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United States Department of
Agriculture**

**Local and Regional Food Aid Procurement (LRP) Program Nicaragua
MAS Program
Mayor Acceso a Alimentos Saludables (Better Access to Healthy Foods)**

**Baseline Evaluation and Market Study
June 2020**

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MAS Program Baseline Evaluation and Market Study

Project Concern International (PCI) is implementing the *Mayor Acceso a Alimentos Saludables (MAS)* project funded by the United States Department of Agriculture (USDA), in the Jinotega department of Nicaragua from 2019 to 2022. The project aims to improve the effectiveness of food assistance by improving the cost-effectiveness of food assistance, improving the timeliness of food assistance, and improving the utilization of nutritious and culturally acceptable food that meets quality standards. It aims to reach 10,609 children from 60 schools, ten food supply businesses, 260 producers, and 420 parents belonging to the parent-teacher association (PTA) in the schools.

This study establishes the current status of nine project indicators, validates the theory of change, identifies the suppliers' capacities, and analyses the impact of local food purchases on markets. It presents conclusions and recommendations that will be useful to the program to ensure the effective accomplishment of indicators and to achieve quality implementation.

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Evaluation Authored by: CYCCO/FUNICA

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Acronyms

ADD	Acceptable Dietary Diversity
CECOOPSEMEIN, R.L.	Center of Producer Society Cooperatives Eco Vegetables of Nicaragua, Limited Liability
COOMSEPODA, R.L.	Producer Society Cooperative Father Odorico D’Andrea, Limited Liability
COOPPANOR, R.L.	Potato Producers Society Cooperative, Limited Liability
COOSEMTRI, R.L.	Producer Society Cooperative La Trinidad, Limited Liability
COOSMPROJIN, R.L.	Jinotega Producers Society Cooperative Limited Liability
CUCULMECA ECA	Education and Communication Association
ECOFODESA	Community Credit and Marketing Company Development Fund, Public Limited Company
ECOMAVSA	Credit and Marketing Company Father Miguel Ángel Vásquez
ECOPRASA	Community Credit and Marketing Company Pedro Pablo Rivera Alaniz, Public Limited Company
EDUCO	Education and Co-ordination Foundation
EMAJUSA	Communal Credit Company Manos Amigas 26 th of July, Public Limited Company
ESJUSA	Company Esperanza 23 rd of June, Public Limited Company
FANTA	Food and Nutrition Technical Assistance Project
FAO	Food and Agriculture Organization of the United Nations
GRINSA	Northern Industrial Group, Public Limited Company
IPSA	Institute for Agricultural Health and Protection
LRP	Local and Regional Food Aid Procurement Program
MAD	Minimum Acceptable Diet
MAF	Minimum Acceptable Frequency
MAS	Increased Access to Healthy Foods
MESA	Better Education and Health
MINED	Ministry of Education
MINSA	Ministry of Health
MT	Metric Ton
PCI	Project Concern International
PINE	Comprehensive School Nutrition Program
pp	Percentage points

PTA	Parent-teacher Association
SACACLÍ	Producer Society Co-operative Sacaclí, Limited Liability
SFC	School Food Committee
SM	School Meal
SOPROCOM	Society of Producers and Retailers, Limited Liability
TOMATOYA	Agricultural Co-operative of Services Tomatoya-Chagüite Grande, Limited Liability
USDA	United States Department of Agriculture
WFP	World Food Program

Executive Summary

Project Concern International (PCI) is implementing the *Mayor Acceso a Alimentos Saludables (MAS)* project funded by the United States Department of Agriculture (USDA), in the Jinotega department of Nicaragua from 2019 to 2022. The project aims to improve the effectiveness of food assistance by improving the cost-effectiveness of food assistance, improving the timeliness of food assistance, and improving the utilization of nutritious and culturally acceptable food that meets quality standards. It aims to reach 10,609 children from 60 schools, ten private-sector agribusinesses, 260 producers, and 420 parents belonging to the parent-teacher association (PTA) in the schools. The strategic partners for this intervention are the Ministry of Education's (MINED) Comprehensive School Nutrition Program (PINE), the private food producers, and parents.

This study combines the project's baseline evaluation with a market analysis. The primary goal of the baseline study is to measure baseline values for the project's indicators, validate indicator targets, provide a foundation for conducting an impact evaluation at endline, and validate project strategies. The market study's primary goals are to determine if the LRP model is feasible for the required quantities and whether the program could result in any significant negative market impacts. The evaluation uses a quasi-experimental design with a sample of intervention and matched control schools, with a mixed methods approach. The sample size was estimated on a finite population with a significance level of 95.0% and an error of 5.0% using a two-stage cluster sampling approach that randomly selected schools in the first stage, then students within the schools at the second stage. The variables of interest were analyzed to find out if the differences observed were significant using the appropriate statistical test described in this report.

Adequate Dietary Diversity (ADD), school meal (SM) acceptance by students, and the Minimum Acceptable Diet (MAD) were measured in the control and intervention schools. The ADD in intervention schools was 21.4%, the lowest of the three nutrition indicators measured for the baseline. The SM acceptance by students was 94.6%. The student's estimated MAD, which is a combination of Minimum Acceptable Frequency (MAF) and MAD, was 64.2%, mostly due to a high MAF (97.2%).

The students' overall ADD was 62.9%, 41.5 percentage points (pp) higher when compared with the ADD in school meals only, implying that students obtain a majority of their dietary diversity outside of school. The evaluation observed higher MAF in urban areas, which had a significant difference.

It is recommended that potatoes and cream are excluded from the SM to avoid increases in carbohydrates and fats, and to instead replace them with seasonal fruits. It is also recommended that the following tools should be included: checklists, monthly menu templates with standardized recipes, compliance checks for completion of the PINE logbook, and a nutrition education and advocacy strategy aimed at motivating parents to contribute fruit to the SM due to its nutritional value.

Transportation costs were calculated based on information provided by the suppliers and were projected considering inflation at 6.0%, devaluation at 3.5% as of 2021, and the number of deliveries established in the purchase plan. Additionally, consolidated vegetable and tuber deliveries were considered. The cost of transportation¹ for produce purchased is in line with estimates made by the project. In addition, the cost of the product purchased for food assistance was \$1.8 million, similar to the target of \$1.9 million. This indicator was calculated considering the number of deliveries set out in the PCI purchasing plan and the pre-bids provided by the vendors evaluated. Seven percent of producers implement practices to improve the cost-effectiveness of delivery, a low result due to the fact that in the existing market model where producers sell products on the farm and buyers are responsible for practices that would improve cost-effectiveness.

Sixty percent of the ten agri-businesses participating in the project are implementing practices and processes to improve the cost-effectiveness of delivery to schools and markets. It is expected that the goal to improve the cost-effectiveness of delivery to schools and markets to 80.0% will be met at the end of the project. The sales value and volume of produce sold annually by producers and businesses exceeded \$5.5 million and 14,082MT, respectively. Sixty percent of agri-businesses participating in the project comply with administrative and financial practices; the project should strengthen them in costing, strategic planning tools, and financial analysis.

The market study showed that of the ten private-sector food suppliers preselected by PCI, only six were marketing the products selected by the project for school meals, the remaining four's main business activity was financial services. None of the six active suppliers sold potatoes and beans because they lack buyers, even though they had a high mass of producers for these products. Production, nationally and in Jinotega, generates surpluses to satisfy current demand. PCI's purchases, due to their size, can be absorbed without causing negative effects on market dynamics.

¹ It is considered that the purchase will be delivered to the schools. Therefore, PCI would not incur any additional storage and handling cost, as it would be included in the transportation cost.

Produce prices showed slight increases over time. Vegetables presented fluctuations due to lack of production planning, causing oversupply in the market. This meant that prices fell, and producers' income was reduced. Tuber and vegetable cooperatives used staggered vegetable production and irrigation, allowing availability all year round. Milk, cream, and egg suppliers indicated that they had no issues with availability. Beans were harvested between the months of September and March, allowing national and local supply throughout the year. For vegetables, microbiological contamination and maximum pesticide residue limits were monitored by the buyer but not by the supplier because sales prices did not allow them to cover the cost of carrying out these tests. Food suppliers can produce the quantities required by PCI and meet quality standards.

Local procurements supported by USDA for MAS will allow for a greater number of members to be incorporated into a guaranteed market, generating increases in income through production diversification or through increased quality and better prices. Private dairy and egg businesses showed a higher level of consolidation in the area of management and organizational structure. Vegetable cooperatives were more consolidated in the provision of technical and financial services, with potential for improvement in management and strategic orientation. Funding, production support, supplies, and technical assistance services were not a limitation to production as the cooperatives were able to provide them. The cooperatives had means of transportation that met the criteria to ensure safe produce transfer. The risk factors that affected the production chain were mainly climatic, and for the marketing chain, risks were seen in price fluctuations and produce scarcity. The businesses are in a position to make commercial commitments to PCI with updated employer obligations, legal and financial records, and tax commitments.

The PTAs focused on operational activities, such as preparing and handing out the SM, and less on strategic planning. Schools have the capacity to store non-perishable produce but lacked the facilities to store dairy produce and vegetables. It is recommended that PCI define strategies and actions to ensure adequate food handling and storage, both in schools and at homes. PCI should direct their actions to strengthen the PTAs' strategic capacities and invest in school facilities, including the consideration of a sustainable cold chain.

The project is relevant to donor and national policies as it contributes to the reduction of food insecurity. Some assumptions of the theory of change are currently not valid, so it is recommended the theory be adjusted to improve diet by focusing on promoting local purchasing, capacity building for the ten agribusiness, producers, and PTAs. The public policy framework is a barrier to

sustainability and the scaling up of results as the government centralizes food purchases and producer cooperatives are not eligible to supply food according to the national procurement system. It is recommended that a project sustainability strategy is developed that includes documentation and dissemination of project strategies and successes, and engagement with local government.

1. Program Information and Project Background

In 2017, Nicaragua maintained a consistent economic growth rate of 4.6%. Due to the social and political unrest that the country has experienced since April 2018, the economy contracted to 4.0% and -3.9% in 2018 and 2019, respectively. In 2020, growth is expected to fall -6.3%, recovering slowly to 0.7% by 2021.² Poverty increased to 13.1% in 2019 (from 9.5% in 2017), adding more than 240,000 people into poverty.

PINE is a strategic program of MINED. Within the framework of national policies, its objective is to help improve children's food culture, education, and nutrition in preschools and public primary schools with a rights-based approach. PINE is a public good provided by the Nicaraguan Government to school children. Nationwide, 1.8 million children receive food through PINE programs that is rich in carbohydrates, fats, and plant-based protein but does not include fruits or vegetables.

In this context, PCI, with the support of the USDA, designed the MAS project that aims to improve the effectiveness of food assistance through by improving the cost-effectiveness and timeliness of food assistance, the use of nutritious food, and the strengthening of PTAs, businesses, cooperatives, and food producers. This will be achieved through the following activities: purchasing produce locally; providing technical and administrative strengthening of local agricultural businesses and producers; promoting relationships between PTAs, producers, and suppliers; and strengthening producers technical capacity. Annex 5 details the results framework. The project aims to provide nutritious food to 10,609 primary school students (5,100 boys and 5,509 girls) in 60 schools in two municipalities, Pantasma and Jinotega (found in the department of Jinotega), by September 2022. Ultimately, the objective of the project is to build a local market for healthy and nutritious food in collaboration with PTAs, the Government, and food suppliers.

² World Bank

2. Study Summary

2.1. Purpose of the Evaluation and Key Questions

The evaluation answered the key questions by assessing the current project indicators and the feasibility of the achieving indicator targets. It analyzed the validity and relevance of the theory of change established at the beginning of the project and the validity of the sustainability elements. It also assessed the performance of the PTAs, as well as providing important information to be considered for project implementation. For the market study, the following were analyzed: the impact of local purchases on the food market, the seasonal production in terms of the schools' demand, and the product-price distribution to determine their trends over time.

The key evaluation themes include:

- determine the relevance of the project,
- ascertain the consistency of the logical framework and if any modifications were necessary,
- calculate quantitative values for the selected indicators,
- assess the objectivity of indicator targets,
- evaluate the actors' knowledge and skills to recommend improvements,
- identify opportunities and threats,
- determine potential problems or challenges,
- ascertain the degree of empowerment and participation of local actors, and
- validate the strategies designed for **MAS**.

In the market study, the key study themes include:

- Do food supplies meet or exceed demand?
- Are there problems with competition at different levels of the market system?
- What are the possible negative effects caused by **MAS** purchases?
- Are there problems of seasonal availability for specific produce?
- What are the seasonal variation in supply of food commodities or availability trends?

Is there historical price data for specific produce proposed in the project over the last 3 to 5 years?

Hypothesis

El diseño de evaluación inicial tomó en cuenta la hipótesis que será comprobada en el estudio final del proyecto, planteada de la siguiente manera: the cost-effectiveness and timelines of food assistance and utilization of nutritious foods improves as a result of Local Regional Procurement compared to schools participating in a USDA-funded MGD program

Measured Indicators

To test the hypothesis, the baseline evaluation and market study measured three groups of indicators. The first focused on ascertaining the current state of ADD, schoolchildren's perception of the SM, and the MAD, which relate to the utilization of nutritious food. The second aimed to learn about the value and volume of sales, as well as the administrative and financial practices of the businesses and producers. The third was to determine the value of procurements, costs of transport, and food handling paid for by PCI. These last two groups relate to the cost-effectiveness and timeliness of food assistance. The indicators are detailed in the terms of reference, see Annex 5. The hypothesis will be further tested through the measurement of additional indicators throughout the life of the project and during the project's final evaluation.

Planning and Implementation of the Evaluation

The evaluation was carried out in 60 working days, divided into four major phases. The first phase took place in March 2020 and focused on developing a workplan and analysis of secondary information. The second phase was data collection from schools, agribusinesses, and producers from March 26 to April 27, 2020. Phase three was data analysis and drafting the report in May 2020. The fourth phase was editing the final report and translating it into English in June. PCI is planning an internal phase of results dissemination, learning and project adaptation for July 2020. Project management software was used for planning and monitoring the study, ensuring that tasks were completed in the established timeframe.

2.2. Methodology and Limitations

The evaluation used a quasi-experimental design method with an intervention and control population that were selected due to their similar characteristics and geographical proximities to the intervention schools. The use of a control group will allow PCI to demonstrate impact during the final evaluation by measuring changes for indicators between the control and intervention schools.

The information collected used mixed methods to obtain quantitative and qualitative data. Quantitative data was collected through surveys, while qualitative data was gathered via focus groups, interviews,

guided questionnaire, and workshops with different stakeholders. Both the baseline and market studies used participatory, constructive, and knowledge-based approaches.

The variables, where sample size allowed it, were analyzed using the Student's *t*-test³ and Fisher's exact test to detect significant differences with $p < 0.05$ between the project and control groups, and InfoStat⁴ was used to make comparisons between municipalities and origin. Qualitative variables were analyzed by frequency analysis.

Limitations included: (a) the COVID-19 pandemic, forcing a rethink of data collection strategies; (b) no student lists available to determine the study subjects, as had been predefined in the sampling strategy; (c) producers being absent from their homes; (d) student absenteeism due to fear of the pandemic; (e) PINE's food control notebooks with information gaps; and (f) dispersed locations of producers belonging to a cooperative or business. To overcome the limitations, the team made the following adjustments: (a) asked teachers to directly invite children's parents to activities, (b) used a random numbers application for the students' list, and (c) sought support from the cooperatives' managers and technical teams to ensure producers participated.

2.3. Sampling Strategy

The samples were taken from the municipalities of Santa Maria de Pantasma and Jinotega. For students, the sample size was calculated using the sampling formula for known populations with a confidence interval of 95.0% and a sampling error of 5.0%. A stratified sampling strategy was used to select 22 schools and then 668 students from those schools from a sample frame of 60 intervention schools and 10,609 students.

Schools selected for the control group for this baseline evaluation will also be included in the control group for the final evaluation. Control schools share similar characteristics with intervention schools, including:

- ✓ Taking part in the MGD FFE (MESA II) project, and thus receiving USDA-donated commodities and PINE food, including rice, beans, oil, wheat flour, and oil.
- Starting in FY20, MESA II began to phase out commodity distribution, which will be completed by FY22 when MGD commodity distribution will no occur, only fresh LRP commodities in intervention schools.

³ Student *t*-test for two samples is used to test whether two groups (two populations) are different in terms of a quantitative variable and to construct confidence intervals.

⁴ (Di Rienzo, Casanoves, Balzarini, González, & Tablada M.) URL <http://www.infostat.com.ar>

- ✓ Encouraging parents to contribute different nutritious foods to complement school meals, including vegetables, protein, and fruit. The frequency of parent contributions varies across all schools; on average, parents complement school meals only 41 days of the 180 days in the school year or 23%.
- ✓ Conducting local capacity strengthening activities for PTA members who are actively involved in the project to enhance sustainability readiness.
- ✓ Easy access to main roads; school size; type of community (urban, rural); socioeconomic level; and native language.

The main difference between the two groups is that intervention schools will be receiving eight locally-procured fresh food products, to allow the final evaluation to identify the difference between schools that provide fresh food to their students and schools that do not.

PCI will also ensure that there are no spillover effects from the MAS intervention to the control schools during project implementation so that the control group is not contaminated and can serve as a good comparison group during the final evaluation.

For producers, the sample size was calculated using the sampling formula for known populations (676 producers) with a confidence interval of 95.0% and a sampling error of 5.0%. The simple random sample strategy was used to select 269 producers who were members of the eight cooperatives engaged with project MAS. The R-sampling statistical package was used so that all selected actors had the same probability of being chosen Annexes 3.1 and 3.2 display the schools, cooperatives, producers, and focus groups.

The baseline evaluation selected a control group of producers based on the criterion of being members of six cooperatives that did not qualify as project suppliers, given their reduced supply capacity compared to the eight cooperatives engaged with project MAS. The final evaluation will use the same criterion for selecting a control group of producers.

2.4. Data Collection Instruments

For the baseline evaluation, the data collection techniques were hedonic rating tests, student surveys about eating frequency, questionnaires and focus groups for PTA members, food consumption frequency checklists in PINE's food control notebook in the schools, and food handling and manipulation observation lists in schools.

For the market study, the following techniques were used: surveys of producers, focus groups for service suppliers, semi-structured surveys of cooperatives and businesses, visits to service providers and product suppliers, and interviews with the World Food Program (WFP) and Pantasma mayor's office. For all techniques used, the respondents' prior consent was obtained and information confidentiality was ensured.

The surveys were adapted to the KoBoToolbox platform and the KoBoCollect application, which allowed information to be collected using Android devices. This facilitated data collection, systematization, quality control, and information analysis. The methodological tools are presented in Annex 3.4.

2.5. The Team and Participating Actors

The main consulting team was Danilo Saavedra (Coordinator), Carmen María Reyes (Nutrition Specialists), Araceli Jiménez (Economist), Rafael Salazar (Economist), Elías Bucardo (Statistician) and Lyndsey Chapman (English Translator). The nutrition specialist had a team of nutritionists, namely Ligia Teresa Yllescas, Berna Mendieta, and Brenda Romero. The producers' survey was conducted by Axel Calero, Harvey Valverde, Victor Bucardo, and Samir Gutierrez. PCI staff participated from the initial planning through to the consultancy's, both in the office and out in the field. The participating actors included (a) schoolteachers, (b) third to sixth grade students, (c) school PTAs, (d) cooperatives and businesses, (e) producers, (f) traders, (g) WFP, (h) Pantasma's mayor's office, and (i) members of PCI's management and operational team.

2.6. Report Structure

This report contains an executive summary detailing the evaluation's most important findings and the methodologies used to collect and process the qualitative and quantitative data. The results show the indicators' current state with an analysis of how realistic, achievable, and attributable to the project they are. They also identify certain internal and external risks for compliance, sustainability, and some elements for the final evaluation, which allow the project's impact to continue beyond the life of the project. The market study addressed the analysis of supply and demand, the suppliers' characteristics, ability to meet product quality, and risks and impacts that could affect the value chains. At the end of this report, conclusions and recommendations of where the project should focus its actions are presented.

3. Results and Analysis

3.1. Initial Project Assessment

3.1.1. *Relevance and Theory of Sustainable Change*

The project contributes to improving dietary diversity of the SM, thus reducing food insecurity and hunger. The initiative is relevant to the UN's Sustainable Development Goals.⁵ It also contributes to the U.S. Government's Global Food Security Strategy⁶ and, in particular, to the overarching goals of agricultural growth, strengthening people and system's resilience and nutrition. The project contributes to the National Human Development Plan⁷ and the National Education Plan for 2017 to 2021⁸ in Nicaragua, which aims to bring school feeding programs to 100.0% of primary school students. The initiative is consistent with the Food Sovereignty and Security Law 693 (Asamblea Nacional de Nicaragua, 2009).

The theory of change focuses on improving the supply of and access to healthy and culturally acceptable food, as well as the development of a sustainable and locally owned school feeding program. The first part of this is achievable in improving food supply and access. However, there will be challenges sustaining the school feeding program due to the country's socio-political conditions. The public policy framework is directed, in part, towards food security and sovereignty and the centralization of food purchases by MINED's PINE. It is recommended that the elements of the theory of change focus on improving the School Meal in terms of nutrition and diversity, making the procurement process more effective; strengthening the capacities of enterprises, producers, and PTAs; producing healthy food; and developing a project knowledge management strategy, including the documentation and dissemination of policy briefs, project processes, dissemination of good practices and results. In addition, it is important to have outcome indicators that measure the expected change of the project and to validate the theory of change. Possible outcome indicator could be agricultural productivity, producer's income, prevalence of overweight and obesity, school retention, and cognitive functions.

⁵ Sustainable Development Goals 2015-230

⁶ U.S. Government Global Food Security Strategy FY 2017-2021

⁷ Gobierno de Nicaragua, Plan Nacional de Desarrollo Humano 2018-2021

⁸ Gobierno de Nicaragua, MINED Plan de Educación 2017-2021.

3.1.2. Current Status of the Project Indicators

LRP 1.1. Cost of transportation, storage, and handling of commodities procured as a result of USDA's assistance (by product). PCI's goal is \$46,249.0.

The indicator baseline value is \$43,620 for the life of the project. Table 2.1 shows how this was calculated. The indicator was estimated based on average costs provided by the private sector providers⁹ to consolidate weekly deliveries for vegetables, dairy and eggs, and quarterly deliveries of beans. The target budget established by PCI is similar to the one estimated in the evaluation and should be kept as is.¹⁰

LRP 1.1.1. Cost of commodities procured as a result of USDA's assistance (by produce and country of origin). PCI's target is \$1.9 million.

The indicator was calculated using benchmark estimates from pre-selected businesses, which were projected by applying an annual inflation of 6% and a devaluation of 3% from 2021, for the purchase volumes and weeks per year planned for the project. The total cost of the produce was estimated at \$1.8 million, slightly below the project target. Table 2.2 and 2.3 show how this was calculated. Food prices should be monitored weekly at wholesale markets and potential suppliers, considering the current context of the country, climate variability, supply costs, and the impact of COVID-19.

LRP 1.1.2. Percentage of producers who have adopted practices and processes to improve the cost-effectiveness of delivery. PCI's target is 80.0%.

According to PCI's project plan, the following practices will be promoted and were measured during this evaluation: (a) delivery recording and tracking systems, (b) use of appropriate packaging for transportation, and (c) delivery schedules to meet school procurement schedules. Of those evaluated, only the use of packaging and delivery recording were used. The average percentage of practices used by the intervention producers was 4.3%. No significant differences were found between the intervention and control producer groups (see Table 2.16).

Other practices that producers were implementing in their production systems were identified: 98.0% performed chemical control, 79.0% did not burn, 48.0% had natural fences, 38.0% used crop rotation, 55.0% performed safe disposal of pesticide containers, and 49.0% reforested. Trainings and technical

⁹ For cost estimation purposes, inflation of 6% and devaluation of 3.5% were assumed

¹⁰ This recommendation is made considering the Cordoba's crawling peg policy with respect to the dollar, which allows for partial absorption of the internal inflation rate.

assistance are needed to implement practices throughout the production process in order to achieve the indicator target, especially for those where the level of implementation is low (see Table 2.19).

Sixty percent of the eight cooperatives and two businesses¹¹ have implemented improvement practices and processes,¹² which helps them compete in the market. However, it is advisable to incorporate practices such as sanitation protocols and safety controls in the field, that minimize the risk of quality loss and pesticide contamination (see Table 2.4. and 2.5).

***LRP 1.3. Percentage of schools serving school meals with Adequate Dietary Diversity (ADD).
PCI's target is 90.0%.***

The percentage of schools serving school meals with an ADD was measured using the eight food groups from Food and Nutrition Technical Assistance Project (FANTA)¹³ and FAO (Food and Agriculture Organization of the United Nations)¹⁴ guidelines. ADD is achieved when four or more food groups are present out of eight groups, and they are consumed daily. Intervention schools are already participating in PCI's McGovern-Dole Food for Education program and thus receive three of the food groups daily: Group 1 consisted of grains, cereals, and tubers; Group 2 of pulses and nuts; and Group 8 of food cooked with oil or fat. Therefore, this study measures ADD by the presence of two additional food groups out of five: animal protein (egg, milk and animal source foods), fruits and vegetables rich in vitamin A, and other fruits and vegetables. The ADD was calculated with data from the PINE logbooks, which was present in all but two schools and from the snack contribution logbook in only 28.6% of intervention schools. The results for ADD correspond to 20 schools, due to the two missing logbooks.

According to the survey, 21.4% of project schools served meals with vegetables and animal proteins, giving them ADD, (see Table 1.3). The schools with ADD are mainly located in the rural areas of Santa María de Pantasma; this difference is explained by parents' contributions to the SM (see Table 1.2). The plan for analysing the indicators shows the difference between the types of ADD in Annex 3.3.15.

¹¹ The calculation was made using the selected businesses.

¹² Delivery tracking system, use of appropriate packaging for transportation, scheduling of deliveries to meet school procurement schedules, and reduction of food loss due to transportation.

¹³ (Swindale, Anne; Paula Bilinsky. FANTA, 2006, pág. 12)

¹⁴ (FAO, 2013)

Overall, ADD for the SM was made up of 21.4% from protein, 7.1% from fruits, and 64.3% from vegetables (see Table 1.3). The lack of fruit in the school diet limited the inclusion of two very important food groups found in Group 5 foods rich in vitamin A, and Group 6, other fruits and vegetables. Vegetables, such as peppers, onions, and tomatoes, were consumed as a condiment added to fried rice, as this is part of the families' eating habits. Nevertheless, the nutritional contribution was low. Milk consumption was limited by price and availability as it's an agricultural region.

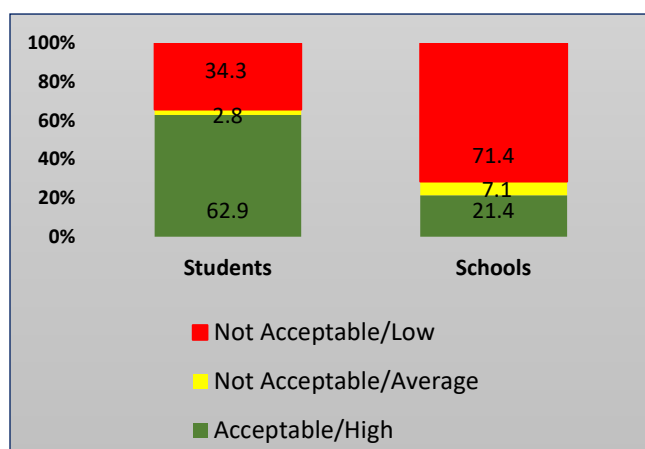
Of the control schools, 16.7% served food with ADD. They had a vegetable consumption of 83.3%, 19 pp higher than the project school group, no fruit consumption, and a protein intake of 16.6%, 4.7pp lower than the project schools (see Table 1.2). ADD between project and control schools is not statistically significant.

MAS's goal is for 90.0% of schools to have ADD. According to the results obtained, 21.4% has been achieved and to reach the project's goal it has to increase by 68.6 pp. The current SM and **MAS's** contribution would total six food groups. Three products provide protein, two of animal origin and one of vegetable origin. In the case of vegetables, three products selected by the project provide vitamins and minerals and one is rich in vitamin A. Potatoes are part of Group 1, as well as rice, corn, and cereal, which are already provided in the SM. Cream belongs to Group 8 of foods prepared with fat, which is already covered by oil in the SM.. Therefore, it is expected the established target will be achieved by the end of the project.

Percentage of Students with an ADD

Schoolchildren's overall ADD (including at-home and in-school dietary diversity), though not a specific project indicator, was calculated to obtain complementary information for dietary diversity obtained through school meals. According to the surveys, 62.9% of schoolchildren had ADD. When comparing students' and schools' ADD within intervention schools, 41.5 pp of students have an ADD compared to ADD within just the

Figure 1: Schools and Students' at Home Level of Dietary Diversity



schools. Conversely, 37.2 pp more schools have a low rated ADD compared to students.¹⁵

Disaggregated by sex, 63.7% of boys and 62.2% of girls had ADD, showing no significant difference. When analyzing the students' ADD, it was much higher than the ADD found in schools. The high ADD of the school children in the project group was related to the variety of diet at home, since lots of these foods were homegrown (see Table 1.4).

According to the survey, 63.8% of urban schoolchildren had ADD compared to 62.7% of rural school children, a statistically significant difference (see Table 1.4).

Children aged between 10 and 11-years-old have an ADD of 68.8%, higher than other ages. There was a statistical difference between school children aged 10 to 11 and those over 11. The fifth and sixth grade primary school students showed an ADD with similar percentages, ranging from 64.4% to 67.9%, respectively. The fourth grade showed the lowest percentage of 56.3%, showing a significant difference between the fourth to sixth grades. In the municipalities, Santa María de Pantasma had a higher percentage of students with ADD at 65.3% and Jinotega at 60.6%, although this difference is not statistically significant.

In the control schools, 62.9% of schoolchildren had achieved ADD (see Table 1.5), not significantly different from intervention schools.

The foods that were consumed with high frequency by the project schoolchildren were Group 1 at 84.1%, being predominantly rice; Group 8 at 83.4%, mainly in the form of oil in rice and fried beans; and Group 2 at 76.0%, which were mostly consumed at home. The groups with the lowest consumption were Group 4, foods of animal origin, at 15.6% and Group 5, foods rich in vitamin A, at 28.4%. Group 6, other fruits and vegetables was consumed by 46% of schoolchildren. Fruits were mainly consumed according to the season, and vegetables (onion, pepper, tomato, chayote, and carrot) were added to rice in small quantities as a condiment, so their nutritional contribution was not important. In both cases, amounts consumed were very low, considering that the recommendation intake of these foods is five portions per day (see Table 1.6).

¹⁵ High/Adequate = 4 or more food groups at least 6 days/week; Average = four or more food groups 3-5 days/week; low = fewer than 4 food groups consumed in a week.

There was a statistical difference in the *t*-test for schoolchildren in the project and control groups for food Groups 3 and 4. There was a significant difference for food Groups 1, 2, 3, and 5 for urban/rural, and for food Groups 2, 4, and 5 for municipality.

Table 1. Frequency of Schoolchildren's Consumption of Food Intervention Students by Location and Municipality, March to May 2020

Food groups	High consumption frequency (6 to 7 days) with intervention group					
	Condition		Location		Municipality	
	Contol n=277	Intervention n=391 %	Rural n=322 %	Urban n=69 %	Jinotega n=198 %	Santa María de Pantasma n=193 %
1. Grains, cereals, roots and tubers	83.4	84.1	87.0*	71.0*	78.8	89.6
2. Pulses and nuts	69.3	76.0	80.4*	55.1*	68.7*	83.4*
3. Dairy products	7.2*	33.0*	32.0*	37.7*	29.8	36.3
4. Animal protein	6.5*	15.6*	14.9	18.8	13.1*	18.1*
5. Rich in vitamin A	33.8	28.4	26.1*	39.1*	30.3*	26.4*
6. Other fruits and vegetables	38.3	46.0	44.7	52.2	49.5	42.5
7. Eggs	41.5	38.9	40.1	33.3	38.9	38.9
8. Fatty and oily foods	82.7	83.4	82.9	85.5	81.8	85.0

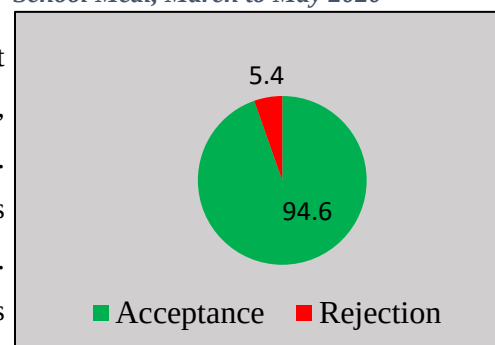
Source: Elaborated from the results of the survey "consumption frequency by food group for schoolchildren in intervention schools".

* **Significant statistical difference with $p < 0.05$**

LRP 1.3.1. Percentage of students who report liking school meals using a 5-point hedonistic facial scale according to gender. PCI's target is 90.0%.

Of students, 94.6% reported liking school meals using the mixed 5-point hedonic facial scale. PCI's goal was exceeded by 4.6 pp.

Graph 2: Acceptance and Rejection of the School Meal, March to May 2020



School meals were more accepted in the urban area at 97.1%, compared to the rural area at 94.1%. However, there was no significant difference in relation to location. In both municipalities, the percentage of acceptance was high and did not differ significantly, 94.4% and 94.8%. Among the age groups, 88.6% of over 11-year-olds accepted the SM, the other ages had a similar behavior with

95.5% and 96.7%. There was a significant difference for the 10 to 11-year-old group and the over 11-year-old group. Disaggregated by sex, the percentages were similar, with girls at 95% and boys at 94% (see Table 1.7). A statistically significant difference was found between all primary grades. Boys

preferred rice and fortified cereal (with milk). The food that was least liked was beans at 29.2%, due to the way it was prepared, and the type provided by the schools. The local variety of bean is more accepted as it is eaten at home.

Of the eight foods surveyed, milk is the most preferred food, with 95.5% of students liking bagged milk and slightly fewer (94.7%) liking powdered milk. The second favorite was tomatoes for girls and potatoes for boys. The food ingredient that both sexes least preferred were carrots and beans. The PTAs showed 93% acceptance of the eight foods to be included in the SM through the support of **MAS**. Beans were the food with least acceptance with 71.4% acceptance and 28.6% rejection. This data confirmed what 29.2% of school children expressed about beans being the food they least liked.

In the control schools, 92.4% of students reported that they liked the SM (see Table 1.8). There was no significant difference in acceptance of the SM for students in the control and project schools.

***LRP 1.3.2.1. Value of annual sales for businesses and producers receiving USDA assistance.
PCI's target is \$1.9 million***

Total annual sales for project businesses and producers in 2019 was \$5.5 million, of which \$3.6 million corresponded to sales by producers, giving an average of \$21,200.0 per producer (based on 170 producers). There were no significant differences with respect to the control group. The sales for the six businesses and cooperatives that marketed the selected produce was \$1.9 million (see Table 2.6 and 2.20). Regarding PCI's established target, total sales exceeded \$3.6 million. According to the results, the indicator needs to be adjusted. However, the annual sales indicator is affected by external factors, such as price, decrease in production volumes, planting areas, and company dynamics, among others.

Below, the 2019 sales value is broken down by produce type, producer type, age, and gender for the project group:

- Of total sales, \$2.6 million (47%) comes from vegetables, \$1.6 million (28%) from tubers, \$1.1 million (19%) from the sale of eggs, \$0.3 million (5%) from beans, and \$0.04 million (1%) from cream and milk.
- According to the typology defined by USDA, 13.3% come from small producers, 52.0% from non-small producers, 34.7% from small businesses. 82.5% of sales were made by older adults and 17.5% by people under 30. Ninety-five percent of sales were made by men and 5.0% by women.

- Of the ten private sector suppliers included in the project, 43.0% of sales were made by COOSEMPODA, 19.0% by Klifford, 17.0% by SACACLI, 11.0% by Tomatoya, 8.0% by COOSMPROJIN, 1.0% by GRINSA, and 1.0% by ECOPRASA.
- The value of sales for small producers was \$733,357.71; for non-small producers, it was \$2,874,663.98; and \$1,918,534.90 for small businesses.
- Of the value of sales from small producers, \$33,258.03 correspond to adult women (≥ 30 años) representing 4.5% of the sales value for this group, while \$184,236.76 corresponded to male small producers under 30 years of age, and \$515,862.92 to male small producers 30 or older. No female small producers under 30 were found for this group. With non-small producers, the value of sales from adult women was \$130,367.03, while young male non-small farmers sold \$176,104.62 and adult men sold \$2,568,192.34. Again, no young women were found for this group. Small businesses were all owned by men 30 or older.
- Small producer sales included vegetables (excluding carrots) for a value of \$221,057.71, tubers for \$455,591.37 and beans for \$56,708.62. Non-small producers sold vegetables for a value of \$1,556,518.63; tubers for \$1,119,038.19 and beans for \$199,107.17. Finally, small businesses sold a value of \$1,072,986.00 in eggs, \$807,122.00 in vegetables, \$13,315.40 in milk and \$25,111.50 in fresh cream.

LRP 1.3.2.1. Volume of produce (MT) sold by businesses and producers receiving USDA assistance. PCI's target goal is 3,600 MT.

In 2019, project producers sold 12,327 MT, with an average volume of 72.5 MT per producer (based on 170 producers). There were no significant differences with respect to the control group. The businesses sold 1,754.1 MT (see Table 2.6), giving a total volume of 14,082 MT. The total estimated volume exceeded the target by 10,324 MT. This indicator needs to be adjusted.

Below, the product volume sold in 2019 is broken down by produce type, type of producer, age, and gender for the project group:

- Of the volume sold, 10.1 thousand MT (72%) were vegetables, 3.1 thousand MT (22%) were tubers, 0.5 thousand MT (4%) were eggs, milk and fresh cream, and 0.4 thousand MT (3%) were beans.
- 76.0% were made by adults and 24.0% from young people under 30 years. 94.0% of the volume sold was by men and 6.0% by women.
- Of the ten private sector suppliers included in the, 55.0% of the volume sold was from COOSEMPODA, 15.0% from COOSMPROJIN, 14.0% from SACACLI, 10.0% from Tomatoya and 4.0% from GRINSA.

- Based on the type of producer, 20.0% of the volume of products sold were from small producers, corresponding to 2,838.46 MT, while 67.0% or 9,489.83 MT were from non-small producers, and 12.0% or 1,754.10 MT from small businesses, for an overall total of 14,082.39 MT of products sold.
- A total of 156.31 MT or 4.5% of the products sold by small producers corresponded to adult women (≥ 30 years of age), while 705.83 MT were sold by men under 30, and 1,976.32 MT by men 30 or older. With non-small producers, the volume of products sold by women over 30 was 522.60 MT; men under 30 sold 575.44 MT; and men over 30 sold 8,391.71 MT. The sample did not find any female under 30 for any of the types of producers. Small businesses were all owned by adult males over 30 and sold a volume of 1,754.09 MT.
- Small producers sold a volume of 855.60 MT of vegetables (there were no carrots), 1,763.37 MT of tubers, and 219.49 MT of beans. Non-small farmers sold 8,042.30 MT of vegetables, 1,307.91 MT of tubers, and 139.62 MT of beans. And small businesses sold 1,198.70 MT of vegetables and 528.70 MT of eggs, 16.70 MT of milk and 10 MT of fresh cream.

LRP1.3.2.4. Percentage of suppliers who apply improved financial and administrative practices. PCI's target is 70%

This indicator was measured using a self-assessment methodology of associative enterprises¹⁶ that took into account a total of 11 practices, five related to administration (implementation of operations and functions manuals, existence and implementation of strategic plan, implementation of business and operational plans) were aimed at determining the existence of instruments that allowed management bodies to supervise and direct the organization's activities. Six were related to finance (use of accounting systems, implementation of accounting procedures manual, preparation of financial statements and monthly reports, conducting audits at least once a year, evaluation and review of financial statements, production process planning, requirements to comply with commercial contracts) were aimed at ensuring the systematization and use of accounting information for decision making. The indicator was calculated considering those businesses that have implemented at least four of the 11 practices. Sixty percent (6/10) of the businesses evaluated complied with administrative and financial practices. Financial practices were used more than administrative practices. In the financial area, five of the businesses implemented 100.0% of the practices, two 83.0%, and three 67.0%. In the administrative area, two businesses implemented 100.0% of the practices, three 80.0%,

¹⁶ (Ilabaca Ugarte, Gottret, & Junkin, 2010). <http://www.renida.net.ni/renida/funica/REC10-II25.pdf>

three 60.0%, one 20.0%, and one 0%. The planned target is expected to be met (see Table 2.8 to 2.11).

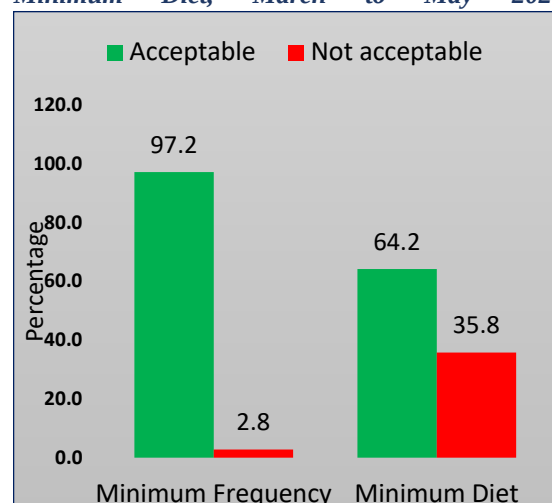
It is recommended that PCI strengthen administrative and strategic orientation capacities, as well as the capacity to interpret financial instruments for decision-making and costing. In the case of the producers, none of them complied with the administrative and financial requirements (Unique Registry of Taxpayers Number, General Directorate of Revenue Registry, commercial or formal invoices).

LRP 1.3.3. Percentage of school-aged children receiving a MAD. PCI's target is 90.0%.

The MAD is the combination of two indicators: the MAF, considered to be three or more meals per day, and ADD in schools, determined by the presence of four or more of the eight food groups in the diet. Figure 3 shows that students in the project schools had a MAF of 97.2% and an MAD of 64.2%.

For the control group, 67.5% had a MAD, 3.3 pp above the project group, however this difference is not statistically significant. By municipality, 67.9% of Jinotega had a MAD, 6.9 pp more than the municipality of Santa María de Pantasma, which was 60.9% (see Table 1.13).

Graph 3: Project Schools' Frequency and Minimum Diet, March to May 2020



Schoolchildren in urban areas had a MAF of 100.0%, higher than those in rural areas with 96.6%. This, in part, was because in the urban area they gave more mealtimes at school. Between municipalities, Jinotega reached 99.0% and Pantasma 95.3%. According to sex, 97.5% of the girls had MAF compared to 96.8% of the boys. On average 95.6% of schoolchildren ate the three main meals: breakfast, lunch and dinner. Only 36.6% had an afternoon snack (see Table 1.10). A statistically significant difference was found in the project group and control group at lunchtime. 99.3% of the students in the control schools showed MAF (Table 1.13). The MAF of the control group and the project group did not show significant differences.

Girls were found to have the highest MAD value at 64.7%, 1 pp more than boys. The highest percentage was found in the urban area at 72.5%, showing statistical significance. Similar tendencies

were found among the municipalities, with Jinotega at 64.1% and Pantasma at 64.2%. For the 10 to 11-year-old age group, 69.8% of students had a MAD, 13 pp higher than the other age groups, which were 56.8% and 58%. This showed a statistical difference between children in the 10 to 11-year-old age group and those older than 11-year-old age group. For the fourth grade, 58.6% of students had a MAD and the rest of the grades showed similar results at 65.2% and 68.7% respectively. Statistically significant differences were found between the third to fifth and third to sixth grades (see Table 1.12).

The target is for 90.0% of school-aged children to receive a MAD and the current indicator stands at 64.2%. Through **MAS**, an improvement of 25.8 pp must be made. However, the variables that determine the level of this indicator are based on how children eat in their homes, where PCI is unlikely to have any influence. And if the ADD does not improve, there is a risk that the MAD target will not be met.

LRP 1.4.3 Number of individuals in the agriculture system who have applied improved management practices or technologies with USDA assistance. PCI's target goal is 216.

Of the 170 producers in the intervention group, 17 (or 10%) were small producers, with 12 being over 30 years of age (2 women and ten men), and five were men under 30. Non-small farmers included 153 or 90% of the sample, including 147 over the age of 30 (26 women and 121 men), and six were male under 30. All 170 producers interviewed were applying at least one food production improvement practice in their farms, representing almost 79% of the LOP target; thus, this report recommends changing this indicator's definition to include at least two improvement practices. Besides this change, other elements will not allow comparing this result during the final evaluation, including the fact that the project will train producers to participate in the project and measure their knowledge during field visits. In contrast, this baseline evaluation measured a randomly selected sample of potential suppliers.

The types of agricultural practices or technologies (see table 2.18) that respondent producers are applying include:

1. **Pest management**, including using chemical pesticides with 98%, pest counting with 22%, and biological controls with 15%. There were no differences between the intervention and control groups.
2. **Soil Conservation**, including not practicing agricultural burning with 79%, planting live barriers with 48%, crop rotation with 38%, and using dead barriers with 22.35%. These practices were more frequently used by non-small farmers.

3. **Adaptation to climate change**, including adequate disposal of containers with 55%, reforestation with 49%, rainwater harvesting with 38%, and the use of drought resistant crop varieties with 28%. Reforestation is most prevalent among non-small farmers as they typically own their farms.
4. **Storage**. Under this category, 79% of producers are not conducting any practice because most are growing vegetables, which are sold immediately after harvesting. Only 5% of producers have an appropriate area in their farms to store their products, 3% use practices to control temperature, humidity and lighting, and 2% adopt food safety services outside the warehouse.
5. **Product transportation**, including cleaning the recipients where products are transported with 23% and cleaning the vehicles with 4%.

3.1.3. Organizational Capacity of School Food Committees (SFC) and PTAs for School Food Procurement, Control, and Management

This indicator was evaluated based on the use of the PINE-MINED School Feeding Committee Operation Guide to manage school feeding. Fifty-seven percent of the project's PTAs fulfilled all of the responsibilities entrusted to them with regards to school feeding and none of the control's PTAs fulfilled all of them (see Table 4.1). The functions with less participation were knowledge of school feeding committee (SFC) regulations, participation in preparing the school committee activity report, promotion of community participation in School Meal activities, and supervision of food reception and withdrawal. The PTAs focus on the operational side of the School Meal rather than strategic aspects such as planning, food reception, registration, departure control, monitoring, and quality control. It is recommended that PCI direct its actions towards strengthening strategic capacities that allow for greater community participation, accountability, sustainability, and capacity for appropriate food preparation.

In terms of food storage, 67.0% of project schools and 70.0% of the control group met the storage conditions and standards set out by the project. The criteria least complied with were protecting food from insects and rodents using products authorized by the Ministry of Health (MINSA), ensuring that food is not on the floor, and providing a warehouse or storage containers exclusively for food storage (see Table 4.2). The schools have the capacity to store the current School Meal products but lack facilities and infrastructure for fresh produce that will complement the School Meal.

Optimal conditions for food preparation. The project schools that had a kitchen met 57.0% of the optimal conditions for food preparation but had limitations in hygiene, food handling, proper waste management, and water availability (see Table 4.3). Some of the practices that require strengthening

are MINSA certification for food handlers, investment in protective equipment for food handlers, and water storage containers for hand washing and cleaning work areas and kitchen utensils. Sixty-six percent of the project schools and 14.0% of the control schools had a kitchen, the main obstacle to monitoring hygienic food preparation. It is recommended that PCI define a strategy to ensure the necessary facilities required for safe food handling, especially as vegetables and dairy produce will be part of the SM.

3.1.4. Internal and External Factors that May Influence the Project's Results

The pandemic in the is an external factor that could have an effect on the continuity or the scope of the project. This is a factor beyond the control of the project but is present during implementation. COVID-19 can impact the household economy, intensifying food insecurity, the involvement of PTAs in schools, the resilience of food prices, and public sector technical support services to the private sector.

Nicaragua's GDP will contract by 4.3%, according to the World Bank¹⁷, and will have an effect on social investment and consequently on the SM. This context will increase levels of extreme poverty in rural areas, impacting ADD and MAD. The productive sector is expected to have less investment, impacting productivity and food prices. Climate change is an external factor that directly affects productivity, profitability, and production volumes in the agricultural sector, the main effect being on food availability and price fluctuations. Also, Nicaragua's sociopolitical instability, which started in April 2018, the upcoming presidential elections in 2021, and insecurity in rural areas are beyond the project's control and could have a strong effect on performance and results. All external factors can affect indicators related to food procurement, production, sales volumes, application of practices for cost-effectiveness of delivery, and nutrition.

PCI's main strengths in facing the current context lie in the organization's experience in school feeding projects worldwide, the synergy that was observed between PCI's technicians and the schools (directors, coordinators, teachers, SFC, and PTA) and the producers, and the team's technical capacity, which is expected to mitigate the current situation. It is important that the project develops a risk mitigation plan that takes into account the aforementioned aspects.

¹⁷ (Forbes Centroamérica, 2020) <https://forbescentroamerica.com/2020/04/13/nicaragua-y-el-salvador-tendran-la-mayor-caida-del-pib-en-centroamerica-por-covid-19-banco-mundial>

3.1.5. The Project's Sustainability

The project's sustainability is based on four pillars and six critical assumptions. The pillars are: (a) capacity, (b) motivation, (c) linkage, and (d) resources. A market formed by PTAs, the public sector, and food providers is anticipated to be developed where parents will continue to purchase produce long after USDA's intervention. The project's critical assumptions are: (a) USDA funding will continue during the project, (b) natural or economic disasters will not significantly undermine the results, (c) government policies remain favorable, (d) agricultural production and market systems do not suffer significant crashes, (e) stakeholders continue to support the program, and (d) the political situation does not deteriorate significantly.

The project will have control over capacity building, linkage, and resources for food acquisition. PINE's motivation to adopt the procurement model and expand investment is beyond the control of the project because of the way the state purchases food, the current procurement system, and the limited economic capacity to duplicate the investment in the School Meal. On the other hand, the current school feeding model has relegated the PTAs to food preparation tasks, occasional and voluntary food complement contributions, and not to actions where they participate in food selection, acquisition, administration, and preparation of the foods to be eaten in the schools.

The project made critical assumptions that have now changed, including: (a) there is a pandemic that is deteriorating the country's economic conditions, (b) the government of Nicaragua's policies do not favor the project's proposed model because the government doesn't permit the participation of PTA in purchase processes and food delivery, and (c) the country's political situation has deteriorated. The change in situation will limit public investment in the medium term and eventually the possibilities for expanding the School Meal and transferring the additional cost to PTAs will not be possible due to the level of poverty and food insecurity experienced by these families. However, many fruits that currently rot in the backyard could be a substantial addition to the schoolchildren's diet.

The change of context, in the short term, limits the project's sustainability. However, as a pilot project, it could build its sustainability in knowledge management, capacity building of PTAs, and linkages with local governments, while conditions arise in terms of public policy and the availability of resources for scalability.

To support sustainability efforts, the project should provide evidence of the effects achieved at the level of schools, producers, and process innovation developed during its implementation, and

disseminate results among key stakeholders. It is necessary to invest in case studies, best practice documents, systematization of results, policy briefs and standardized local procurement processes in order to share the model's results with public policy makers. The PTAs' capacity can be strengthened through exchanges and learning paths that will contribute to improved PTA performance.

Capacity building for PTAs through a curriculum aimed at improving skills in the area of school feeding programs, management, and food and nutrition education is likely to result in greater participation, ownership, and empowerment in all processes from reception, management, and preparation of food. Similarly, encouraging PTAs to integrate existing seasonal fruits grown at home to supplement the food could improve the project's impact.

Engaging local governments from the start of operations means that the project would have far-reaching possibilities. The municipalities could potentially support school feeding programs in their area. The municipalities' participation in the project's implementation would show the feasibility of decentralizing school feeding programs to the local level and would be a very important contribution of the project.

The project should develop a sustainability strategy with regards to the abovementioned aspects and include it in the project's actions. It is important to establish achievable global outcome indicators for the project that go beyond those already established for the school feeding program, in order to show the intervention's added value. The outcome indicator could be agricultural productivity, producer's income, prevalence of overweight and obesity, school retention, and cognitive functions

3.1.6. Elements for the Final Evaluation

The evaluation methodology should allow for the observed changes to be attributed to the project. The project baseline has shown that there are no significant differences between the control and project population at the school, student, and producer level. The quasi-experimental model used in the final evaluation should use the *difference-in-differences* analysis method so that the differences between the attended and control population display the effects attributed to the project. For the impact variables that are influenced by gender, age, schooling, access to services, and investment, it

is necessary to use the propensity score matching¹⁸ technique to eliminate any effects from the covariates.

The evaluation should use a random selection for the 60 schools, the schools' students, and producers in order to reduce experimental error and results scaling. Prior to the assessment, it is important to ensure that all actors are available in order to use the R sampling package with 5.0% error and 95.0% confidence so that all actors involved in the evaluation have the same probability of being selected. Similarly, data collection techniques should be mixed so both quantitative and qualitative data can be used for the final evaluation.

3.2. Market Study

3.2.1. Supply and Demand Analysis

Value-Added Analysis

Aggregate Supply

This analysis is based on information collected on national production indicators from the production plans for 2017 to 2019.¹⁹ It was determined that the purchase volumes required by PCI would not compromise produce availability nationally for the products being studied.

When comparing national production in 2017 to 2019, growth was observed for the period, where potatoes, milk, and cabbage recorded the highest growth rates of between 28.0% and 70.0%. The remaining produce—eggs, tomatos, beans, and carrots—grew between 4.0% and 13.0%.

Cabbage and carrots were the only items that recorded imports in the last two years, representing 3.0% and 15.0% of domestic production, respectively. Imports were approved for the months of July and September, coinciding with the national sowing and harvesting dates to ensure supply and avoid speculation.

In the case of beans, Nicaragua exported an average of 34.0% of national production in the 2017 to 2019 period. Milk was another export item; since exports were reported in monetary values (dollars),

¹⁸ Rosenbaum, Paul R.; Rubin, (1983).

https://es.wikipedia.org/wiki/Pareamiento_por_puntaje_de_propensi%C3%B3n#cite_note-3.

Saavedra, D. (2019). Técnica aplicada para aislar los efectos de la productividad en café entre contrafactual y productor beneficiario.

https://www.academia.edu/38583234/Propensity_Score_Matching_tool_to_improve_impact_evaluation_in_Agriculture

¹⁹ (Production, consumption and trade plan for 2016-2017, 2016). <https://www.lavozdelsandinismo.com/wp-estaticos/2016/05/PLAN-PRODUCCION-CONSUMO-COMERCIO-2016-2017.pdf>

it was not possible to compare them in terms of volume. For both items, exports did not compromise domestic availability.

Aggregate Demand

Aggregate demand for tomatoes was the only product with a decreasing variation at 34.5% between 2017 and 2019. Potatoes and cabbages showed an average growth of 30.0% and eggs and beans at a lesser rate of 12.0% each.

National production of the eight products in the period analyzed showed growth, generating surpluses that allowed the aggregate demand to be satisfied. Purchases by PCI would represent 0.2% of production and 0.3% of national demand and are unlikely to cause market distortions.

➤ Local Level Analysis of Jinotega

Jinotega generates 11.0% of national production for the eight food groups and 40.0% for vegetables (see Table 2.1.1). Average production for the items in the study has been higher than demand (see Table 2.13 and 2.14). Production surpluses have increased by an average of 25.0% (see Table 2.14).

PCI's purchases represent an average of 0.6% of production and 3.0% of demand in the department of Jinotega in 2019. Therefore, they would not have a significant negative impact on local market dynamics in terms of price determination and product availability (see Table 2.15).

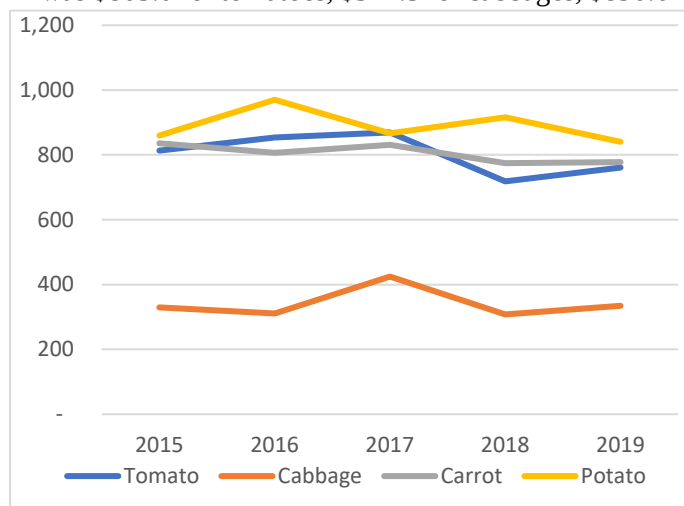
For the cooperatives studied, PCI's purchases would have a positive impact, providing them with a market opportunity to harness their members' production capacity with a guaranteed buyer. This would increase income for their producers, either through produce diversification or obtaining better prices for high quality products.

➤ Price Analysis of Selected Products

This analysis is based on the compilation of a series of consumer prices from 2015 to 2019, sourced from popular markets in Managua and is available from the Ministry of Industry and Commerce.

Figure 4: Price Behavior of Vegetables and Tubers for the Period 2015 to 2019 (amounts in US Dollars per MT)

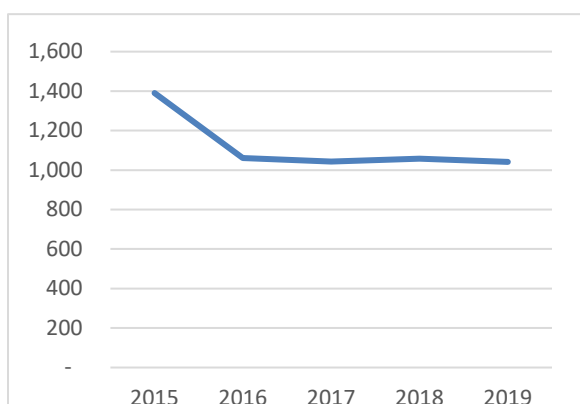
Vegetables and tubers: The average consumer price per MT, according to the data series analyzed, was \$803.0 for tomatoes, \$341.5 for cabbages, \$890.6 for potatoes, and \$805.0 for carrots. The prices



presented fluctuated due to lack of planning and/or staggered production that are used to avoid market saturation or produce shortage, which effects price.

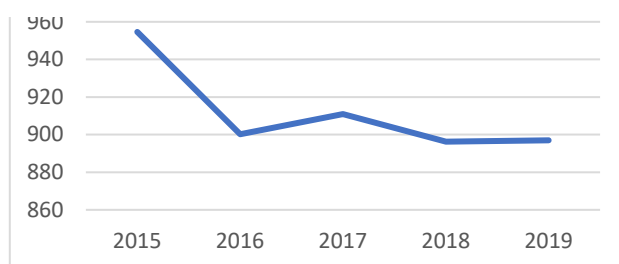
The prices rose in the middle of the year due to lower production and at end of the year due to higher demand because of end-of-year activities.

Figure 5: Price Behavior of Beans for the Period 2015 to 2019 (amounts in US Dollars per MT) Price Behavior of Beans for the Period 2015 to 2019 (amounts in US Dollars per MT)



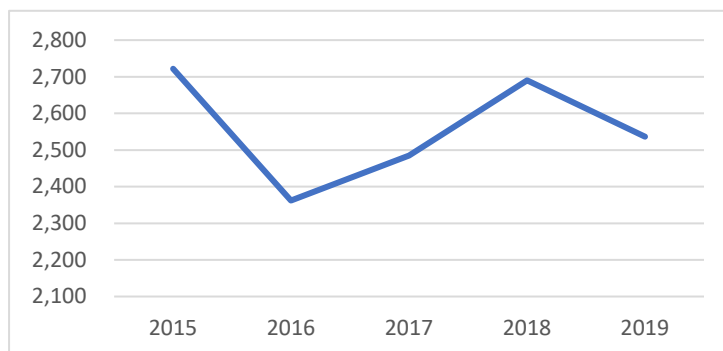
Beans: The average consumer price for beans was \$1,118.0 per MT for the period analyzed. In the analyzed period, it was stable with an interannual variation of 1.0% due to appropriate climate conditions and a growing demand for the item, both nationally and for exportations. The product's highest price was between the months of May and June, coinciding with the period of relative scarcity.

Figure 6: Price Behavior for Milk for the Period 2015 to 2019 (amounts in US Dollars per MT)



Milk: The average consumer price was \$912.0 per MT for the period analyzed. The price was relatively stable with average interannual variations of -2.0%. The lower prices were between August and October with average variations of -1.0% due to favorable climate conditions for production.

Figure 7: Price Behavior of Eggs for the Period 2015 to 2019 (amounts in US Dollars per MT)



Eggs: The average consumer price was \$2,558.7 per MT for the period analyzed and displayed stable behavior. The price was highest in the months of November and December due to higher consumption because of end-of-year activities.

3.2.2. Characteristics of Suppliers Selected by PCI

3.2.2.1. Suppliers' Current Situation: Vegetable and Tubers, Eggs and Dairy, and Basic Grains

The market study showed that from the ten food suppliers preselected by PCI, only six were selling the required products, while the other four's main business activity was financial services. None of the six active suppliers sold potatoes and beans, even though they had a critical mass of producers to supply them; they lacked buyers to encourage the commercialization of these products.

➤ Production

Vegetables: The preselected cooperatives have implemented a staggered production system and have a production base that allows them to respond to PCI's demand. According to data collected in the survey, producers were able to produce 11,968.0 MT, of which 6,701.0 MT were cabbages, 1,835.7 MT were tomatoes, 360.6 were MT carrots, and 3,071.0 MT were potatoes. The vegetable production of the control group was 5,015.0 MT.

According to the volume produced by the project group, the biggest cabbage production came from the following cooperatives: COOSEMPODA with 67.0%, COOSMPROJIN 23.0%, Tomatoya 10.0%, and Sacacli 1.0%. For tomatoes, Sacacli produced 92.0%, COOSMPROJIN 6.0%, and Tomatoya and COOSEMPODA the rest. For carrots, Tomatoya produced 57.0%, COOSMPROJIN 23.0%, COOSEMPODA 18.0%, and Sacacli 3.0%. For potatoes, COOSEMPODA produced 98.0% and COOSMPROJIN 2.0%.

Beans: According to the results of the producer survey, production in 2019 for the project group was 359.0 MT and for the control group 261.0 MT. From the volume produced by the project group, 48.0% came from producers belonging to the SACACLI Cooperative, 14.0% from COOSMPROJIN, 11.0% from ECOPRASA, 8.0% from ESJUSA, 7.0% from ECOFODESA, 6.0% from EMAJUSA, 4.0% from COOSEMPODA, and 2.0% from Tomatoya.

From the total sample of producers surveyed, the productive management practices were: 51.0% used irrigation, 48.0% did not burn, 39.0% managed containers properly, 8.0% had a good agricultural practices certificate, and 1.7% used boxes to handle products (Table 2.16).

Milk and cream: GRINSA, a dairy produce processing business, was not included in this section, as it collected raw materials and processed them. The business did not have any plan to vertically integrate the process from the source.

Eggs: Klifford, a small production company, ensures egg production by maintaining an inventory of laying hens imported from Costa Rica or Miami. They purchase hens every four months in order to have batches of different ages that allow for year-round staggered production. The company is under the supervision of the Institute of Agricultural Protection and Health (IPSA) for the detection of salmonella, tracheitis larynx, and avian influenza, a requirement for their operating permit, which is renewed every year.

➤ *Storage*

Vegetables and tubers: Produce is harvested in tandem by the cooperative's technical staff and the producer, where preselection is done according to the quality standards requested by the clients. The produce is packed in boxes and transported in closed trucks owned by the cooperatives. Prior to produce reception, the vehicle and facilities are sanitized.

Beans: At the time of the study none of the businesses stored beans. Producers store beans individually to sell.

Milk and cream: GRINSA collects raw material (fresh milk) from producers in Jinotega and cooperatives in Boaco and Matiguás. In Jinotega, the producers are certified for brucellosis-free herds and are provided with cooling tanks, which turn them into small-scale collection centers. The cooperatives in Boaco and Matiguás are in the process of being certified as brucellosis-free farms.

GRINSA's competitors are LALA and Centrolca. LALA has the greatest capacity nationally for collecting and processing milk and milk products, and it has a network of exclusive distributors who are responsible for placing producers among retailers. Raw material is collected from dairy cooperatives throughout the country by quota. CENTROLAC is a smaller-scale company and has an operating system similar to LALA using a collection system. They allocate milk collection quotas without competition between them.

➤ *Processing*

Vegetables: The Cooperatives' vegetable processing consists of washing, grading, and packing produce according to each client's quality standards (size, weight, taste, color, and texture). Tomatoya is the only cooperative that has a manual for processing produce, which is being reviewed by IPSA for approval. The cooperatives have workplace safety practices, such as requiring processing personnel to wear boots, masks, mouth covers, as well as biannual medical examinations for staff. For producers, processing is minimal and consists only of sorting and cleaning produce.

Beans: Seventy-six percent of producers indicated that they only cleaned beans, 6.0% reported cleaning and drying them, and 18.0% cleaned, dried and bagged them. The businesses evaluated were not selling this item.

Milk and cream: GRINSA use industrialized processes. Once the raw material is received, it is transported by pipes to pasteurization tanks and vats depending on which process line is required: packaged milk, cocoa, cheese, and cream. The milk line has its own filling machine that allows 40 one-liter bags to be filled per minute.

Each process line has its own work plan and assigned staff responsible for it. During processing operational sanitation practices are observed, which are included in their standardization and sanitation operational plans. Likewise, they comply with the norms and standards in the purchase of raw materials required by NTON 03034-11 (Food Technical Committee, 2011).

Eggs: Klifford's product processing consists of sorting, cleaning, and packaging. It has 5 three-story production lines, each with a water system that enters through pipes connected to a tank, and the birds are fed from a conveyer belt. The eggs are transported by conveyer belt to the collection point, where the staff manually clean and select the eggs according to their size and possible shell anomalies. Once selected, they are placed in 30-unit boxes.

➤ *Warehousing*

Vegetables: In this group, there is no storage because they are distributed on the same day. The Tomatoya Cooperative has a cold room with a capacity of 14.5 MT and is used occasionally when they have surplus produce.

Beans: Seventy percent of producers do not store this item because the produce is sold on the farm after the harvest. The other 30.0% store them mainly for personal use either in metal silos, bags, or plastic barrels.

Milk and cream: GRINSA has 6 cold rooms with a total storage capacity of 68.0 MT. The stored volumes are adjusted according to demand so inventory does not build up. The produce is first prestored in a cold room where it awaits microbiological coliform analysis by the laboratory. For example, for milk it would be milk viscosity and pH for cream, and then it is transferred to other cold rooms where it will be stored until it is shipped to the customer.

Eggs: Even though Klifford distribute their produce daily, they have a policy of not storing produce for more than two days. They have the capacity to store 2,400 boxes.

➤ *Sales*

Total sales for 2019 by the producers were \$5.2 million, 69.0% of which came from the project group and 31.0% from the control group. For the project group's sales, 44.0% came from potatoes, 27.0% from cabbages, 20.0% from tomatoes, 7.0% from beans, and 2.0% from carrots (see Table 2.17).

Vegetables: Total sales for the project group of producers were \$3.3 million, from which potatoes formed 47.0%, cabbages 30.0%, tomatoes 21.0%, and carrots 2.0%. Forty-one percent of the producers sold at the local market in Jinotega, 32.0% sold to wholesalers, 18.0% sold to cooperatives, and the remaining 9.0% sold to national markets and supermarkets (see Table 2.17).

Cooperatives: Sales from the cooperatives in 2019 totaled \$1.9 million. Cabbage, carrots, and tomatoes represented 42.0% of total sales (see table 2.6). The cooperatives conformed to the quality standards of buyers, who focused on compliance with physical standards (texture, color, weight, and size). According to the cooperatives, microbiological parameters and pesticide residue tests were carried out by the buyers because the price paid did not allow them to cover the cost of the service.

Vegetable cooperatives sold cabbages, tomatoes, and carrots to Walmart, La Colonia (national supermarket), Subway, and certain restaurants in Managua (Pizza Hut, El Eskimo Restaurant, and Comedor Santa Lucia). They did not sell beans and potatoes because of the lack of formal buyers, which discouraged them from producing and storing them. However, producers sold them independently.

Beans: According to the producer survey, total sales in 2019 were \$443,482.2, of which \$255,815.8 came from the project group and \$187,666.5 from the control group. Fifty percent of the producers sold to the local market, 41.0% to wholesalers in Jinotega and Estelí, 6.0% indicated that they sold to cooperatives, and 3.0% did not sell.

Milk and Cream: GRINSA sold its produce to Walmart, Pricesmart, La Colonia, AM/PM, and Super Express for a total of 26.0% of sales; 19.0% to Cargill, and 55.0% to mainstream market wholesalers. The produce was transported in four-ton trucks refrigerated at 2 degrees, where the temperature was monitored by sensors so that the cold chain was not broken. These vehicles were also subject to standardization and sanitation operational cleaning practices.

Pasteurized milk was packaged in 450 ml bags with a shelf life of 15 days, and cream was packaged in 454-gram bags with a shelf life of 60 days in optimal conditions. They are able to adjust packaging size according to the client's demands.

Eggs: Klifford's sales were 35.0% to small and medium grocery stores, 20.0% to resellers, and 45.0% on consignment. The company met the average weight standard of 54 grams required by customers, selling 92.0% of its production to this standard. Transportation to sale points was done using the company's vehicles.

➤ ***Cost Analysis for Transport, Processing, and Storage***

At the producer level, the means of transport used when delivering outside the farm gates were 8 to 10-ton trucks at an approximate cost of \$150.0 per delivery. For cooperatives, the price was \$235.0, which included transportation from the farm to the collection center and from the collection center to Managua.

Vegetables: According to the information provided by the cooperatives, the average processing costs were \$12.5 per MT. They did not record storage costs because the produce was harvested then sold.

Eggs: The average processing costs were \$1,300.0 per MT and were mostly concentrated in bird feeding. GRINSA provided no processing costs. The average storage costs for milk reported by GRINSA were \$176.0 per MT of milk and \$550.0 per MT of cream.

3.2.3. Ability to Comply with PCI's Requirements

The companies that have as a business line commercialization (6 of 10) are able to meet the volumes, quality standards, legal aspects, and financial administrative capacity required to tender bids and to establish commercial relations with PCI.

The cooperatives showed a similar level of development in their functional areas: organizational structure, governance, and technical services. The areas with potential for improvement were strategic orientation, administrative management, and marketing (see Graph 2.8 and 2.9).

➤ Legal Issues

According to the information collected, it was determined that 40.0% of the suppliers operated commercially as cooperatives, 50.0% as public limited companies, and 10.0% as natural persons. One hundred percent had legal status, held a unique registry taxpayer's number (RUC), and were up to date with their tax obligations (see Table 2.8). Ninety percent of the businesses complied with their employers, social, and occupational obligations.

➤ Financial Administration

To evaluate these capacities, 11 practices were considered, five from the administrative area and six from the financial. Both aimed at providing information for strategic decision-making by the businesses' management bodies.

Analyzing by area, suppliers had paid relatively more attention to implementing financial practices than administrative practices. On average, the businesses had implemented 64.0% of the administrative practices and 87.0% of the financial practices (Table 2.7).

The ten businesses applied practices in both areas. When analyzing the implementation percentage in relation to the total number of practices, only GRINSA implemented 100.0% of the practices

evaluated. Sacaclí, Tomatoya, COOSEMPODA, and ESJUSA cooperatives implemented 91.0% (10 practices), ECOFODESA 73.0% (8 practices), EMAJUSA and ECOPROSA 70.0% (7 practices), COOSMPROJIN 55.0% (6 practices), and Klifford 36.0% (4 practices). The practices used by the businesses are presented in Tables 2.9 and 2.10. None of the individual producers that constituted the Cooperatives implemented administrative or financial practices.

➤ *Quality Standards*

Tomato, carrot, cabbage, and potato suppliers met the quality standards: produce characteristics, ripeness, size, and absence of pests. As far as microbiological parameters and maximum pesticide residue limits were concerned, they were met as long as the client's order continued; the client had to carry out the corresponding tests. From the interviews and surveys, 24 practices were identified (15 for quality and nine for safety) that were implemented by all suppliers to guarantee physical standards.

The dairy produce supplier meets the quality standards required by PCI; the company has a hazard analysis and critical control points plan that allows it to guarantee produce safety and its implementation is permanently verified by IPSA. Additionally, its installed capacity allows it to comply with the standards related to presentation, chemical characteristics, and microbiological parameters (it has a laboratory and qualified personnel).

The egg supplier is able to meet the standards required by PCI. The company is able to provide eggs with the characteristics, size, and packaging required. However, it does not perform sample testing for salmonella, but there are sanitary practices (waste disposal and cleaning of production lines, food belts, and floors) supervised by IPSA.

➤ *Production Volume*

Individual producers and cooperatives were consulted about their ability to expand production volumes for a new buyer. Forty-nine percent of producers expressed that they were able to do so, 66.0% of those were bean producers, 16.0% cabbage, 8.0% potato, 6.0% tomato, and 3.0% carrot.

Although vegetable suppliers do not currently market the full range of produce required by PCI, they have the critical mass of producers to meet demand, and their staggered planting system would allow them to meet PCI requirements. However, it is recommended to distribute purchases between suppliers and promote alliances among them, taking advantage of the organizational platform recently created by COOSMPROJIN, COOSEMPODA, and SACACLI to minimize delivery risks. Dairy and egg suppliers are able to provide the volumes required by PCI.

➤ *Estimates for PCI's Purchases*

Six preliminary bids from suppliers were presented for the produce required by PCI. Businesses from Santa María de Pantasma did not provide information, since they did not sell any of the products required by PCI.

For vegetables and tubers, four businesses submitted a preliminary price proposal, two of which offered the range of items required by PCI (COOSEMPODA and COOSMPROJIN). For tomatoes, SACACLI presented the lowest price, COOSEMPODA for cabbages, Tomatoya for carrots, and COOSEMPODA for potatoes (see Table 2.3).

Vegetable prices were compared with the Producer Society Cooperative La Trinidad. They quoted tomatoes in a price range of \$453.0 to \$647.0 per MT in the cooperative's processing plant and gave an estimate of \$400.0 for the cost of transportation. In the case of national supermarkets, final consumer prices were \$687.0 per MT for cabbages, \$2,266.0 per MT for potatoes, \$1,078.0 per MT for carrots, and \$1,518.0 per MT for tomatoes.

Prices for tomatoes and carrots were more competitive at the comparison points for in-plant pick up. The proposed price should include transportation to schools, which would increase over longer distances and worse road conditions. Additionally, as market price changes, so will the quoted prices.

Beans: Two bean-producing cooperatives submitted proposals, and the lowest price was from COOSEMPODA at \$1,289.0 per MT. Local prices were compared with the price of imports made by PCI in 2018, which was lower at \$1,205.5 per MT delivered to PCI's warehouse in Jinotega. The import price included tax exemptions, in order to make a fair comparison the exemption amount was added. This brought the cost up to \$1,660.0 per MT, 23.0% higher than the highest bid presented by one of the cooperatives, and it did not include the cost of transportation to the schools.

In order to have an additional point of comparison, bean prices were compared with Producer Society Cooperative La Trinidad, by asking for a quote by telephone. Producer Society Cooperative La Trinidad offered a price of \$1,617.0 per MT for in-plant pick up, with an additional transportation cost of US\$440.0 per trip, equivalent to \$44.0 per MT.

Eggs: Klifford submitted a proposal for US 2,390.5 per MT of eggs. A comparison point for Kilfford was the national supermarkets, where a consumer price of US\$2,588.0 per MT was offered. This point of comparison was included in order to be consistent with meeting the quality standards required by PCI and was also helpful due to the absence of other suppliers in the area with an adequate scale of production.

Milk and Cream: GRINSA's proposal for pasteurized milk was \$750.6 per MT and cream at \$2,187.1 per MT, according to PCI's quality criteria. When interviewed, the supplier expressed the possibility of supplying schools with display fridges to ensure the required temperature for these products, however, since both products require cold handling, PCI needs to assess issues of safety, electricity, and appliance capacity in the schools.

Comparison points for GRINSA were the national supermarkets, where the price per MT of milk was \$794.0 and the price of cream was \$2,267.0 per MT. In both cases, these prices were higher than those offered by GRINSA by 6.0% and 4.0%, respectively, which included delivery to the schools in the price.

Another comparison point was LALA in Sébaco. Their distribution prices were \$676.0 per MT for milk and \$2,200.0 per MT for cream. These prices did not include the profit margin of wholesale and retail distributors (10.0%). Negotiating with LALA would be difficult because they do not distribute milk to schools, making the prices offered by GRINSA more feasible.

➤ *Seasonal Analysis*

Vegetables and Tubers: Production was continuous for this group, with higher volumes in the last quarter due to the increase in demand, typical of the end-of-year period. On a quarterly basis, the average crop output volume was 23.0% and 31.0% in the last quarter.

Table 2: Percent of Output per Month for 2019

Crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Tomato	5%	7%	9%	10%	7%	6%	5%	11%	7%	8%	12%	13%
Cabbage	3%	6%	13%	10%	5%	3%	5%	16%	7%	4%	7%	21%
Carrot	9%	9%	4%	9%	4%	9%	9%	9%	4%	4%	13%	17%
Potato	5%	1%	12%	13%	4%	2%	7%	17%	5%	2%	8%	24%
Bean	3%	9%	18%	1%	0%	0%	2%	30%	9%	0%	6%	22%

Source: Elaborated based on information from producers' survey

Beans: The harvest period was consistent with the national production cycle, registering 57.0% of the harvest period between November and March (*postrera* seedtime, July to November, and *apante* seedtime, November to January) and 39.0% between August and September (first seedtime).

Eggs, milk and cream: Production was continuous.

3.2.4. Alternative Suppliers and Service Providers

Identifying alternative suppliers focused on produce that was currently not being marketed by the preselected businesses i.e. potatoes and beans.

Potatoes:

Potato Producers Society Cooperative, Limited Liability (COOPPANOR, R.L.), Matagalpa.
Telephone: 8547-3437

Beans:

Credit and Marketing Company Father Miguel Ángel Vásquez (ECOMAVSA). Phone 8269-8995.
Society of Producers and Retailers, Limited Liability (SOPROCOM). Phone 8644-8552, bean and potato supplier.

Center of Producer Society Cooperatives Eco Vegetables of Nicaragua, Limited Liability (CECOOPSEMEIN, R.L.), Sébaco Km 99. E-mail: Macorreocp475960@gmail.com. Phone 8647-1464

Señor de Esquipulas Cooperative, Chagüite Grande 1. Telephone 8360-0686

Producer Society Cooperative La Trinidad, Limited Liability (COOSEMTRI, R.L). Phone: 8661-5905

3.2.5. Risks and Impacts on the Product Value Chain

The main risk identified by producers was climate change, which affects not only produce availability and therefore supply. Poor rains/droughts lead to decreased supply and therefore decrease supply of the produce. Variable weather may also lead to pest outbreaks that affect supply.

One of the economic risks identified was price instability and the informal market. Lack of production planning means that the market becomes saturated at certain times and this means the price is lowered, and at other times produce becomes scarce.

4. Conclusions and Recommendations

4.1 Conclusions

- a. The highest level obtained for school feeding indicators included the percent of students who said they like their school meals (94.6%), and the percent of students who received a Minimum Acceptable Diet (64.2%), mostly in urban areas. The lowest result found for school feeding indicators was the percent of schools serving an Adequate Diversified Diet with 21.4%, focalized primarily in rural areas of the municipality of Pantasma.
- b. Of PCI's established nutritional targets, two are likely to be achieved by the end of the project (ADD and SM acceptance). The MAD target will be difficult to achieve because it measured food consumed inside and outside of the school, and it is outside of the project's scope to impact food consumption in the home. Also, the socio-economic situation is unlikely to improve in the next few months due to the current economic and health crisis, therefore MAF is likely to decrease.
- c. The PTAs are focused on the operational actions of the School Meal and less on strategic actions, such as planning and follow-up in the preparation of menus, participation in produce procurement, evaluations, and seeking support from other actors.
- d. The schools have the capacity to store the current products for the School Meal but lack the facilities and infrastructure for the storage of fresh produce that will be provided by PCI. Sixty-six percent of the project schools and 14% of the control schools had a school kitchen, which was the main limitation for monitoring hygienic food preparation.
- e. National production of the items under study satisfies the demand, ensuring supply at national and local levels. PCI's purchases are 0.3% for national demand and 3.0% for Jinotega, which would not distort market supply.
- f. PCI purchases, due to their size, will not exert pressure on prices or relative scarcity in the markets, so they will not generate negative impacts on the dynamics of local markets, nor on its actors (wholesalers, retailers, consumers, and service providers).
- g. PCI procures food commodities from cooperatives and therefore more smallholder farmers (members) are integrated into viable value chains that offers market opportunities for their produce, enhances incomes from the premium prices offered for higher quality produce and promotes diversification of livelihoods.
- h. Vegetable and tuber cooperatives use staggered production with irrigation, allowing for sustainable production and ensuring that it can meet the demand from PCI. Eggs, milk, and

cream are produced all year round. Beans are produced from November to March, coinciding with *postrera* and *apante* seedtime, which is 70.0% of national production and can be stored for times when there is no production.

- i. The companies that have as a business line commercialization (6 of 10) can meet the volumes, quality standards, legal aspects, and financial administrative capacity required to tender bids and to establish commercial relations with PCI. Bidders should be encouraged to form alliances to enable them to reduce their transaction costs including transport and aggregation.
- j. The cooperatives don't have limits in terms of transportation services that meet the safety criteria, and among them they share this service for product distribution. They also provide all other production support services, such as financing, technical assistance, inputs and marketing. Local suppliers have a comparative advantage because of their proximity to the schools.
- k. Of the suppliers studied, 60% implemented practices that minimized risks of losses in quality and safety. They also implemented administrative and financial practices that allowed management to monitor and make necessary adjustments in operational areas to ensure the best product delivery, meeting customer standards.

4.2 Recomendations

- a. Food group 8 measured in ADD and MAD is provided both by the oil given by the project and oil consumed at home. Cream would exceed recommended fat consumption for the students, therefore PCI should consider substituting them with seasonal fruits typically found in the municipalities, such as mango (which is produced during the months of March and April), or papaya (which is harvested all the year), both foods that are rich in vitamin A (Group 5). Oranges and bananas are harvested from May to October and watermelon is harvested from January to February; both are part of the group of other fruits and vegetables (Group 6). These foods are absent in the School Meal and incorporating them would provide fiber, vitamins, minerals, and phytonutrients.²⁰ Fruits would provide more variety to the School Meal; they could be eaten whole, in salads, in juice, as dessert and/or dried.
- b. It is important that the project establishes an advocacy and nutritional education strategy aimed at parents to motivate them to contribute fruits to the School Meal, according to interviews conducted with school children, they expressed that fruit was available in their yards at home. It is widely acknowledged that due to lack of knowledge about fruits'

²⁰ Phytonutrients have, among others, antioxidant properties. These bioactive chemical compounds are found in fresh and natural foods, such as fruits, vegetables, cereals, and tubers.

nutritional value, how to prepare them, and the importance of these foods in their children's diet, they are not included in the School Meal. Fruits are healthy foods that can help prevent malnutrition and other associated health issues related to an imbalanced diet (obesity, diabetes, hypertension, etc).

- c. The ADD indicator needs to ensure that the correct information is in the PINE logbook. It is suggested that the checklist developed in the framework of this consultancy be used to monitor that the notebook is filled out correctly. It is also recommended that monthly menu templates with standardized recipes be established.
- d. PCI should focus its actions to improve PTAs' knowledge and practice of safe food handling. At the same time, investing in cold chain equipment and infrastructure in schools to cook food would be beneficial.
- e. It is recommended that PCI pre-qualifies some vendors with the capacity to respond to the surge in demand to speed up the procurement process.
- f. To reduce the impact of the risks of climate variability, consideration should be given to strengthening producers' capacities to adapt to climate variability, pest management, and the cooperatives' social capital to take better advantage of market opportunities.
- g. It is recommended that actions be directed to strengthening organizational capacities and enterprise management for suppliers through trainings and accompaniment, which allow the following: elaboration and updating operations and functions, strategic and business plans, trainings in marketing and commercializing agricultural products, elaboration and analysis of product price structures, calculation of sale prices, and analysis of financial statements.
- h. The project complies with national and donor policies and contributes to reducing food insecurity especially among children of school age. The project can focus on improving food quality; promoting local purchases; capacity building for the businesses, producers, and PTAs; and knowledge management. The public policy framework is a barrier to sustainability and the scalability of the project, due to centralized food procurement by the government, the limited role of PTAs, and the procurement system that limits the participation of producers. It is advised that a sustainability strategy is developed, which incorporates capacity building, documentation and dissemination of project successes and process, and local government participation.

Annexes

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Annex 1: Current status of baseline indicators for the school meal component of the MAS project

Table 1.1. Results of baseline indicators in intervention schools, March to May 2020

Indicator	Result		
LRP 1.3. Percent of schools serving school meals with acceptable dietary diversity	Adequate/High: 21.4 % in schools		
	By municipality:	Jinotega: 0 %	Project target: 90% Santa María de Pantasma: 42.9%
	By location:	Rural: 23.1%	Urban: 0%
Percentage of schoolchildren that consume an acceptable dietary diversity	Adequate/High: 62.9 % in schools		
	By municipality:	Jinotega: 60.6 %	Santa María de Pantasma: 65.3%
	By location:	Rural: 62.7%	Urban: 63.8%
	By age group:	8-9 years: 54.5% 10 to 11 years: 68.8%	Older than 11 years old: 56.8%
	By school grade in primary school:	3rd/4th grade: 53.6% 5th grade: 64.4%,	6th grade: 67.9%
	By sex:	Girls: 62.2%	Boys: 63.7%
LRP 1.3.1. Percentage of students who report liking school meals	Acceptance: 94.6 % of students		
	By municipality:	Jinotega: 94.4 %	Project target: 90% Santa María de Pantasma: 94.8%
	By location:	Urban: 97.1%	Rural: 94.1%
	By age group:	8 to 9 years: 95.5% 10 to 11 years: 96.7%	Older than 11 years old: 88.6%
	By school grade in primary school:	3rd/4th grade: 92.3% 5th grade: 96.2%	6th grade: 93.9%
	By sex:	Girls: 95%	Boys: 94.2%
LRP 1.3.3. Percentage of school-age children receiving a minimum acceptable diet	Minimum acceptable diet: 64.2 % of students		
	By location:	Urban: 72.5%	Target: 90% Rural: 62.4%
	By municipality:	Jinotega: 64.1 %	Santa María de Pantasma: 64.2%
	By age group:	8 to 9 years: 56.8% 10 to 11 years: 69.8%	Older than 11 years old: 58%
	By school grade in primary school:	3rd/4th grade: 58.6% 5th grade: 65.2%	6th grade: 68.7%
	By sex:	Girls: 64.7%	Boys: 63.7%
Purpose of study: Organizational capability of SFCs and PTAs for school food acquisition, control and management	Schools with a kitchen:		Schools without a kitchen:
	✓ Have all the facilities 30%. ✓ Have some of the facilities 60% ✓ Don't have the facilities 10%.		✓ Have all the facilities 20%. ✓ Have some of the facilities 80%.

Source: - School Food Consumption Checklist for principals/coordinators from the PINE-MINED notebook; - Food Consumption Frequency Survey and 5-point Hedonic Facial Scale applied to students in project schools; - Guided Questionnaire and Observation List applied to school organizations (SFC and PTA)

Table 1.2. Acceptable Dietary Diversity in Intervention Schools by Municipality and Location, March to May 2020

Description	Dietary Diversity						P-valor
	Adequate/High		Not adequate/medium		Not adequate/low		
	No.	%	No.	%	No.	%	
Municipality:							
Jinotega	0	0	0	0	7	100	0.1478
Santa María de Pantasma	3	42.9	1	14.3	3	42.9	
Location:							
Urban	0	0	0	0	1	100	0.9864
Rural	3	23.1	1	7.7	9	69.2	
Status:							
Intervention	3	21.4	1	7.1	10	71.4	0.6514
Control group	1	16.7	0	0	5	83.3	

Source: Prepared from results from the Food Consumption Frequency Survey and the Checklist for principals/coordinators from the PINE-MINED notebook for intervention schools.

* *Significant statistical difference with $p < 0.05$*

Table 1.3. Frequency of high consumption of food groups in project schools, March to May 2020

Food consumption	High frequency 6-7 days n=20	
	No.	%
Vegetables	9	64.3
Fruits	1	7.1
Proteins	3	21.4

Source: Prepared from results from the Food Consumption Frequency Survey and the Checklist for principals/coordinators from the PINE-MINED notebook for intervention schools.

Table 1.4. Schoolchildren with Acceptable Dietary Diversity in the intervention group by municipality, location, age group, grade, and sex, March to May 2020

Description	Acceptable Dietary Diversity						Total	P- valor
	Adequate/High		Not adequate/medium		Not adequate/low			
	No.	%	No.	%	No.	%		
Municipality								
Jinotega	120	60.6	8	4	70	35.4	198	0.2253
Santa María de Pantasma	126	65.3	3	1.6	64	33.2	193	
Location*								
Urban	44	63.8	6	8.7	19	27.5	69	0.0011
Rural	202	62.7	5	1.6	115	35.7	322	
Age group*								
8- 9 years old	48	54.5	2	2.3	38	43.2	88	0.7006
10 to 11 years old	148	68.6	6	2.8	61	28.4	215	0.0474
Older than 11 years old	50	56.8	3	3.4	35	39.8	88	0.0322
Primary school grade*								
3rd/4th grade	72	56.3	4	3.1	52	40.6	128	0.0909
5th grade	85	64.4	4	3.0	43	2.3	132	0.1455
6th grade	89	67.9	3	2.3	39	29.8	131	0.4478
Sex								
Girls	125	62.2	7	3.5	69	34.3	201	0.4353
Boys	121	63.7	4	2.1	65	34.2	190	

Source: Elaborated from the results from the food consumption frequency of schoolchildren survey in the intervention schools.

* **Significant statistical difference with $p < 0.05$**

Table 1.5. Dietary diversity of schoolchildren according to status March-May 2020

Food Diversity	Intervention group		Control group		Total	P-value
	No.	%	No.	%		
Adequate/High	246	62.9	179	64.6	425	0.602
Not adequate/medium	11	2.8	9	3.2	20	
Not adequate/low	134	34.3	89	32.1	223	
Total	391	100.0	277	100.0	668	

Source: Elaborated from the results from the food consumption frequency of schoolchildren survey in the intervention and control group schools. Significant statistical difference with $p < 0.05$

Table 1.6. Acceptance of the intervention group school meals by municipality, location, age group, grade and sex, March to May 2020

Description	School Meal				P-value
	Acceptance		Rejection		
	No.	Percentage	No.	Percentage	
Municipality					
Jinotega	187	94.4	11	5.6	0.4157
Santa María de Pantasma	183	94.8	10	5.2	
Location					
Urban	67	97.1	2	2.9	0.4589
Rural	303	94.1	19	5.9	
Age group*					
8- 9 years old	84	95.5	4	4.5	0.0849
10 to 11 years old	208	96.7	7	3.3	0.4128
Older than 11 years old*	78	88.6	10	11.4	0.0169
Primary school grade*					
3rd/4th grade*	120	93.8	8	6.3	<0.0001
5th grade*	127	96.2	5	3.8	<0.0079
6th grade*	123	93.9	8	6.1	<0.0001
Sex					
Girls	191	95	10	5	0.1505
Boys	179	94.2	11	5.8	

Source: Elaborated from the results from the 5-point face hedonic scale applied to school children in intervention schools.

* **Significant statistical difference with $p < 0.05$**

Table 1.7. Acceptance of school meals by schoolchildren by status, March to May 2020

SM Acceptance	Intervention group		Control group		Total	P-value
	No.	%	No.	%		
Acceptance	370	94.6	256	92.4	626	0.2599
Rejection	21	5.4	21	7.6	42	
Total	391	100.0	277	100.0	668	

Source: Elaborated from the results from the 5-point face hedonic scale applied to school children in intervention and control group schools.

Table 1.8. Minimum acceptable frequency in intervention schools' groups according to municipality, location, age group, grade, and sex, March to May 2020

Description	Minimum Frequency				Total	P-value
	Acceptable		Not Acceptable			
	No.	%	No.	%	No.	
Municipality*						
Jinotega	196	99	2	1	198	<0.0001
Santa María de Pantasma	184	95.3	9	4.7	193	
Location*						
Urban	69	100	0	0	69	0.0045
Rural	311	96.6	11	3.4	322	
Age group*						
8- 9 years old	88	100	0	0	88	0.0247
10 to 11 years old	209	97.2	6	2.8	215	0.0045
Older than 11 years old	83	94.3	5	5.7	88	0.2631
Primary school grade*						
3rd/4th grade	126	98.4	2	1.6	128	0.1578
5th grade	127	96.2	5	3.8	132	0.014
6th grade	127	96.9	4	3.1	131	0.025
Sex*						
Girls	196	97.5	5	2.5	196	0.0458
Boys	184	96.8	6	3.2	184	

Source: Elaborated from the results of the food consumption frequency survey applied to school children in intervention schools.

* *Significant statistical difference with $p < 0.05$*

Table 1.9. Mealtimes eaten by schoolchildren according to status, March to May 2020

Mealtime	Intervention group		Control group		P-value
	Number	Percentage	Number	Percentage	
Breakfast	365	93.4	259	93.5	0.9637
Morning snack	291	74.4	212	76.5	0.5713
Lunch*	374	95.7	273	98.6	0.0318
Afternoon snack	143	36.6	120	43.3	0.0833
Dinner	382	97.7	270	97.5	0.6835

Source: Elaborated from the results of the food consumption frequency survey applied to schoolchildren in intervention and control groups.

* *Significant statistical difference with $p < 0.05$*

Table 1.10. Minimum acceptable frequency for schoolchildren by status, March to May 2020

Minimum Frequency	Intervention group		Control Group		Total	P-value
	No.	%	No.	%		
Acceptable	380	97.2	275	99.3	655	0.0533
Not Acceptable	11	2.8	2	0.7	13	
Total	391	100.0	277	100.0	668	

Source: Elaborated from the food consumption frequency survey results applied to schoolchildren in control and intervention groups.

** Significant statistical difference with $p < 0.05$*

Table 1.11. Minimum acceptable diet in schoolchildren in intervention schools by municipality, location, age group, grade, and sex, March to May 2020

Description	Minimum Diet				Total	P-value
	Acceptable		Not Acceptable			
	No.	%	No.	%		
Municipality*						
Jinotega	127	64.1	71	35.9	198	0.0716
Santa María de Pantasma	124	64.2	69	35.8	193	
Location*						
Urban	50	72.5	19	27.5	69	<0.0001
Rural	201	62.4	121	37.6	322	
Age group*						
8- 9 years old	50	56.8	38	43.2	88	0.6543
10 to 11 years old	150	69.8	65	30.2	215	0.0685
Older than 11 years old	51	58	37	42	88	0.0386
Primary school grade*						
3rd/4th grade	75	58.6	53	41.4	128	0.0834
5th grade	86	65.2	46	34.8	132	0.036
6th grade	90	68.7	41	31.3	131	0.0203
Sex*						
Girls	130	64.7	71	35.3	201	0.2812
Boys	121	63.7	69	36.3	190	

Source: Elaborated from the food consumption frequency survey results applied to schoolchildren in intervention schools.

** Significant statistical difference with $p < 0.05$*

Table 1.12. Minimum Acceptable Diet in schoolchildren by status, March to May 2020

Minimum Diet	Intervention Group		Control Group		Total	P-value
	No.	%	No.	%		
Acceptable	251	64.2	187	67.5	438	0.3751
Not Acceptable	140	35.8	90	32.5	230	
Total	391	100.0	277	100.0	668	

Source: Elaborated from the food consumption frequency survey results applied to schoolchildren in control and intervention schools.

*** Significant statistical difference with $p < 0.05$**

Annex 2: Current status of baseline indicators and market research

Table 2.1. Transport costs by product. Figures in US Dollars

Description of Items				
	2020	2021	2022	TOTAL
Vegetables y Tubers				
Cost per trip	294.12	302.68	311.50	
Amount of deliveries	24	36	27	
Total Cost	7,058.8	10,896.6	8,410.5	26,366.0
Milk and cream				
Cost per trip	54.00	55.57	57.19	
Amount of deliveries	24	36	27	
Total Cost	1,296.0	2,000.6	1,544.2	4,840.8
Eggs				
Cost per trip	89.90	92.52	95.21	
Amount of deliveries	24	36	27	
Total Cost	2,157.6	3,330.7	2,570.8	8,059.0
Beans				
Cost per trip	470.00	483.69	497.78	
Amount of deliveries	3	3	3	
Total Cost	1,410.0	1,451.1	1,493.3	4,354.4
TOTAL	11,922.4	17,679.0	14,018.8	43,620.2
<i>Notes: Movement of vegetables and tubers is assumed to be done together.</i>				

Table 2.2. Average cost per metric on-site according to product

	2020			2021			2022		
	Price/MT	MT	Value	Price/MT	MT	Value	Price/MT	MT	Value
Tomatoes	1,496.4	28.8	43,095.5	1,540.0	44.5	68,528.1	1,584.8	34.4	54,469.9
Cabbages	369.7	24.0	8,873.9	380.5	37.1	14,109.6	391.6	43.0	16,827.1
Carrots	1,067.6	57.6	61,496.5	1,098.7	89.0	97,777.2	1,130.7	34.4	38,863.7
Potatoes	1,294.1	86.4	111,811.8	1,331.8	133.5	177,783.4	1,370.6	68.8	94,228.8
Beans	1,235.3	30.0	37,058.8	1,271.3	46.4	58,923.5	1,308.3	35.8	46,850.3
Egg	2,138.9	63.6	136,033.3	2,201.2	98.3	216,288.6	2,265.3	75.9	171,958.8
Milk	711.8	115.2	81,995.3	732.5	178.0	130,369.6	753.8	137.5	103,644.2
Cream	2,135.3	12.0	25,623.5	2,197.5	9.3	20,370.7	2,261.5	7.2	16,192.3
TOTAL		417.6	505,988.7		635.9	784,150.6		436.8	543,035.0
TOTAL									1,833,174.4

FSource: Pre-quotes provided by evaluated suppliers.

Table 2.3. Sales price per MT from site and in school according to supplier (amount in US Dollars)

Supplier	From site	School
Klifford		
Egg	2,138.9	2,390.5
GRINSA		
Milk	711.8	750.6
Cream	2,135.3	2,187.1
COOSMPROJIN		
Tomato	1,617.6	2,264.7
Cabbage	369.7	554.6
Carrot	1,164.7	1,617.6
Potato	1,294.1	1,941.2
COOSEMPODA		
Tomato	1,470.6	1,524.7
Cabbage	369.7	385.2
Carrot	970.6	1,024.7
Potato	1,294.1	1,348.2
Bean	1,235.3	1,289.4
Tomatoya		
Tomato		1,617.65
Cabbage		462.18
Carrot		776.47
SACACLI		
Tomato		1,400.88
Bean		1,310.29

Source: Based on pre-quotes provided by suppliers evaluated.

Note: The cooperatives Tomatoya and Sacaccli only provided quotes for produce delivered to schools.

Table 2.4. Practices implemented by businesses in the delivery process, March to May 2020

Business/practice	Use of plastic crates to transport product from the farm to the collection center	Use of plastic boxes for product delivery	Implements control and registration of delivery and are counted to pay producers	Production scheduling synchronized with customer delivery
COOSEMPODA	X	X	X	X
COOSMPROJIN	X	X	X	X
Tomatoya	X	X	X	X
SACACLI	X	X	X	X
GRINSA	X	X	X	X
Klifford	X	X	X	X
Total	6	6	6	6
Porcentaje	60.0%	60.0%	60.0%	60.0%

Source: Data collected in interviews with suppliers evaluated.

Note: The percentage was calculated based on ten businesses.

Table 2.5. Compliance with practices which affecting the cost-effectiveness of delivery by business, March to May 2020

Area	Description of practice	Business			
		COOSEMPODA	COOSMPROJIN	Tomatoya	SACACLI
Practices to ensure product supply and meet customer delivery schedules	Staggered production planning/scheduling of harvest according to the volumes required by the customer	X	X	X	X
Maximizes compliance with quality standards in the field	Training producers in quality standards	X	X	X	X
	Implementation of technology and control chart of items prohibited in GAP	X	X	X	X
	Technical assistance in the cultural process	X	X	X	X
	Accompaniment during harvest	X	X	X	X
	Pre-selection of produce in the field	X	X	X	X
	Transport produce in boxes from the field to the farm	X	X	X	X
Minimizes the risk of quality loss during transportation	Transports produce in boxes	X	X	X	X
	Consider maximum amounts per box to avoid physical damage due to friction	X	X	X	X
Maximizes quality compliance and reduce likelihood of mechanical damage at reception and processing	Produce selection on-site to identify damaged or infested produce to be discarded	X	X	X	X
	Processed produce placed in boxes and on chutes in the output area	X	X	X	X
	Consider maximum amounts per box to avoid physical damage due to friction	X	X	X	X
Minimizes the risk of rejection due to damage	Use of closed trucks	X	X	X	X
	Use of boxes to avoid physical damage due to friction	X	X	X	X
	Maximum amount per box	X	X	X	X
Guarantee product safety during transport	Transport in closed vehicle	X	X	X	X
	Cleaning transport before collecting produce	X	X	X	X
Guarantee product safety in reception and assembly process of produce	Use of chlorinated water for washing produce	X	X		X
	Apply bactericides	X	X	X	X

	Cleaning of areas before reception and processing of produce			X	X
	Cleaning of areas after the reception and processing of produce	X	X	X	X
	Reception and processing staff are trained in personal hygiene standards	X	X	X	X
	Use of equipment (nets, boots, aprons, gloves, boots, apron, mask)	X	X	X	X
Average rejection by the customer due to physical damage detected at the delivery point		6%	5%	4%	0%

Source: Interviews with suppliers evaluated.

Table 2.6. Volume sold, prices and revenues reported in 2019 by suppliers evaluated

Business/Producer		MT	Price US Dollars	Revenue US Dollars
COOSMPROJIN				
Cabbage		289.7	380.0	110,086.0
COOSEMPODA				
Cabbage		238.0	510.0	121,380.0
TOMATOYA				
Cabbage		164.0	390.0	63,960.0
Tomato		68.0	1,860.0	126,480.0
Carrot		340.0	730.0	248,200.0
SACACLI				
Tomato		99.0	1,384.0	137,016.0
GRINSA				
Milk		16.7	797.0	13,315.4
Cream		10.0	2,523.8	25,111.5
Klifford				
Egg		528.7	2,029.4	1,072,986.0
Total		1,754.09		1,918,535.0

Source: Interviews with cooperatives and businesses evaluated.

Table 2.7. Financial management practices implemented by suppliers evaluated for the period March to May 2020

Supplies	Administrative	Financial	Total	% in relation to the total number of practices	% in relation to the total of administrative practices	% in relation to the total of financial practices
COOSEMPODA	5	6	11	100%	100%	100%
COOSMPROJIN	1	5	6	55%	20%	83%
Tomatoya	4	6	10	91%	80%	100%
SACACLI	4	6	10	91%	80%	100%
GRINSA	5	6	11	100%	100%	100%
Klifford	0	4	4	36%	0%	67%
EMAJUSA	3	4	7	64%	60%	67%
ECOFODESA	3	5	8	73%	60%	83%
ECOPRASA	3	4	7	64%	60%	67%
ESJUSA	4	6	10	91%	80%	100%
Average	3	5	8	77%	64%	87%

Source: Based on ADA results

Table 2.8. Legal practices implemented by suppliers evaluated, March to May 2020

Description of practice implemented	COOSEMPODA	COOSMPROJIN	Tomatoya	SACACLI	GRINSA	Klifford	EMAJUSA	ECOFODESA	ECOPRASA	ESJUSA
Has legal status and is legally constituted	X	X	X	X	X	X	X	X	X	X
Up to date with all legal, tax and financial commitments	X	X	X	X	X	X	X	X	X	X
Up to date with occupational safety commitments and social benefits	X	X	X	X	X	X	X	X	X	X
Has regulations and statutes	X	X	X	X	X	X	X	X	X	X
The statutes and regulations include elements and mechanisms for organizational management transparency	X	X	X	X	X	X	X	X	X	X

Source: Based on ADA results

Table 2.9. Administrative practices implemented by suppliers evaluated, March to May 2020

Description of practice implemented	COOSEMPODA	COOSMPROJI	Tomatoya	SACACLI	GRINSA	Klifford	EMAJUSA	ECOFODESA	ECOPRASA	ESJUSA
A function manual exists and is implemented. It includes descriptions of roles and responsibilities for personnel in different areas and contains controls to verify their implementation	X	X	X	X	X	-	X	X	X	X
An operations manual exists, is implemented and contains verification controls	X	-	X	X	X	-		X		X
A strategic plan exists and is implemented	X	-	X	X	X	-	X	-	X	X
A business plan exists and is implemented	X	-	X	-	X	-	-	-	-	-
Annual operational plans are prepared with their respective budgets	X	-	-	X	X		X	X	X	X

Source: Based on ADA results

Table 2.10. Financial practices implemented by suppliers evaluated, March to May 2020

Description of practice implemented	COOSEMPODA	COOSMPROJI	Tomatoya	SACACLI	GRINSA	Klifford	EMAJUSA	ECOFODESA	ECOPRASA	ESJUSA
Have a formal and updated accounting information system	X	X	X	X	X	X	-	X	X	X
An accounting procedure manual exists and is implemented, which includes a clear description of the accounting system, how to use it, and controls for processing the information	X	X	X	X	X	-	X	X	-	X
Prepare financial statements and reports on a monthly basis and submit them to management for analysis	X	X	X	X	X	X	X	X	X	X
Perform financial and accounting audits at least once a year	-	-	X	X	X	-	-	-	-	X
The management bodies meet monthly to review financial statements and operational performance	X	X	X	X	X	X	X	X	X	X
Ensures that production meets its markets' requirements and plans the production process to meet its commercial contracts	X	X	X	X	X	X	X	X	X	X

Table 2.11. Importance of Jinotega's production by product (in thousands of MT)

Product	National average production	Jinotega's average production	% of Jinotega's production with relation to national production
Tomato	75.99	12.16	16.0%
Potato	56	26.32	47.0%
Cabbahe	63.16	33.48	53.0%
Carrot	16.92	13.53	80.0%
Milk	1,220.05	61	5.0%
Egg	47.3	4.73	10.0%
Bean	189.39	32.2	17.0%
Average in MT	1,668.81	183.42	11.0%

Source: Data of the production plan consumption trade 2017-2019 and IV CENAGRO 2011.

Table 2.12. Jinotega production by product, 2017-2019. Figures in thousands of Tons

Product	2017	2018	2019	Average	Variation over period
Tomato	11.91	11.48	13.09	12.16	9.9%
Potato	18.8	28.12	32.05	26.32	70.5%
Cabbahe	28.22	36.07	36.14	33.48	28.1%
Carrot	14.41	11.22	14.97	13.53	3.9%
Milk	50.05	65.06	67.91	61	35.7%
Egg	4.4	4.8	4.99	4.73	13.4%
Bean	30.91	32.45	33.23	32.2	7.5%

Source: Based on Jinotega's participation in production according to IV CENAGRO 2011.

Table 2.13. Jinotega's demand by product, 2017-2019. Figures in thousands of Tons

Product	2017	2018	2019	Average	Variation over period
Tomato	3.46	2.26	2.28	2.67	-34.3%
Potato	2.58	3.04	3.48	3.03	34.8%
Cabbahe	3.70	4.87	4.75	4.44	28.3%
Carrot	1.13	1.20	1.22	1.18	8.5%
Milk	9.15	12.28	18.69	13.37	104.2%
Egg	3.05	3.33	3.47	3.28	13.9%
Bean	7.56	8.53	8.54	8.21	13.0%

Source: Based on the population of Jinotega and the apparent consumption per capita.

Table 2.14. Jinotega production surpluses according to product, 2017-2019 Figures in thousands of tons

Product	2017	2018	2019	Average	Variation over period
Tomato	8.5	9.2	10.8	9.5	27.9%
Potato	16.2	25.1	28.6	23.3	76.1%
Cabbahe	24.5	31.2	31.4	29.0	28.0%
Carrot	13.3	10.0	13.8	12.4	3.5%
Milk	40.9	52.8	49.2	47.6	20.3%
Egg	1.4	1.5	1.5	1.4	12.6%
Bean	23.4	23.9	24.7	24.0	5.7%
Average				21.0	24.9%

Source: Based on the difference between supply and demand

Table 2.15. Importance of PCI's purchases for production and demand in Jinotega for 2019. Figures in thousands of tons

Item	Tomato	Potato	Cabbage	Carrot	Milk	Egg	Bean
Production	13.09	32.05	36.14	14.97	67.91	4.99	33.23
PCI's demand	0.05	0.04	0.09	0.14	0.05	0.10	0.18
Percentage	0.35%	0.12%	0.25%	0.92%	0.07%	2.09%	0.55%
Average	0.62%						
Demand	2.28	3.48	4.75	1.22	18.69	3.47	8.54
PCI's demand	0.05	0.04	0.09	0.14	0.05	0.10	0.18
Percentage	2.0%	1.1%	1.9%	11.3%	0.3%	3.0%	2.2%
Average	3.1%						

Source: Data obtained from PCI's demand and Jinotega's production.

Table 2.16. Producer survey results, March to May 2020

Variable	Category	Intervention group	Control group
Total surveyed		170	103
Academic level	Primary	57%	63%
	Literate	17%	17%
	Secondary	12%	11%
	Technical	1%	1%
	University	8%	4%
	Other	5%	4%
Áverage are of foarm	Hectars	9	7
Land ownership	Owner	86%	89%
	Rented	11%	8%
	Borrowed	3%	3%
Land use	Permanent	11%	11%
	Anbual	40%	32%
	Pasture	35%	44%
	Forestry	10%	12%
	Other	4%	1%
Main rotation of the productive unit	Basic grains	45%	46%
	Vegetables	39%	37%
	Livestock	5%	6%
	Coffee	11%	7%
	Other	1%	5%
Producer/crop quantity	Bean	56%	57%
	Tomato	9%	9%
	Cabbage	22%	20%
	Carrot	4%	1%
	Potato	9%	13%
Production system	Traditional (agrochemicals)	88%	92%
	Organic	1%	0%
	Mixed	11%	8%
Production volume ^{MT}	Bean	359.1	261
	Tomato	6,701.0	2,323.0
	Cabbage	1,835.7	1862.9
	Carrot	360.6	59.0
	Potato	3,071.0	770.7
Yields in MT per hectare	Bean	1.0	1.1
	Cabbage	34.1	31.7
	Tomato*	56.5	71.8
	Carrot	30.8	21.0
	Potato	16.8	14.8

Variable	Category	Intervention group	Control group
Uso de riego		51.0%	46.0%
Use of irrigation	Bean (\$/MT)	431.21	397.95
	Cabbage (\$/MT)	3,169.11	3,351.84
	Tomato (\$/MT)	10,349.06	12,815.87
	Carrot (\$/MT)	2,850.68	4,223.23
	Potato (\$/MT)	5,223.22	4,964.93
Cost of transport Jinotega-Managua	Overall Cost \$ (8-10 MT)	143.00	192.00
Buyers	Traders	32%	35%
	Cooperatives	18%	10%
	Local market	41%	50%
	Others	9%	5%
Average sales prices	Bean (\$/MT)	712.4	718.9
	Cabbage (\$/MT)	146.9	132.7
	Tomato (\$/MT)	390.7	369.4
	Carrot (\$/MT)*	210.7	266.2
	Potato (\$/MT)	512.7	573
Transport used when selling off-site	Pick up	29%	14%
	Truck	29%	72%
	Other	42%	14%
Conditions under which transported	Boxes, sacks	9%	5.8%
Product delivery records	Yes	3.5%	5.8%
Availability to store beans	Yes	29%	32%
	No	71%	68%
Availability to store potatoes	Yes	14%	6%
	No	86%	94%
Willingness to deliver product to schools	Yes	99%	98%
	No	1%	2%
Capacidad para ofrecer más productos	Yes	49%	48%
	No	51%	52%
Location of suppliers product	Jinotega and Pantasma	30%	31%
	Cooperatives	68%	63%
	Other departaments	2%	6%
Financing	Yes	88%	75%
	No	12%	25%
Source of financing	Cooperative	90%	89%
	Microfinance	1%	2%
	Bank	1%	1%

Variable	Category	Intervention group	Control group
	Other	8%	8%
Use of financing	Supplies	93%	83%
	Equipment	4%	4%
	Machinery	1%	3%
	Other	2%	10%
Received training	Yes	46%	37%
	No	54%	63%
Topics of trainings received	Agronomic management	45%	50%
	Processing	15%	13%
	Accounting	3%	5%
	Marketing	9%	3%
	Climate change	18%	13%
GAP certificate		8%	0%
Most implemented practices	No burn	48%	49%
	Container handling	39%	40%
	Reforestation	34%	26%
	Water harvesting	27%	34%
Meet storage practices	Productos don't touch the ground	82%	80%
	Insects not present	95%	100%
	Rodents not present	87%	96%
	Noty dirty	79%	88%
	No excrement	100%	100%
	Dented dilos	51%	20%
Problemas which affect production	Adverse climate	38%	37%
	Pests and diseases	26%	24%
	High supply cost	29%	31%
	Lack of labor	2%	2%
	Lack of technical assistance	5%	6%
Sales problems	Low prices	58%	52%
	Unstable market	45%	41%
	No fixed price	5%	6%
	Competition from other producers	6%	3%
	Production	5%	3%
	RUC number	0%	1%

Variable	Category	Intervention group	Control group
Legal and commercial requirements	Registered at the DGI	0%	1%
	Invoices	0%	1%

Source: Data obtained from producer surveys

**Statistical difference significant with $p < 0.05$*

Table 2.17. Sales value for producers 2019

Status	Product	Production ^{MT}	Average sale price \$/MT	Total Sales \$
Intervention group	Bean	359.1	712.4	255,815.8
	Potato	3,071.3	512.7	1,574,629.6
	Cabbage	6,701.0	146.9	984,301.0
	Tomato	1,835.7	390.7	717,198.8
	Carrot	360.6	210.7	75,988.5
Total intervention group		12,327.7		3,607,933.6
Control group	Bean	261.0	718.9	187,666.4
	Potato	770.7	573.0	441,602.1
	Cabbage	2,323.0	132.7	308,164.7
	Tomato	1,862.9	369.4	688,171.3
	Carrot	59.0	266.2	15,695.7
Total Control group		5,276.6		1,641,300.3

Source: Data obtained from producer surveys

Table 2.18. Practices adopted by producers

Practices implemented by producers	Intervention	Control	Total	% of adoption	
				Intervention	Control
Pest Management					
1. Chemical control	166	102	268	98%	99%
2. Biological control	25	10	35	15%	10%
3. Pest and disease count	37	26	63	22%	25%
4. Yellow traps	23	17	40	14%	17%
5. Drill Traps	9	4	13	5%	4%
6. Protected agriculture	12	12	24	7%	12%
Total of sample producers	170	103			
Soil Conservation					
1.No burn	134	86	220	79%	83%
2. Live fencing	81	41	122	48%	40%
3. Windbreakers	10	3	13	6%	3%
4. Crop rotation	64	47	111	38%	46%
5. Cultivation of crops on contour lines	3	3	6	2%	3%
6. Ditches	4	4	8	2%	4%
7. Zero Tillage	20	23	43	12%	22%
8. Containment dikes	5	3	8	3%	3%
9. Dead Barriers	38	22	60	22%	21%
Total of sample producers	170	103			
Climate change adaption					
1.Water harvesting	65	46	111	38%	45%
2. Container handling	94	55	149	55%	53%
3.Reforestation	83	36	119	49%	35%
4. Drought tolerant varieties	47	26	73	28%	25%
Total de muestra de productores	170	103			
Storage					
1. Temperature, humidity and light control	5	2	7	3%	2%
2. Proper area location	26	14	40	15%	14%
3. Toilet facilities outside the warehouse area	4	0	4	2%	0%
4. None	134	84	218	79%	82%
Total of sample producers	170	103			
Transport					
1.Vehicle cleaning	6	4	10	4%	4%
2. Cleaning of product containers	39	19	58	23%	18%
3.Other practices	1	0	1	1%	0%
Total of sample producers	170	103			

Source: Producer survey

Table 2.19. Value classification and product sales 2019

Level 1: Product type	Volume produced MT			Total, Sales U\$		
	Intervention	Control	Total	Intervention	Control	Total
Beans MT	359.11	261.04	620.15	255,815.79	187,666.45	443,482.23
Vegetables MT	10,096.60	4,245.74	14,342.34	2,584,698.35	1,012,145.83	3,596,844.18
Tubers MT	3,071.28	770.65	3,841.93	1,574,629.56	441,602.11	2,016,231.66
Eggs	528.70		528.70	1,072,986.00		1,072,986.00
Milk and cream	26.70		26.70	38,426.90		38,426.90
Total	14,082.39	5,277.43	19,359.82	5,526,556.60	1,641,414.38	7,167,970.98

Source: Producer survey and interviews with businesses

Level 2: Type of producer/business	Intervention		Control		Totals	
	Volume MT	Sales U\$	Volume MT	Sales U\$	Total MT	Total sales U\$
Small producer	2,838.46	733,357.71	2,430.68	766,986.79	5,269.13	1,500,344.51
Medium producer	9,489.83	2,874,663.98	2,846.76	874,427.59	12,336.59	3,749,091.57
Small business	1,754.09	1,918,535.00				
Total	14,082.38	5,526,556.70	5,277.43	1,641,414.38	17,605.72	5,249,436.08

Level 3: Age	Intervention		Control		Totals	
	Volume MT	Sales U\$	Volume MT	Volume MT	Sales U\$	Volume MT
Young person	3,400.05	965,761.20	464.89	115,592.32	3,864.94	1,081,353.52
Adult	10,682.32	4,560,795.49	4,812.54	1,525,822.06	13,740.78	4,168,082.56
Total	14,082.38	5,526,556.70	5,277.43	1,641,414.38	17,605.72	5,249,436.08

Source: Producer survey and interviews with businesses

Level 3: Sex	Intervention		Control		Totals	
	Volume MT	Sales U\$	Volume MT	Volume MT	Sales U\$	Volume MT
Male	13,306.87	5,275,925.40	4,774.62	1,469,662.26	16,327.40	4,827,052.66
Female	775.51	250,631.30	502.81	171,752.12	1,278.32	422,383.42
Total	14,082.38	5,526,556.70	5,277.43	1,641,414.38	17,605.72	5,249,436.08

Source: Producer survey and interviews with businesses

Level 3: Business	Intervention		Control		Totals	
	Volume MT	Sales US\$	Volume MT	Volume MT	Sales US\$	Volume MT
Cooperativa Sacaculi RL	2,033.85	932,114.09	2,506.38	881,041.31	4,441.23	1,676,139.41
Cooperativa Tomatoya	1,448.62	587,543.10	71.40	10,481.74	948.01	159,384.84
COOSEMPODA	7,812.48	2,354,640.54	2,338.14	645,527.79	9,912.63	2,878,788.33
COOSMPROJIN R.L	2,114.06	456,801.89	268.35	62,912.36	2,092.71	409,628.25
ECOFODESA	26.44	18,838.02	43.95	6,070.10	70.40	24,908.12
ECOPRASA	40.82	29,080.99	17.55	12,619.79	58.38	41,700.79
EMAJUSA	20.41	14,540.50	3.67	2,641.35	24.09	17,181.85
ESJUSA	30.30	21,584.56	27.99	20,119.93	58.29	41,704.49
Klifford	528.70	1,072,986.00				
GRINSA	26.70	38,426.90				
Total	14,082.39	5,526,556.60	5,277.43	1,641,414.38	17,605.72	5,249,436.08

Source: Producer survey and interviews with businesses

Table 2.20 - 2019 Detailed Sales Volumes and Values

Products	Value of annual sales (USD) of farms and firms receiving USDA assistance -LRP 7	Volume (MT) of commodities sold by farms and firms receiving USDA assistance - LRP 8
Eggs (Total value)	\$1,072,986.00	528.7
Eggs (Producer - smallholder)	\$0.00	0
Eggs (Producer - non-smallholder)	\$0.00	0
Eggs (Firm - small or medium enterprise)	\$1,072,986.00	528.7
Eggs (Producer - smallholder, female)	\$0.00	0
Eggs (Producer - non-smallholder, female)	\$0.00	0
Eggs (Firm -small or medium enterprise, female)	\$0.00	0
Eggs (Producer - smallholder, male)	\$0.00	0
Eggs (Producer - non-smallholder, male)	\$0.00	0
Eggs (Firm -small or medium enterprise, male)	\$1,072,986.00	528.7
Eggs (Firm -small or medium enterprise, mixed sex)	\$0.00	0
Eggs (Producer - smallholder, 15-29)	\$0.00	0
Eggs (Producer - smallholder, 30+)	\$0.00	0
Eggs (Producer - non-smallholder, 15-29)	\$0.00	0
Eggs (Producer - non-smallholder, 30+)	\$0.00	0
Eggs (Firm -small or medium enterprise, mixed age)	\$1,072,986.00	528.7

Horticulture (Total value)	\$2,584,698.34	10,096.60
Horticulture (Producer - smallholder)	\$221,057.72	855.60
Horticulture (Producer - non-smallholder)	\$1,556,518.63	8,042.30
Horticulture (Firm - small or medium enterprise)	\$807,122.00	1,198.70
Horticulture (Producer - smallholder, female)	\$25,142.72	132.51
Horticulture (Producer - non-smallholder, female)	\$26,108.40	367.88
Horticulture (Firm -small or medium enterprise, female)	\$0.00	0
Horticulture (Producer - smallholder, male)	\$195,914.99	723.09
Horticulture (Producer - non-smallholder, male)	\$1,530,410.23	7,674.42
Horticulture (Firm -small or medium enterprise, male)	\$807,122.00	1,198.70
Horticulture (Firm -small or medium enterprise, mixed sex)	\$0.00	0.00
Horticulture (Producer - smallholder, 15-29)	\$69,233.39	213.19
Horticulture (Producer - smallholder, 30+)	\$151,824.33	642.41
Horticulture (Producer - non-smallholder, 15-29)	\$59,822.60	464.10
Horticulture (Producer - non-smallholder, 30+)	\$1,496,696.03	7,578.20
Horticulture (Firm -small or medium enterprise, mixed age)	\$807,122.00	1,198.70
Tubers (Total value)	\$1,574,629.56	3071.28
Tubers (Producer - smallholder)	\$455,591.37	1,763.37
Tubers (Producer - non-smallholder)	\$1,119,038.19	1,307.91
Tubers (Firm - small or medium enterprise)	\$0.00	0
Tubers (Producer - smallholder, female)	\$0.00	0
Tubers (Producer - non-smallholder, female)	\$75,291.91	88.00
Tubers (Firm -small or medium enterprise, female)	\$0.00	0
Tubers (Producer - smallholder, male)	\$455,591.37	1,763.37
Tubers (Producer - non-smallholder, male)	\$1,043,746.28	1,219.91
Tubers (Firm -small or medium enterprise, male)	\$0.00	0
Tubers (Firm -small or medium enterprise, mixed sex)	\$0.00	0
Tubers (Producer - smallholder, 15-29)	\$161,644.63	363
Tubers (Producer - smallholder, 30+)	\$343,946.74	1,400.37
Tubers (Producer - non-smallholder, 15-29)	\$42,720.45	172
Tubers (Producer - non-smallholder, 30+)	\$1,076,317.74	1,135.91
Tubers (Firm -small or medium enterprise, mixed age)	\$0.00	0
Beans (Total value)	\$255,815.79	359.11
Beans (Producer - smallholder)	\$56,708.62	219.49
Beans (Producer - non-smallholder)	\$199,107.17	139.62
Beans (Firm - small or medium enterprise)	\$0.00	0
Beans (Producer - smallholder, female)	\$8,115.30	23.8
Beans (Producer - non-smallholder, female)	\$28,966.72	66.8

Beans (Firm -small or medium enterprise, female)	\$0.00	0
Beans (Producer - smallholder, male)	\$48,593.32	195.69
Beans (Producer - non-smallholder, male)	\$170,140.45	72.82
Beans (Firm -small or medium enterprise, male)	\$0.00	0
Beans (Firm -small or medium enterprise, mixed sex)	\$0.00	0
Beans (Producer - smallholder, 15-29)	\$3,358.74	13.00
Beans (Producer - smallholder, 30+)	\$53,349.88	206.49
Beans (Producer - non-smallholder, 15-29)	\$73,561.57	66.8
Beans (Producer - non-smallholder, 30+)	\$125,545.60	72.82
Beans (Firm -small or medium enterprise, mixed age)	\$0.00	0
Milk (Total value)	\$38,426.90	26.7
Milk (Producer - smallholder)	\$0.00	0
Milk (Producer - non-smallholder)	\$0.00	0
Milk (Firm - small or medium enterprise)	\$38,426.90	26.7
Milk (Producer - smallholder, female)	\$0.00	0
Milk (Producer - non-smallholder, female)	\$0.00	0
Milk (Firm -small or medium enterprise, female)	\$0.00	0
Milk (Producer - smallholder, male)	\$0.00	0
Milk (Producer - non-smallholder, male)	\$0.00	0
Milk (Firm -small or medium enterprise, male)	\$38,426.90	26.7
Milk (Firm -small or medium enterprise, mixed sex)	\$0.00	0
Milk (Producer - smallholder, 15-29)	\$0.00	0
Milk (Producer - smallholder, 30+)	\$0.00	0
Milk (Producer - non-smallholder, 15-29)	\$0.00	0
Milk (Producer - non-smallholder, 30+)	\$0.00	0
Milk (Firm -small or medium enterprise, mixed age)	\$38,426.90	26.7

Gráfico 2.1. Administrative and Financial Capacity Area Scoring of Four Cooperatives

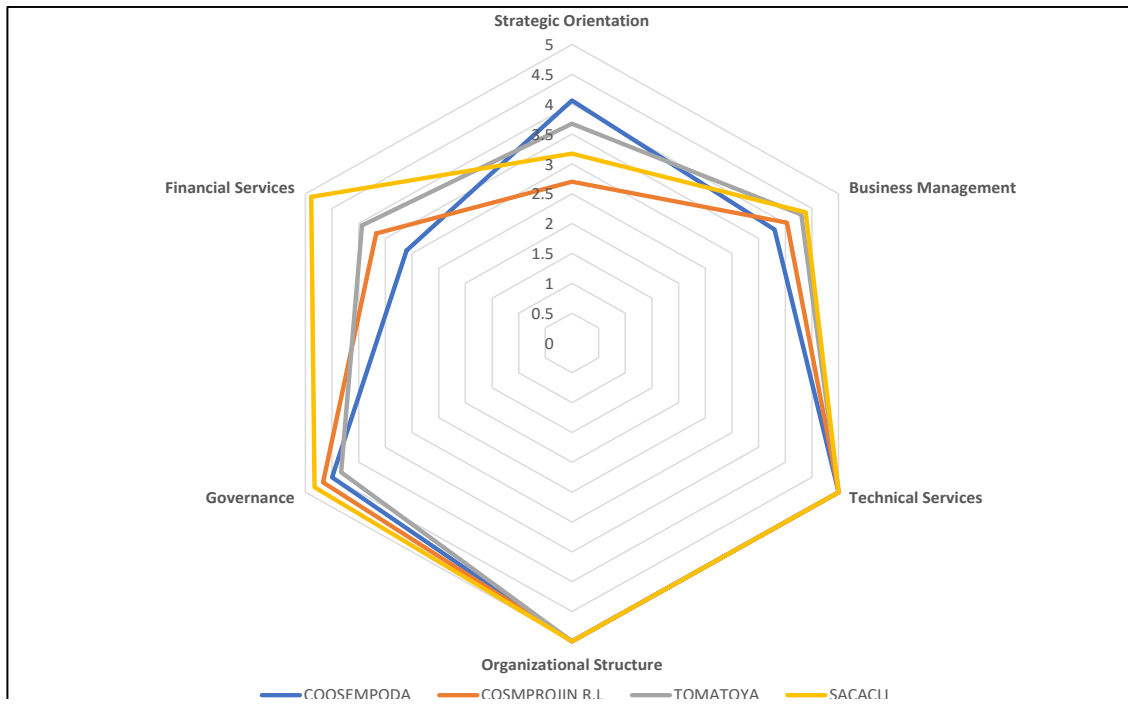
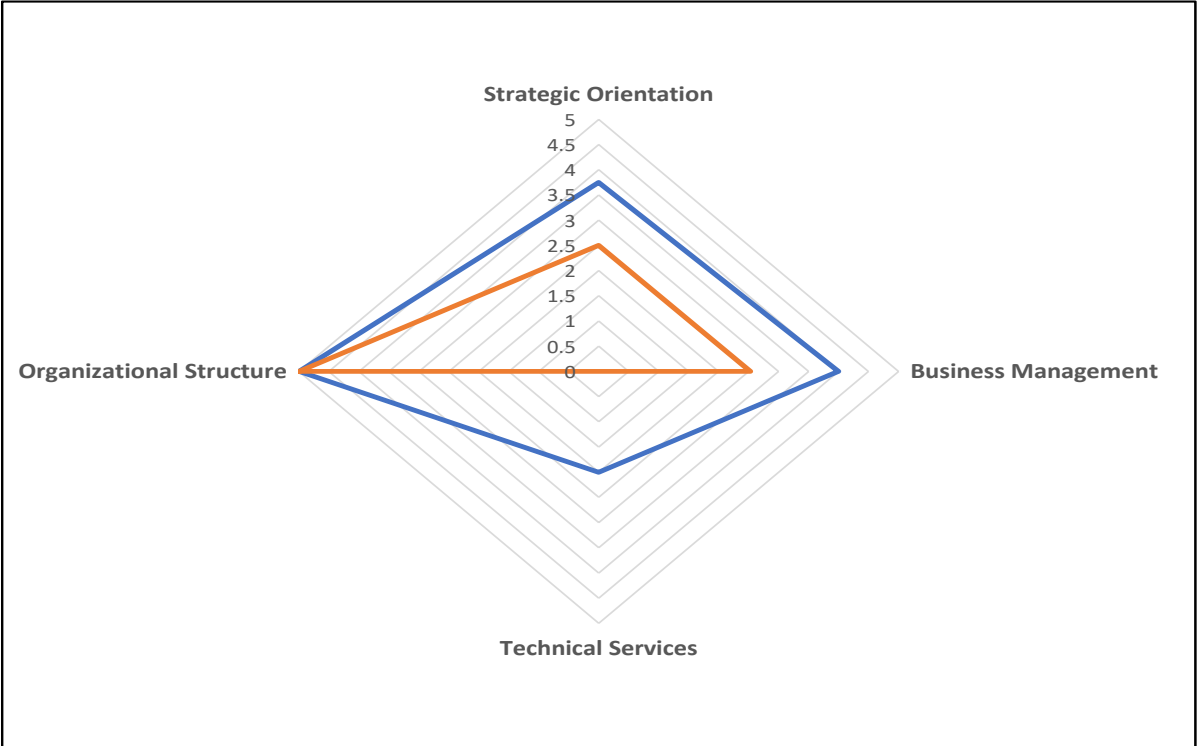
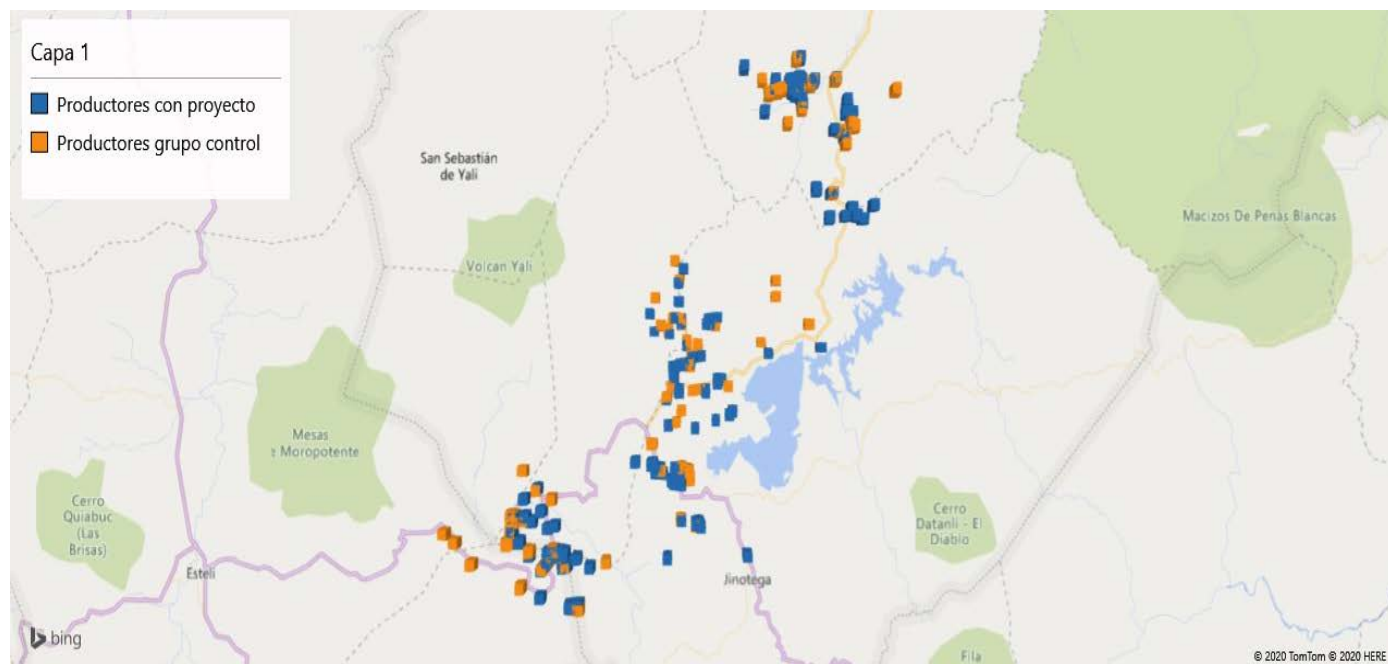


Gráfico 2.2. Capacity Scoring of Functional Areas for Two Private Businesses



Mapa 1. Distribution of producers surveyed with project and control group of the municipalities of Jinotega and Santa María de Pantasma, , March to May 2020



Fuente: Elaboración propia a partir de información georeferenciada.

Annex 3

Anexo No. 3.1. Sampling Table

Municipio	Community	School Name	Control/ Intervention	Girls Sampled	Boys Sampled	Total general
Jinotega	Colinas	Bastilla	Intervention	6	15	21
	Lipululo	Lipululo	Intervention	13	12	25
	Mancotal Abajo	San Miguel	Intervention	8	8	16
	Pelón	Pelón	Intervention	9	8	17
	Sisle 2	Juan Pablo Segundo	Intervention	6	9	15
	Tomatoya	Amanda López Pineda	Intervention	5	13	18
	Villa Norte	Rubén Darío	Intervention	41	28	69
	Yankee 1	Rubén Darío Yankee 1	Intervention	11	6	17
	19 de julio	Simón Bolívar	Intervention	40	30	70
	Bo. Jinotega	Gabriela Mistral	Intervention	75	48	123
	Paso Real 1	Eliás Blandón Machado	Intervention	4	6	10
	Robles	Pedro Lisimaco	Intervention	21	18	39
Santa Maria de Pantasma	Aserrio	Jose Cesareo Blandón	Intervention	8	3	11
	Cedros	Cedros Central	Intervention	10	9	19
	Cenizabu	Cenizabú	Intervention	12	12	24
	Cruces 2	Jose Benito Arauz	Intervention	13	11	24
	Praderas	Ninfa Segura Castillo	Intervention	48	44	92
	Sacramento	Sacramento	Intervention	7	6	13
	Tigre	Ángeles	Intervention	4	6	10
	Anizales 2	Anizales 2	Control	6	6	12
	Chile	Chile	Control	6	4	10
	Cruce 1	Rubén Darío	Control	6	7	13
Total				359	309	668

Anexo No. 3.2. Cooperatives and Producers Included in the Evaluation

Cooperativas y empresas	Products	Municipality	Number of Members	Members participating in MAS	Study Sample	Control Sample Frame	Control Sample
COOSEMPODA	Hortalizas	Jinotega	95	27	22	68	17
COOSMPROJIN	Hortalizas	Jinotega	73	35	29	38	10
Tomatoya	Hortalizas	Jinotega	33	22	18	11	3
Sacacli	Hortalizas	Hortalizas	219	60	49	159	40
Subtotal		Hortalizas	420	144	118	276	70
ECOPRASA	Frijol	Pantasma	53	44	12	9	5
EMAJUSA	Frijol	Pantasma	37	24	6	13	7
ECOFODESA	Frijol	Pantasma	58	52	14	6	3
ESJUSA	Frijol	Pantasma	108	73	19	25	14
Subtotal			256	193	51	53	30
Total			676	337	169	329	100

Anexo 3.2.1. Cooperative Focus Group Participants

Organizaciones	Men	Women	Total
COOMSEPODA	5		5
COOSMPROJIN	4	2	6
Tomatoya	9		9
SACACLI	6	1	7
ECOPRASA	8	1	9
ESJUSA	5	1	6
ECOFODESA	4	2	6
EMAJUSA	5		5
GRINSA	2		2
Klifford (avícola)	1		1
Total	49	7	56

Anexo 3.2.2. PTA Members

No.	School Name	Control/ Intervention	Males	Females	Total
1	José Cesareo Blandón	Proyecto	1	5	6
2	Chile	Control	2	10	12
3	Anizales 2	Control	6	4	10
4	Rubén Darío, Villa Norte	Intervention	0	2	2
5	Ninfa Segura Castillo	Intervention	2	10	12
6	Rubén Darío, Cruces 1	Control	1	2	3
7	Cenizabu	Intervention	1	4	5
8	Bastilla	Intervention	3	6	9
9	Pedro Lisímaco	Control	3	5	8
10	Elías Blandón Machado	Control	5	9	14
11	Simón Bolívar	Control	1	6	7
12	Juan Pablo Segundo	Intervention	1	11	12
13	Amanda López Pineda	Intervention	1	6	7
14	Gabriela Mistral	Control	0	5	5
	Total		27	85	112

Source: Obtained from the list of participants who were applied the guided questionnaire (parents of the CAE y PTA).

Anexo 3.2.3. PTA Focus Group Participants

No.	Escuela	Control/ Intervention	Males	Females	Total
1	Pelón/Lipululo	Intervention	2	9	11
2	Cedro Central y Cruces	Intervention	8	6	14
3	Mancotal/San Miguel	Intervention	0	12	12
4	Sacramento/Los Ángeles	Intervention	9	3	12
	Total		19	30	49

Fuente: Elaborado a partir de los resultados de la guía de grupo focal aplicado a miembros del CAE y PTA.

Anexo No. 3.3. Data Collection Instruments

Anexo No. 3.3.1. Supplier and Producer Focs Group Guide



Proyecto Mayor Acceso a Alimentos Saludables – MAS. Jinotega 2019-2022 Evaluación Inicial y Estudio de Mercado en Jinotega

Sesión con grupo focal

Principales proveedores de productos, prestadores de servicios y comerciantes de Jinotega y Pantasma Marzo a mayo 2020

I. Metodología del grupo focal

Este instrumento será aplicado a proveedores sujetos de estudio (8 cooperativas 2 empresas), principales proveedores potenciales, prestadores de servicio (transporte, almacenaje), comerciantes mayoristas y se realizarán dos eventos, uno en Jinotega y otro en Pantasma.

Se considera realizar las sesiones posteriormente a la sistematización de la información recolectada las cooperativas, empresas y productores, ya que son la base para la identificación de los principales actores que podrían estar involucrados directa o indirectamente, en caso que el proyecto decida realizar la compra de los productos sujetos de estudio.

Con el listado de principales actores de cada eslabón de la cadena, se coordina con el personal de campo de PCI y se filtrará esta lista, aprovechando el conocimiento que tiene este funcionario de zona, así mismo, será a través de él que se realizará la convocatoria.

El objetivo de del grupo focal es conocer de los proveedores, prestadores de servicios y comerciantes los efectos positivos o negativos y riesgos que causaría un incremento en la demanda de tomate, repollo, zanahoria, papa, frijol rojo, huevos, leche pasteurizada, crema, por la aparición de un nuevo comprador en la zona.

Se conformarán grupos de trabajo, los cuales estarán integrado por los representantes de cada eslabón de la cadena, (proveedores, proveedores potenciales, prestadores de servicios, comerciantes), cada grupo discutirá de manera independiente las preguntas que serán presentadas al resto de grupos. Adicionalmente, se abrirá un panel de discusión donde cada participante tendrá la oportunidad de exteriorizar su opinión.

Para evitar que los grupos se diluyan en la discusión interna, el tema principal será abordado a través de las siguientes preguntas:

- ¿Qué efectos positivos o negativos y riesgos tendría si el nuevo comprador me solicitará el servicio que ofrece? (vender el producto, transportarlo, etc)
- ¿Qué efectos positivos o negativos y riesgos tendría si este nuevo comprador me exige estándares de calidad en la prestación de mi servicio?
- ¿Qué efectos positivos o negativos y riesgos tendría sobre la comunidad si le prestara el servicio?

El facilitador durante el proceso de discusión de los grupos estará visitándolos para aclarar cualquier duda, así mismo, durante las exposiciones podrá intervenir para solicitar aclaración o profundización en aquellos aspectos que son de interés para el tema abordado, durante el panel abierto servirá como moderador y al mismo tiempo irá realizando anotaciones.

El tiempo efectivo estimado para realizar la sesión será 2 horas con treinta minutos, tiempo total estimado 3 horas considerando tiempos de inducción al tema y otros.

El facilitador será responsable de recolectar las hojas que utilizaron los grupos en las exposiciones; las cuales serán sistematizadas en conjunto con las anotaciones y el resultado final de la sesión será un listado de factores de riesgo y efectos positivos o negativos percibidos en caso de que el proyecto decida adquirir los productos en la zona.

➤ **Actividades preliminares**

a) Llenado de la lista de participantes



Proyecto Mayor Acceso a Alimentos Saludables – MAS. Jinotega 2019-2022

Evaluación Inicial y Estudio de Mercado en Jinotega

Hoja de Asistencia Sesión grupo Focal

Fecha: ____/____/____

Hora de inicio _____ Hora de finalización _____

Departamento/Región: Jinotega ☐ Pantasma ☐

Lugar donde se realizará sesión _____

Facilitador _____

Apoyo Logístico _____

Nombre	Organización que representa	Teléfono	Correo Electrónico	Firma

a. Inducción al tema

Buenos días o Buenas tardes, mi nombre es _____, somos parte de un equipo de trabajo que apoya a PCI en realizar una investigación del mercado de productos frescos y granos en los municipios de Jinotega y Pantasma, con el objetivo de aportarles información para complementar la merienda escolar con alimentos frescos, sanos y limpios.

En días pasados (indicar la fecha de levantamiento de entrevistas a cooperativa y empresas) estuvimos con algunos de ustedes, queremos agradecerles por la información que nos han brindado y expresarles que esta reunión es complementaria, así mismo a los nuevos participantes agradecerles por el tiempo y aporte que nos brindarán.

El día de hoy, nos hemos reunido con el propósito de conocer su opinión sobre los efectos positivos o negativos y riesgos que causaría un incremento en la demanda de tomate, repollo, zanahoria, papa, frijol rojo, huevos, leche empacada y crema empacada por la aparición de un nuevo comprador en la zona de Jinotega y Pantasma, en este caso PCI.

b. Solicitar permiso para grabar.

- c. **Aclarar que si alguno desea salirse de la sesión puede hacerlo.**
- d. **Solicitarles silenciar los teléfonos y salirse del sitio de la reunión para responder cuando lo deseen.**

II. Desarrollo de la sesión

- a) Presentar y dar la bienvenida
- b) Solicitar presentación de los asistentes, nombre y a quien representan
- c) Explicar las reglas, procedimientos a seguir y duración de la sesión
- d) Conformar los grupos de trabajo y nombrar representante del grupo
- e) Entrega del material a utilizar en el trabajo en grupo
- f) Lecturas a las preguntas que deberán dar respuesta al tema, explicaremos que los mismos están visibles en pizarra o pared (según sea el caso)
 - ¿Qué efectos positivos o negativos y riesgos tendría si el nuevo comprador me solicitará el servicio que ofrece? (vender el producto, transportarlo, etc.)
 - ¿Qué efectos positivos o negativos y riesgos tendría si este nuevo comprador me exige estándares de calidad en la prestación de mi servicio?
 - ¿Qué efectos positivos o negativos y riesgos tendría sobre la comunidad si le prestará el servicio?
- g) Iniciar trabajo en grupo. Tiempo estimado 1 hora
- h) Presentación de resultado del trabajo de cada grupo. Tiempo estimado 1 hora
- i) Inicio panel abierto de discusión. Tiempo estimado 30 minutos

III. Finalización de la sesión

- a) Palabras de agradecimiento por la participación de todas las personas
- b) Conclusión de la actividad, haciendo ver lo importante que fueron los aportes brindados.
- c) Ofrezca un refrigerio para compartir.



Proyecto Mayor Acceso a Alimentos Saludables – MAS. Jinotega 2019-2022

Evaluación Inicial y Estudio de Mercado en Jinotega

Entrevista con proveedores de alimentos

Metodología

Objetivo de la entrevista

Identificar las capacidades de los proveedores preseleccionados (8 cooperativas y 2 empresas) para cumplir con los estándares legales, de calidad, volumen de producción, áreas de mejoras técnicas y administrativas. Este objetivo será abordado en dos fases:

Primera Fase: Capacidad que tienen para garantizar la entrega de volúmenes de producto que cumplan con estándares de calidad exigidos por el cliente (comprador) y las normativas legales nacionales.

En este sentido, dicha capacidad estará determinada por el conjunto de prácticas o procedimiento implementadas para garantizar el abastecimiento producto y el conjunto de prácticas y procedimientos que garantice la calidad en las diferentes etapas (acopio, procesamiento y entra del producto). En conjunto establecería un parámetro para determinar la rentabilidad de la entra de producto en la medida que se acopio procesa y entrega las cantidades demandas acorde a los estándares exigidos por el cliente.

Bajo este contexto, en esta prima fase la información recolecta además permitirá dar salida a los siguientes indicadores y dar respuesta a algunos propósitos establecidos a nivel de organizaciones y empresas:

Indicadores

LRP 1.1. Costo de transporte, almacenamiento y manipulación según tipo de productos

LRP 1.1.1 Costo de adquisición según tipo de producto

LRP 1.1.2 Porcentaje de productores que han adoptado prácticas y procesos para mejorar la rentabilidad de la entrega.

LRP 1.3.2.1 Valor de las ventas anuales según tipo de producto

LRP 1.3.2.1 Volumen (TM) de productos vendidos según tipo de producto

Propósitos

- Identificar los factores de riesgos (ambientales, climáticos, económicos y sociales) que afecten la cadena productiva y comercialización de los productos a adquirir en este proyecto
- Identificar otros productores potenciales quien pueden ser capacitados para vender productos a las escuelas
- Determinar la disponibilidad de servicios y actores agropecuarios como transportistas y almacenamiento

Segunda Fase: Capacidad administrativa de las organizaciones y empresas será concebida como la capacidad de gestión y administración de los recursos para alcanzar objetivos en el tiempo; en este sentido, dicha capacidad se determinará a través de la valoración del nivel en que se encuentran sus principales áreas funcionales participativa (orientación estratégica, gestión gerencial, servicios técnicos, servicios financieros, funcionalidad de estructura organizacional y gobernanza), en donde la valoración es concebido como un proceso participativo entre el consultor y representantes de los órganos de dirección y administrativos de las cooperativas y empresas a una serie de preguntas. El análisis conjunto (dos fases) permitirá alcanzar el objetivo propuesto.

Es importante destacar que en la primera fase el sujeto de estudio los sujetos de investigación son el gerente y equipo técnico en la medida que lo requiera el primero y en la segunda fase el sujeto de estudio son los

órganos de dirección, en este sentido, el proceso metodológico ha considerado realizar ambos entrevista en una vista, la entrevista a realizar en la primera fase se hará en horas de la mañana la entrevista de la segunda fase se hará en la tarde (acápito 1.3).

Tipo de instrumentos a utilizar en la recolección de información

En ambas fases se considera utilizar entrevistas, sin embargo, cada entrevista presenta diferencias de fondo.

Primera fase: Se ha considerado utilizar una entrevista semiestructurada, a través de este instrumento se tiene más libertad de desarrollar a partir de las respuestas otros temas no previstos en la entrevista, además dan la oportunidad al entrevistado de expresar sus ideas y obtener una información más completa y precisa.

Segunda fase: Se ha considerado utilizar el instrumento ADA es una entrevista tipo estructurada con una serie de preguntas para cada una de las áreas funcionales de la organización o empresas y cuyas respuestas serán un valor de uno a cinco, puntaje que será asignado de manera consensuada en entre los representantes de órganos de dirección.

Estos tipos de entrevistas requieren un entrevistador con experiencia, puesto que deberá tener conocimientos de los temas abordados y así poder moderar al entrevistado cuando se aleja de la pregunta base.

Coordinación general

El equipo consultor coordinará con personal de PCI para establecer las fechas en que se realizará la entrevista y será este último el responsable de garantizar la convocatoria, proporcionar una idea del proyecto MAS para ubicar al entrevistado y garantizar la información que previamente las organizaciones tienen que tener al momento de ser entrevistados requerida.

Ubicación: Ambas entrevistas serán realizadas en las instalaciones de la organización, en algún lugar que proporcione un ambiente cómodo y libre de interrupciones para facilitar la concentración del entrevistado.

Persona entrevistada

En la entrevista a proveedores de alimentos se entrevistará al gerente o administrador de organización bajo el supuesto que este funcionario maneja la información relevante para dar respuesta a las interrogantes, sin embargo, no se excluye que pueda hacerse acompañar del personal clave (responsable de acopio, recepción y procesamiento y ventas) con el fin de poder complementar las respuestas, es importante destacar que el total de encuestados no debe ser mayor a cinco.

Hora propuesta

La primera entrevista será realizada en horas de la mañana y tendrá una duración aproximada de **3 horas**; por lo cual se exigirá puntualidad y buen manejo del tiempo del entrevistador. El entrevistador estará 30 minutos antes de iniciar; a fin de garantizar las condiciones del local.

Requerimiento de información

Para el buen desarrollo de la entrevista en la primera fase se ha contemplado solicitar a la organización información preparada para que la tengan en el momento de la entrevista a fin de poder maximizar el tiempo. Estos requerimientos de información se harán llegar a través del personal de PCI.

Información requerida

- Total, de socios, listado
- Total, de socios activos,
- Listado de socios proveedores y cantidad entregadas a la organización.

- Volúmenes mensuales de acopio según producto por proveedor.
- Precio promedio por unidad de medida (kilogramo) según producto pagado a cada proveedor en el último año.
- Volúmenes mensuales vendidos según producto a cada cliente. último año
- Precio de venta promedio por kilogramo de producto según cliente en el último año
- Costo promedio de transporte de la finca al centro de procesamiento según tipo de producto para el último año. Por kilogramo
- Costo promedio de procesamiento por kilogramo según producto en el último año.
- Volumen mensual de procesamiento según producto para el último año
- Capacidad máxima de procesamiento del equipo y maquinaria existente.
- Costo promedio de almacenaje según producto en el último año. Por kilogramo
- Volumen mensual de procesamiento según producto para el último año
- Capacidad máxima de procesamiento según tipo de producto del equipo y maquinaria existente. En kilogramo
- Estándares de calidad exigidos por el comprador en el último
- Porcentaje promedio de devoluciones de producto
- Estado de resultado de resultado último año

Instrumento metodológico

Estructura de la entrevista

La entrevista será estructurada en cinco áreas operativas que permitirán visualizar el proceso desde el acopio en finca hasta que el producto llega al cliente dichas áreas serán las siguientes:

- (i) Recepción de producto en portón finca y traslado al centro de acopio
- (ii) Recepción en planta
- (iii) Procesamiento de los productos
- (iv) Almacenaje
- (v) Venta del producto procesado

Desarrollo de la entrevista

Primer paso: Presentación del entrevistador en caso de que sean más de una persona solicitara también presentación, a continuación, solicitara que se apaguen los celulares a fin de minimizar la interrupción de la entrevista.

Segundo paso: Se comunicará cual es el objetivo de la encuesta su estructura entregándole a los presentes una copia del cuestionario.

Tercer paso: El encuestador dará lectura a las preguntas correspondiente a cada área procurando que el entrevistado la ha comprendido, posteriormente el entrevistado dará la respuesta.

Cuarto paso: El entrevistador realizará anotaciones de los puntos totales proporcionados en cada respuesta, realizando un resumen por área el cual será leído al finalizar el cuestionario para garantizar que no ha faltado nada,

Quinto paso: Lectura de resumen información total por área para consensuar anotaciones

Sexto paso: Cierre de encuentro.

Una vez finalizada la entrevista, el encuestador solicitará al gerente o administrador la información previamente requerida.

Procesamiento y análisis de la información

Por las características del instrumento el procesamiento de la información el instrumento base será los resúmenes realizados donde se establece las respuestas proporcionadas por cada organización., las respuestas por área proporcionados por cada organización serán tabulados de manera intendente en una hoja Excel.

Posteriormente se elaborará un cuadro de condensación, el cual proporcionará las capacidades que tiene en las áreas funcionales: Acopio de producto, procesamiento y almacenamiento de producto y venta. Para cumplir con los volúmenes y estándares de calidad requeridos por el proyecto.

La valoración de cada criterio se realizará a través de una escala de 0 a 5.

Área funcional	Criterios de valoración	Valoración de los Criterios
Acopio	Cantidad de proveedores	Para este criterio se considerará como parámetro el porcentaje de socios que son proveedores.
	Capacidad que tiene para garantizar el abastecimiento y estándares de calidad por parte de sus proveedores	La cantidad de los instrumentos o practicas utilizados que permitan minimizar el riesgo de no entrega
	Capacidad para garantizar la inocuidad del producto y minimizar riesgos en el traslado al centro de procesamiento	Comparación con las prácticas y procesos que aplican y las establecidas en las normativas, BPA y otras.
Procesamiento y almacenamiento	Implementación de prácticas y protocolos garanticen estándares y minimización de pérdidas.	Comparación con las prácticas y procesos que aplican y las establecidas en las normativas, BPM y otras
	Capacidad instalada de procesamiento y almacenaje (capacidad ociosa actual)	Cálculo de nivel de subutilización de capacidad instalada
Ventas	Capacidad de entrega bajo cumpliendo estándares de calidad e inocuidad. Porcentaje de devoluciones Prácticas para minimizar riesgos de perdida en producto	Disponibilidad de medios propios de transporte y precio Comparación

Se ha considerado que los costos de transporte, procesamiento y almacenaje son componentes del precio de venta puesto en planta o punto de entrega (escuelas), por tal razón se calculará la importancia relativa de éstos en la estructura de precios de venta por producto y a partir de este porcentaje se estimará cual podría ser el impacto en términos de valor absoluto sobre estas variables un aumento repentino en la demanda (incremento en ventas) y a su vez sobre el precio final.

Es importante mencionar que estas variables (transporte, procesamiento, almacenaje) responden inversamente al nivel de capacidad ociosa, por tanto, al aumentar su utilización los costos fijos promedios disminuyen y por ende se generaría un impacto sobre el precio de venta, permitiendo estimar cual podría ser el impacto sobre el precio de venta puesto en punto (escuelas), ante una posible compra por parte de PCI.

Una vez realizado el análisis individual de cada organización, se realizará un comparativo entre las diez organizaciones y otra clasificación estableciendo los niveles A, B, C; donde A se considerará las organizaciones con mayor capacidad de cumplimiento de los requisitos establecidos en el propósito 4 que es el objetivo propuesto del instrumento aplicado.

Adicionalmente, se solicitará una cotización de entrega de producto a las escuelas, para tales efectos la cotización se hará por ruta lógica de entregará a las escuelas el propósito de esto es tener un parámetro base en caso de que el proyecto pueda hacer negocio con la organización.

Preguntas de la entrevista a cooperativas y empresas



Proyecto Mayor Acceso a Alimentos Saludables – MAS. Jinotega 2019-2022

Evaluación Inicial y Estudio de Mercado en Jinotega

Guía de preguntas para acopio y traslado a centro de procesamiento

	PREGUNTA
	ABASTECIMIENTO GENERAL DE PRODUCTO
1.1	¿Qué prácticas o procesos implementan o a implementado ustedes para que sus proveedores garanticen los volúmenes de producto requeridos?
1.2	¿Cuáles han sido los principales problemas que han manifestado sus proveedores cuando han incumplido con los volúmenes de producto planifica ¿como lo ha solicitado?
1.3	¿A nivel interno cuales han sido los principales problemas para abastecerse de productos?
1.4	¿Qué otras organizaciones o empresa de la zona compite en el acopio de productos? son? Quienes son
	ESTANDAR DE CALIDAD DEL PRODUCTO EN PROCESO PRODUCTIVO Y ENTREGA PORTON FINCA
1.5	¿Qué prácticas o procesos implementan o ha implementado ustedes para que sus proveedores garanticen a nivel productivo que el producto sea entregado de acuerdo a los estándares de calidad e inocuidad requerido por el cliente? Como se asegura que las cumplan.
1.6	¿Para establecer las prácticas o procesos productivos que debe implementar sus proveedores a nivel productivo consideraron además de los estándares de calidad del cliente las regulaciones técnicas nacionales para la producción de los productos acopiados?
1.7	¿Cuáles han sido los principales problemas que han manifestado los proveedores para cumplir con los estándares productivo requerido? ¿cómo lo solucionado?
	TRANSPORTE DE LA FINCA AL CENTRO DE ACOPIO
1.8	¿Qué prácticas o procesos implementan o ha implementado para garantizar que el producto entregado por el proveedor no sufra daños o perdida calidad en el transporte al centro de acopio?
1.10	¿En casos de tener problemas con el transporte en esta etapa existen en la zona proveedores de este servicio? ¿Cuáles son los más importantes?
1.11	¿Cuál es el costo promedio por kilogramo en transporte según producto en el último año de operación?
1.12	¿Cuál es el precio promedio por kilogramo pagado al proveedor según el producto en el último año de operación? ¿Ese precio le proporciona alguna ventaja en relación a la competencia? Porque

Guía de preguntas para recepción y procesamiento

	PREGUNTA
	RECEPCION DE PRODUCTO
2.1	¿Qué controles o prácticas realiza para controlar la entrada de producto a planta? Considera que son los más adecuados
2.2	¿Qué procedimientos o prácticas implementa o ha implementado para que el personal realice la clasificación de producto acorde a los estándares de calidad solicitados por el comprador?
	PROCESAMIENTO
3.1	¿Según producto que tipo de procesamiento realiza?
3.2	¿Qué equipo o maquinaria utiliza para realizar el procesamiento?
3.3	¿Cuál es la capacidad máxima de procesamiento según producto?
3.4	¿Cuánto de esa capacidad instalada está aprovechando? porcentaje
3.5	¿Qué controles o prácticas realiza para garantizar que el producto siga cumpliendo con los estándares establecidos en la etapa de recepción y en el procesamiento se reduzca el daño manual o mecánico? (perdida de producto en proceso)?
3.6	¿Cuál es el costo promedio por kilogramo por procesamiento según tipo de producto que ha tendió en el último año?
3.7	¿El personal de recepción y procesamiento cuenta con las capacidades para realizar eficaz y eficientemente estas actividades? ¿Quién ha capacitado y en qué temas?

Guía de preguntas para Almacenamiento

PREGUNTA	
ALMACENAMIENTO	
4.1	¿Según producto que tipo de almacenamiento realiza?
4.2	¿Cuál es la capacidad máxima de almacenamiento según producto
4.3	¿Cuánto de esa capacidad instalada está aprovechando? Porcentaje
4.4	¿Qué controles o prácticas realiza para garantizar que el producto ya procesado siga cumpliendo con los estándares establecidos en la etapa de recepción y el procesamiento?
4.5	¿Cuál es el costo promedio por kilogramo de almacenamiento según tipo de producto que ha tenido en el último año?
4.6	¿El personal encargado de almacenamiento cuenta con las capacidades para realizar eficaz y eficientemente estas actividades? ¿Quién ha capacitado y en qué temas?
4.7	¿En el caso que tuviera problemas de almacenaje ¿existen en la zona suficientes proveedores de este servicio? ¿ha tenido que utilizar estos servicios en algún momento, cuánto fue el costo? ¿Quiénes son los proveedores más importantes de este servicio?

Guía de preguntas para Ventas

PREGUNTA	
COMERCIALIZACIÓN	
5.1	¿A quién vende actualmente los productos acopiados y procesados?
5.2	¿Cuáles son las cantidades vendidas por producto de acuerdo al comprador en el último año?
5.3	¿Cuál es el precio promedio por kilogramo vendido según producto en el último año
5.4	¿Cuáles son los estándares que exige el comprador según producto?
5.5	¿En caso que la organización asuma el transporte al punto de entrega establecido por el comprador ¿Qué prácticas o acciones realiza para garantizar los estandares establecidos por el comprador?
5.6	¿Qué tan frecuente el comprador ha rechazado el producto entregado que porcentaje? ¿Por qué ha sido el rechazo?
5.7	¿Cuál es el costo promedio por kilogramo en transporte en esta etapa según tipo de producto para el último año?
5.8	¿En caso de tener problemas con el transporte, existen suficientes oferentes en la zona que puedan prestarle el servicio? Mencione los más importantes
5.9	¿Qué otra organización o empresa de la zona compiten con su organización como oferentes de productos?
5.10	¿De acuerdo a las características de sus socios y/o proveedores que capacidad tendría la organización para incrementar la oferta de producto o diversificar la oferta para atender un nuevo cliente? ¿Cuánto más podrían incrementar la oferta por producto?
5.11	¿Cuáles podrían ser los principales problemas que enfrentaría la organización para incrementar la oferta de los productos? Internos y externos

Anexo No. 1.3.3. Interview of Agri-business on management capacity, financial and administrative management

Metodología

En la entrevista de capacidades gerenciales se entrevistará a los miembros de los órganos de dirección, (consejo Administrativo) y representante de consejo de vigilancia, (el total de encuestados no debe ser mayor a 7) en caso de las empresas esta se continuará con el administrador o gerente.

Estructura de la entrevista

La entrevista será ha sido estructurada en seis áreas funcionales las cuales se han dividido en subáreas, a continuación, se hace el detalle

Orientación estrategia:

- Competencias de gestión empresarial de los órganos de dirección
- Instrumentos de planificación
- Alianzas comerciales.

Gestión empresarial:

- Gestión financiera contable
- Gestión administrativa
- Gestión comercial

Servicios técnicos:

- Acceso y cobertura
- Alianzas para la innovación en la prestación de servicios

Estructura organizativa:

- Estado legal y normas
- Organigrama y funcionalidad

Gobernanza:

- Competencias organizativas
- Pertenencia y compromiso
- Prácticas organizativas

Servicios financieros (las preguntas en esta área serán pertinentes a las organizaciones que proporción crédito)

- Planificación para la prestación del servicio
- Alianzas para el acceso a financiamiento
- Gestión de los servicios financieros
- Acceso y cobertura

Desarrollo de la entrevista

Primer paso: Presentación del entrevistador y de los entrevistados a continuación, solicitara que se apaguen los celulares a fin de minimizar la interrupción de la entrevista.

Segundo paso: Se informará cual es el objetivo de la encuesta, estructura de esta, entregándole a los presentes una copia del cuestionario y explicar el procediendo, en este sentido, se les informara que para cada pregunta tendrán unos momentos para discutir entre ellos y en conjunto asignarán una puntuación de 1 a 5 a cada pregunta.

El encuestador explicará el proceso de razonamiento que deberá seguir para dar respuesta a las preguntas a través de un ejemplo:

Ejemplo No 1

¿En la organización se practican auditorías financieras y contables al menos una vez al año? En este caso, las únicas alternativas de respuestas son NO HAGO entonces tendrá que darse una puntuación de 1, SI LA HAGO, entonces tendrá que darse una puntuación de 5.

Ejemplo No 2

¿La organización cuenta con un plan estratégico actualizado, alineado a lo establecido en la misión y visión el cual está siendo implementado?

En este caso se presenta varias alternativas de respuesta:

- No cuento con plan estratégico la puntuación deberá ser **1**
- Cuenta con el plan estratégico, **pero no está actualizado** la puntuación deberá ser **2**
- Cuenta con el plan estratégico **actualizado, pero no está** alineado a la misión y visión de la organización la puntuación deberá ser **3**
- Cuenta con el plan estratégico actualizado, **alineado a la misión y visión** de la organización la puntuación deberá ser **4**
- Cuenta con el plan estratégico actualizado, **alineado a la misión y visión** de la organización y está siendo **implementado** la puntuación deberá ser **5**

Adicionalmente se le comunicará que una de esas copias deberá ser llenada con lapicero para ser entregada con el sello de la organización en cada página y rubricada por el presidente o miembro de mayor jerarquía del órgano de dirección a fin de tener una evidencia física.

Tercer paso: El encuestador dará lectura a las preguntas correspondiente a cada área procurando que el entrevistado la ha comprendido, dando un margen de tiempo para que el grupo genere una discusión para asignarse la puntuación.

Durante el espacio de discusión, el encuestador deberá estar atento por si los participantes comienzan a desviar el tema de la pregunta, así mismo, recolectar información complementaria relevante que está vinculada indirectamente y amerita ser considerada como elemento para ampliar la investigación.

Cuarto paso: Cierre de encuentro

Una vez finalizada la entrevista, el encuestador solicitara copia del cuestionario sellado y rubricado.

Procesamiento y análisis de la información

La puntuación sobre la puntuación será sistematizada en hoja excel propia del instrumento ADA y a través de la cual se generará una salida de puntuación por subárea, por área y finalmente una puntuación promedio de la organización.

La información procesada de cada organización será utilizada para elaborar un cuadro comparativo entre las cooperativas y empresas para identificar cuál de ellas se encuentra más consolidada.

Preguntas para el cumplimiento de la metodología



Proyecto Mayor Acceso a Alimentos Saludables – MAS. Jinotega 2019-2022

Evaluación Inicial y Estudio de Mercado en Jinotega

Guía de preguntas

	ORIENTACIÓN ESTRATÉGICA	1	2	3	4	5
	Competencias de gestión empresarial de los órganos de dirección					
1.1	Los directivos y las personas responsables de la administración cuentan con las capacidades para evaluar, monitorear y tomar las medidas correctivas para el buen funcionamiento de la organización.					
1.2	Los directivos y las personas responsables solicitan periódicamente reportes e informes financieros contables y están capacitados para interpretarlos					
1.3	Los directivos y las personas responsables utilizan esos reportes e informes para la toma de decisiones					
1.4	Los directivos evalúan periódicamente las situaciones que se presentan en las diferentes áreas operativas (acopio, procesamiento y ventas) para realizar los ajustes pertinentes					
1.5	Los directivos y las personas encargadas del trabajo técnico y gerencial en la organización dan seguimiento y ajustan mensualmente el plan operativo anual de la organización					
	Planificación estratégica					
1.6	La organización cuenta con un plan estratégico actualizado, alineado a lo establecido en la misión y visión el cual está siendo implementando					
1.7	Los directivos y las personas encargadas de las actividades productivas, de mercado y administrativas implementan el plan de negocio,					
	Alianzas Comerciales					
1.8	La organización desarrolla alianzas estables para acceder a mercados y servicios que responden a sus necesidades					
1.9	Las alianzas establecidas por la organización, le permiten acceder a recursos frescos para desarrollar sus actividades.					

Guía de preguntas

	GESTIÓN EMPRESARIAL	1	2	3	4	5
	Gestión Financiera y Contable					
2.1	La organización cuenta con un sistema de información financiera y contable formal y actualizado.					
2.2	Existen y es implementado manual de procedimientos contables actualizado, que incluyen la descripción clara del sistema contable, manejo de registros y controles de la elaboración de información					
2.3	En la organización se practican auditorías financieras y contables al menos una vez al año.					
2.4	La información financiera y contable es utilizada para toma de decisiones de la organización					
	Gestión Administrativa					
2.5	La organización cuenta con un área administrativa adecuada acorde al volumen de sus operaciones, y por tanto que puede ser remunerada con los ingresos de la organización.					
2.6	El personal administrativo y operativo cuenta con las competencias para realizar sus funciones.					
2.7	Se elaboran y analizan mensualmente informes o balances y son entregados a los órganos de dirección					
2.8	Existen y está siendo implementado manual de funciones actualizado, que incluyen la descripción de funciones y responsabilidades que tiene el personal en las diferentes áreas y contenga los controles de para verificar la implementación					
2.9	Existen y está implementado manual de operaciones actualizado, que incluyen la descripción clara de los procesos que tiene que realizar en las diferentes actividades (acopio, procesamiento etc) y cuenta con los controles de verificación					
	Gestión Comercial					
2.10	El personal de comercialización, cuenta con conocimiento en mercadeo para realizar la actividad de manera efectiva.					
2.11	La organización cuenta con relaciones estables, formales, con los compradores en los mercados donde comercializa sus productos.					
2.12	La organización asegura que la producción de sus socios y socias cumple con los requerimientos de sus mercados, y planifica los procesos de producción, acopio y agregación de valor para cumplir en tiempo y forma con sus contratos comerciales.					
2.13	La organización destina recursos para la innovación y desarrollo de nuevos productos y servicios, de acuerdo a la demanda del mercado.					

Guía de preguntas

	SERVICIOS TÉCNICOS	1	2	3	4	5
	Acceso y Cobertura					
3.1	Todos los socios reciben servicios técnicos de su organización,, según sus necesidades y en forma					
3.2	Las condiciones de oferta de los servicios técnicos permiten el acceso a los jóvenes y mujeres (socios-as o hijos-as de socios).					
3.3	Los servicios prestados por la organización son competitivos en comparación con el mercado, en términos de costo y son proporcionados en tiempo oportuno					
	Alianzas para la innovación en la prestación de servicios					
3.4	La organización ha establecido alianzas estables con proveedores públicos de servicios técnicos, lo cual permite ampliar la cobertura de estos.					
3.5	La organización ha establecido alianzas con proveedores, públicos y/o privados, que contribuyen a innovar y mejorar la prestación de servicios técnicos.					
3.6	Las personas asociadas reciben capacitación para desarrollar sus competencias a fin de aumentar su capacidad de resiliencia ante el cambio climático.					

Guía de preguntas

	ESTRUCTURA ORGANIZATIVA	1	2	3	4	5
	Estado Legal y normas					
4.1	La organización cuenta con personería jurídica y está legalmente constituida					
4.2	La organización está al día con todos sus compromisos legales, tributarios, financieros, de seguridad ocupacional y sus prestaciones sociales.					
4.3	La organización cuenta con estatutos y reglamentos actualizados.					
4.4	Los estatutos y los reglamentos de la organización incluyen elementos y mecanismos específicos sobre la transparencia en la gestión de la organización					
	Organigrama y Funciones					
4.5	La organización tiene un organigrama actualizado y cuenta con los órganos directivos y operativos completos y son funcionales					
4.6	La estructura organizativa está acorde al volumen de las operaciones de la organización					

Guía de preguntas

	GOBERNABILIDAD	1	2	3	4	5
	Competencias Organizativas					
5.1	La organización cuenta con un plan de fortalecimiento de competencias organizativas para la participación y el liderazgo, al cual tienen acceso en igualdad de condiciones socios y socias.					
5.2	La organización destina un presupuesto de sus utilidades para la formación de sus socios y socias para las competencias organizativas.					
5.3	Los socios y socias jóvenes cuentan con las competencias organizativas para garantizar el relevo en los cargos de dirección de la organización.					
	Pertenencia y Compromiso					
5.4	Los socios y socias se identifican y participan activamente en las reuniones, asambleas, capacitaciones y otras actividades convocadas por la organización.					
5.5	Los socios y socias cumplen con las metas de entrega de producto y de pago de créditos con su organización.					
	Prácticas Organizativas					
5.6	Existe una rotación sana de líderes y directivos, en el cual tienen la posibilidad de participar todos los socios y las socias.					
5.7	La organización implementa espacios para la evaluación y la rendición de cuentas, donde los socios y las socias acceden a información sobre la gestión financiera, productiva y comercial de su organización.					
5.8	En la organización existen mecanismos específicos para solucionar los conflictos de interés originados por situaciones donde los socios y las socias ofrecen servicios o productos que compiten o afectan la realización de negocios de la organización.					

Guía de preguntas

	SERVICIOS FINANCIEROS	1	2	3	4	5
	Planificación para la prestación de servicios financieros					
6.1	La organización planifica sus requerimientos financieros de forma oportuna, para responder a sus socios, socias y clientes.					
6.2	La organización asegura la existencia de fondos razonablemente suficientes para prestar los servicios financieros en los momentos en que las socias, los socios y clientes los requieren					
6.3	La organización estima, registra y analiza los costos de prestación de los servicios financieros, y toma acciones para mejorar su gestión.					
	Alianzas para el acceso al financiamiento					
6.4	La organización establece alianzas estables con instituciones financieras para ampliar la cobertura de los servicios a socios, socias y clientes.					
6.5	La organización establece alianzas estables con compradores para garantizar el acceso a recursos financieros para sus socios, socias y clientes.					
	Gestión de los servicios financieros					
6.6	La organización cuenta con políticas y procedimientos para la prestación de servicios financieros con equidad, transparencia y calidad.					
6.7	Los directivos y el personal (si lo tiene), de la organización aplican las políticas y procedimientos para la prestación de los servicios financieros con equidad, transparencia y calidad.					
6.8	Los socios, las socias y clientes cumplen con los compromisos financieros adquiridos con su					
	Acceso y Cobertura					
6.9	Los socios, las socias y clientes tienen acceso a los servicios financieros que ofrece, o canaliza, la organización, cuando los necesitan.					
6.10	Las condiciones de oferta de los servicios financieros facilitan el acceso de las mujeres socias y					
6.11	Los montos y plazos de los créditos que ofrece la organización para inversión están acordes con las necesidades de las personas asociadas.					
6.12	Las tasas de interés y comisiones de los servicios financieros ofrecidos o canalizados por la organización son competitivos frente a los otros proveedores de servicios financieros					



Proyecto Mayor Acceso a Alimentos Saludables – MAS. Jinotega 2019-2022
Evaluación Inicial y Estudio de Mercado en Jinotega

Entrevista grupal a productores (socios de Cooperativas y Empresas)

Tema de discusión: El mercado de vegetales y frijoles en Jinotega y Pantasma.
Marzo 2020

I. Datos generales

Facilitadores:		Fecha:			
-----------------------	--	---------------	--	--	--

Hora inicio: _____

Hora final: _____

Departamento:		Municipio:		Comunidad:	
----------------------	--	-------------------	--	-------------------	--

Nombre del lugar donde se realiza el Grupo Focal:
--

Participantes:

Nombre y apellido	Organización a la que pertenece	Productor de: (Marque con una X)				
		Frijoles	Papa	Repollo	Tomate	Zanahoria

II. Introducción

Buenos días o Buenas Tardes, mi nombre es _____, somos parte de un equipo de trabajo que apoya a PCI en realizar una investigación del mercado de productos frescos y granos en los municipios de Jinotega y Pantasma, con el objetivo de aportarles información para complementar la merienda escolar con alimentos frescos, sanos y limpios.

En días pasados (indicar la fecha de levantamiento de encuesta a productores) estuvimos con ustedes en sus unidades de producción, queremos agradecerles por la información que nos han brindado y expresarles que esta reunión es complementaria a las entrevistas que muy amablemente nos dieron en sus fincas. El objetivo de la reunión es ampliar los puntos abordados en la encuesta, identificando posibles acciones que les permita superar gradualmente los desafíos/limitantes planteados en los segmentos de: producción, procesamiento, almacenamiento, comercialización y transporte de la producción.

Sus ideas, conocimiento y experiencias serán de mucha utilidad para este estudio. Su participación es voluntaria y lo que aquí se exprese será utilizado exclusivamente para facilitar las decisiones a PCI sobre el complemento de la merienda escolar con productos frescos.

¿Nos gustaría conocer si están de acuerdo con participar en esta entrevista de grupo? Nuevamente les agradecemos sus aportes.

III. Metodología y actividades iniciales

- a) Presentarse y dar la bienvenida
- b) Explicar las reglas y procedimientos a seguir durante la entrevista
- c) Solicitar permiso para grabar
- d) Aclarar que si alguno desea salirse de la sesión, puede hacerlo
- e) Solicitarles silenciar los teléfonos y salirse del sitio de la reunión para responder cuando lo deseen
- f) Realizar dinámica para la presentación con los participantes
- g) Presentaremos los temas a abordar en la sesión y explicaremos que los mismos están visibles en pizarra o pared (según sea el caso), sin embargo, también se irán exponiendo en el desarrollo de la plática

Temas:

Tema 1. Producción y cosecha

Tema 2. Procesamiento

Tema 3 Transporte y Comercio

Temas 4. Riesgos y recomendaciones

IV. Desarrollo

Tema 1. Producción y Cosecha

1. La encuesta nos ha dado como referencia los niveles de productividad de los rubros, quisiéramos saber en una lluvia de idea los factores más importantes que les está afectando la productividad en cada uno de los rubros.
2. Podríamos identificar cuáles son los factores más importantes en una escala de 1 a 5, siendo 1=menos importante, 3=Medianamente importante y 5= más importante.
3. ¿Hemos identificado que existen meses donde se baja la producción de hortalizas, que podemos hacer para garantizar la producción en todo el año?
4. La encuesta nos dice que estas actividades son las que tienen mayor costo de producción. ¿Qué acciones identifican para reducirlos sin afectar los rendimientos de los cultivos?
5. ¿Con los volúmenes de producción actual, Ustedes satisfacen la demanda de sus compradores? En el caso que no la suplen, explicar por qué.
6. Qué aspectos positivos o negativos pudieran visualizar, con una mayor demanda de producción de los rubros (papa, tomate, repollo, zanahoria, frijoles). Si mencionan dificultades, indagar sobre soluciones desde la capacidad de los productores
7. ¿Qué niveles de pérdidas tienen en la fase de producción, y en post cosecha, a que se deben? ¿Cuáles de estos aspectos pudieran controlar? ¿con cuáles acciones?
8. Qué porcentaje de rechazo de producto han experimentado con las cooperativas y empresas, cuáles han sido las causas y las medidas que se podrían realizar para reducir el rechazo.

Tema 2. Procesamiento

9. ¿Sobre los resultados de las encuestas, se identifican actividades con mayores costos, qué acciones se podrían desarrollar para reducir los costos de procesamiento?
10. ¿Qué porcentaje de pérdidas tienen en esta etapa? ¿Cómo creen que se pueden reducir?

Tema 3. Transporte y Comercio

11. ¿Cuáles son los factores que inciden en el costo del transporte, qué acciones se pueden realizar para reducir el costo?
12. ¿Cómo valoran los servicios de transporte disponibles en la zona para comercializar sus productos? ¿Qué actividades realizan para encontrar precios justos/competitivos en el transporte?

13. ¿Cuáles son los factores que inciden en las pérdidas durante el transporte y que acciones deberíamos realizar?
14. Nos podrían compartir cuáles son los requisitos de calidad que les solicita sus compradores.
15. ¿En qué fecha se vende a mejor y menor precio y por qué?
16. ¿Qué prácticas han venido realizando para mejorar las entregas, desarrollan un plan de entrega con las cooperativas o empresas?
17. ¿De acuerdo a los resultados de la encuesta, se compartirá la frecuencia de los que llevan registros de entrega y se consultará que acciones debemos desarrollar para un mejor seguimiento a las entregas?
18. ¿Cuáles requisitos administrativos y financieros cumplen para poder vender sus productos?

Tema 4. Riesgos y recomendaciones

19. Que riesgos identifican Ustedes que puedan limitar la producción y el comercio de sus productos, en los siguientes aspectos:
 - a) En lo climático. (Ejemplos para el facilitador: Exposición al CC de los cultivos, sequía, inundación, temperatura alta, deslizamiento y otras). ¿Cuál es la afectación en los cultivos? ¿Qué acciones debemos realizar para mitigar y adaptarnos a la mayor exposición existente?
 - b) En lo social. (Ejemplos para el facilitador: Escasez de mano de obra por migración puede provocar trabajo infantil). ¿Qué acciones debemos tomar?
 - c) En lo ambiental. (Ejemplos para el facilitador: con el aumento de la producción se integrarán a la producción áreas de reservas naturales, se aumentará el uso de plaguicidas, se integrarán áreas de vocación forestal). ¿Qué acciones debemos tomar?
 - d) En lo económico. Precios de los insumos, falta de financiamiento, etc. ¿Qué acciones debemos tomar?
20. ¿Alguna recomendación adicional del grupo que aporte a mejorar las diferentes etapas del proceso productivo?

Finalización de la actividad

1. Agradezca nuevamente la participación de todas las personas
2. Pregunte si hay algo más que deseen mencionar
3. Concluya la actividad haciendo ver lo importante que fueron los aportes brindados
4. Revise la lista de asistencia para verificar que todas las personas están anotadas
5. Ofrezca un refrigerio para compartir

¡Muchas gracias por su participación!

Anexo No. 3.3.5. Producer Survey

PCI Nicaragua - Proyecto: Mayor acceso a alimentos saludables (MAS) 2019 - 2022 Encuesta a Productores (as)/ Estudio de Mercado/ marzo 2020

I. IDENTIFICACION DEL CUESTIONARIO

Código del Productor Coordinadas X Y:

II. IDENTIFICACION DEL PRODUCTOR Y DE LA UNIDAD DE PRODUCCION

1. Nombres y apellidos del informante

2. Cargo del informante

1. Productor 2. Cónyuge 3. Gerente 4. Administrador 5. Hijo mayor de 16 años 6. Familiar 7. Mandador 8. Trabajador

3. Nombre del productor o razón social:

4. Sexo 1. Hombre 2. Mujer Edad Nivel académico
1. Letrado, 2. primaria, 3. secundaria, 4. universitario

5. Dirección exacta del productor

Departamento Municipio Telefono

III. CARACTERISTICAS GENERALES DE LA UNIDAD DE PRODUCCION

6. Total área de Finca/Unidad de Producción

Area dedicada a cultivos permanentes Mz.

Area dedicada a cultivos anuales Mz.

Area en pastos Mz.

Area en forestal Mz.

Otras Mz.

Total Manzanas Mz.

7. Giro principal de la unidad de producción

1. Granos básicos 2. Hortalizas 3. Ganadería 4. Café 5. Otros especificar

8. Indique que tipo de cultivos produce?

1. arroz, 2. frijoles, 3. sorgo, 4. maíz, 5. zanahoria, 6. papa, 7. tomate, 8. chiltoma, 9. lechuga, 10. café, 11. cacao, 12. otros especificar

9. Esta registrada su unidad productiva en alguna institución oficial?

1. Alcaldía, 2. Ministerio Agropecuario, 3. Ministerio Fomento Industria y Comercio, DGI, 4. Otros Especificar

10. Está actualizado su registro

1. Si 0 No

11. Cuenta con facturas

1. Comerciales, 2. Membretadas, 0 No tiene

12. El manejo de su plantación o producción

1. Usa agroquímicos. 2. Orgánico 3. Mixta

13. Cuenta con algun tipo de certificación? Mencionala e indique la institución que la otorgó

14. Mencione prácticas que realiza en su sistema productivo? Se citan algunos ejemplos.

Manejo de plagas	Conservación de suelo	Adaptación al Cambio climático	Almacenamiento	Comercialización
Control químico	No quema	Obras de cosecha de agua	Control temperatura, humedad, luz	Limpieza vehículo
Control biológico	Cercas vivas	Manejo adecuado de envases	Ubicación adecuada area	Limpieza recipientes
Monitoreo cultivo	Cortinas	Reforestación	Vicios sanitario fuera del área almacén	Otras prácticas
	Rotación de cultivos	Semillas resistente a sequía		

15. Fuentes de abastecimiento de agua para el riego:

1. Río 2. Lago/Laguna 3. Quebrada 4. Reservorio 5. Pozo 6. Ojo de agua o manantial

16. Utiliza riego en el cultivo 1. Si 0. No

17. Indicar el área regada por producto Mz.

18. Indicar tipo de riego:

1. microaspersión 2. aspersión 3. goteo 4. gravedad 5. Especifique otros.

IV. INFORMACION DE PRODUCCION AGRICOLA

19. Producción - último año

Descripción	Frijoles (qq)	Tomate (qq)	Repollo (unidades)	Zanahoria (qq)	Papa qq
Áreas de siembra					
Rendimientos por Mz.					
Volumenes producidos (último ciclo/ mayo 2019- abril 2020)					
Cantidad destinada a venta					
Cantidad destinada a auto-consumo					
Períodos de cosecha primer ciclo (meses)					
Fecha de cosecha segundo ciclo (meses)					
Período de cosecha de tercer ciclo (meses)					
Períodos de poca producción (meses)					
Períodos de mayor producción meses (meses)					

V. COSTOS

20. Lleva registros de sus costos de producción, procesamiento, comercialización?

1. Si, 0 No

21. Costos de producción

Frijoles (Costo/Mz.)	Tomate	Repollo	Zanahoria	papa

Los costos refieren a los costos operativos anuales. No incluyen costo de tierra.

22. Quién/es son sus proveedores de insumos para la producción. Liste

Nombre insumos	Proveedores	Ubicación Proveedores

23. Considera que existen suficientes proveedores de insumos en la zona

1. Si 0. No

Costos de procesamiento/manipulación

24. Realiza algún tipo de procesamiento

1. Si

0. No

25. Si la respuesta anterior es 1. que tipo de valor agregado realiza por prod

Frijoles	Tomate	Repollo	Zanahoria	papa

1. secado 2. limpiado o lavado 3. empaque, 4. Indicar cuál

26. Quién le provee los servicios y productos para procesamiento ?

Nombre insumos	Proveedores	Ubicación Proveedores

1. cajillas, 2. sacos 3. Bolsas 4. pichingas, 5. Otras especificar.

27. Indique costos de procesamiento

Frijoles (qq)	Tomate	Repollo (Unidades)	Zanahoria (qq)	papa (qq)

Costo de almacenamiento.

28. Mencione tipos (infraestructura/equipo) de almacenamiento utilizados en su unidad productiva

Frijoles	Tomate	Repollo	Zanahoria	papa

1. Bodega con piso y techada 2. Piso/tarima de concreto 3. Silos metálicos 4. Barriles plásticos 5. Red Frio 5. Especificar lo observado en la unidad productiva

29. El almacenamiento le permite las condiciones de calidad del producto

1. Si, 0 No

30. Quién le provee los servicios y productos para almacenamiento ?

Insumos/Servicios	Proveedores	Ubicación Proveedores

31. Costos de almacenamiento

Frijoles (Costo/qq.)	Tomate (Costo/qq.)	Repollo (Costo/qq.)	Zanahoria (Costo/qq.)	papa (Costo/qq.)

VI COMERCIALIZACION

32. Completar tabla de comercialización según productos destinados a venta

Variables/Productos	Frijoles	Tomate	Repollo	Zanahoria	Papa
A quien vende					
Volumen vendido					
Donde entrega					
Precio de Venta					
Como vende sus Pdtos					
Como es la Demanda					
Condiciones calidad					

Como vende: 1. Tengo contratos antes de la cosecha, 2. Tengo acuerdos informales para los productos, 3. Vendo despues de cosecha

Como es la demanda: 1. Alta, 2. Media, 3. Baja, 888 No Se

Condiciones de calidad: 1. Tamaño, 2. color, 3. sabor, 4.empaquetado, 5 Limpieza, 6 Frescura

33. Tienen capacidad para ofrecer mayores volúmenes de producto al mercado?

1. Si 0. No

34. Hasta cuánto podría aumentar su producción por producto

Indique %

35. Qué requiere usted para lograr ese aumento?

1. tecnología 2. compradores 3. riego 4. tierra, 5. acceso a crédito 6. otros especificar

36. Cuánto costaría la entrega del producto que cosecha puesto en la escuela más cercana?

(Presentar el dato por quintal o unidades en el caso de repollo)

37. En que condiciones lo podría entregar:

Frijoles	Repollo	Papa	Zanahoria	Tomate

Ejemplos: Lavado, Limpiado, clasificado, especificar.

38. Si un comprador le solicitara más productos y Usted solo pudiera asegurarle una parte, que acciones recomendaría ?

Opciones: 1. Estaría dispuesto a comercializar con otros, 2. No haría nada, 3. Otras opciones especificar

39. Si los productos que Ud comercializa ahora, tuvieran mayor demanda en el mercado, que consecuencias le traería ?.

1. Positivo 0. Negativo

40. En cualquiera de las respuestas, explique porque?

Transporte

41. Cuando vende del porton fincan hacia afuera. Qué medio de transporte utiliza?

1. camioneta 2. camión 3. bestia 4. otros especificar 999. No aplica (entrega a cooperativa), salta al siguiente tema

42. En qué condiciones se hace el transporte de los productos

1. Granel, 2. Cajillas, 3. Sacos, 4. Otros especificar

43. Propiedad del medio de transporte

1. Propio, 2. Alquilado, 3. Combinado

44. Si es alquilado, indique quién le presta el servicio?

45. Existe suficiente cantidad de oferentes de servicio en la zona?

1. Entre 1-3; 2. 4-6; 3. De 6 a más

46. Frecuencia de transportación en el departamento

1. semanal 2. quincenal. 3. mensual. 4. Otros especificar.

47. Qué Volúmenes
transporta por viaje

48. Costo por viaje transportado
cuando el transporte es propio

 C\$/Viaje

49. Costo por viaje transportado
cuando es alquilado

 C\$/Viaje

50. Cuál es el porcentaje de pérdida
por transporte?

51. Lleva registros de entrega de los productos

1. Si 0. No

VII ORGANIZACIÓN Y ASISTENCIA TÉCNICA

52. Ha recibido capacitación en el último año (2019)

1. Si

0. No

53. En que temas

54. De quien recibe la capacitación y /o asistencia técnica

1. Institucion de Gobierno. 2. Cooperativas 3. Institución Privada. 4. ONG, 5. Otros

55. Qué prácticas ha adoptado a partir de estas capacitaciones

VIII. FINANCIAMIENTO

56. Ha recibido financiamiento en los últimos dos años

1. Si

0. No

57. Si la respuesta es 1. Quien la ha brindado financiamiento:

1. Microfinanciera, 2. Banco, 3. Cooperativa, 4. Programa de Gobierno, 5. Prestamista, 6. Agroservicios 7. Comerciantes 8. Otro especifi

58. Para que utilizó el financiamiento?

1. compra de insumos agrícolas, 2. compra de equipos, 3. compra de maquinaria, 4. compra de medios de transporte, 5 otros especificar

IX. Desafíos y Recomendaciones

59. Enumere tres principales problemas que enfrenta en:

Producción

Post-cosecha

Comercialización

60. Que requeriría Usted para mitigar o resolver la problemática anterior

X. Inspección a bodegas de almacenamiento de productos

61. Los productos están en contacto con el suelo

1. Si, 0 No

62. Hay piso/paletas debajo de los productos

1. Si, 0 No

63. Se observan las siguientes incidencias en las bodega

1. Pulgas, 2. roedores, 3. Suciedad-polvo, 4. Excrementos, 5. Especificar otros

64. Material de construccion de bodega

1. madera, 2. Concreto, 3. Plástico, 4. Especificar otros



Proyecto Mayor Acceso a Alimentos Saludables – MAS. Jinotega 2019-2022
Evaluación Inicial y Estudio de Mercado en Jinotega.
Marzo 2020

Lista de verificación sobre consumo de alimentos en las escuelas Proyecto MAS

El objetivo de la actividad es conocer el tipo y frecuencia con que se consumieron los alimentos de la merienda que les ofrece la escuela anotados en el cuaderno de control y seguimiento de alimentación escolar u otro sustituto.

Encuestador:			Fecha de la encuesta:			
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I. Datos Generales

1.1. Departamento:			1.2. Municipio:			1.3. Comunidad:		
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1.4. Nombre de la escuela:

1.5. Nombre del director:

1.6. Nombre de la Persona que acompaña el recorrido:
--

1.7. Cargo en la organización Escolar:
--

Marque con una “X” los documentos revisados:

Control y seguimiento del Componente de alimentación escolar (Cuaderno PINE MINED)	
Cuaderno de aportes del complemento de la merienda escolar.	

En caso de no estar disponible alguno de los medios de verificación, señale las razones:

Solicite al director de la escuela o persona designada, el cuaderno de Control y seguimiento del Componente de alimentación escolar (Cuaderno PINE-MINED) y el cuaderno de aportes del complemento de la merienda escolar.

II. Frecuencia de consumo de alimentos de la merienda escolar

En base al acápite 6 del cuaderno de Control y seguimiento del Componente de alimentación escolar (Cuaderno PINE-MINED) Control diario de consumo, revise los alimentos consumidos durante los 7 días, complete la información con la registrada en el acápite 5, Rol de cocina del mes considerando la columna Complemento para la merienda.

De no encontrar la información requerida en estos dos cuadernos, consulte al docente si anotan los aportes que complementan la merienda en otro cuaderno y solicítelo.

Es importante que coteje que las fechas que revisa coincidan en ambos acápite. En el caso del arroz, la harina y el cereal (todos pertenecen al grupo 1).

Una vez termine la revisión, marque según su observación cuántos días consumieron cada grupo de alimento en la merienda escolar en el período indicado.

Grupos de alimentos	Días de la semana								
	1	2	3	4	5	6	7	No (0)	Datos faltantes (888)
1. Proteínas de origen animal Leche, queso, cuajada, yogurt, leche agria, carne de res, pollo, cerdo, hígado, corazón, pescado, huevo.									
2. Frutas Naranja, limones, mandarinas, banano, sandía, papaya, melón, melocoton, mango maduro, jocote, guayaba.									
3. Verduras Pipián, chayote, frijol en vaina, tomate, chiltoma, cebolla, repollo, lechuga, pepino, hojas verdes, zanahoria, ayote									



Consentimiento informado

Estimado Señor (a) Padre o Madre de familia o responsable del estudiante:

PCI está realizando un estudio que permitirá identificar cómo mejorar las actividades que desarrolla el proyecto en las escuelas. Para ello, se necesita su permiso para platicar con su hijo o hija sobre la alimentación o merienda que reciben en la escuela.

Si Usted autoriza que platiquemos con su hija o hijo, favor escriba su nombre y firma en esta hoja.

Nombres y apellidos

Firma

Fecha: _____



Proyecto Mayor Acceso a Alimentos Saludables – MAS. Jinotega 2019-2022
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Encuesta Frecuencia de consumo de alimentos
En escolares de cuarto a sexto grado de primaria

Presentación ante los estudiantes:

Una presentación a cargo del equipo de personal de PCI, Nicaragua. Seguidamente el encuestador.

Buenos días apreciados alumnos. Mi nombre es _____ y en nombre de PCI estamos realizando un estudio en las escuelas del municipio de Jinotega y Pantasma. Su centro de estudio es uno de los escogidos, la maestra/o nos ha permitido trabajar con ustedes al igual que hemos solicitado autorización a sus padres para la aplicación de una encuesta sobre el consumo de los alimentos que ustedes comen.

El objetivo de la encuesta es conocer los tiempos de comida que ustedes hacen en todo el día y el tipo de alimentación que consumieron en la merienda servida en la escuela y en las comidas de su casa, en los últimos siete días. El llenado será fácil, vamos a utilizar un celular para que ustedes marquen la respuesta sobre la pregunta que le haremos, no es un examen, no tiene notas.

Agradecemos su disposición a participar y aprovechamos para decirles que es importante todo lo que nos digan.

Encuestador:				Fecha de la encuesta:			
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I. Datos Generales

1.1. Departamento:				1.2. Municipio:				1.3. Comunidad:		
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1.4. Nombre de la escuela:										
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1.5. Nombre completo del alumno:										
---	--	--	--	--	--	--	--	--	--	--

1.6. Edad (años):	1.7. Grado:	4to grado	5to grado	6to grado	1.8. Sexo :	Niña			Niño	
--------------------------	--------------------	-----------	-----------	-----------	--------------------	------	--	--	------	--

II. Frecuencia mínima de alimentación (Tiempos de comida que consumió el escolar en casa y en la escuela)

¿Cuántos tiempos de comida haces en el día? Marque con una X cada tiempo de comida que el niño o niña hace en el día.

Tiempos de comida al día				
Desayuno	Merienda mañana	Almuerzo	Merienda tarde	Cena

III. Frecuencia de consumo de alimentos de la merienda escolar

¿Observe los siguientes alimentos y marque cuántos días lo comió? en los últimos 7 días. Ejemplo si consumió arroz 4 días a la semana, deberá marcar la opción 4-5 días.

¿De estos alimentos cuantos días comieron en la última semana? Marque con una x.

Grupos de alimentos	Frecuencia de consumo							
	7	6	5	4	3	2	1	No (0)
1. Granos, cereales, raíces y tubérculos 								
2. Legumbres y nueces 								
3. Productos lácteos 								

4. Alimentos origen animal (Carne, Pollo, Hígado, Pescado)



5. Alimentos enriquecidos con vitamina a



6. Otras frutas y verduras



7. Huevo



8. Comida cocinada con aceite o grasa



Anexo No. 3.3.5. 5-Point Facial Hedonic Scale Instrument



Proyecto Mayor Acceso a Alimentos Saludables – MAS. Jinotega 2019-2022
Evaluación Inicial y Estudio de Mercado en Jinotega.

Marzo 2020

Ficha: Escala Hedónica Facial de 5 puntos

En escolares de cuarto a sexto grado de primaria, ambos sexos.

Presentación:

El encuestador procede a mostrar el instrumento, auxiliándose de un póster ilustrativo y explica a los escolares que se usará una Tablet para completar las preguntas mostradas y que se les llamará uno a uno.

El objetivo es conocer la aceptación de los alimentos que consumieron en la merienda escolar que les ofrece su escuela y cuál es el alimento o bebida que más les gusta o no les gusta; e indagar sobre si gustan o no otro tipo de alimentos.

Encuestador:				Fecha de la encuesta:			
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I. Datos Generales

1.1. Departamento:			1.2. Municipio:			1.3. Comunidad:		
--------------------	--	--	-----------------	--	--	-----------------	--	--

1.4. Nombre de la escuela:

1.5. Nombre completo del alumno:

1.6. Edad (años):	1.7. Grado:	4to grado	5to grado	6to grado	1.8. Sexo:	Niña			Niño	
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II. Aceptación de la alimentación escolar, mediante escala hedónica facial de 5 puntos

2.1. Marque la carita que indique la aceptación de la comida que te ofrece la escuela que va con la siguiente escala como se muestra, entre no me gusta nada (1); no me gusta (2); me da igual (3); me gusta (4) y me gusta mucho (5).



III. Alimentos que gustan o no gustan

3.1. ¿De lo que te han dado de comer o beber en la escuela, cuál es el alimento que más te gusta?

3.2. ¿De lo que te han dado de comer o beber en la escuela, cuál es el que menos te gusta?

3.3. ¿Cuáles de los siguientes alimentos, te gustan o no? Marque con **1** si te gusta, **0** si no te gusta y **777** si no sabes.

Código alimento	grupo	Tipo de alimento	Preferencia		
			Si = 1	No = 0	No sé = 777
1		Papa			
2		Frijol			
3		Leche pasteurizada			
5		Zanahoria			
6		Tomate			
6		Repollo			
7		Huevo			
8		Crema dulce			

Cierre de la encuesta

Agradecer a las niñas y niños por su participación y al personal de la escuela. Mencionar lo importante que es esta información y que será utilizada por PCI Nicaragua.

Anexo No. 3.3.6. School Meal Management and Preparation Observation Checklist



Proyecto Mayor Acceso a Alimentos Saludables – MAS. Jinotega 2019-2022
Evaluación Inicial y Estudio de Mercado en Jinotega.
Marzo 2020

Lista de Observación sobre las condiciones óptimas para el manejo y preparación de alimentos en las escuelas

El objetivo de su aplicación es medir los conocimientos y capacidades de las organizaciones escolares (CAE Y PTA) para el manejo y preparación de los alimentos comprendidos en la merienda escolar.

Encuestador:				Fecha de la encuesta:			
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I. Datos Generales

1.1. Departamento:			1.2. Municipio:			1.3. Comunidad:		
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1.4. Nombre de la escuela:

1.5. Nombre del director:

1.6. Nombre de la Persona que acompaña el recorrido:

1.7. Cargo en la organización Escolar:

II. Lista de observación sobre condiciones óptimas para el manejo y preparación de alimentos en las escuelas.

Aspectos por considerar	Codificación:		
	Si=1	No=0	Omitir=999
A Almacenamiento de alimentos			
1. El centro escolar cuenta con una bodega exclusiva o baúles para el almacenamiento de alimentos.			
2. La bodega o baúl metálico para el almacenamiento de alimentos se encuentra dentro del área de infraestructura en el centro escolar.			
3. La bodega para almacenamiento alimentos o baúl metálico está seca, cerrada y alejada de basureros y aguas estancadas.			
4. La bodega para almacenamiento de alimentos o baúl metálico se limpia diariamente			
5. En la bodega de almacenamiento de alimentos o baúl metálico se encuentran insumos de limpieza (detergente, cloro, ambientador, lampazo, escoba)			
6. Alimentos están sobre polines, tablas o mesas. (Separados del piso).			
7. Los granos básicos y los alimentos en polvo están guardados en sus empaques originales o en frascos de vidrio o plásticos bien cerrados y rotulados.			

8.	Las frutas y verduras están almacenadas en un lugar fresco, limpio y obscuro para evitar su pronta maduración.	
9.	Los alimentos se colocan por orden de llegada, siguiendo el criterio primero en entrar, primero en salir, tomando en cuenta la fecha de vencimiento	
10.	Protegida contra insectos y roedores utilizando productos registrados y autorizados por el MINSA.	
B	Higiene:	
	<u>Área de preparación de alimentos</u>	
11.	Existe en el centro escolar un espacio exclusivo para la preparación de alimentos.	
12.	Solo el personal autorizado ingresa al área de preparación de alimentos.	
13.	En el área de preparación de alimentos: el piso, las paredes y techo están limpios para evitar presencia de roedores, insectos y otro tipo de animales (de corral y domésticos).	
14.	Las mesas donde se preparan los alimentos se lavan antes y después de la preparación con agua y jabón.	
15.	Las diferentes superficies en la cocina o el área donde se preparan los alimentos están limpias	
16.	Existe en el área de preparación de alimentos un sistema de desagüe para las aguas negras	
17.	Los alrededores del área de preparación de alimentos se encuentran limpios	
	<u>De los manipuladores de alimentos</u>	
18.	Las personas encargadas de la preparación de alimentos cuentan con un certificado de salud otorgado por el MINSA	
19.	Las personas encargadas de la preparación de alimentos cuentan con un proceso de capacitación con temas específico como higiene personal e higiene en la preparación de los alimentos	
20.	Las personas encargadas de la preparación de alimentos conocen y demuestran la técnica correcta de lavado de manos.	
21.	Las personas encargadas de la preparación de alimentos hacen uso de equipo de protección (gorro, malla, boquilla, delantal, zapato cerrado)	
22.	Las personas encargadas de la preparación de alimentos manejan las manos limpias uñas cortas y sin pintar.	
23.	Las personas encargadas de la preparación de alimentos no tienen heridas, ni infecciones en la piel, brazos, boca y uñas.	
24.	Los alimentos preparados son protegidos de la contaminación antes de servirse (están tapados).	
	<u>De los escolares al consumir los alimentos</u>	
25.	Los escolares practican una buena técnica de lavado de manos antes de consumir los alimentos.	
26.	Disponen de agua potable para el lavado de manos	
27.	Disponen de jabón para el lavado de manos	

28.	Los utensilios en que sirven la comida a los escolares están limpios (platos, vasos, tazas, cucharas)	
29.	El lugar donde comen los escolares está limpio	
C	Disponibilidad de agua	
30.	Existe en el centro escolar disposición de agua potable.	
31.	De no tener disponibilidad de agua potable se utiliza agua tratada para el consumo humano. (Pozo con tratamiento, clorado dentro de la escuela)	
32.	Existe en el área de preparación de alimentos disposición de agua potable	
33.	El recipiente donde se almacena el agua para la preparación de alimentos está debidamente tapado.	
34.	El recipiente donde se almacena el agua para el lavado de manos, lavado de áreas de trabajo y lavado de utensilios de cocina está debidamente tapado.	
35.	Los recipientes donde se almacena el agua se lavan a diario	
36.	El agua que se almacena para la preparación de alimentos, lavado de manos, lavado de áreas de trabajo y lavado de utensilios de cocina se cambia a diario	
37.	Los recipientes donde se almacena el agua para para el lavado de manos, lavado de áreas de trabajo y lavado de utensilios de cocina están en un lugar protegido ubicado donde no se contamine	
D	Manejo de desechos (basura)	
	<u>Desechos Sólidos.</u>	
38.	Existen en el centro escolar recipientes para el manejo de desechos (basura).	
39.	Existe en el área de preparación de alimentos recipientes cerrados para la acumulación de residuos provistos de tapas, con una bolsa para facilitar su limpieza e higiene.	
40.	En el área de preparación de alimentos se separa los desechos orgánicos (cascaras, desechos de comidas) y los inorgánicos (papel, plásticos)	
	<u>Desechos Líquidos.</u>	
41.	En el área de preparación de alimentos existe disposición final de los desechos líquidos conectada a la red de alcantarillado sanitario existente o tratamiento de las aguas mediante fosas sépticas o estanque de captación de aguas servidas.	
42.	Existen charcas o aguas grises a menos de 5 metros del espacio asignado para el almacenamiento y preparación de alimentos	
E	Servicios higiénicos	
43.	El centro escolar cuenta con servicios higiénicos en buen estado (limpios por dentro y fuera, con ventilación, con tapa o separados para niños y niñas o ambos)	
44.	Los servicios higiénicos del centro escolar se encuentran a un mínimo de 3 metros retirados del lugar donde se almacenan y preparan los alimentos	
F	Disponibilidad de equipos e instrumentos para la preparación de alimentos	

45.	Existen en este centro escolar utensilios para la preparación de alimentos	
46.	Los utensilios de cocinar son propiedad del centro escolar	
47.	Los utensilios de cocinar son los adecuados y suficientes para la preparación de los alimentos	
48.	Los equipos y utensilios están limpios e higienizados	

A cada ítem de los 48 verificables, se les asignará un punto. Los resultados del instrumento serán analizados de acuerdo con las siguientes categorías:

- De 48 a 33 = *Condiciones óptimas*
- De 32 a 17= *Existen algunas condiciones*
- De 16 a 0 = *No hay condiciones.*



Proyecto Mayor Acceso a Alimentos Saludables – MAS. Jinotega 2019-2022
Evaluación Inicial y Estudio de Mercado en Jinotega

Cuestionario guiado por facilitador dirigido al Comité de Alimentación Escolar (CAE - PTA)
Marzo 2020

Facilitadoras:				Fecha:			
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I. Datos Generales

Departamento:			Municipio:			Comunidad:		
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Nombre de la escuela:

Objetivo

- Determinar las capacidades actuales y potenciales de la organización escolar para **apoyar/participar en el proceso de recibir otros alimentos para la merienda** y la preparación higiénica de productos de la alimentación escolar.

Buenos días, tardes

Somos _____. Estamos realizando este encuentro para tener su opinión para mejorar las actividades que promueve PCI en la merienda de la escuela.

Para esto usted puede participar respondiendo a las preguntas que abajo se mencionan, son fáciles y todas las respuestas serán importantes. Si tiene dudas puede preguntar, el llenado durará aproximadamente 20 minutos. Después, tendremos un conversatorio para ampliar sus ideas, intercambiar experiencias y aportar recomendaciones para fortalecer el trabajo de este grupo y el del PCI, lo que tomará aproximadamente 2 horas.

Cuestionario guiado dirigido al Comité de alimentación escolar a cargo de un facilitador

Estamos interesados en aplicar el siguiente cuestionario para apoyar el fortalecimiento de las actividades de PCI en la merienda escolar. Será de mucha ayuda para este proceso si pueden dedicar 20 minutos en llenar esta encuesta.

Por favor indique a qué grupo de la comunidad representa (Marque en el cuadro a su derecha, según corresponda)	☐ Líder comunitario ☐ Docente ☐ Líder religioso ☐ Padre de familia ☐ Otro, especifique		Áreas
1. ¿Cuenta su comité con una normativa para su funcionamiento?	Si= 1 ☐	No= 0 ☐	Organización
2. ¿Le explicaron a usted cuáles son sus tareas en el comité de alimentación escolar?	Si= 1 ☐	No= 0 ☐	
3. ¿Qué actividades realiza usted en el comité escolar? marque sí o no en la siguiente lista:			
A. Avisa a las madres y padres de familia cuando reciben los alimentos para la merienda.	Si= 1 ☐ No= 0 ☐		
B. Supervisa la recepción y el retiro de los alimentos del punto de entrega.	Si= 1 ☐ No= 0 ☐		
C. Almacena los alimentos que reciben.	Si= 1 ☐ No= 0 ☐		
D. Hace los roles de cocina para preparar la Merienda Escolar.	Si= 1 ☐ No= 0 ☐		
E. Revisa que la Merienda Escolar se prepare según el rol de cocina y las normas de higiene.	Si= 1 ☐ No= 0 ☐		
F. Supervisa como se sirve la Merienda Escolar y el momento en que comen los niños.	Si= 1 ☐ No= 0 ☐		
G. Comparte con las madres, padres de familia y la comunidad los beneficios de la Merienda Escolar.	Si= 1 ☐ No= 0 ☐		
H. Promueve la participación de la comunidad en las actividades de la merienda escolar	Si= 1 ☐ No= 0 ☐		
I. Participa en la elaboración del informe de actividades del comité escolar, después de cada distribución.	Si= 1 ☐ No= 0 ☐		
4. ¿Cuánto tiempo tiene de pertenecer al comité escolar?			
5. ¿Cada cuánto tiempo se reúnen como comité escolar?			
6. ¿En qué registran los acuerdos de sus reuniones?			
☐ Libro de actas			
☐ Cuaderno de notas			
☐ Ninguno			
En los siguientes aspectos usted va a valorar las condiciones higiénicas en la preparación de la merienda, calificando: 1, No hay condiciones 2, Existen algunas condiciones 3, Condiciones óptimas			

7. Condiciones en preparación higiénica de la merienda escolar	Lea las siguientes oraciones y marque con un círculo el número que usted considera es el adecuado. Solo marque un número				Capacidades/ Higiene
A. Usted cree que la escuela tiene condiciones de higiene en el lugar donde se preparan los alimentos	1	2	3		
B. Usted cree que la escuela tiene utensilios adecuados para cocinar los alimentos	1	2	3		
C. Usted cree que la escuela tiene utensilios adecuados para servir los alimentos	1	2	3		
D. Usted cree que la escuela tiene condiciones de higiene en el lugar donde comen los niños	1	2	3		
E. Usted cree que la escuela tiene utensilios suficientes para disposición de basura.	1	2	3		
8. Si tuviera que recibir alimentos (tomate, zanahoria, papa, repollo, leche, crema, huevos) para complementar la merienda escolar, valore las capacidades de su organización, teniendo en cuenta: - 1, cuando no hay capacidad - 2, cuando hay algunas capacidades - 3, cuando están todas las capacidades	Lea las siguientes oraciones y marque con un círculo el número que usted considera es el adecuado. Solo marque un número.				
A. Usted puede identificar si el alimento se encuentra en buen estado (huevos quebrados, vegetales golpeados, podridos, con mal olor)	1	2	3		
B. En la escuela hay capacidad para el almacenamiento de estos alimentos	1	2	3		
C. En la escuela se pueden preparar comidas con estos alimentos para mejorar nutricionalmente la merienda escolar	1	2	3		
D. Ustedes pueden planificar las necesidades de alimentos para complementar la merienda con productos frescos	1	2	3		
9. ¿Cuál es el aporte que Uds. dan en este momento a la merienda?	☐ Efectivo	☐ Mano de Obra	☐ Tiempo	☐ Comida	Sostenibilidad/ Escenario para recibir alimentos
10. ¿Si más adelante esta organización tuviera que recibir alimentos frescos como (tomate, zanahoria, papa, repollo, leche, crema, huevos) para mejorar la merienda, estaría de acuerdo en hacer algún tipo de aporte?	Si= 1 ☐		No= 0 ☐	No sé = 777 ☐	
11. Si usted dice que si, en los cuadrillos de la derecha escriba una X el aporte que pudiera dar	☐ Efectivo	☐ Mano de obra	☐ Tiempo	☐ Comida	
12. Marque con una X los alimentos que recomienda para mejorar la merienda					

☐ Frijol ☐ Tomate ☐ Repollo ☐ Zanahoria	☐ Papa ☐ Leche ☐ Crema ☐ Huevos	
--	--	--



Proyecto Mayor Acceso a Alimentos Saludables – MAS. Jinotega 2019-2022
Evaluación Inicial y Estudio de Mercado en Jinotega
Marzo 2020

Guía para Grupo focal dirigido a miembros de la organización escolar (CAE - PTA)

Facilitadoras:				Fecha:			
-----------------------	--	--	--	---------------	--	--	--

Hora inicio: _____

Hora final:

I. Datos Generales

Departamento:			Municipio:			Comunidad:		
----------------------	--	--	-------------------	--	--	-------------------	--	--

Nombre de la escuela donde se realiza el Grupo focal:
--

Número de Participantes: _____ (Detalle en lista anexa)

II. Objetivo

- Determinar las capacidades actuales y potenciales de la organización escolar para **apoyar/participar en el proceso de recibir otros alimentos para la merienda** y la preparación higiénica de productos de la alimentación escolar.

Buenos días, tardes

Somos _____. Nos encontramos en esta escuela realizando esta reunión que nos ayude a tener insumos para mejorar la implementación de las iniciativas que promueve PCI en la escuela.

Esta reunión tendrá una duración de dos horas, de los cuales, tendremos un conversatorio para ampliar sus valoraciones, intercambiar experiencias y aportar recomendaciones para fortalecer el trabajo de este grupo y el del PCI.

Posterior al llenado del cuestionario, se agradece a los participantes por sus respuestas y se inicia el conversatorio, dando a conocer los puntos a tratar en el grupo focal:

1. Funcionamiento y Capacidades del comité
2. Capacitación
3. Disseminación del trabajo del comité
4. Percepciones de mejora de la merienda

Se aclara al grupo, que No existen respuestas buenas ni malas, solamente queremos conocer su opinión, conocimientos y experiencias. Sus respuestas nos ayudarán a entender más sobre el manejo de los alimentos en la escuela y las posibilidades de otros alimentos que actualmente no tiene para que la merienda sea más nutritiva y aceptada por los niños y niñas.

Les solicitamos la participación de todos, indicándoles que pueden levantar la mano para darles la palabra. Se les recuerda que cada opinión es muy importante y que anotaremos en papelógrafo lo expresado con un resumen al final y nos dirán si lo que hemos escrito está de acuerdo a lo conversado o no.

Antes de iniciar nos acercaremos y anotaremos sus nombres y otros datos (Tiempo de participación, edad y nivel académico). (No olvidar anotar el sexo).

III. Desarrollo de puntos a tratar

1. Funcionamiento y Capacidades del Comité (CAE y PTA). En este tema, quisiéramos que nos compartan:

¿Qué les motivó o les impulsó a integrarse al comité (CAE y/o PTA)? ¿Por qué se integraron al comité (CAE y/o PTA)?

¿Cómo se sienten realizando este trabajo en el comité de la escuela? ¿Por qué?

¿Cómo motivaría a otro padre para que se integrará al comité de la escuela?

¿Cómo explicaría a otro padre las actividades que realiza el comité de la escuela?

¿Cómo funciona actualmente el grupo y cuáles son sus limitantes/dificultades (hacer énfasis en las reuniones, si llevan agenda, si toman acuerdos, planes de acción comunitaria, cumplimiento de los roles en la preparación de alimentos u otro tipo de barreras.)?

¿Cómo participan las mujeres y los hombres en las tareas del grupo en la escuela?

2. Capacitación

¿Han recibido capacitación?

¿Cuántas el año pasado?

¿En qué temas? (Si no mencionan temas relacionadas a las prácticas de preparación de la merienda, hacer la pregunta sobre esos temas. “¿Y les han capacitado sobre la preparación de la merienda de los niños y niñas?”

¿Quién les ha capacitado? (PCI, MINSA, MINED, Alcaldía, otros)

¿Ha tenido oportunidad de aprender algo nuevo?

¿Qué utilidad ha tenido esas capacitaciones en sus formas de preparar la comida en la escuela o en sus casas, qué cambios tuvieron después de capacitarse?

Para mejorar sus conocimientos en el manejo de los alimentos en la escuela, ¿qué temas necesitarían incluir a las capacitaciones?

3. Diseminación del trabajo del Comité

¿Actualmente dan a conocer a otros padres de familia y miembros de la comunidad el trabajo que ustedes hacen en el manejo de los alimentos para servir una buena merienda?

¿Qué debe mejorarse cuando dan cuenta de las actividades que se realizan en apoyo a la alimentación escolar?

¿A quién debemos incluir para informar sobre las actividades que ustedes hacen en la escuela?

4. Percepciones de mejora de la merienda

¿Existen otras organizaciones, personas, cooperativas o empresas en la comunidad con quien deberían coordinar para desarrollar sus funciones? si dicen que no, indagar ¿por qué? o las dificultades.

Si tuvieran que recibir alimentos frescos para mejorar el valor nutritivo de la merienda escolar:

- ¿Cuáles alimentos agregaría?
- ¿Cuáles serían los aportes de los padres de familia (mano de obra, especie, recursos en efectivo, tiempo, otros)?
- ¿Qué necesitaría para recibir, almacenar, incluir en la merienda?
- ¿Qué necesitaría para llevar el control de entrada y salida de los alimentos?

Finalización de la actividad

- Lea el resumen de la conversación escrito en los papelógrafos y espere su aprobación, de lo contrario corrija inmediatamente.
- Pregunte si hay algo más que deseen mencionar.
- Agradezca nuevamente la participación de todas las personas.
- Concluya la actividad haciendo ver lo importante que fueron los aportes brindados.
- Revise la lista de asistencia para verificar que todas las personas están anotadas.
- Ofrezca un refrigerio para compartir.



Proyecto Mayor Acceso a Alimentos Saludables – MAS. Jinotega 2019-2022
Evaluación Inicial y Estudio de Mercado en Jinotega

Guía para entrevistas a personal PINE MINED departamental y municipal
Marzo 2020.

Facilitador(a):

Fecha:

Hora inicio: _____

Hora final: _____

I. Datos Generales

Lugar:

Participantes:

Nombre y apellido

Cargo

Tiempo de laborar en PINE-MINED

II. Introducción

Hola, mi nombre es _____, soy parte del equipo de investigación que está realizando la Evaluación y estudio de mercado del proyecto acceso a mercado saludable a ser ejecutado por PCI en el departamento de Jinotega, municipio de Pantasma y Jinotega. Hoy estamos aquí para realizar una Entrevista cuyos objetivos son:

- Conocer la operación y perspectiva del PINE en la región y en particular la zona de influencia del MAS
- Compartir información sobre los objetivos, alcances, población meta del MAS e identificar el nivel de conocimiento del MAS en la estructura pública
- Conocer las consideraciones estratégicas y operacionales del MAS desde la perspectiva del PINE
- Capturar información sobre los factores externos que pueden facilitar o limitar el éxito del MAS
- Lecciones aprendidas en la ejecución del PINE, recomendaciones y sugerencias para la buena ejecución del MAS y la sostenibilidad del proyecto más allá de la inversión del MAS
- Identificar acciones complementarias que contribuyan a mejorar el desempeño de la alimentación escolar

Sus ideas, puntos de vista, conocimiento o experiencia que nos pueda compartir, serán de mucha utilidad en esta evaluación final y también para considerarlas en la nueva fase del proyecto. Su participación es completamente voluntaria y lo que aquí se exprese será confidencial, y se utilizará exclusivamente para efectos de la evaluación. ¿Están de acuerdo en participar en esta entrevistada de grupo? Muchas gracias.

III. Metodología y actividades iniciales

- Presentarse y dar la bienvenida agradeciendo la presencia de los/as participantes y presentar los objetivos de la entrevista
- Explicar las reglas y procedimientos a seguir durante la entrevista que incluyen:
 - La participación es de forma totalmente voluntaria con una participación amplia que permita tener la oportunidad de poner sus puntos de vista sobre los temas a discutir. Es importante aclarar que ninguno de los presentes está obligada a responder las preguntas que no están en su alcance responder. Si alguien quiere salirse de la reunión puede hacerlo en cualquier momento.
 - El facilitador tomará nota de los aspectos importantes obviando la fuente específica del proveedor de la información. Por otro lado, en algún momento se harán conclusiones y recomendaciones que quedarán en las notas del facilitador.
 - Se garantiza que la información será resguardada y utilizada única y exclusivamente para fines de esta evaluación.
- El facilitador estará identificado de tal manera de generar una relación horizontal durante la entrevista.
- Al inicio de la entrevista para romper el hielo se comentarán temas relacionados a al clima, la vegetación, el paisaje de tal manera que permita crear un ambiente favorable entre el facilitador y el entrevistado.
- Se explicará la metodología a seguir durante el proceso de la entrevista la cual consistirá en abordar los temas relacionados a los objetivos y preguntas para el desarrollo de los temas. Los temas a abordar serán:
 - Accionar del PINE en la zona de influencia del MAS
 - Proyecto MAS y recomendaciones para su funcionamiento

IV. Accionar del PINE en la zona de influencia del MAS

- ¿Cuáles son los objetivos y alcance del PINE en la zona?
- Población meta, cobertura de atención y acciones principales en la zona
- Acciones del PINE para el cumplimiento de los objetivos
 - Acciones que realizan para alcanzar los objetivos
 - ¿Qué inversión ha hecho el PINE en las escuelas para garantizar la alimentación escolar?
 - ¿Cómo se organizan para operar el PINE?
- Roles de los actores interesados en la alimentación escolar
 - Institucional, rol del PINE, compromisos de los profesores y demás miembros institucionales en la escuela
 - Roles de la organización de padres, nivel de participación, factores positivos y negativos para su integración
 - Otros actores públicos participantes (Alcaldías, Sector Público Agropecuario y otros)
 - Actores privados que apoyan la alimentación escolar, que aportes hacen, como lo hacen
 - Donantes o proyectos existentes en la zona que realizan apoyo a la alimentación (acciones que realizan y ubicación), cómo se articulan con el PINE.
- Seguimiento y evaluación
 - ¿Existen indicadores para medir el desempeño del PINE? ¿Cuáles son?
 - ¿Han realizado una evaluación del PINE en la zona?
 - Cómo se integra los resultados de otros proyectos dentro del informe del PINE
- Sostenibilidad de la alimentación escolar
 - ¿Cómo se visibiliza la participación económica de los padres en el proceso de alimentación escolar?
 - Disponen de los resultados de la experiencia piloto de compras de agricultura familiar con las Alcaldías
 - ¿Han sistematizado la experiencia de la alimentación escolar en la zona que nos puede dar aprendizajes?
- Principales limitantes encontradas
 - ¿Qué limitantes han encontrado con la implementación del PINE?

V. El proyecto MAS y recomendaciones para su funcionamiento

- Objetivos
- Alcances
- Población meta del proyecto
- Estrategia del Proyecto y actividades más importante
- Finalidad de las acciones

Preguntas claves para alcanzar los objetivos esperados

- ¿Qué grado de conocimiento había tenido sobre el proyecto?
- ¿Han participado en reuniones o actividades donde se comparta información del proyecto?
- ¿Participaron o fueron consultados en procesos de formulación inicial del proyecto?
- ¿El proyecto es relevante hacia la política pública nacional y sectorial?
- ¿Es congruente el accionar del proyecto y los objetivos del PINE? ¿Aporta el proyecto a los cambios que se quieren lograr?
- ¿Existe coordinación a nivel de campo entre el PINE y el proyecto, que espacios existen y la recurrencia de las reuniones de coordinación?
- ¿Qué aprendizajes les interesaría conocer sobre la base de la experiencia del MAS en un futuro que podría ser implementado por PINE?
- Factores externos que han afectado al PINE y que pueden afectar al proyecto
- Factores internos que han afectado al PINE y que pueden afectar al proyecto
- Lecciones aprendidas en la implementación del PINE que pueden ser retomadas por el proyecto
- El proyecto invertirá en las escuelas equipos, esto incrementará los costos de la energía, podrán las escuelas sufragar ese costo adicional para el funcionamiento y mantenimiento de los equipos
- ¿Qué acciones complementarias no existentes con el PINE se debería de promover en el marco del proyecto para mejorar su integración dentro de la política pública?



Proyecto Mayor Acceso a Alimentos Saludables – MAS. Jinotega 2019-2022
Evaluación Inicial y Estudio de Mercado en Jinotega

Guía para Entrevistas a Personal PMA del C4P

Facilitador(a):

Fecha:

Hora inicio: _____

Hora final: _____

I. Datos Generales

Lugar:

Participantes:

Nombre y apellido

Cargo

**Tiempo de laborar en PMA-
MINED**

II. Introducción

Hola, mi nombre es _____, soy parte del equipo de investigación que está realizando la Evaluación y estudio de mercado del proyecto acceso a mercado saludable a ser ejecutado por PCI en el departamento de Jinotega, municipio de Pantasma y Jinotega. Hoy estamos aquí para realizar una Entrevista cuyos objetivos son:

- Conocer la operación y perspectiva del PMA en lo que respecta al proyecto compras para para el progreso.
- Identificar aprendizajes, lecciones aprendidas y recomendaciones para la implementación del MAS.

Sus ideas, puntos de vista, conocimiento o experiencia que nos pueda compartir, serán de mucha utilidad en esta evaluación final y también para considerarlas en la nueva fase del proyecto. Su participación es completamente voluntaria y lo que aquí se exprese será confidencial, y se utilizará exclusivamente para efectos de la evaluación. ¿Están de acuerdo en participar en esta entrevistada de grupo? Muchas gracias.

III. Metodología y actividades iniciales

- Presentarse y dar la bienvenida agradeciendo la presencia de los/as participantes y presentar los objetivos de la entrevista
- Explicar las reglas y procedimientos a seguir durante la entrevista que incluyen:
 - La participación es de forma totalmente voluntaria con una participación amplia que permita tener la oportunidad de poner sus puntos de vista sobre los temas a discutir. Es importante aclarar que ninguno de los presentes está obligada a responder las preguntas que no estan en su alcance responder. Si alguien quiere salirse de la reunión puede hacerlo en cualquier momento.

- o El facilitador tomará nota de los aspectos importantes obviando la fuente específica del proveedor de la información. Por otro lado, en algún momento se harán conclusiones y recomendaciones que quedarán en las notas del facilitador.
- o Se garantiza que la información será resguardada y utilizada única y exclusivamente para fines de esta evaluación.
- El facilitador estará identificado de tal manera de generar una relación horizontal durante la entrevista.
- Se explicará la metodología a seguir durante el proceso de la entrevista la cual consistirá en abordar los temas relacionados a los objetivos y preguntas para el desarrollo de los temas. Los temas a abordar serán:
- o El proyecto MAS
- o Accionar del C4P y los aprendizajes

IV. El proyecto MAS

- Objetivos
- Alcances
- Población meta del proyecto
- Estrategia del Proyecto y actividades más importante
- Finalidad de las acciones

V. Accionar del C4P

- Desde cuándo inicia C4P y cuáles son los objetivos y alcances
- Población meta, cobertura de atención y alcances
- Alimentos que compran y la calidad
- Principales acciones de C4P
- Actores interesados en la alimentación escolar que se articulan a C4P
- Proceso de compra con los proveedores
- o ¿Cómo es el proceso de la compra a proveedores?
- o Barreras encontradas, Control de calidad del producto adquirido
- o Lecciones aprendidas que nos pueden servir en la implementación de MAS
- o Comparación de costos importando o adquiriendo en el país
- o Incentivos y acciones del PMA a los productores u oferentes
- Proceso de recepción de alimentos
- o Aprendizajes
- o Barreras
- o Recomendaciones y lecciones aprendidas
- Proceso de distribución
- o Aprendizajes
- o Barreras
- o Recomendaciones y lecciones aprendidas
- Seguimiento y evaluación
- o ¿Existen indicadores para medir el desempeño del C4P? ¿Cuáles son?
- o ¿Han realizado alguna evaluación y sistematización de C4P?
- Sostenibilidad de C4P para la alimentación escolar
- o ¿Cómo se visibiliza la participación económica de los padres en el proceso de alimentación escolar?
- o ¿Cómo visibilizan la sostenibilidad del modelo C4P?
- Logros alcanzados
- Principales limitantes encontradas
- o ¿Qué limitantes han encontrado con la implementación del C4P?

Proyecto Mayor Acceso a Alimentos Saludables – MAS. Jinotega 2019-2022
Evaluación Inicial y Estudio de Mercado en Jinotega

Guía de temas para el taller teoría de cambio y marco de resultados

Facilitador(a): Danilo Saavedra

Fecha: 7 de mayo 2020

Hora inicio: _____

Hora final: _____

I. Datos Generales

Lugar: Oficinas de PCI

Inicio: 9:00 am

Participantes:

Nombre y apellido

Cargo

II. Introducción

La teoría de cambio de un proyecto es la hipótesis y es la ruta por el cual la intervención pretende lograr el cambio esperado. La construcción se basa en la cadena causal del problema u oportunidad abordada, del contexto y los supuestos.

III. Metodología

El proceso metodológico para analizar la teoría de cambio y el marco de resultados esta basado en la cadena causal del problema o la oportunidad que el proyecto está dirigiendo sus esfuerzos. Una vez derivada las causas y subcausas se contrastarán con los resultados previstos en el proyecto, de tal manera de ver el nivel de congruencia, los riesgos y posibles medidas de mitigación que el proyecto debe tener en cuenta durante su ejecución.

IV. Contexto del proyecto

- Contexto actual

V. Construcción de la cadena causal del proyecto

- ¿El problema u oportunidad que el Proyecto pretende resolver?
 - o ¿El problema principal?
 - o ¿Las causas principales del problema?
 - o ¿Las causas que el proyecto aborda?
 - o ¿Existen subcausas de las causas principales?
 - o ¿Actores interesados?
- Pertinencia del problema a resolver
 - o Pertinencia a las prioridades a los Objetivos de desarrollo

- o Pertinencia a las políticas del USDA
- o Pertinencia a las políticas nacionales

VI. Viabilidad de la teoría de cambio

- Cambio esperado del proyecto
- o **¿Cuál es el cambio final esperado por el proyecto?**
- El cambio esperado vs el problema principal del proyecto
- o ¿Es consistente el cambio esperado y la problemática a resolver?
- o ¿Los supuestos de la ruta de cambio?
- Ajuste al cambio esperado en el contexto del proyecto
- o Que ajustes deben realizarse para la coherencia del cambio
- La ruta de cambio vs la cadena causal
- o ¿Es coherente la ruta de cambio con las causas principales del problema?
- o ¿Hay causas no abordadas que son riesgos para el alcance del cambio esperado?
- Ajustes a la teoría de cambio
- o Que ajustes debe tener la teoría cambio en el contexto actual
- o Indicadores de efectos superiores que evidencien el cambio
- Riesgos para alcanzar los cambios esperados

VII. Marco de resultados

- Consistencia del marco de resultados del proyecto con la teoría de cambio
- Propuesta de ajustes.

VIII. Sostenibilidad

- Elementos de sostenibilidad de los productos costo actual vs costos agregados por la diversidad de alimentos (recursos, vinculación, capacidad y motivación)
- Estrategia de sostenibilidad y participación de los Gobiernos Locales
- Posibilidad de escalamiento de los resultados

Annex 4: Organizational Capacity of the School Feeding Commissions and PTA for the Procurement, Control and Management of School Meals

Table 4.1. Score Achieved by School

Description	Organization
Escuelas con proyecto	
Bastilla	8
Rubén Darío, Villa Norte	10
José Cesáreo Blandón	9
Ninfa Segura Castillo	11
Amanda López Pineda	11
Cenizabu	11
Juan Pablo Segundo	11
Grupo control	
Simón Bolívar	10
Chile	9
Rubén Darío	10
Elías Blandón Machado	6
Anizales 2	8
Pedro Lisímaco	7
Gabriela Mistral	10

Fuente: Datos facilitado por PCI, Nicaragua

Table 4.2. Observation Checklist of Optimal Conditions for the Management and Preparation of School Meals in the Cafeteria

Área	Intervention	Control
Almacenamiento de alimentos		
El centro escolar cuenta con una bodega exclusiva o baúles para el almacenamiento de alimentos.	53.3	85.7
La bodega o baúl metálico para el almacenamiento de alimentos se encuentra dentro del área de infraestructura en el centro escolar.	73.3	85.7
La bodega para almacenamiento alimentos o baúl metálico está seca, cerrada y alejada de basureros y aguas estancadas.	86.7	100.0
La bodega para almacenamiento de alimentos o baúl metálico se limpia diariamente	73.3	85.7
En la bodega de almacenamiento de alimentos o baúl metálico se encuentran insumos de limpieza (detergente, cloro, ambientador, lampazo, escoba)	100.0	85.7
Alimentos están sobre polines, tablas o mesas (separados del piso).	26.7	0.0
Los granos básicos y los alimentos en polvo están guardados en sus empaques originales o en frascos de vidrio o plásticos bien cerrados y rotulados.	100.0	100.0
Protegida contra insectos y roedores utilizando productos registrados y autorizados por el MINSA.	20.0	14.3
Promedio	66.7	69.6
Higiene de los escolares al consumir los alimentos		
Los escolares practican una buena técnica de lavado de manos antes de consumir los alimentos.	40.0	57.1
Disponen de agua potable para el lavado de manos	40.0	42.9
Disponen de jabón para el lavado de manos	40.0	57.1
Los utensilios en que sirven la comida a los escolares están limpios (platos, vasos, tazas, cucharas)	40.0	57.1
El lugar donde comen los escolares está limpio	40.0	42.9
Promedio	40.0	51.4
Disponibilidad de agua		
Existe en el centro escolar disposición de agua potable.	73.3	85.7
De no tener disponibilidad de agua potable se utiliza agua tratada para el consumo humano. (Pozo con tratamiento, clorado dentro de la escuela)	33.3	0.0
Los recipientes donde se almacena el agua se lavan a diario	33.3	0.0
Promedio	46.7	28.6
Manejo de desechos (basura)		
Existen en el centro escolar recipientes para el manejo de desechos (basura).	40.0	71.4
Existen charcas o aguas grises a menos de 5 metros del espacio asignado para el almacenamiento y preparación de alimentos	20.0	28.6
Promedio	30.0	50.0
Servicios higiénicos		
El centro escolar cuenta con servicios higiénicos en buen estado (limpios por dentro y fuera, con ventilación, con tapa o separados para niños y niñas o ambos)	66.7	71.4
Los servicios higiénicos del centro escolar se encuentran a un mínimo de 3 metros retirados del lugar donde se almacenan y preparan los alimentos	86.7	85.7
Promedio	76.7	78.6

Fuente: Coordinadores de las Organizaciones escolares CAE y PTA de las escuelas con proyecto y grupo control

Table 4.3. Optimal Conditions for the Management and Preparation of School Meals, by Condition

Área	Con proyecto	Grupo control
Almacenamiento de alimentos	66.7	69.6
Higiene de los escolares al consumir los alimentos	40.0	51.4
Disponibilidad de agua	46.7	28.6
Manejo de desechos (basura)	30.0	50.0
Servicios higiénicos	76.7	78.6

Fuente: Resultado del análisis de la lista de observación aplicada a coordinadores de los CAE y PTA de las escuelas con proyecto y grupo control.

Table 4.4. Observation Checklist for Optimal conditions for the Management and Preparation of School Meals in Schools with Kitchens

Área	Intervention	Control
Higiene		
Área de preparación de alimentos		
Existe en el centro escolar un espacio exclusivo para la preparación de alimentos.	100	100
Solo el personal autorizado ingresa al área de preparación de alimentos.	80	0
En el área de preparación de alimentos: el piso, las paredes y techo están limpios para evitar presencia de roedores, insectos y otro tipo de animales (de corral y domésticos).	70	100
Las mesas donde se preparan los alimentos se lavan antes y después de la preparación con agua y jabón.	70	100
Las diferentes superficies en la cocina o el área donde se preparan los alimentos están limpias	80	100
Existe en el área de preparación de alimentos un sistema de desagüe para las aguas negras	70	100
Los alrededores del área de preparación de alimentos se encuentran limpios	100	100
Promedio	81.4	85.7
De los manipuladores de alimentos		
Las personas encargadas de la preparación de alimentos cuentan con un certificado de salud otorgado por el MINSA	10	0
Las personas encargadas de la preparación de alimentos cuentan con un proceso de capacitación con temas específico como higiene personal e higiene en la preparación de los alimentos	80	100
Las personas encargadas de la preparación de alimentos conocen y demuestran la técnica correcta de lavado de manos.	50	100
Las personas encargadas de la preparación de alimentos hacen uso de equipo de protección (gorro, malla, boquilla, delantal, zapato cerrado)	40	0
Las personas encargadas de la preparación de alimentos manejan las manos limpias uñas cortas y sin pintar.	90	100
Las personas encargadas de la preparación de alimentos no tienen heridas, ni infecciones en la piel, brazos, boca y uñas.	40	100
Los alimentos preparados son protegidos de la contaminación antes de servirse (están tapados).	70	100

Área	Intervention	Control
Promedio	54.3	71.4
Disponibilidad de agua		
Existe en el área de preparación de alimentos disposición de agua potable	60	100
El recipiente donde se almacena el agua para la preparación de alimentos está debidamente tapado.	40	100
El recipiente donde se almacena el agua para el lavado de manos, lavado de áreas de trabajo y lavado de utensilios de cocina está debidamente tapado.	30	100
El agua que se almacena para la preparación de alimentos, lavado de manos, lavado de áreas de trabajo y lavado de utensilios de cocina se cambia a diario	40	100
Los recipientes donde se almacena el agua para para el lavado de manos, lavado de áreas de trabajo y lavado de utensilios de cocina están en un lugar protegido ubicado donde no se contamine	30	100
Promedio	40.0	100.0
Manejo de desechos (basura)		
Existe en el área de preparación de alimentos recipientes cerrados para la acumulación de residuos provistos de tapas, con una bolsa para facilitar su limpieza e higiene.	30	0
En el área de preparación de alimentos se separa los desechos orgánicos (cascaras, desechos de comidas) y los inorgánicos (papel, plásticos)	20	100
En el área de preparación de alimentos existe disposición final de los desechos líquidos conectada a la red de alcantarillado sanitario existente o tratamiento de las aguas mediante fosas sépticas o estanque de captación de aguas servidas.	40	100
Promedio	30.0	66.7
Disponibilidad de equipos y utensilios para la preparación/servida de alimentos		
Existen en este centro escolar utensilios para la preparación/servida de alimentos	90	100
Los utensilios de cocinar/servir son propiedad del centro escolar	80	100
Los utensilios de cocinar/servir son los adecuados y suficientes para la preparación de los alimentos	60	0
Los equipos y utensilios para la preparación/servida de alimentos están limpios e higienizados	90	100
Promedio	80.0	75.0

Fuente: Resultado del análisis de la lista de observación aplicada a coordinadores de los CAE y PTA de las escuelas con proyecto y grupo control.



Terms of Reference (TOR)

Proyecto de Adquisiciones Locales Regionales (LRP) - USDA

Regional Local Procurement Project (LRP)

Better Access to Healthy Foods (MAS)

Consulting services for baseline study

And

Market Study

Request for Proposals (RFP)

Consulting Services for a Baseline Evaluation and Market Study in Jinotega, Nicaragua

Date of issue of the RFP:

Closing date of the RFP:

Delivery Address:

PCI Nicaragua Office
Leonel Arguello MD, Epidemiologist
Country director PCI Nicaragua
email: larguello@pciglobal.org
Edificio El Carmen, frente al canal 13 de TV
Bolonia, Managua, Nicaragua

Glossary

CAE	School Feeding Committee
FFE	Food For Educaion
GAEC	Community School Support Group
LRP	Local Regional Procurement
MAS	Mayor Acceso a Alimentos Saludables
MESA II	Mejor Educación y Salud fase II

MGD	McGovern-Dole
MINED	Ministry of Education
PCI	Project Concern International
PINE	School Nutrition Program
PMP	Performance Monitoring Plan
PTA	Parent-Teacher Association
RFP	Request for Proposals
SO	Strategic Objective
TOR	Terms of Reference
USDA	U.S. Department of Agriculture

I. INTRODUCTION

Nicaragua is expected to experience its third consecutive year of economic contraction with an estimated -1.1% in 2020, on top of the -3.8% and -5.9% contraction experienced in 2018 and 2019 respectively, while open unemployment is expected to go from the 5.5% recorded in 2018 to an approximately 7.4% by the end 2020, and a 10% (\$202) reduction in the GDP per capita from \$2,031 in 2018 to an estimated \$1,829 in 2020. As a result, poverty in Nicaragua is expected rise from 20.1% of the population in 2017, to 31.9% by the end of this year (2020). Which means that more than 2 million Nicaraguan will be living in poverty, with less than \$1.80 dollars per day.

The north-central region of Nicaragua, where the Department of Jinotega is located, is one of the most productive regions of the country for basic grains and vegetables, supplying the rest of the country; however, paradoxically, this is also one of the regions in the country with the highest levels of food insecurity. Fortunately, Jinotega has a number of strengths including: i) several agroecological and climatic zones (predominantly humid and semi-humid), ii) groups of producers organized in cooperatives and agricultural enterprises, iii) stable local markets, supply chains and sub-chains which provide a favorable scenario for the development of a program to procure locally grown food that is fresher, closer and more nutritious.

In summary, while there are social and climatic threats to nutritional food security in Jinotega, there are also enormous opportunities to harness and maximize the potential of existing local production and market assets to improve and maintain school feeding in targeted schools.

A particular strength of the municipalities of Jinotega and Pantasma, is the work currently being carried out by PCI under its USDA-funded MESA II (*Mejor Educación y Salud* or Improved Education and Health) project, which targets all schools in these municipalities, with activities that include: i) organizing and strengthening the capacities of local PTAs (Parents and Teachers Associations), ii) supply a daily school meal to every student, iii) hygiene and health promotion, and iv) Literacy promotion. These activities provide a key platform for adopting a community managed process for the procurement of high-quality locally grown food for the schools.

PCI is initiating a new 3-year, USDA-Funded LRP project titled MAS (*Mayor Acceso a Alimentos Saludables* or Greater Access to Healthy foods) which will target 60 schools²¹ in the municipalities of Jinotega and Pantasma, and will reach approximately 10,609 primary students, and more than 700 other beneficiaries (including individual farmers as well as members of agricultural cooperatives and enterprises, school parents and teachers, with activities related to food production, business management, school meal preparation and food procurement.

The criteria for selecting schools were: 1) currently participating in project MESA II; 2) easy geographic access; 3) willingness by PTA members to engage in procurement processes; 4) sufficient critical mass of students (at least 70 students); 5) parents regularly supplement and prepare school meals; 6) Conditions for storing fresh food (available space); 7) A high (A) or medium (B) score in MESA's sustainability readiness assessment.

Project MAS activities will contribute to achieving the strategic objective of ²² Improved effectiveness of food assistance, through local and regional procurement. This SO will be achieved through the following intermediate results:

²¹ See *Annex III* List of selected schools

²² See *Annex IV*. Project MAS Results Framework

LRP 1.1 Improved Cost-Effectiveness of Food Assistance

LRP 1.2 Improved timeliness of Food Assistance

LRP 1.3 Improved Utilization of Nutritious and Culturally Acceptable Food that Meet Quality Standards

Key results include: Increased leverage of private sector services, and Improved capacity of relevant organizations at the local level. MAS will address 5 activity areas in order to achieve the aforementioned results:

- 1. Purchase commodities from local food suppliers.*
- 2. Strengthen the technical expertise of local suppliers*
- 3. Promote Linkages between Parent-Teacher Associations (PTAs) and Local Food Producers and Suppliers*
- 4. Training: Strengthen Capacities of Local Farmers/Suppliers*
- 5. Training: Supplier Organizations' Financial and Administrative Capacity*

MAS' Theory of Sustainable Change is based on the following premise:

IF a cost-effective market is built to supply schools with locally available nutritionally dense fresh products, and **IF** local producers have increased access to markets, and **IF** school capacity to procure, manage and prepare fresh foods is improved, and **IF** key stakeholders from the public and private sector are involved in implementation, **THEN** the supply and access of culturally acceptable and quality food will be improved, the utilization of nutritious meals will be enhanced, and schools will be equipped with the skills needed for a transition away from USDA-provided commodities, towards a sustainable and locally-owned school feeding program.

Overall, MAS' contributions to the wellbeing, educational status and ultimate development of Nicaragua will follow two interrelated pathways: 1) an educational pathway whereby school meals will contribute to educational outcomes such as attendance and performance, and 2) a market pathway whereby local producers benefit from local investment, production, procurement and profit which can be reinvested in both the educational pathway as well as catalyze additional economic stimulation along the market pathway.

PCI will hire an external consultant to design and implement the Baseline Evaluation for Project MAS, addressing two objectives: determine the baseline values for key project indicators, and ii. conduct a market study for food products that will be included in local procurement for school feeding. The baseline evaluation will identify initial values for key project indicators, as well as provide a qualitative assessment of the different stakeholders in the target areas who may contribute to the success of project strategies. In addition, the consulting team will carry out a market study to initial supply chain information for select locally produced food products in the Jinotega market which will be used for school feeding under MAS.

II. PURPOSE OF STUDIES

For the baseline:

1. Establish baseline values for key project indicators to validate project strategies and projected targets.

2. Determine the level of capacity of school and community organizations (CAE and GAEC) in targeted schools to manage local procurement processes for school feeding, including storage, quality inspection, bookkeeping, and hygiene practices for the preparation of fresh food.
3. Prospectively identify internal and external factors that can facilitate or limit the success of the project, including elements against which to measure project impact at the end of project implementation.
4. Provide recommendations focused on improving the strategies to be implemented in order to strengthen the performance of the different stakeholders and key elements for sustainability of project benefits by the end of project implementation.
5. Make recommendations for the program performance and quality monitoring approach and for a quasi-experimental methodology for the final evaluation

For the market study:

1. Determine if local and regional procurement is feasible for the required quantities and whether it could result in any significant negative impacts on the local market and local stakeholders (wholesalers; retailers, producers, transporters, laborers and communities)
2. Provide data on prices, variety and temporary availability of fresh and local products
3. Identify the risk factors (environmental, climatic, economic and social) that affect the production and marketing chain of the products to be acquired under this project
4. Identify the capabilities of the shortlisted suppliers (8 cooperatives and 2 companies) to comply with legal requirements, quality standards, production volume, and areas for technical and administrative improvement.
5. Identify other potential producers who can be trained to sell products to schools
6. Determine the availability of agricultural services and providers such as transporters and storage

III. EVALUATION APPROACH AND METHODOLOGY

MAS' baseline evaluation approach will include a performance evaluation methodology to determine the project context and initial values for key indicators. In the final evaluation, a quasi-experimental methodology with control groups will be used, which is why this initial evaluation is expected to provide prospectively the key elements against which to measure impact. The consulting team is expected to provide a detailed methodology to achieve the purpose of the evaluation, which facilitates impact measurement, considering the project's Evaluation Plan approved by USDA. Data collected will baseline against which to measure a final evaluation with a control group of schools that did not participate in the intervention, to compare with beneficiary schools.

The design must include a mixed methods approach (i.e. focus groups, in-depth interviews and observation) to determine the context in participating schools, producers and agricultural market systems to guide and adjust MAS project strategies. Quantitative data collected through representative surveys will provide or confirm the reference values for all required project indicators (see Required Indicators section below). Qualitative methods will include a wider selection of stakeholders and will provide additional information to understand the context in which the program operates, cross-reference data and findings, strengthen confidence and validity levels.

The baseline study should propose criteria for comparison between participating and control schools, including links with the different local stakeholders that will participate in the MAS project. The consulting team will identify a well-defined control group of school, with key matching characteristics, which will be used to measure impact in the final evaluation. The counterfactual data

of these schools will allow the final evaluation to measure how the degree to which progress can be attributed to the project.

Quantitative and qualitative data for the market study will be collected for a sample of schools, suppliers, potential producers and other local actors in the local agricultural market system. This study does not have specific indicators; therefore, the consulting team will collect and analyze qualitative and quantitative data to respond to the purposes mentioned in this document.

Key evaluation questions:

Relevance

- Identify potential problems or challenges for project beneficiaries to make progress in achieving results.
- Determine how well aligned the project's interventions are with the policies and priorities of other actors.
- Determine how realistic, appropriate and practical the results framework is, and identify whether modifications to the design, structure, logic or management of the project are required to facilitate the scope of the desired results and impacts.

Performance

- Determine baseline values for required project indicators
- Assess how realistic and appropriate the goals of the indicators are
- Assess the knowledge and skills of beneficiaries to refine capacity-building activities.
- Identify opportunities and threats to project implementation.

Sustainability

- How much should local actors (private sector, community entities/associations, government agencies, etc.) be involved and committed to ensuring sustainability?
- What specific institutional capacity needs (e.g. GoG, municipal, community and school actors) should the project address to promote greater participation and accountability?

Key market study questions:

- Are food supplies currently meeting or exceeding demand?
- Are there issues with competition at various levels of the market system?
- What are possible negative impacts on stakeholders (traders, wholesalers, transporters, retailers, local producers, wage laborers, vulnerable non-beneficiaries) caused by MAS purchases?
- ¿Are there seasonal availability issues with targeted commodities and if so, are nutritionally similar alternatives available?
- What are the seasonal variation dates/availability trends of targeted commodities? (create a supporting graphic)
- What is the historical price data for targeted commodities over the past 3-5 years? (create a supporting graphic)

Sampling Strategy

The consultant is expected to design and verify the sampling strategy in consultation with PCI. As an impact assessment, the assessment needs to collect intervention area data plus a control area. The consultant should consider using strategies such as *cluster sampling* at the school level to minimize the cost and logistical complexity of the sample. The sample size for the baseline of students, parents and producers/suppliers in reference to quantitative indicators should allow statistically significant

changes (at a 95% confidence level, with 5% confidence interval) to be detected over the life of the project. The final sample size should consider cost and complexity, as well as statistical significance. A list of schools by location with the number of students is included in Annex III of this document.

Schools and producers included in the baseline sample would be used for market research.

Required Indicators

The consultant will be responsible for collecting and reporting data on the following required project indicators as part of the baseline study. The proposed evaluation design should provide a methodology for data collection and analysis to report on these indicators at the time of the baseline and end line of the project. Baseline values will be reported using experimental group data. However, to demonstrate the impact the results will be compared between the control group. The following table lists the indicators required for the baseline and its data sources. The consultant will develop the quantitative tools for baseline and market research in collaboration with PCI at the start of the evaluation.

Result	Indicator	Source
LRP 1.1	Cost of transport, storage and handling of commodity procured as a result of USDA assistance (by commodity)	Producers
LRP 1.1.1	Cost of commodity procured as a result of USDA assistance (by commodity and source country)	Market Study
LRP 1.1.2	Percent of producers who have adopted practices and process to improve the cost-effectiveness of delivery ²³	Producers
LRP 1.3	Percentage of schools which serve school meals with adequate dietary diversity, as a result of USDA assistance	Schools - Teachers
LRP 1.3.1	Percent of students who report that they like school meals, using the 5-point facial hedonic scale, by sex.	Schools - Pupils
LRP 1.3.2.1	Value of annual sales of farms and firms receiving USDA assistance	Producers
LRP 1.3.2.1	Volume (MT) of commodities sold by farms and firms receiving USDA assistance	Producers
LRP 1.3.2.4	Percent of suppliers who apply improved financial and administrative practices	Producers
LRP 1.3.3	Percent of school-age children receiving a minimum acceptable diet	Schools - Pupils

²³ While actual indicator values will be collected during the project from actual school purchases, a baseline value of the cost of relevant products will be established during this study based on current market prices from vendors and producers. The market study will also be used to establish standardized units of measurement for each product.

Qualitative data collection requirements:

Additional qualitative data will be collected from key stakeholder groups to triangulate and contextualize quantitative findings and help answer key baseline questions listed above. Tabal 4 lists the groups of beneficiaries to be interviewed and/or involved during the baseline study.

Data Collection Groups	Quantitative	Qualitative
Schools	X	
Parents	X	X
Suppliers	X	X
Producers	X	X
Other market actors		X
School Organizations: CAE, GAEC	X	X
Departmental and municipal PINE-MINED staff		X
PCI Staff		X

IV. KEY TASKS OF CONSULTANCY

4.1 Review project documentation and meet with project staff.

- o Understand the design and contextual framework of the project.
- o Understand the full context of project activities, beneficiary types, expected results, and monitoring and evaluation strategies.

4.2 Design and develop a Start Report that addresses baseline questions descritas above and conforms to a quasi-experimental evaluation design that can be applied in the final assessment.

The Start Report should include at least:

- o A qualitative-quantitative study design (framework, methodology, etc.) stick to the guidelines set out below
- o Sampling strategy
- o Data collection plan to report on all required indicators and disaggregations.
- o Identify the data collection tools available or necessary to collect all required data
- o A quality control plan
- o An analysis plan detailing the methodologies to analyze the data, present and visualize the results and perform tests with statistical significance
- o An updated timeline to complete the consulting
- o Roles and responsibilities of the consulting team

4.3 Develop ingesced data collection tools and protocols for the baseline with PCI staff

- o Review and refine tools and protocols as appropriate.
- o Using mobile devices to collect data
- o Hire and train enumerators, team leaders/supervisors.
- o Test all instruments in the field.

4.4 Perform data collection.

- o Manage and secure all datasets
- o Clean up data
- o Ensure data quality through an established data quality control protocol.

- o Deliver to PCI all completed, clean and translated datasets (including interview transcripts and focus groups)

4.5 Perform baseline data analysis.

- o The consultant will be responsible for consolidating the quantitative and qualitative results of the analyses into a full final report

4.6 Prepare the full baseline study report

- o Follow PCI guidelines and report guides
- o Provide PCI and the relevant actors with sufficient time for review and feedback of draft reports
- o Incorporate comments from PCI and other actors and present the final report

5 Provide a summary presentation

- o Make a presentation of key findings for project staff and other stakeholders in Guatemala

V. FINAL DELIVERABLES

The Consultant or Consultant must deliver the following products:

1. An inception report that includes an evaluation design in light with section 4.2 of the TOR, a workplan with timelines, key milestones, and team roles and responsibilities
2. A PCI-approved final report outline
3. First draft baseline and market study reports, in Spanish. Reports must follow PCI's "Writing and Formatting Guide for Evaluation Reports", and requirements established in PCI's "Evaluation Report Assessment Tool"
4. Final drafts of the baseline and market study reports in Spanish and English
5. A presentation of key findings of evaluation and market study for key players (PCI Nicaragua, PCI International Bureau, Donor)
6. Complete and clean sets of all quantitative data(datasets) following PCI quantitative data standards
7. A data dictionary/codebook for quantitative datasets using a PCI-provided format
8. Product of statistical analysis of quantitative results in MS Word.
9. Complete transcripts of all qualitative data collected in Spanish. Analysis of content or other analytical products of qualitative data, including identified key topics and the frequencies of such topics

VI. RESPONSIBILITIES

Consultant's Responsibilities

- Submit technical and financial proposal with a clear statement of the methodologies proposed.
- Direct consultations with all evaluator informants.
- Hire, train, and monitor enumerators for the collection of quantitative data.
- Apply data collection, entry, and analysis of quantitative survey data.
- Carry out qualitative data collection with experienced qualitative process facilitators
- Review of relevant documents and literature.
- Analyze qualitative and quantitative data.
- Provide products according to pre-agreed evaluation schedule.
- Develop survey tools on mobile data collection platform (if feasible)

PCI Responsibilities

- Ensuring the involvement of the government and other relevant actors
- Facilitate consultations with relevant actors
- Ensuring contact in the areas of the study
- Review the draft report and provide feedback to the consultant
- Approve all final products
- Disburse payment for services in accordance with the provisions of the contract.
- Participate in training for quantitative data collection enumerators
- Train the consultant in the use of mobile data collection platform, and/or survey tools on mobile data collection platform (if not the consultant)

VII. ESTIMATED TIMELINE

The consultancy is expected to begin the third week of January 2019 and conclude by June 15, 2019, with an estimated level of effort **(LOE) of 60 days** to execute the responsibilities of the consultancy, distributed as follows:

Activity	Expected time
Desktop review of the project documentation.	February 2020
Create an implementation work plan, finalize the technical design (sampling strategy, analysis plan, data collection tools), send the startup report	February 2020
Train the data collection team and finalize logistics	March 2020
Data collection	March 2020
Data analysis, review and preparation of the first draft report	April 2020
Incorporate PCI feedback and final report	May 2020
Present all final products	June 2020

VIII. COORDINATION

The technical management of the evaluation report review process will be coordinated by the team of Nuestra Cosecha de PCI Guatemala, composed of the Program Director, the Project Coordinator and the technical officer of M&E, in close collaboration with the MERL Technical Advisor of the international PCI office and the implementing partners (Save the Children and CRS). The main point of contact will be the M&E technical officer of Our Harvest.

IX. QUALIFICATIONS

The consultant team must meet the following criteria for the baseline study:

- Academic training in social sciences / health or related field with 15 years experience; minimum degree of mastery
- Extensive experience in leading project evaluations using a variety of methods of collecting qualitative and quantitative data, and analysis and sampling methods for **quasi-experimental design**
- Experience in leading assessments in the areas of international development/public health, and agriculture; it is highly preferred to have experience in **evaluating school feeding programs**.
- Experience in evaluating U.S. government-funded projects is highly preferred.
- Knowledge of Nicaragua's policies and laws around school feeding

- Demonstrable ability to deliver high-quality results within the proposed timeframe
- Verbal and written english proficiency is preferred
- Professional experience leading evaluations in the areas of project care.

The consultant team must meet the following criteria for the market study:

- Extensive experience at the national level in Nicaragua with market studies and value chain analysis
- Demonstrated academic and practical knowledge of agricultural market systems, value chains, agricultural technology, and climate-smart agriculture
- Verifiable experience in similar studies
- Familiarity with market study methods promoted by international donors, including: Emergency Market Mapping Analysis (EMMA), Market Information for Food Insecurity Analysis (MIFIRA), the World Food Program Trader Survey, and the MARKit Price Monitoring, Analysis and Response Kit.

X. PROPOSAL SUBMISSION

1. Elaboration of a technical proposal

The Technical Proposal shall be presented in the format provided in Annex I and shall describe the approach and plans for carrying out the work described in these TdRs. The technical proposal should be limited to ten (10) pages and should contain the following:

- A. Technical proposal cover sheet (not counted against the 10-page limit)
- B. A minimum of two references from organizations with which you have previously performed evaluation consulting work or a list of three references with contact information (does not count against the **10-page** limit)
- C. A description of the applicant's direct and relevant prior experience, including a summary of previous assessments
- D. Description of the methodology
 - E. Explain how the design of the assessment addresses research questions.
 - Sampling strategy
 - Approach to primary data collection
 - Data analysis plan.
- F. Timeline of the activity
 - G. Include a schedule of activities and the level of effort required for each activity.
- H. Team composition and roles, including:
 - List of key team members and key qualifications
 - Team key team members resume (not counted within the 10-page limit)
- I. An example of evaluation reports developed by the applicant (not counted within the 10-page limit)

2. Preparation of the financial proposal

The Financial Proposal shall be presented in the format provided in Annex II and shall establish a breakdown of the consulting price in accordance with the table provided.

Applicants are solely responsible for covering their own costs in the development of applications.

Annex III. List of selected schools for project MAS

Jinotega

Community	Name of School
Pelón	Pelón
Lipululo	Lipululo
Naranjo	Naranjo
Robles	Pedro Lisímaco Vilchez
Tejera	Tejera
Datanli	Ruben Baltodano
Caserio Dorado	Dorado
Barrio Linda Vista	Andrés Castro
Barrio Llano de la Cruz	Alfredo Alegría
Barrio Ernesto Rosales	Metodista
Barrio Sandino	Patricio Centeno
San Isidro	INACS
Villa Valencia	Ruben Dario
Mancotal	José Dolores Estrada
Yankee 1	Rubén Darío
Yanque 2	San Jose
Mancotal Abajo	San Miguel
Mancotal La Porra	Divino Nino Jesús de Praga
Pueblo Nuevo	José Dolores Estrada
San Esteban 1	San Esteban 1
Colinas	Bastilla
San Esteban 2	Jigüina
Tomatoya	Amanda López Pineda
Carril	Carril

Chaguite Grande 1	Chagüite Grande 1
Cureñas	Inmaculada Concepción de María
Sisle 2	Juan Pablo Segundo
Mojon	Mojón
San Antonio de Sisle	San Antonio de Sisle
El Limón	Divino Maestro
Sasle	Sasle
Sisle	Divino Niño

Pantasma

Community	Name of School
Cruces 2	Jose Benito Aráuz
Loma Alta Arriba	Cristóbal Vanegas Gaitán
Chaguitones	Chaguitones
Cedros Centrales	Cedros Central
Piragua	Piragua
Breyera 1	Breyera 1
Guásimo Est. Cora	Juan Castilblanco
Venado 1	Alfredo Alegría
Quebrada El Hule 1	Quebrada El Hule 1
Recuerdo 1	Recuerdo 1
Cuatro Esquinas	Cuatro Esquinas
Cenizabu	Cenizabu
Corozal	Corozal
Sacramento	Sacramento

Soledad	San Cristobal
Aserrió	José Cesareo Blandón H.
Tigre	Ángeles
Limonés 1	Miguel Larreynaga
Penquilla	Penquilla
Charcón 1	Pedro Joaquin Chamorro
Limonés 2	Limonés 2
Tamalaque	Tamalaque
Wale 1	Gabriela Mistral
Malecón	Luis Alfonso Velasquez
Praderas	Ninfa Segura Castillo
Loma Alta Abajo	Rafaela Herrera
Linda Vista 1	Linda vista 1
Pacayal	Pacayal

Project MAS Results Framework

