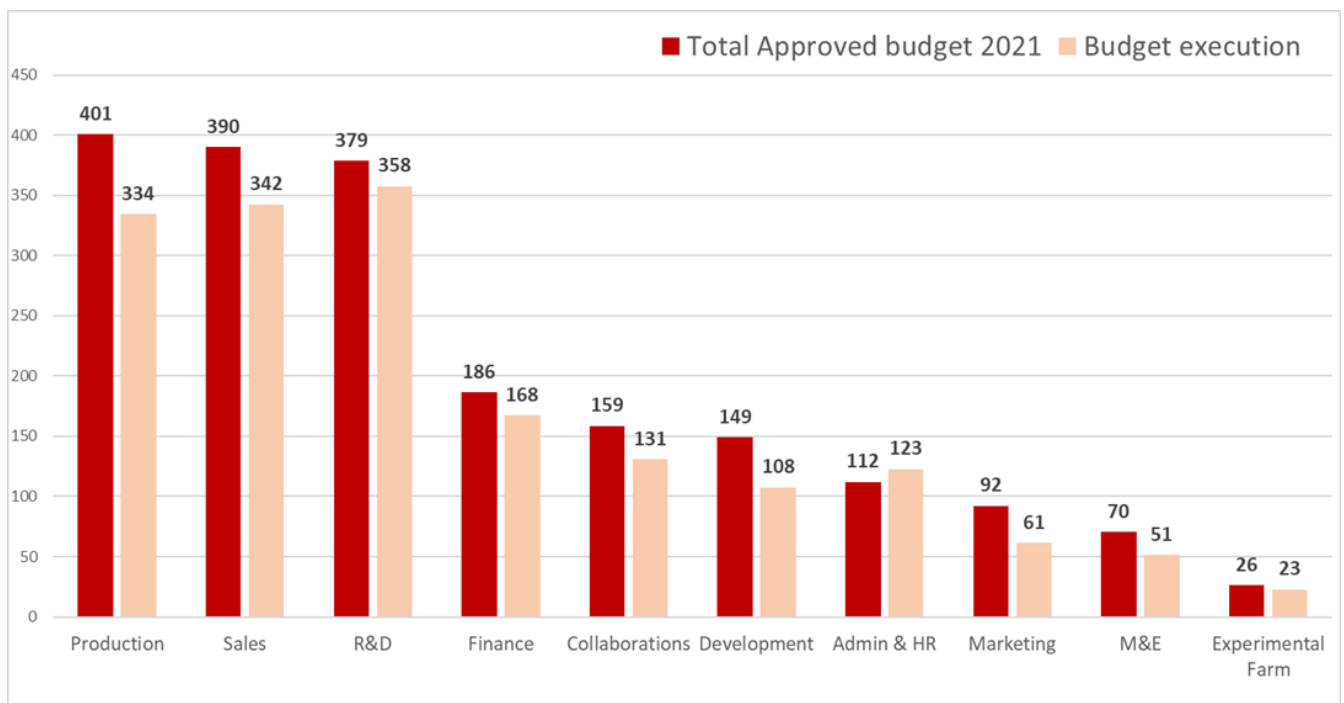


Figure 13: Semilla Nueva 2021 Budget vs. Actual (US\$ 1,000's)

### Successful creation and implementation of Enterprise Resource Planning (ERP) software

In August 2021, we replaced the Quickbooks and Google sheets-based accounting and inventory systems that Semilla Nueva had used since its founding. The accounting team, with assistance from consultants, implemented 10 out of 12 accounting and payroll modules of a new ERP. This new system has decreased accounting time by 50% and will allow Semilla Nueva to continue to grow



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without massively increasing administration and finance costs. The new software also creates a more robust accounting system which will allow for easier implementation of large projects from bilateral and multilateral donors, as well as facilitate communication between staff and Board.

### **Consolidated external audit 2021 done early and without findings**

As a result of the efficiency that the ERP implementation brought, we were able to start our consolidated external audit process at the beginning of 2021, allowing the audit to be complete before the end of January 2022. For a third year, the external audit of the 2021 consolidated financial statements passed without findings. The scope of the audit includes the financial statements and respective transactions of all three Semilla Nueva organizations (US 501(c)3 nonprofit, Guatemalan nonprofit, and our subsidiary Guatemalan company).

Copies of the 2021 audit report can be requested by emailing Maria Cruz at [mariacruz@semillanueva.org](mailto:mariacruz@semillanueva.org)

### **Implemented policies**

During the last half of 2021, the leadership team worked closely with the Board of Directors to develop and put in place appropriate policies regarding:

- Whistleblower
- Conflict of interest
- Child and vulnerable populations safeguarding
- Anti-bribery

These policies were approved by the Board of Directors and the appropriate training has been given to applicable staff. Refreshers will be happening at least once a year and a focal point of contact was designated for each case.