Dominican Republic Food for Progress Trade Safe (TraSa) Project

Baseline Evaluation

12/10/2021

Trade Safe Project Baseline Evaluation Report

Program: Food for Progress

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List of Acronyms

Acronym	Full Term
APHIS	Animal & Plant Health Inspection Service
AQAS	Agricultural Quarantine Activity System
CAFTA-DR	Dominican Republic-Central American Free Trade Agreement
COVID-19	Coronavirus-2019
DEC	Development Experience Clearinghouse
DR	Dominican Republic
EAN	Emergency Action Notification
EQ	USDA FFPr Exporting Quality/Exporta Calidad Program
FAS-GATS	USDA Foreign Agricultural Service's Global Agricultural Trade System
FFPr	Food for Progress
FY	Fiscal Year
GAT	Global Agricultural Trade System
GCCA-WFLO	Global Cold Chain Alliance-World Food Logistics Organization
HIT	Haina International Terminals
I4DI	Institute for Development Impact
IDB	Inter-American Development Bank
IESC	International Executive Service Corps
ISO-IEC	International Organization of Standardization/ International Electrotechnical Commission
ITC	International Trade Center
KI	Key Informant
KII	Key Informant Interview
M&E	Monitoring and Evaluation
MEL	Monitoring, Evaluation, and Learning
MS	Microsoft
MT	Metric Tons
NTFC	National Trade Facilitation Committee
PMP	Performance Monitoring Plan

Acronym	**Full Term**
SEZ	Special Economic Zone
SOW	Statement of Work
SPS	Sanitary and Phytosanitary
TFA	Trade Facilitation Agreement
TraSa	Trade Safe
TRCBD	USDA/FAS Trade and Regulatory Capacity Building Division
UN	United Nations
U.S.	United States
USD	United States Dollar
USDA	U.S. Department of Agriculture
USTR	United States Office of the United States Trade Representative
WTO	World Trade Organization

Executive Summary

Project Background and Purpose

The International Executive Service Corps (IESC) Trade Safe (TraSa) Project, funded by a United States Department of Agriculture (USDA) Food for Progress (FFPr) cooperative agreement, proposes to improve the trade, commercialization, and safety of food and animal health in the Dominican Republic (DR). This five-year, $13.7 million project, which began in October 2020, aims to facilitate these improvements by supporting the implementation of science and risk-based sanitary and phytosanitary (SPS) measures, standards, and regulations. It is a comprehensive and somewhat complex project that has four key activities: 1) capacity building of government institutions, 2) develop an improved policy and regulatory framework, 3) improve the industry's cold chain facilities and procedures, and 4) train private sector firms, farmers, laboratories, and consumers about food safety standards and procedures. To achieve this, the TraSa Project will build farmer and institutional capacity in SPS standards, improve the application of the risk management system at borders, and leverage private sector investment to further develop cold chain systems.

The value chains targeted by the TraSa Project include nine crops, namely avocados, tomatoes, peppers (bell and chili), cucumbers, papaya, eggplant, pineapple, and limes, and two livestock value chains, swine and poultry.

TraSa's design has been informed by and is built upon the efforts of two prior FFPr projects in the DR, namely the 1) USDA FFPR Exporting Quality)/Exporta Calidad (EQ) Program, implemented by IESC which focuses on expanding agricultural productivity and trade for following horticultural value chains: cocoa, pineapples, avocados, greenhouse vegetables, and Asian vegetables; and the 2) USDA FFPr SAFE/PROGRANA Program implemented by NCBA/CLUSA which focuses on expanding agricultural productivity and trade in the beef and dairy sectors in the DR. The activities and accomplishments of these two programs were taken into consideration during the design and implementation of this baseline evaluation.

The Institute for Development Impact (I4DI) and its DR-based partner, Fundación REDDOM, were selected to provide a baseline study for the project. The main features of the study include a stratified sample of organizations receiving training and other services; interviews with key informants; five standard USDA FFPr indicators and three specific custom indicators that focus on measures of project impact; and four context indicators that summarize the exports and imports of the DR. The custom indicators were chosen by IESC to provide important measurable outcomes that can be tied specifically to the activities of the project. Context indicators were chosen by IESC and provide measurable outcomes that are related to project activities.

The surveys conducted by I4DI and Fundación REDDOM for this baseline study were administered to a broad range of farmers producing avocados, bell peppers, cucumbers, eggplants, limes, papayas, chili peppers, tomatoes, poultry, and swine. Supplemented by the custom and context indicators and through interviews with key informants, I4DI generated baseline values for eight of the 18 TraSa Project's performance indicators and all four context indicators that accurately describe the food safety and animal health situation in the DR.

Evaluation Questions, Design, Methods, and Limitations

The TraSa Baseline Study lines of inquiry were developed around the eight performance indicators (five of which are standard indicators developed by USDA for FFPr, and three customs indicators provided by IESC specifically for the TraSa Project). Ten out of the eighteen performance indicators tracked by TraSa did not require baseline values and as such, this study did not collect baseline data for those ten indicators.

Table 1: Full List of TraSa Project Performance Indicators

TraSa Project Performance Indicator Number and Name	Included in the Baseline Study
FFPr Indicator #3: Number of hectares under improved management practices or technologies with USDA assistance	Yes
FFPr Indicator #4: Number of Individual in the agricultural system who have applied improved management practices or technologies with USDA assistance	Yes
FFPr Indicator #9: Number of technologies, practices, and approaches under various phases of research, development, and uptake as a result of USDA assistance	No
FFPr Indicator #11: Number of host government or community derived risk management plans formally proposed, implemented or institutionalized with USD assistance	Yes
FFPr #13: Number of public-private partnerships formed as a result of USDA assistance	No
FFPr #14: Value of new U.S. assistance commitments and new public and private sector investment leveraged by USDA to support food security and nutrition (USD)	No
FFPr #16: Total increase in installed storage capacity (dry and cold) as a result of USDA assistance	No
FFPr #17: Number of policies, regulations, and/or administrative procedures in each of the following stages of development as a result of USDA assistance	No
FFPr Indicator #18: Value of annual sales of farms and firms receiving USDA assistance	Yes
FFPr Indicator #19: Volume of commodities sold by farms and firms receiving USDA assistance	Yes
FFPr #21: Number of individuals who have received short-term agricultural sector productivity or food security training as a result of USDA assistance	No
FFPr #22: Number of individuals participating in USDA food security programs	No
FFPr #23: Number of individuals benefiting indirectly from USDA-funded interventions	No
Custom Indicator #1: Number of project-supported packinghouses that meet FSMA requirements	No
Custom Indicator #2: Percent Change in APHIS EANS for selected commodities	Yes
Custom Indicator #3: Number of e-Phyto system users	No
Custom Indicator #4: Number of firms that pay to use improved cold chain inspection areas	Yes
Custom Indicator #5: Percent Change in facility income from project supported labs	Yes

Data collected for the eight performance indicators included in this baseline study feed into FFPr Strategic Objective 1: Increased Agricultural Productivity and FFPr Strategic Objective 2: Expanded Trade of Agricultural Products and will inform future midterm and final evaluations as they aim to answer questions related to TraSa Project's relevance, effectiveness, efficiency, sustainability, and impact.[1] A core component of the baseline study is the stratified survey of 231 farmers and 28 processor firms (26 packinghouses and 2 slaughterhouses) that assesses improved management practices, risk management plans, and volume and value of annual sales. The survey's final sample size for farmers was derived from the overall population of 4,451 farmers, and for firms from a population of 98 processors (packinghouses and slaughterhouses) that meet TraSa Project beneficiary requirements, using a confidence level of 95 percent and a 6 percent margin for error. A limitation with the proportionate sampling regarding the survey size for processor firms (packinghouses and slaughterhouses), from the target population of 98 generated a sample size of only 6. Thus, a practical approach to sampling processor firms was needed to accurately capture TraSa Project's outcomes. The evaluation team, in agreement with IESC, determined that a sample size of 30 processor firms was required, but due to challenges faced in the field with collecting data from slaughterhouses, such as overall hesitation from slaughterhouses to partake in the surveys (further detailed in the Evaluation Limitation section of this study), the final number of processor firms surveyed by the evaluation team was 28. The overall sample size of 258 was met, by surveying more farmers. This has been further detailed in Section 2.6: Evaluation Limitations.

Findings and Conclusions

I4DI determined that the sector is in many respects well-positioned to improve its food safety and animal health standards. There is a coherent SPS system in place in the DR, that is well developed in some respects, with APHIS having approved over 60 fruit and vegetables as eligible to be exported to the U.S, and a competent albeit resource-constrained government authority overseeing the SPS system. This SPS system will serve as a platform for the TraSa Project. Many farms already had well established food safety procedures in place, particularly among the avocado, poultry, and swine producers and processors. Other farmers and processors had poorly established procedures. The wide variance of attainment among the various subsectors was apparent in the data and confirmed in key informant interviews. There is broad agreement among the government representatives interviewed that the sector needs the services that will be provided by the TraSa Project. Overall, the sector is broadly receptive to the TraSa Project and its intended interventions, and willingly and in some respects enthusiastically participated in the evaluation team's baseline surveys and interviews.

Recommendations

The evaluation team's research for the baseline study provided an overall picture of the SPS systems of the DR and a basis for recommendation of IESC to consider the following:

1. The lack of resources for the government is a constraint to the development of the sectors and threatens the project's sustainability. IESC should help to develop, along with government agency representatives, a sustainability plan that maintains the project's most essential services after the project is over.

[1] OECD/DAC Network on Development Evaluation: Better Criteria for Better Evaluation: https://www.oecd.org/dac/evaluation/revised-evaluation-criteria-dec-2019.pdf.

2. An integrated approach is necessary. IESC should put special emphasis on collaboration and communication among government and industry.
3. A national strategy to improve the SPS system is needed. The tendency for managers to focus on specific day to day problems is at the expense of long-term solutions.
4. TraSa can support laboratories with training, technical assistance and resources to assist the agricultural sector's efforts to assess and reduce the risk of food-born illnesses and animal diseases . Laboratories have inadequate resources and staff are unable to support the sector in a fully professional manner. The DR's laboratories were especially hard hit by COVID-19 which sharply reduced their revenues. Further, TraSa can coordinate its efforts with the InterAmerican Development Bank (IADB) which has agreed to provide concessional loans to support the laboratories with equipment, supplies, and trainings.
5. TraSa can also support the National Trade Facilitation Committee's (NTFC) effort to meet the requirements of the WTO's Trade Facilitation Agreement (TFA). TraSa should engage directly with the NTFC to determine how best to support the DR's effort to fully implement the TFA. This is especially important in light of the DR's eight "Category C" notifications, which indicate that assistance is needed to fully meet implement the TFA. IESC should also consider adding a custom indicator related to TFA notifications.

1. Introduction and Purpose

1.1. Project Context

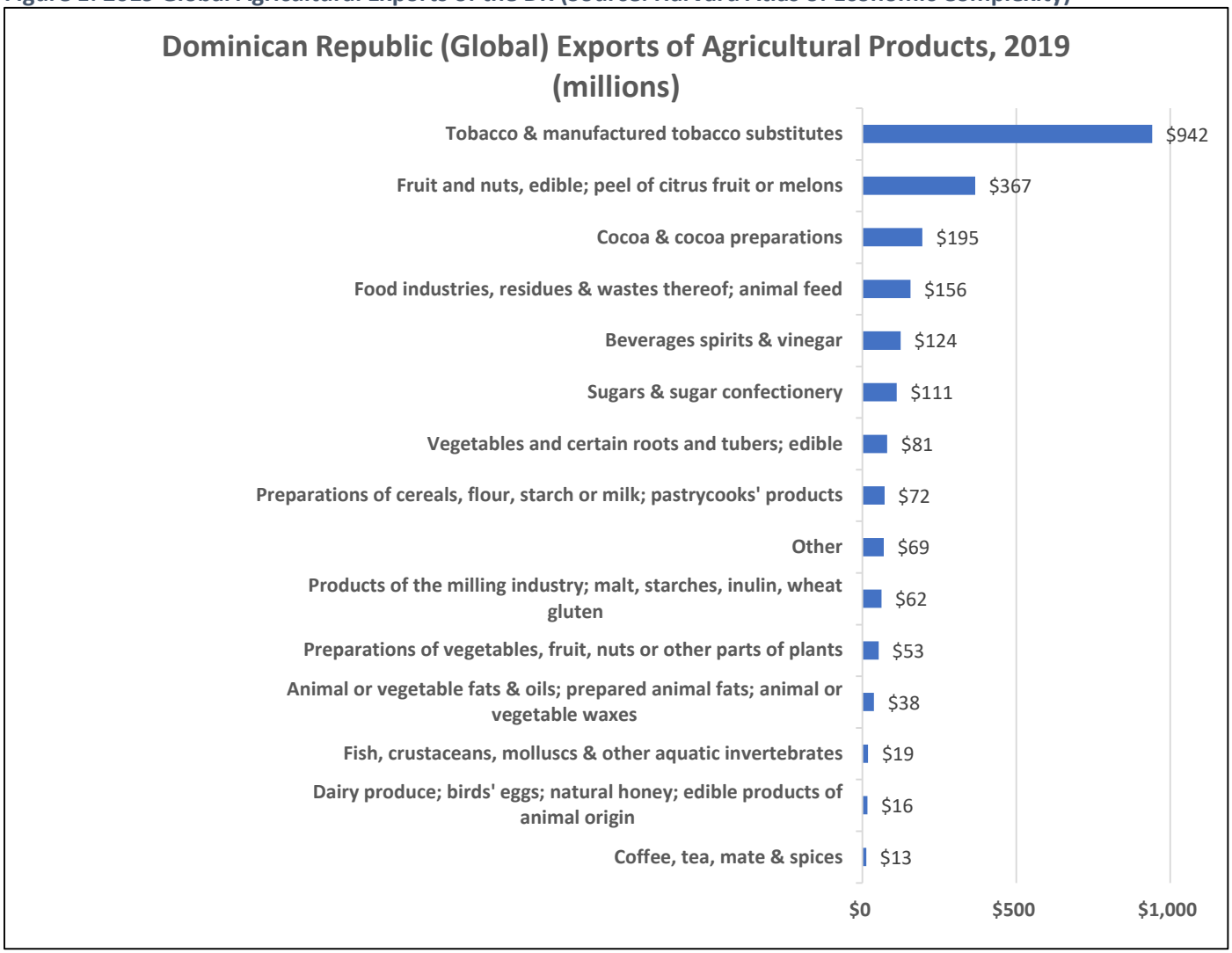
As the TraSa Project will be focused upon agricultural SPS and food safety systems, it is key to understand the Dominican agro-food sector. This section provides information on the economic trends and data relevant to TraSa's related sector and specific value chains and their exports. Secondary data presented here provides the overview of the context within which TraSa will have to operate.

Agriculture and food production, comprising all crops and livestock, and including fruits and vegetables, sugar, beverages, tobacco, and food processing, is one of the DR's most important industries. Since the mid-2000s, agro-food has accounted for 10 percent of GDP, similar to other countries in Latin America and the Caribbean such as Chile (9 percent) and Costa Rica (9.5 percent). Total agro-food exports have doubled between 2000 and 2019, presently accounting for approximately 18 percent of total merchandise exports[2]. Data for 2020 is not yet available from international data services like UNCOMTRADE and FAOSTAT. The data for 2020 may also be less reliable for comparisons because of the impact of the COVID-19 outbreak which impacted international supply chains throughout 2020, and as such may be treated as an outlier year.

Figure 1 below, shows the agriculture and food exports of the DR in 2019 and compares them to exports of other sectors of the economy. It is the DR's largest export sector, greater than gold and other minerals, medical instruments, and textiles. The figure below represents the exports of agriculture and food, which are primarily comprised of tobacco-related products, with fruits and nuts and cocoa beans also playing import roles. Alcoholic beverages, and sugar are also important contributors to the DR's global commodity trade.

[2] Harvard Atlas of Economic Complexity.

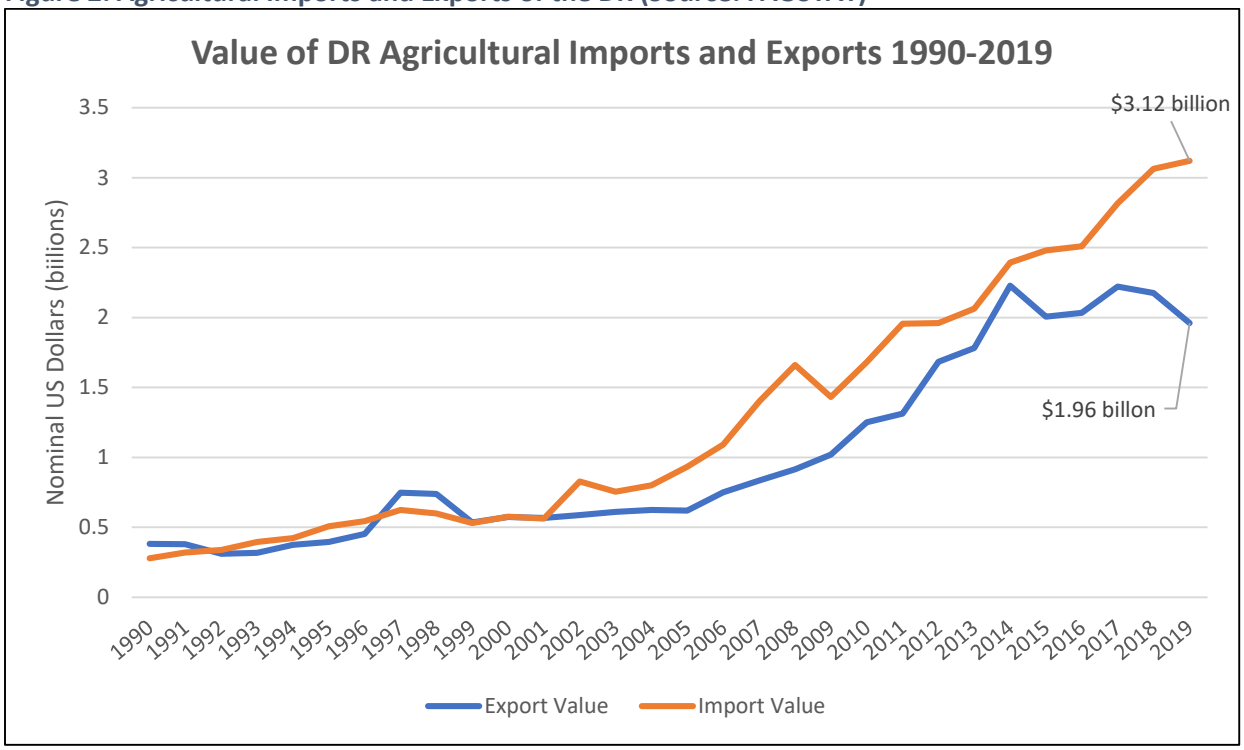
Figure 1: 2019 Global Agricultural Exports of the DR (Source: Harvard Atlas of Economic Complexity)



For the purpose of the baseline study, the fruits, vegetables, and cocoa commodity trade values are of interest considering TraSa's priority crop value chains[3]. Regarding international trade of the sector over time, Figure 2 provides a long-term look at the DR's agricultural exports and imports in value terms. In 2000, the DR exported roughly $500 million in agricultural products; since then, exports have grown by a factor of roughly 4, to just over $1.96 billion in 2019. While these figures and rates of growth for exports are impressive, imports have also grown remarkably during the same period. Figure 2 also captures the growth of imports from 1990-2019. In 2019, imports totaled roughly $3.1 billion, with the DR's agricultural trade deficit exceeding $1.0 billion that year.

[3] TraSa priority crop value chains include papayas, cucumbers, tomatoes, avocados, pineapple, cocoa, chili and bell peppers, eggplants. TraSa's livestock value chains, swine and poultry, are not featured in Figure 1 likely due to the restrictions on livestock exports from the DR that are currently in place.

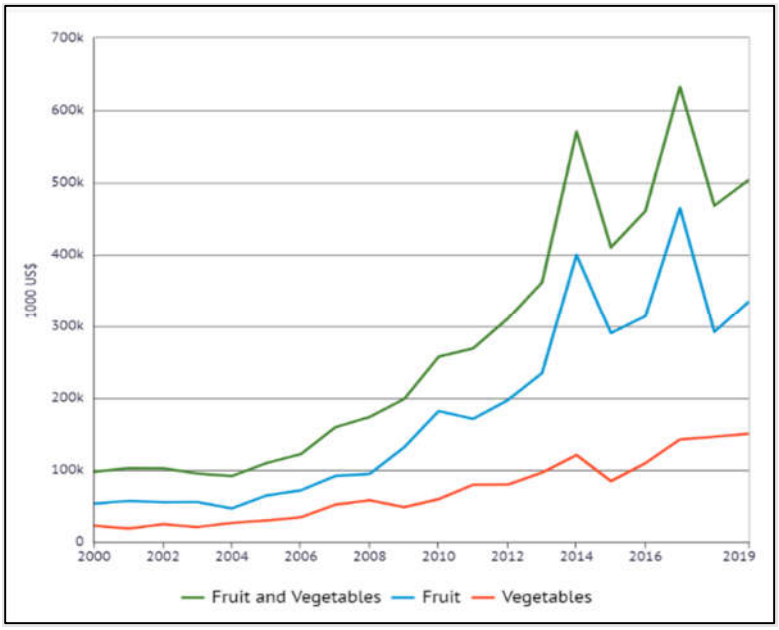
Figure 2: Agricultural Imports and Exports of the DR (Source: FAOSTAT)



The DR's agricultural sector is in some respects a model of the gains from specialization that is the foundation for classic economic trade theory. Its agricultural imports are to a large extent from the U.S. and Canada, in the form of corn, wheat, and soybeans, which are more cheaply produced in temperate climates under extensive cultivation on large farms and through agro-enterprises. Conversely, the DR's exports are from tropical permanent crops such as bananas, cocoa, sugar, avocados, pineapples, and mangoes.

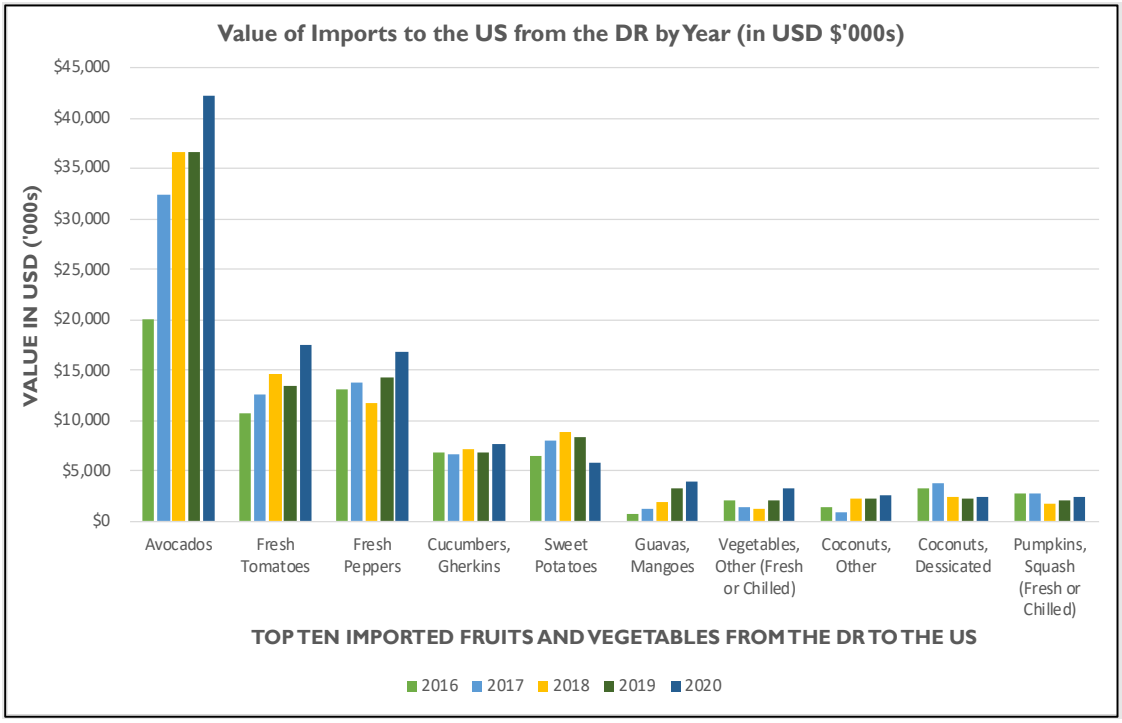
Fruits and vegetables are an important element of the DR's trade, comprising nearly 20 percent of all agricultural exports. Figure 3 presents the DR's exports of fruits and vegetables in value terms from 2000-2019 and shows an impressive growth. In 2000, exports of fruits and vegetables were just slightly more than $97 million; in 2017 they surpassed $630 million, before falling to just over $500 million in 2019. The poultry and swine are not exported as the DR has not been approved for exports to the U.S. or the EU, based on animal health and food safety requirements.

Figure 3: DR Exports of Fruits and Vegetables in thousands of nominal USD, 2000-2019 (Source: FAOSTAT)



Regarding the products that the United States (U.S.) imports from the DR, Figure 4 below shows the top 10 products by value. Avocados, primarily the large, green-skinned varieties, are the top imported fruit and vegetable from the DR, followed by fresh tomatoes, peppers, and cucumbers. Notable here in Figure 4 below is the doubling of avocado imports from 2016 to 2020, from slightly more than $20 million in 2016 to over $42 million in 2020.

Figure 4: Top ten imported fruits and vegetables by the U.S. from the DR, in thousands of USD, 2016 - 2020. Adapted from USDA/FAS Global Agricultural Trade System (GATS)



The increase in the value of imports of avocado from the DR into the US was driven primarily by an increase in the volume imported, which grew by 100.5 percent (more than doubling). Conversely, the price during this period (2016-2020) grew by about 10 percent. Currently, green skinned avocados, which make up about 95 percent of imports by volume of all avocado imports from the DR, averaged $1,447/MT from Jan. 2021 to October 21, a 3 percent decline in average value from the same period in 2020.

1.2. Project Description

The USDA-funded FFPr TraSa project is implemented by IESC, a nonprofit organization dedicated to equitable, sustainable economic growth in developing countries. TraSa aims to improve the efficiency, coordination, and transparency of the trade, commercialization, and safety of food and agricultural products. TraSa will help facilitate these improvements by supporting the implementation of science and risk-based sanitary and phytosanitary (SPS) measures, standards, and regulations. SPS and food safety issues are a significant barrier to the DR's access to high-value markets, a major factor limiting agricultural production, and a risk to consumer health. By addressing these issues, the project will expand the DR's local, regional, and international trade in agricultural products; increase agricultural productivity; and improve consumer access to safe foods. To achieve these objectives, TraSa will build farm and institutional capacity in SPS, improve the application of the SPS risk management system at borders, and leverage private sector investment to further develop cold chain systems at various sea and airports. With an estimated value of $13.7 million in technical and management funds, the project will run for five years, from October 2020, through September 2025 and is currently in its first year of implementation.

TraSa Goals and Activities. TraSa's goal is to advance SPS and food safety systems in the DR by supporting the implementation of SPS and food safety measures, standards, and regulations leading to improved efficiency, coordination, and transparency of the commercialization, trade, and safety of food and agricultural products. TraSa will achieve this goal through four interrelated activities as follows:

- Activity 1: Capacity Building: Promote Improved Policy and Regulatory Framework: TraSa will support capacity building of government institutions to implement science and risk-based SPS and food safety measures, standards, and regulations to facilitate trade in food and agricultural products. TraSa will additionally engage and leverage private organizations to develop evidence-based applied research and other products that builds and sustains this effort. IESC will assess government institutional capacity in SPS; provide training to public sector employees, including lab technicians, on implementation of SPS and food safety systems; and, support the public sector in implementing plans to address national priorities. TraSa will work with the Government of the DR to improve the single window into a more fully integrated risk management system at the interagency level for increased efficiency and transparency of trade. TraSa will also develop research collaboration and professional development initiatives between different stakeholder groups such as government institutions and university systems to build a sustainable Community of Practice (CoPs) related to SPS issues and to support the public sector. TraSa intends to provide technical assistance and training to DR Customs, the Ministry of Agriculture, and other ministries, agencies, or border agencies as appropriate to implement SPS-related risk management systems at borders and maintain cold chain while conducting inspections. Beneficiaries for this activity include public institutions and public sector employees involved in SPS, food safety, and trade facilitation.

- Activity 2: Capacity Building: Government Institutions: TraSa will build the capacity of Dominican government institutions to develop a modernized SPS and food safety related policy and regulatory framework that respond to the needs of DR's trade agreements and international best practices. TraSa intends to do this by assessing the DR's legal and institutional framework for SPS policy; building the capacity of the National SPS Committee, supporting the National SPS Committee address priority issues; and, providing technical assistance, including the delivery of training, to National SPS Committee members to facilitate SPS-related process reforms. TraSa will also support the National Trade Facilitation Committee (NTFC) in developing policies required to implement the SPS-related aspects of the World Trade Organization Trade Facilitation Agreement (TFA) including test procedures, risk management systems, border agency cooperation, and trade in perishable goods (including cold chain). TraSa additionally will increase the public sector's capacity to effectively engage the private sector and other stakeholders in policy reform initiatives and knowledge sharing. Intended beneficiaries for this activity include national public-private coordinating committees, government agencies, universities, and trade associations.

- Activity 3: Cold Chain Improvement: TraSa will support the development of the DR's cold chain infrastructure to help implement SPS and food safety standards in the DR. TraSa intends to do this by assessing market opportunities for cold chain investments and facilitating public private partnerships to catalyze market driven investment in cold chain systems while also targeting low-cost solutions for farmers. These can be in the form of small equipment grants for farmer cooperatives and small businesses, awarded through a competitive process. TraSa plans to provide training in cold chain technologies and practices, as well as support cold chain traceability systems. Beneficiaries of this activity are airport and seaport operators, transportation and logistics companies, warehousing and storage facility operators, importers, exporters, wholesalers, major retailers, aggregators, producer cooperatives, and farmers. TraSa intends to identify cold chain market opportunities and/or application of risk-based inspections at key ports of entry including the seaports of Haina, Caucedo, and Manzanillo as well the airports of Santo Domingo, Punta Cana, and Santiago. The ports were originally selected based on trade volumes (current) in food and agricultural products, while port at Manzanillo added at the request of the U.S. Ambassador to reflect GoDR interest in developing the port in accordance with their export development strategy. TraSa intends to finalize the list of ports prior to conducting a market opportunity study that will help ascertain cold chain investment opportunities at these ports.[4]

- Activity 4: Training: Sanitary and Phytosanitary Standards: TraSa will offer training to private sector firms, farmers, labs, and consumers. Through this activity, TraSa will enhance the private sector's understanding of and compliance with international SPS and food safety standards. The training to farmers and firms will include SPS and food safety practices, such as integrated pest management (IPM), post-harvest handling, and good agricultural practices/good manufacturing practices, as well as use of traceability technology and the single window (VUCE). TraSa's technical assistance will also extend to private labs for conducting SPS and food safety testing in accordance with international standards. TraSa will also endeavor to raise consumer awareness of food safety through media campaigns. Beneficiaries of this activity include producers, firms, private labs, and consumers.[5]

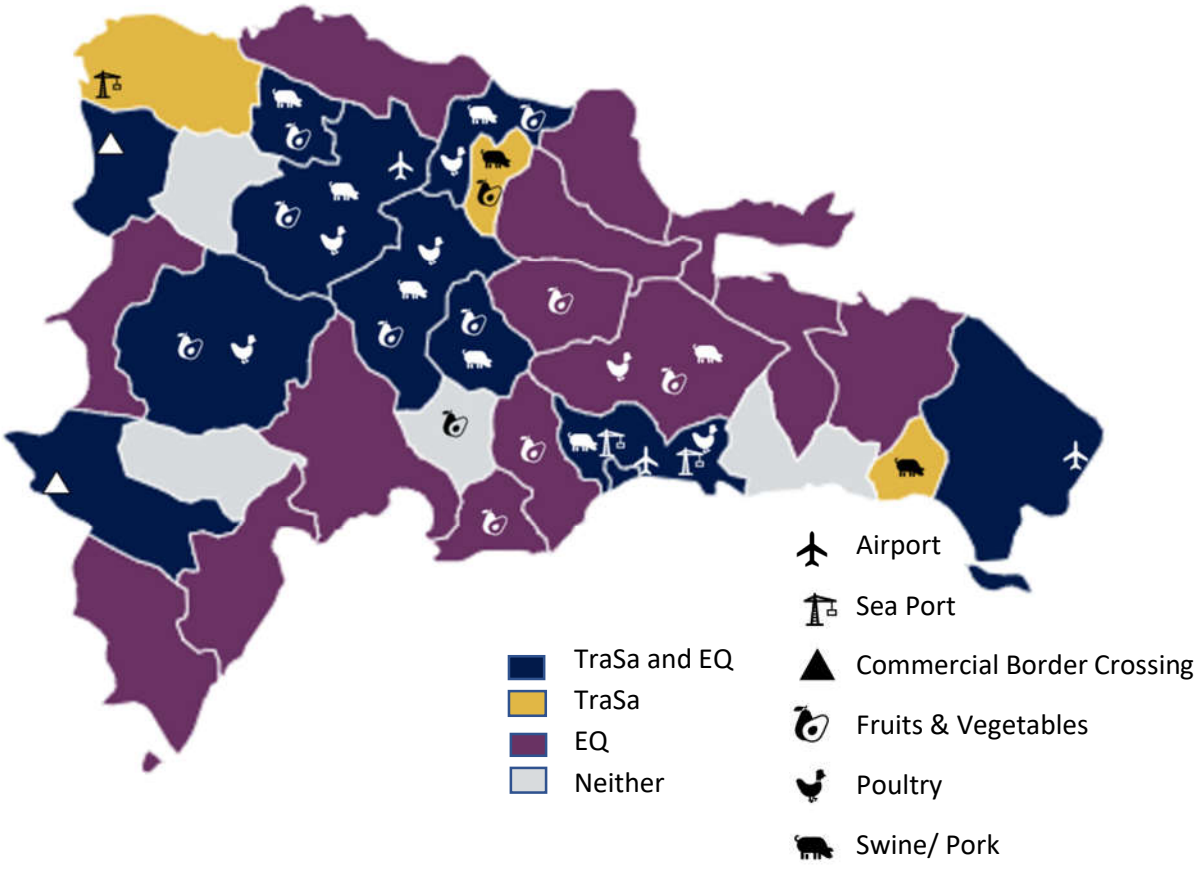
[4] TraSa Project Year 1 Work Plan

[5] Request for Proposals: Evaluation Services for IESC's USDA-funded TraSa Project, IESC-TraSa-2021-001

TraSa Value Chains. The value chains targeted by the TraSa Project include nine crops namely avocados, tomatoes, peppers (bell and chili), cucumbers, papaya, eggplant, pineapple, and limes; and two livestock value chains namely swine and poultry. The selection of these nine crops is based on the Ministry of Agriculture, Department of Plant Health's request for a USDA's Animal and Plant Health Inspection Service (APHIS) pre-clearance program for these crops. Swine and poultry value chains were selected based on USDA APHIS' recommendation, since APHIS provides support in the DR for swine and poultry disease surveillance. Another key reason to include poultry and swine is that they are the most consumed meats in the DR and therefore important from a local consumer safety perspective[6].

TraSa Geographic Scope. TraSa intends to work in over 15 provinces in the DR. The USDA FFPr EQ Program is also implemented by IESC (and detailed in a subsequent section 'Complementary Programs in the DR' of this report) in the DR with a scope similar to TraSa. Figure 5 shows TraSa's and EQ's geographic scopes and how they overlap. All regions colored in dark blue had both EQ and TraSa activities. Regions in yellow are only covered by TraSa, and those in purple are regions in which EQ worked but not TraSa. The four regions in light green have no IESC activities. Additional provinces will also be considered by TraSa as project intervention locations. See Table 2 for more details. Key airports, seaports and border crossings have also been displayed to help display an overall picture of the scope and scale of the TraSa Project in the figure with appropriate icons.

Figure 5: Geographic Scope of the TraSa Project and EQ Program



[6] TraSa Project Year 1 Work Plan

TraSa intends to work in the following locations as shown in Table 2 below.

Table 2: Table Showing TraSa Value Chains and Service Offerings Distributed by Location

Priority Commodities/Service Offerings	TraSa Project Geographic Scope
1. Greenhouse Vegetables Producers and Exporters	San Juan, Santiago, La Vega, Espaillat, and San José de Ocoa
2. Swine and Poultry Slaughterhouses	Valverde, Santiago, Espaillat, Hermanas, La Vega, Monsenor Nouel, Santo Domingo, and la Romana
3. Commercial Border Crossings to Haiti	Dajabón and Independencia
4. Sea and airports	Santo Domingo, Santiago, Monte Cristi, and Altagracia
Priority Commodities/Service Offerings	**Additional Provinces for TraSa to Consider for Priority Commodities**
5. Avocados	San Cristobal
6. Pineapples	Sanchez Ramirez and Monte Plata

TraSa Stakeholders. TraSa has a diverse group of stakeholders, and their role and relationship to the project are outlined below:

- Private Sector Stakeholders: These include private labs working in the agriculture sector, private sector firms, trade associations, producers, and farmers.
- Public Sector Stakeholders: These include inter-agency, public-private committees responsible for coordination of policy issues related to SPS and trade facilitation in the DR such as the National SPS Committee (NSPSC) and the National Trade Facilitation Committee (NTFC). Key members of these committees include Government of DR (GoDR) counterparts like the Department of Food Safety (DIA); Department of Plant Health; Department of Animal Health, DIGEMAPS, an agency within the Department of Public Health, DECA, and Customs and border agencies.
- USDA Foreign Agricultural Service (FAS) personnel in Washington and at post in Santo Domingo.

TraSa Steering Committee. In order to effectively collaborate with diverse project stakeholders mentioned above, as well as USDA/Washington and Santo Domingo, TraSa Project has established a Steering Committee, wherein TraSa serves as a technical resource that addresses capacity needs for Dominican Republic processes related to the WTO TFA for topics such as agriculture and food safety. Members include representatives from FAS/FFPr-DC, FAS-DR, USDA/FAS Trade and Regulatory Capacity Building Division (TRCBD) and APHIS-DR, as well as TraSa's senior management. Through quarterly Steering Committee meetings that it convenes with members, TraSa will arrive at consensus building on key programmatic issues related to agriculture and food safety, which will help inform subsequent years activities and interventions. TraSa through its Chief of Party will be responsible for the overall facilitation of the Steering Committee meetings.

TraSa's Work as it Relates to World Trade Organization's (WTO) Trade Facilitation Agreement (TFA). An important aspect of the WTO's TFA is that the WTO recognized that members, particularly many of the developing country members, needed substantial time and resources to reach or maintain their commitments. If a member cannot meet the TFA commitments, it can notify the WTO under "Category C", indicating that it designates a transition period in order to meet the commitments of the agreement.

Furthermore, the member also commits to the acquisition of implementation capacity through the provision and assistance of capacity building. The DR has identified eight disciplines of the TFA under Category C: *Test Procedures, Risk Management, Average Release Times, Expedited Shipments, Perishable Goods, Border Agency Cooperation, Acceptance of Copies*, and *Single Window*. Some of these disciplines will be impacted by the TraSa Project, particularly *Test Procedures* and *Risk Management* which relate strongly to the project's effort to develop the capacities of the laboratories. The *Perishable Good*s discipline, which relates strongly to fruit, vegetables, and livestock products, will be supported by the cold chain infrastructure needed to maintain proper temperature controls. The provision of TraSa trainings and other services will also assist in the implementation of the agreement in an indirect manner. The overall focus on improvement of a wide variety of activities related to trade and cooperation among different government and the private sector will lead to improvement in *Border Agency Cooperation* and *Average Release Times.* TraSa will also work closely with the USDA/FAS/Trade and Regulatory Capacity Building Division (TRCBD) regarding trainings and online courses related but not limited to general staff training; FSMA compliance; socializing the "Don't Pack a Pest" campaign to key project stakeholders in the Ministry of Agriculture, and DR Customs; and enhancing risk management systems at borders, and risk-based inspections.

TraSa Targeted Beneficiaries. The TraSa Project interventions are targeted towards the following beneficiaries:

- Public sector: The NSPSC, NTFC, DIA, Ministry of Agriculture's Department of Plant Health and Department of Animal Health, DIGEMAPS, DECA, Customs and Border Agencies, and cold chain facilities at sea and airports.
- Private sector: Trade associations, individuals, firms and farmers (that work in the priority commodities and livestock value chains, and private labs working in the agriculture sector.
- Dominican universities and public research institutions (i.e. UASD and ISA University).
- Consumers.

The project is intended to benefit more than 7,000 beneficiaries in the public sector, private sector, and research institutions as well as the larger population of consumers. During the first year of the project, most beneficiaries will be from the public sector with more extensive work with the other beneficiary groups beginning in the second year.

Implementation Strategy. The TraSa Project's design and approach are informed by World Bank recommendations for strengthening SPS and food safety systems, based on an FDA-funded report; USAID's Comprehensive Approach to Trade Facilitation and Capacity Building that incorporates best practices from the WTO and World Customs Organization; USAID's Human and Institutional Capacity Development Handbook that describes strategies for improving public sector performance; IESC's internal community of practice, including senior management, the chief of party, and the IESC project staff of USDA's Paraguay Trade-Facilitating Agricultural Systems and Technology (T-FAST[7]); and the TraSa team's own experience, internationally and in the DR as the implementer of the USDA FFPr EQ Program. For technical SPS content, TraSa will draw on USDA expertise including materials from the USDA/USAID/

[7] Food for Progress Trade-Facilitating Agricultural Systems and Technology (T-FAST) project in Paraguay, funded by USDA, aims to simplify, modernize, and harmonize processes for the export, import, and transit of agricultural goods in Paraguay by promoting improved policy and regulatory framework, building capacity of government institutions and trade associations, supporting the infrastructure for markets and trade, and other on-demand support.

FDA Food Safety Network. TraSa's implementation strategy approach is guided by the following principles:

1) **Leverage systems approach.** Combine a systems-level approach with institutional capacity building, with a focus on strengthening the entire SPS and food safety system, including the public sector, private sector, research, academia, producers, and consumers, while recognizing that the SPS and food safety system intersects with other systems including those for trade facilitation, cold chain, and agricultural value chains.

2) **Ensure stakeholder ownership.** Help to maintain country ownership and leadership of reform efforts and support shared responsibility between the public and private sectors. For long-term sustainability, it is crucial that the NSPSC and the NTFC lead the reform process, with TraSa's technical support. SPS, food safety, and trade facilitation processes involve multiple government agencies and require a collaborative approach; with both NSPSC and NTFC having the mandates to coordinate those actions.

3) **Sequence interventions.** The first step involves building political will for reform among key stakeholders and implementing fundamental principles, such as science- and risk-based decision making, transparency, and stakeholder engagement; then simplifying processes and procedures as appropriate; followed by building compliance management capacity in the public and private sectors; and finally, facilitating inter-agency cooperation during implementation.

4) **Build core competencies.** Build the four core capacities required to effectively implement food safety systems generally, and risk-based systems specifically: 1) institutional norms and systems, 2) management systems, 3) infrastructure, and 4) human capital.[8]

Training methodologies. TraSa will use a combination of training methodologies to build capacity in the public and private sectors, through online learning modalities such pre-recorded and live webinars; in-person classroom-style intensive short-courses; practical exercises and demonstrations; and study tours. To facilitate financial sustainability of training programs beyond the TraSa Project's duration, TraSa will promote use of readily available, free or low-cost training materials as feasible. Online learning will include use of the SPS modules developed by the USDA/USAID/FDA Food Safety Network and the International Plant Protection Convention, while in-person, classroom-style training will include the USDA/USAID/FDA Food Safety Network courses on pest risk assessment and inspections as well as the World Food Logistics Organization Institute intensive training program on cold chain. Practical exercises will include conducting inspections following site-specific protocols to maintain cold chain. [9]

The study tour methodology is intended to provide first-hand observation, experience, and knowledge sharing for public and private sector participants through development of beneficiary eligibility and selection criteria based on the tour objectives; selection of beneficiaries through a competitive application process, in consultation with USDA; use of an expert facilitator in the destination country; pre-departure briefings, daily briefings during the trip, and a post-travel debriefing on return; a structured study tour agenda with time built in for guided learning discussions; development of post-trip

[8] USDA TraSa Project Year 1 Work plan
[9] Ibid.

action plans, when applicable, to follow up on learnings; and a post-trip survey for monitoring and evaluation purposes.[10]

Structure of Implementation and Partners. IESC leads project implementation overall and serves as technical lead for trade-related policy and capacity building activities. IESC will additionally field all project staff, with subrecipients providing technical assistance in their areas of expertise. Purdue University brings technical expertise on SPS and food safety issues to technical assistance and training activities; Global Cold Chain Alliance-World Food Logistics Organization (GCCA-WFLO) contributes cold chain related activities, including public policy, public sector capacity building, and technical assistance/training for the private sector. LixCap applies its experience in cold chain systems market research and cold chain investment market research and facilitation to assess the investment opportunities for cold chain systems and facilitate scalable investment; and the Center for Agricultural and Forestry Development (CEDAF) provides expertise in farmer training and scale up its food safety traceability system that was developed with USDA support. All of TraSa's work in Year One will take the form of technical assistance to the public and private sectors. Beginning in Year Two, TraSa will also implement several small grants programs for research (academia/public sector), cold chain equipment (private sector), and SPS-related equipment (private sector).[11]

Complementary Programs in the DR. Three on-going programs have some level of complementarity with TraSa Activities and intended interventions.

1. **USDA FFPr EQ Project** *(October 2015-November 2021).* This project is implemented by IESC and is focused on increasing agricultural productivity and trade in five high-value horticultural and vegetable value chains for cocoa, pineapples, avocados, greenhouse vegetables, and Asian vegetables through five key activities that: a) strengthen producer organizations; b) build the capacity of trade associations; c) improve cold chain management; e) increase adoption of food safety practices and value addition through in-kind equipment donations; and, f) promote consumer awareness of food safety through mass media communications campaigns. The project differs from TraSa in that EQ focuses on promoting exports of value chains and looks at a broad set of related issues including productivity, quality, marketing/branding, and logistics as well as sanitary and phytosanitary (SPS)/food safety. With the EQ project coming to an end in November 2021, the experience and contextual understanding gleaned from its six years of implementation, provides essential background and a foundation for the TraSa project. Much of the training and technical assistance provided in EQ will be expanded to a broader base of producers and further enhanced by the TraSa team.
2. **USDA FFPr SAFE/PROGRANA Program** *(September 2015-December 2023.)* Implemented by NCBA/CLUSA, this program focuses on increasing agricultural productivity and trade in the beef and dairy sectors with the aim to facilitate beef exports from the DR to the U.S. While TraSa is sector agnostic, and SAFE/PROGRANA's relevance to TraSa is largely indirect, cross-learning about public and private sector capacity building can be beneficial to TraSa as it implements its activities on general functionality of the SPS and trade facilitation systems, import-related issues, and sanitary practices for domestic poultry and pork production.
3. **Inter-American Development Bank (IDB) Agricultural Health and Innovation Project** *(Tentative Start in December 2021).* This is a $50 million loan for supporting the DR's Ministry of Agriculture improve agricultural and food health and safety services, innovation and the transfer of SPS

[10] Ibid.
[11] Ibid.

technologies, and the agricultural statistical system. In terms of sector-specific activities, the IDB plans an emphasis on animal health, especially on vaccinations and traceability, for the cattle, beef, and dairy sectors. While the IDB project focuses on high level policy, infrastructure, and organizational issues exclusively working with the Ministry of Agriculture, TraSa supports other government agencies including NTFC, national SPS inter-agency coordination committees, in addition to the Ministry of Agriculture for which it plans to provide follow up technical assistance for public sector employees.

TraSa Project Year 1 Focus. TraSa's first year will focus on building on a positive momentum for SPS and trade facilitation reforms that will lead to the execution of a comprehensive package of interventions that can position the project for long-term success. A series of activities designed to further build political will for reforms within line ministries and instill fundamental principles such as risk-based and science-based decision-making will also be a project focus in Year 1. A few key Year 1 accomplishments are included below:

- Established and convened the TraSa Steering Committee;
- Conducted stakeholder outreach and coordination;
- Developed Letters of Commitments (LoC) with key partners;
- Received approval of IESC's monetization plan to the DR from USDA International Food Assistance Division's operations branch; and,
- Led staff recruitment: IESC recruited and rapidly mobilized the TraSa chief of party and an administrative team, and technical staff.[12]

1.3. Results Framework and Theory of Change

TraSa's Theory of Change is ***if*** SPS and food safety policies across government agencies and the private sector are prioritized and coordinated by technically strengthened national organizing bodies; ***and if*** key agencies in government institutions have increased technical and managerial capacity to implement a science- and risk-based SPS and food safety system; ***and if*** appropriate cold chain infrastructure for enforcement of and compliance with SPS and food safety is in place; ***and if*** firms and farmers consistently apply knowledge gained from SPS-related training and technical assistance, ***then*** the safety of food and agricultural products and efficiencies in trade are improved and result in expanded domestic, regional, ***and*** international trade in agricultural products as well as increased agricultural productivity. See figure 6 for the graphical representation of TraSa's theory of change.

Figure 6: TraSa Project's Theory of Change Diagram[13]

[12] Trade Safe Semi-Annual Performance Report 01
[13] TraSa Evaluation Plan

TraSa is designed to primarily support the expansion of local, regional, and international trade (FFPr Strategic Objective 2 – SO2) through all four TraSa activities namely Activity 1: Capacity Building: Promote Policy & Regulatory Framework; Activity 2: Capacity Building of Government Institutions; Activity 3: Cold Chain Improvement; and Activity 4: Training: Sanitary and Phytosanitary Standards (SPS), and secondarily to support the increase of agricultural productivity (FFPr Strategic Objective 1 -SO1), mainly through Activity 4. The graphical representation of the Results Framework and the underlying critical assumptions are detailed in Annex G of this report.

1.4. Purpose of the Evaluation

The purpose of the TraSa Baseline Study is to complete the following:

- Establish baseline data (and trendline, as applicable) for five standard and three custom performance indicators prior to the start of project activities.
- Establish baseline data and trendline for four context indicators.
- Make possible an analysis that verifies the realism of proposed targets.
- Thoroughly document fit-for-purpose data collection methods for relevant indicators to ensure the same metrics can be applied throughout the life of the project to the extent possible, increasing the likelihood of data reliability.

The key audience for the TraSa Baseline Study includes the IESC TraSa Project staff, including the TraSa Steering Committee comprised of key U.S. government stakeholders, USDA staff, Dominican government stakeholders, and other USDA implementers.[14] The final version of this report will also be publicly available to a wider audience that may include TraSa stakeholders and beneficiaries in the DR, as well as the general public. The findings of this baseline study will aid the TraSa Project establish targets that are reflective of the agricultural context in the DR and lay the framework for TraSa performance monitoring at the midterm and endline stages of the project. The baseline study will also help establish the pre-intervention context for the TraSa Project as it aims to contribute towards FFPr Learning Agenda priority questions in focus areas: 1) Market Systems, 2) Quality of Standards, and 3) Risk and Uncertainty, as well as cross-cutting areas namely culture, demographics, and sustainability.

The TraSa Baseline Study was conducted by the evaluation team led by I4DI with local partner Fundacion REDDOM. This baseline study focused directly on gathering data on current standards of SPS practices from private sector firms or processors (such as packinghouses and slaughterhouses) and farmers in TraSa's priority commodity value chains namely avocados, limes, cucumbers, bell peppers, chili peppers, eggplants, tomatoes, papaya, pineapple, swine, and poultry. The nine priority crops are those that the Department of Plant Health is targeting for a reduction in emergency action notifications when exported to the U.S, while swine and poultry are prioritized livestock for USDA's Animal and Plant Health Inspection Service (APHIS) animal disease work in the DR.[15] The evaluation team facilitated interviews with key regulators in the government, consistent with IESC's efforts to directly involve government food safety and animal health authorities in the TraSa Project. Additionally, the evaluation team lead met with IESC's Chief of Party (CoP), MEL, and project managers in face-to-face meetings in Santo Domingo to gather their observations about the TraSa Project and its direction, given their prior

[14] Evaluation Services for IESC, Request for Proposals, December 2020.
[15] USDA FFPr TraSa Project Year One Work Plan, November 1, 2020-September 30, 2021

experience in similar capacities on the USDA EQ Program, a six-year program implemented by IESC in the DR, that is coming to a close in November 2021.

2. Evaluation Design and Methodology

2.1. Evaluation Questions

The baseline study lines of inquiry were developed around the eight performance indicators (five standard FFPr indicators and three custom indicators). Data collected for these eight performance indicators feed into FFPr Strategic Objective 1: Increased Agricultural Productivity and FFPr Strategic Objective 2: Expanded Trade of Agricultural Products, and will inform future midterm and final evaluations as they aim to answer questions related to TraSa Project's relevance, effectiveness, efficiency, sustainability, and impact.[16] Section 2.4. Data Collection Methods details the different types of data collection instruments used for the baseline study to collect baseline data for the eight performance indicators and four context indicators. Annex C of this report details the different data collection instruments developed that help articulate the evaluation questions at baseline.

2.2. Evaluation Design

The TraSa Baseline Study employed a non-experimental (i.e. no control group against which result were analyzed), mixed-methods design to systematically integrate, or "mix" quantitative and qualitative data within our lines of inquiry. The evaluation team collected primary quantitative data from farmers and processor firms (packinghouses and slaughterhouses) and qualitative data from DR's national government representative and private testing labs. To ensure that we utilize culturally appropriate participatory data collection methods, the evaluation team: 1) Used local enumerators who were from the provinces where the data was being collected to provide clear and appropriate communication with the respondents while also creating a rapport with them; and 2) The quantitative data collection tools (i.e. the four questionnaires) used the local unit of measurement *tareas*[17] instead of hectares given the local context and the familiarity of *tareas* for the respondent in comparison to hectares. The evaluation team converted all values listed in *tareas* into hectares for the purpose of baseline study data analysis.

Due to the COVID-19 situation in the DR, utmost care was taken to ensure the safety of respondents as well as enumerators. The evaluation team followed Fundacion REDDOM's COVID-19 protocols for data collection which is informed by recommendations from the World Health Organization (WHO) and the U.S. Center for Disease Control (CDC.) This COVID-19 protocol document was submitted along with the Baseline Study Work Plan on April 12, 2021, and key elements of this protocol document are excerpted below:

- Measures to consider when traveling to the field for data collection such as wearing personal protective equipment (PPE)-masks, face shields, gloves if available; always carrying an alcohol-based gel sanitizer; conducting surveys outdoors as much as possible.
- Measures to consider when traveling in a vehicle such as always wearing masks; ensuring no more than three people (including driver) in a vehicle at a time.

[16] OECD/DAC Criteria (See footnote 1)

[17] 1 tarea = 0.06288 hectare; or 1 hectare = 15.9033 tareas

TraSa Baseline Study Timeline. With support from I4DI headquarters, the evaluation team began preparation for conducting the TraSa Baseline Study in March 2021 and saw the study through its four distinct phases.

Table 3: TraSa Baseline Study Timeline

TraSa Baseline Study Work Planning and Instruments Design	March 25, 2021-April 23, 2021
Instruments Pre-testing and Data Collection	May 3, 2021- June 11, 2021
Data Analysis	June 1, 2021- June 15, 2021
Evaluation Draft and Reporting	June 15, 2021- June 21, 2021

Ethical Clearance for Data Collection. No ethical clearance from Institutional Review Boards was required for the purpose of collecting data due to the nature of the type of stakeholder groups (i.e. no vulnerable groups such as children) and the lines of inquiry (i.e. no sensitive topics).

2.3. Sampling methods

The sampling plan section outlines the rationale for the development of the sampling frame and the specific context for and implications on data collection across the eleven priority value chains.

TraSa Target Population Context. TraSa Project's baseline study's target population includes the key value chain actors in 11 priority value chains: avocados, bell peppers, chili peppers, cucumbers, tomatoes, papaya, pineapple, limes, eggplant, swine, and poultry. Key value chain actors include farms or suppliers and processor firms such as fruit and vegetable packinghouses and livestock slaughterhouses. In addition to processing, fruit and vegetable packinghouses also export their commodities to regional and global markets. Swine and poultry slaughterhouses process and sell their processed goods to retail markets within the DR with minimal to no exporting done to international markets.

In order to develop a representative sample of the underlying target population of actors within the above-mentioned value chains, Fundacion REDDOM conducted extensive outreach to the key processors (packinghouses and slaughterhouses) and farms in the DR for the following reasons:

1. There is currently no farmer and/or processor population census in the DR, and
2. TraSa did not have a beneficiary list at the time of the baseline study

Based on the number of farmers linked to each organization and packinghouse, the Evaluation Team prepared a stratified sampling matrix taking into consideration commodities, provinces, and value chain categories (e.g. packinghouses and farmers). This was to make sure that every commodity is thoroughly assessed; and, that targeted provinces were considered. Lists of farmers for random selection were requested from farmers' organizations and packinghouses, covering the priority commodities and livestock value chains.

TraSa Baseline Study Population Size Determination. In the TraSa Project's Request for Proposal: Evaluation Services for IESC had mentioned a total target population of 1,875. As TraSa did not have a list of intended beneficiaries at the time of this study's design (as previously detailed), Fundacion REDDOM conducted initial outreach and desk review to help TraSa identify a pool of beneficiaries with the characteristics of the targeted TraSa population such as i) priority value chain commodity, ii) geographic location, iii) beneficiary type, i.e. farmer, firm/processor within priority value chain; iv) farm size: smallholder (with less than 5 hectares of land) and non-smallholder (with more than 5 hectares of

land) and firm size: small (with less than 50 employees), medium (more than 50 employees and less than 250), large (more than 250 employees).

This outreach by Fundacion REDDOM further helped establish the proportions for farmers and processors by commodity in the DR. The evaluation team identified an overall population of 4,549 farms and processor firms (i.e., 4,451 farms and 98 packinghouses/slaughterhouses) operating in the above-mentioned value chains that met TraSa's target population characteristics (See table 5 for more details on the population.) This information was provided by farmers organizations and packinghouses the evaluation team consulted during the study's inception/work planning phase and is higher than TraSa's anticipated beneficiary population of 1,875[18]. The evaluation team also used this larger population of 4,549 in order to arrive at a sample for this baseline study that is more representative of the overall population of farmers and firms in the DR that meet TraSa Project beneficiary characteristics.

TraSa Baseline Study Sample Size Determination. The evaluation team surveyed a total of 231 farmers, both smallholder farmers (i.e. having less than 5 hectares) and non-smallholder farmers (i.e. having more than 5 hectares) and 28 processors[19] (packinghouses and slaughterhouses) with a confidence level of 95 percent and a margin of error of 6 percent to establish TraSa Project's baseline values. Because there are so few processors relative to farmers in each supply chain, a proportionate sampling approach for farmers and processors would have rendered an uneven distribution, with processors significantly under-represented in a sampling plan (See table 5 below for more details). In that regard, the evaluation team, having received agreement with the TraSa Team, proposed a total of 30 processors to be surveyed for the baseline study. This increase constitutes a deviation from the proportionate and statistically generated totals of processor firms (originally only 1 per value chain) to 30 firms in total. An additional deviation from statistically generated totals relate to the number of firms for i) avocados, and ii) bell peppers, tomatoes, and cucumbers. These have been reworked to sample 3 avocado packinghouses and 8 packinghouses that pack bell peppers, tomatoes, and cucumbers despite their population proportion to ensure a more even distribution of packinghouse respondent. Tables 4 and 5 provide details of the Sampling Plan and its parameters.

Table 4: TraSa Baseline Study Sampling Plan: Summary Statistics

Overall Population of Farmers & Processors that Meet TraSa Target Population Characteristics	**4,549**
Confidence Level	95%
Z Value	1.96
Margin of Error	6%
Minimum Sample Size	258
• *Farms*	*228*
• *Firms*	*30*

[18] N=1,875 is the number referenced in the Request for Proposal: Evaluation Services for IESC issued in December 2020

[19] These numbers are slightly different from the sampling distribution approved by IESC (228 farmers and 30 processors) due to the difficulty the evaluation team had in securing meetings for surveys with swine and poultry slaughterhouses, but ultimately the sample size remains unchanged.

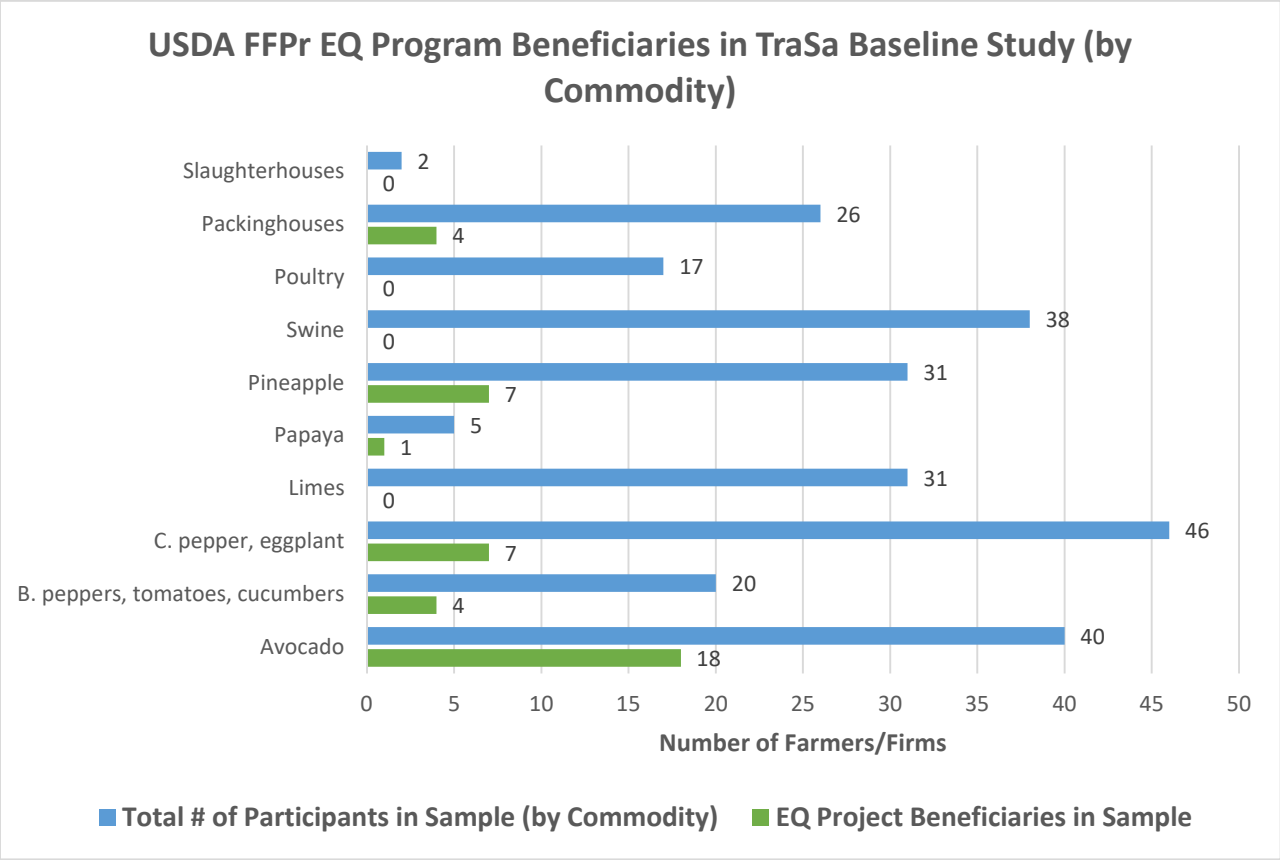
Table 5: TraSa Baseline Study Sampling Plan

Commodities	Overall Population[20]: Farms	Overall Population[21]: Firms (Packinghouses/ Slaughterhouses)	Proportion of Farms	Proportion of Firms (Packinghouses/ Slaughterhouses)	Sample Distribution Farms	Sample Distribution Firms (Packinghouses/ Slaughterhouses)
Avocados	789	28	17.7%	28.6%	40	3
Bell peppers, tomatoes, cucumbers	400	11	9.0%	11.2%	21	8
Chili peppers, eggplants	867	35	19.5%	35.7%	44	9
Limes	450	2	10.1%	2.0%	23	1
Papaya	200	2	4.5%	2.0%	11	1
Pineapple	684	12	15.4%	12.2%	35	4
Swine	750	4	16.9%	4.1%	38	2
Poultry	311	4	7.0%	4.1%	16	2
Total	**4,451**	**98**	**-**	**-**	**228**	**30**

[20] Overall population of farms in the DR that meet TraSa beneficiary characteristics
[21] Ibid.

USDA FFPr EQ Program Beneficiaries in the Sample. The sample drawn for this study includes 41 EQ Program beneficiaries[22] out of a total 258 (~16 percent) based on the value chain distribution below in Figure 7. The beneficiary information was extracted from the TraSa baseline study sample by cross-referencing the sample against IESC's EQ beneficiary list in August 2021.

Figure 7: Number of USDA EQ Program Beneficiaries in the TraSa Baseline Study Sample



Baseline Value Determination. As of December 8, 2021, the evaluation team received TraSa Project's revised target population breakdown for FFPr #3: Number of hectares under improved management practices or technologies with USDA assistance; FFPr#4: Number of individuals in the agriculture system who have applied improved management practices or technologies; FFPr#18: Value of annual sales of farms and firms receiving USDA assistance; and, FFPr#19: Volume of commodities sold by farms and firms receiving USDA assistance. Table 6 below and the subsequent section of the report details how the baseline values have been determined based on how the project plans to collect data from participants for these above-mentioned indicators.

[22] USDA EQ Program value chains (farmers and firms) include avocados, cocoa, pineapples, greenhouse vegetables, and Asian vegetables, hence the sample included 0 EQ participants in livestock, and lime value chains, as well as slaughterhouses. One EQ beneficiary also grows papayas- a TraSa value chain (in addition to another EQ value chain). Nevertheless, this farmer received EQ Program support and is captured in the TraSa baseline study sample.

Table 6: TraSa Project's Target Population Distribution by Indicator

Target population	FFPr #3: Number of hectares under improved management practices or technologies with USDA assistance	FFPr #4: Number of individuals in the agriculture system who have applied improved management practices or technologies with USDA assistance	FFPr #18: Value of annual sales of farms and firms receiving USDA assistance[23]	FFPr #19: Volume of commodities sold by farms and firms receiving USDA assistance[24]
Producers	1,200	1,200	1,200	1,200
• *Smallholder producers*	*720*	*720*	*720*	*720*
• *Non-smallholder producers*	*480*	*480*	*480*	*480*
Firms	0	0	110	110
Individuals	0	675	0	0
• *People in government*	*0*	*261*	*0*	*0*
• *People in private sector*	*0*	*414*	*0*	*0*
Total	**1,200**	**1,875**	**1,310**	**1,310**

For FFPr# 3: Number of hectares under improved management practices or technologies with USDA assistance, the project anticipates a sub-set of the "number of individuals in the agriculture system who have applied improved management practices or technologies" will also have applicable hectares. Specifically, smallholder (720) and non-smallholder (480) producers will have associated hectares that will be captured under this indicator. As such, in total TraSa anticipates a target population of 1,200 unique individuals (comprising 720 small holder producers and 480 non-smallholder producers[25]).

For FFPr#4**:** Number of individuals in the agriculture system who have applied improved management practices or technologies with USDA assistance, TraSa anticipates reaching a total of 1,875 unique individuals from smallholder producers (720), non-smallholder producers (480) people in government (261), and people in private sector firms (414).

For FFPr#18: Value of annual sales of farms and firms receiving USDA assistance, and #19: Volume of commodities sold by farms and firms receiving USDA assistance, most producers will be selling their

[23] For the purpose of establishing reasonable targets for FFPr Indicator #18 and #19, packinghouses/slaughterhouse will provide sales data for themselves (as firms) and their suppliers (producers). This will be the process followed for establishing the baseline value for this indicator as well. Each firm has an average of 10.9 producers each, resulting in a total of 1,200 producers. The sales values and volumes will be regularly collected from the packinghouses/slaughterhouses sales reports.

[24] Same as previous footnote.

[25] Note that both people in government and people in private sector firms will not have any associated hectares and will not be captured under FFPr Indicator #3. As discussed between IESC and I4DI, there will be no associated applicable hectares under improved management practices or technologies for packinghouses or slaughterhouses since these practices are not hectare based.

commodities directly to the packinghouses for export. Only a small share of rejected commodities will be sold on the local market at a reduced price. As such, the TraSa MEL team plans to collect i) sales and associated volume data on a census basis from the 110 targeted packinghouses, similar to the process followed by IESC on the USDA FFPr EQ Program, and ii) sales value and associated volume data for 1,200 producers from packinghouses.

This above distribution of beneficiaries has been taken into consideration for calculating baseline values. As such, baseline values for the above-mentioned indicators (i.e. FFPr #3, 4, 18, 19) have been established by multiplying the sample data and associated proportions by respective target population figures for each of these indicators in Table 6.

2.4. Data Collection Methods

The evaluation team developed four quantitative data collection instruments and two qualitative data collection instruments for the purpose of collecting the required data for TraSa standard and custom indicators as detailed in Table 7 below.

Table 7: Data Collection Instruments Developed for TraSa Baseline Study

Instrument Type	Data Collection Type (Quantitative/Qualitative)	Stakeholder Group
Questionnaire/Survey 1	Quantitative	Fruit and Vegetable Farmers
Questionnaire/Survey 2	Quantitative	Packinghouses/Slaughterhouses
Questionnaire/Survey 3	Quantitative	Swine Farmers
Questionnaire/Survey 4	Quantitative	Poultry Farmers
Key Informant Interview 1	Qualitative	National Government Institutions' Representatives; Other Key Informants
Key Informant Interview 2	Qualitative	Private Testing Labs' Representatives

All instruments were reviewed and approved by IESC on May 5, 2021, after which they were translated to Spanish. Instruments developed are also included in Annex C of this report. See Table 8 below for a breakdown of the instruments that collected data for specific indicators. Two farmer surveys per commodity and four firms' surveys were pre-tested in the field. Note that data for Custom Indicators 2: Percent change in APHIS EANs for selected commodities and 4: Number of firms that pay to use improved cold chain inspection areas, were collected using document review.

Table 8: Summary Table for TraSa Performance Indicator Data Collection Methods

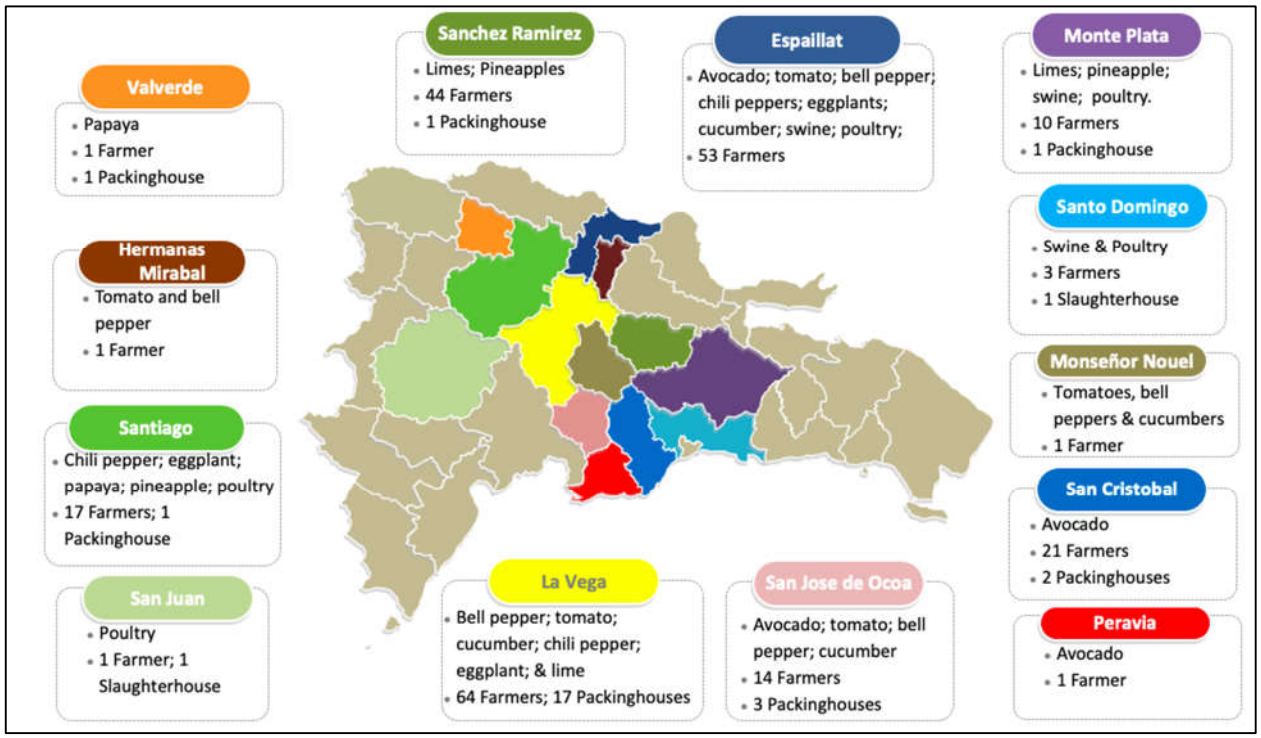
TraSa Performance Indicator	Data Collection Method & Instrument Used (n= sample size)
FFPr Indicator #4: Number of individuals in the agriculture system who have applied improved management practices or technologies with USDA assistance	Quantitative Survey: Administered to sampled farms (231) and packinghouses/slaughterhouses (28)
FFPr Indicator #3: Number of hectares under improved management practices or technologies with USDA assistance	Quantitative Survey: Administered to sampled farms (231)
FFPr Indicator #11: Number of host government or community-derived risk management plans formally proposed, adopted, implemented, or institutionalized with USDA assistance	Qualitative Interview: Key informant interviews (KIIs) with representatives from national government institutions (9)

TraSa Performance Indicator	Data Collection Method & Instrument Used (n= sample size)
FFPr Indicator #18: Value of annual sales of farms and firms receiving USDA assistance	Quantitative Survey: Administered to sampled farms (231) and packinghouses/slaughterhouses (28)
FFPr Indicator #19: Volume of commodities sold by farms and firms receiving USDA assistance	Quantitative Survey: Administered to sampled farms (231) and packinghouses/slaughterhouses (28)
Custom Indicator #2: Percent change in APHIS EANs for selected commodities	Document review
Custom Indicator #4: Number of firms that pay to use improved cold chain inspection areas	Document review
Custom Indicator #5: Percent change in facility income from project-supported testing labs	Qualitative Interview: Key informant interviews (KIIs) with representatives from private testing labs (2)

Quantitative Data Collection & Sample Size. The quantitative survey was administered to 231 farmers and 28 processors (packinghouses and slaughterhouses) across the DR. These figures were determined from a population of 4,451 farmers and 98 processors.

To ensure higher quality and real-time monitoring of data collection, data was collected digitally and included observation elements for post-collection verification and analysis including farm and firm coordinates. Figure 8 shows the geographic distribution of quantitative data collected from across the country disaggregated by beneficiary type and commodity.

Figure 8: Geographic Distribution of Quantitative Data Collected from the DR for the baseline study



Qualitative Data Collection. Using the pre-identified stakeholder group list, which comprised of some EQ Program participants, provided by the TraSa Project team, the evaluation team collected qualitative data using key informant interview (KII) guides from two TraSa stakeholder groups: 1) Government of DR's (national level) representatives; and 2) Private sanitary and phytosanitary (SPS) testing laboratories. These stakeholder groups are in Santo Domingo and initial contact was made with representatives from these groups with the help of facilitation/introduction letters from the TraSa Project. Stakeholder groups surveyed and interviewed as part of the TraSa Baseline Study are provided in Tables 7 and 8 above.

Document Review

i. TraSa Documentation. The evaluation team reviewed project documentation including the TraSa Performance Monitoring Plan (PMP) and TraSa Evaluation Plan to gain the relevant insight on TraSa standard and custom indicators. Additional project documents such as the Year 1 Work Plan and TraSa Steering Committee Guidelines were also reviewed to inform the baseline study with additional programmatic context.

ii. Publicly Available Secondary Resources. The evaluation team collected data related to *Custom Indicator 2: Percent change in APHIS EANs for selected commodities* from the relevant representatives from Plant Health Department of the Ministry of Agriculture; and *Custom Indicator 4: Number of firms that pay to use improved cold chain inspection areas* from sources familiar with operations at the Haina International Terminals (HIT). Additionally, to get baseline information regarding the overall DR context as it relates to agriculture and trade, the following resources were also accessed: DR Ministry of Agricultural Statistics, World Trade Organization Data and International Trade Center (ITC) Trade Map for trade-related datasets, DR National Statistics Office (ONE), and United Nations (UN) Comtrade database, and USDA-Foreign Agricultural Service's Global Agricultural Trade System (GATS) database provided data on imports of the U.S. from the DR.

iii. USDA Documentation. To ensure adherence of the TraSa Baseline Study to USDA standard evaluation protocols, the evaluation team extensively reviewed USDA's Monitoring and Evaluation Policy (February 2019) as well as USDA's Food Assistance Indicators and Definitions to corroborate TraSa standard indicator definitions against the those defined by USDA.

2.5. Data Analysis Methods

Data collected through qualitative and quantitative methods were cleaned, ordered, and structured against lines of inquiry and across study domains to determine indicator values and gather additional context. Quantitative data was processed using Microsoft (MS) Excel and standard descriptive statistical procedures and triangulated with secondary sources and qualitative findings. Data was analyzed to discern proportions, statistical significance, values, and characteristics for each identified stratum. Graphical representation of the analysis from quantitative data collected is detailed in the subsequent sections with additional support documentation in Annex F. Qualitative data was structured in MS Excel using axial coding processes (constant comparative method).

Both analytical procedures followed a rigorous, systematic, sequential, multi-directional and yet verifiable approach, resulting in reliable findings and insights that are presented in the baseline study and accompanying deliverables to IESC.

2.6. Evaluation Limitations

Information Gathering and Time Limitations. Swine and poultry slaughterhouses were reluctant to share information with the evaluation team. Many of these firms required the evaluation team to secure special appointments with written clearance from relevant authorities to access their facilities and gather their information. This also posed significant delays during data collection. This resulted in the evaluation team being able to collect data from only two fairly large slaughterhouses (with an annual income greater than $1.7million). Considering this isn't representative of the TraSa target population of slaughterhouses, these two datapoints had to be excluded from the baseline value calculation.[26] Additionally, at the sampling stage, not all packinghouses/processors wanted to disclose their farm information. This led to more time being spent on identifying farmers for the sample that meet the TraSa Project's target beneficiary characteristics *viz-a-viz* geographic location, priority commodity/ livestock sector, and size of farm.

Travel to Additional Geographic Locations. During the initial desk review and overall analysis of the priority value chain context, it was clear that some of the provinces identified in the evaluation terms of reference were not representative of the main priority commodities, which meant that additional provinces had to be considered to gather the relevant baseline information for each one of these commodities. For instance, one of the main avocado-growing province is San Cristobal; and, two of the main pineapple provinces are Sanchez Ramirez and Monte Plata, which were not included in the baseline study terms of reference. Hence, travel to additional locations (outside of the priority geographic areas identified by the TraSa Project) was needed which also led to some delays with data collection completion. These additional provinces were agreed upon with TraSa and they have decided to expand their geographic scope to include these provinces for programmatic activities. Figure 5 under sub-section 1.2 Project Description of this report shows the map with these additional provinces.

Attribution Limitations. One aspect of the TraSa Baseline Study relates to the need to account for previous interventions into the sector by other projects. These previous projects were also to some degree focused on the functioning of the SPS systems of the DR, including the USDA FFPr EQ Program, also implemented by IESC (period of performance: September 2015-November 2021). Due to the similar scope and nature of work of USDA FFPr TraSa Project when compared to the USDA FFPr EQ Program, the pre-intervention baseline values generated from this baseline study for performance indicators could potentially be attributable to the EQ Program or similar project interventions. Early discussions between the Evaluation Team and the TraSa Team established that attribution to EQ was not a particular priority for the purpose of this study, and is also beyond the scope of this study[27], but the baseline study sample does include 41 EQ Program beneficiaries (about 16 percent of the total sample of 258) and analysis has been conducted along EQ beneficiary lines (as relevant) as well for this baseline study and detailed in the Findings section of this report.

Markets' Unpredictability. Some of the selected indicators, especially FFPr Indicators #3: Number of hectares under improved management practices or technologies, #18: Value of annual sales of farms and firms, and #19: Volume of commodities sold by farms and firms, are measures that are driven by the interaction of firms in a dynamic market. The decision to use a specific management practice (FFPr Indicator #3) is influenced not only by the TraSa Project's resources but by a number of market factors related primarily to expect revenue and costs of production. The same is true for FFPr Indicators #18 and #19. Measures of sales and volumes for the selected producers are important to monitor and measure,

[26] This limitation is also mentioned as 'outlier data' limitation as well

[27] Refer to Section 6.1 Baseline Evaluation in RFP

but these are also strongly influenced by a host of other factors, and thereby outside of the control of the TraSa Project.

Recall Bias. Since a number of questions will deal with issues that took place in the past, recall bias cannot be excluded. Some respondents may have found it difficult to accurately compare organizational arrangements/capacity three or more years ago to the current situation and record keeping is not a common practice among farmers, especially those that do not apply improved practices.

Halo Bias. There is a known tendency among respondents to under-report socially undesirable answers and alter their responses to approximate what they perceive as the social norm (halo bias). The extent to which respondents will be prepared to reveal their true opinions may also vary for some questions that call upon the respondents to assess the performance of their colleagues or people on whom they depend for the provision of services. To minimize the effect of this limitation, the evaluation team: provided the respondents with confidentiality and anonymity guarantees, where possible; conducted the interviews in settings where respondents felt comfortable; and strived to establish rapport between the interviewer and the respondent.

Adjusting for Outlier Data. Given the evaluation team collected data from a very diverse respondent pool of farms and firms, a few exclusion criteria were applied to avoid skewing of data for performance indicators. These criteria have been agreed upon with the TraSa team.

1. **Farms with hectarage greater than 150 HA.** Two very large pineapple farms, with hectarage greater than 150 HA, were excluded from all baseline indicator calculations because i) TraSa intends to target smaller farms for training and interventions; and, ii) including these would inflate averages for FFPr Indicator #3: Number of hectares under improved management practices or technologies with USDA assistance, FFPr Indicator #4: Number of individuals in the agriculture system who have applied improved management practices or technologies with USDA assistance. FFPr Indicator #18: Value of annual sales of farms and firms receiving USDA assistance, and FFPr Indicator #19: Volume of annual sales of farms and firms receiving USDA assistance (in MT).
2. **Slaughterhouses with annual income greater than $1.7million.** As mentioned earlier, the evaluation team had difficulty obtaining data from slaughterhouses. The two slaughterhouses (one swine, and one poultry) from which data were collected were very large operations and not necessarily representative of the overall industry in the DR nor of TraSa's intended beneficiary population. Accordingly, these two datapoints were removed from the overall indicator baseline calculations.

Annex F of this report has more details about the excluded datapoints.

3. Findings

Respondent Profile

A total of 259 in-person surveys were administered to 231 farmers and 28 processor firms (26 packinghouses and 2 slaughterhouses). Figures 9 and 10 show a summary snapshot of the baseline study respondents. 95 percent of the respondents were male. Respondents in commodities such as papaya, bell peppers, tomatoes, cucumbers, chili peppers, and eggplants, as well as slaughterhouses, were all male. Interestingly, 23 percent of respondents in packinghouses were female. Details of respondent and stakeholder group profiles can be found in Annex F of this report.

Figure 9: TraSa Baseline Study Respondent Profile

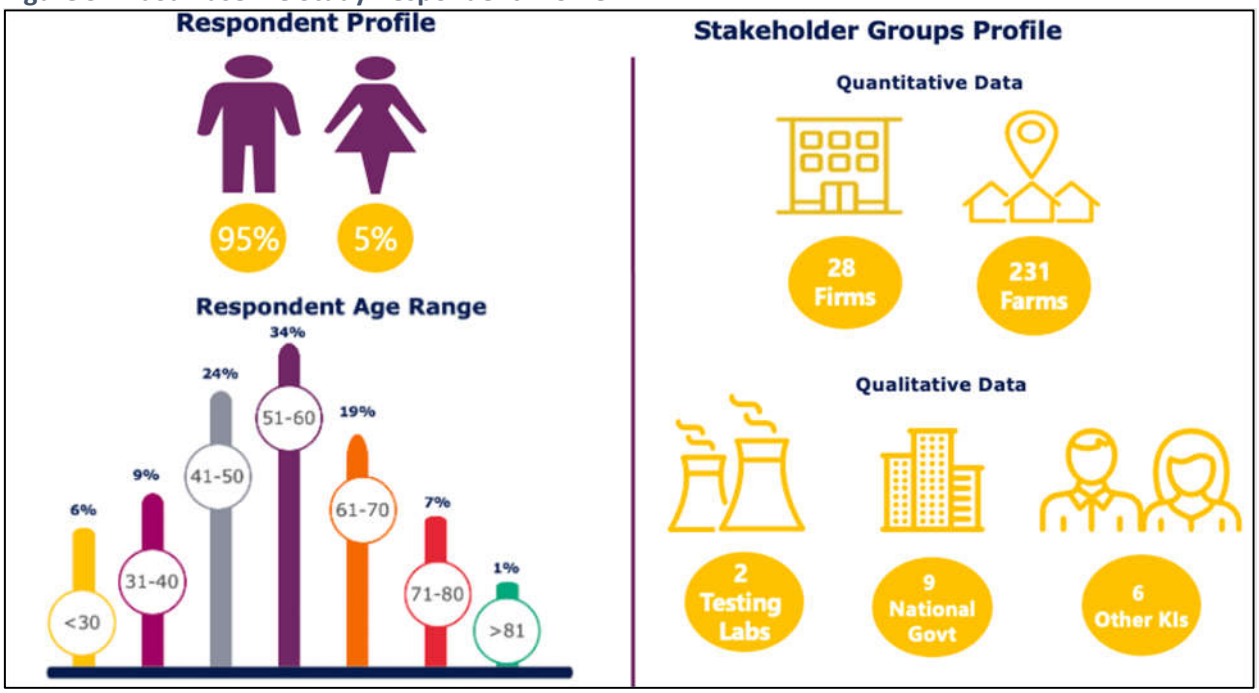
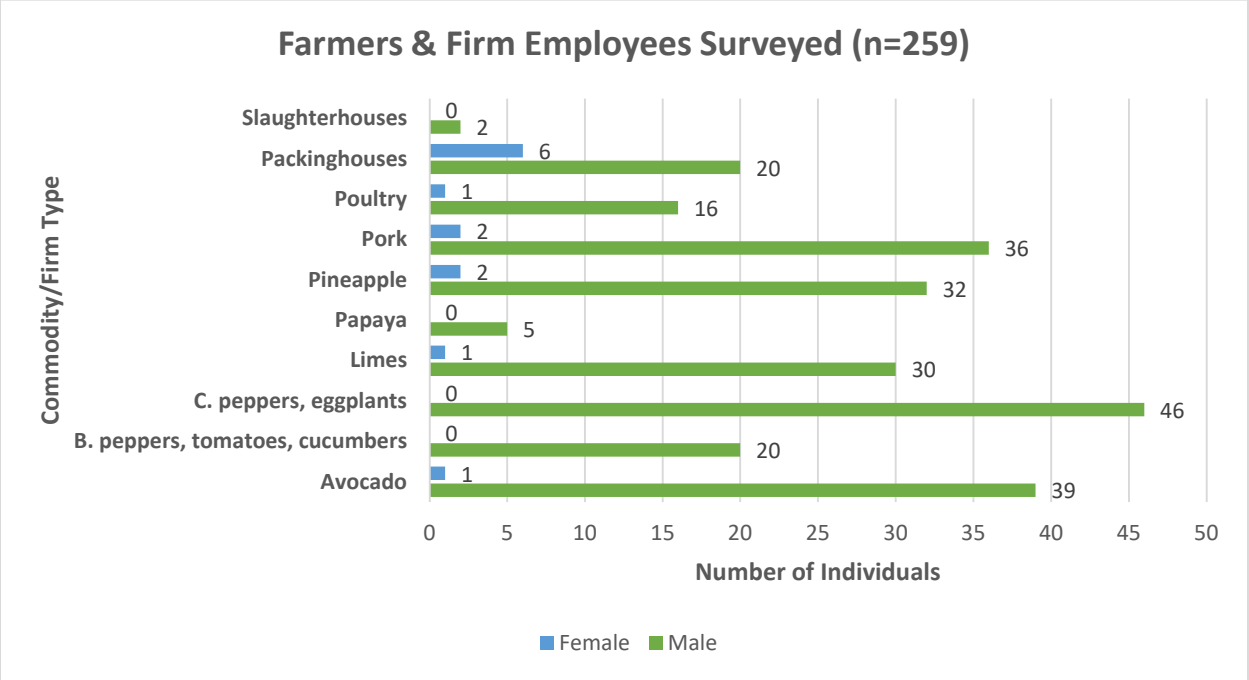
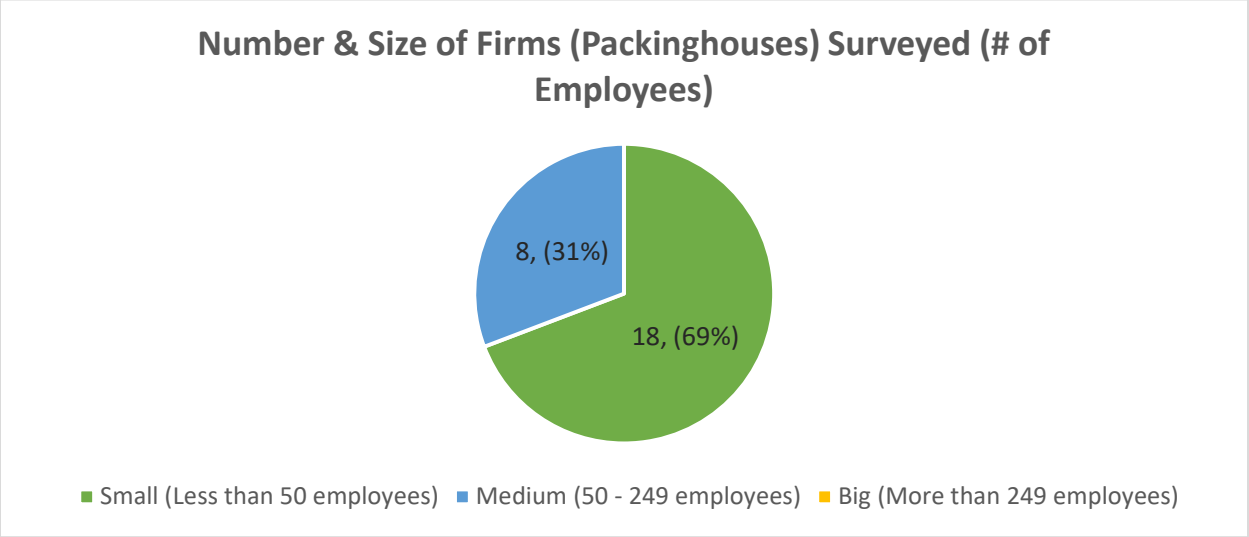


Figure 10: Number of Farmers and Firm Employees Surveyed Disaggregated by Gender and Commodity Type



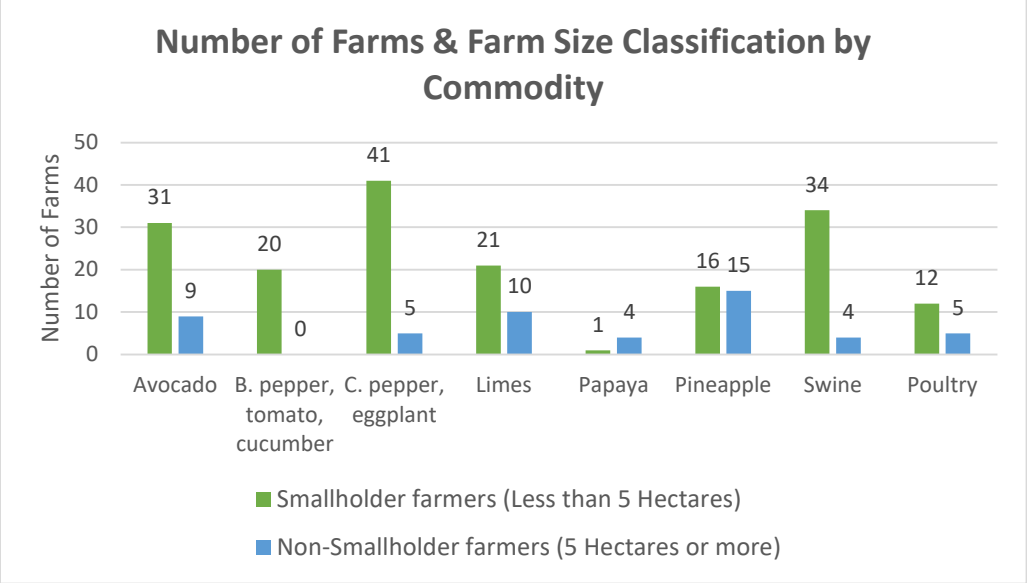
Number of Firms Surveyed and Number of Employees in Firms. Of the 26 packinghouses surveyed, 18 (69 percent) were small with less than 50 employees and 8 (31 percent) were medium with 50-249 employees. None of the packinghouses surveyed had more than 249 employees. Of the 2 slaughterhouses surveyed, 1 was small with less than 50 employees while the other was large with over 249 employees.

Figure 11: Chart showing Firms Size (i.e. # of employees) as a Percentage (disaggregated by small, medium, big)



Farm Size. Figure 12 shows the breakdown of farm sizes by smallholder (i.e less than 5 HA) and non-smallholder (i.e greater than 5 HA) farms by commodity type that were sampled. Around 78 percent of avocado farms surveyed were smallholder farms, while 100 percent of bell peppers, tomatoes, and cucumber farms were smallholder. 80 percent of the papaya farmers and 48 percent of pineapple farmers surveyed were non-small holder farmers. More details of this farm size breakdown can be found in Annex F of this report. Farms in the sample that have area greater than 150 hectares (n=2) have been excluded for the purpose of determining baseline data since they were far too large and don't necessarily require any additional support from USDA-funded assistance. This exclusionary criterion has been agreed upon with the TraSa team.

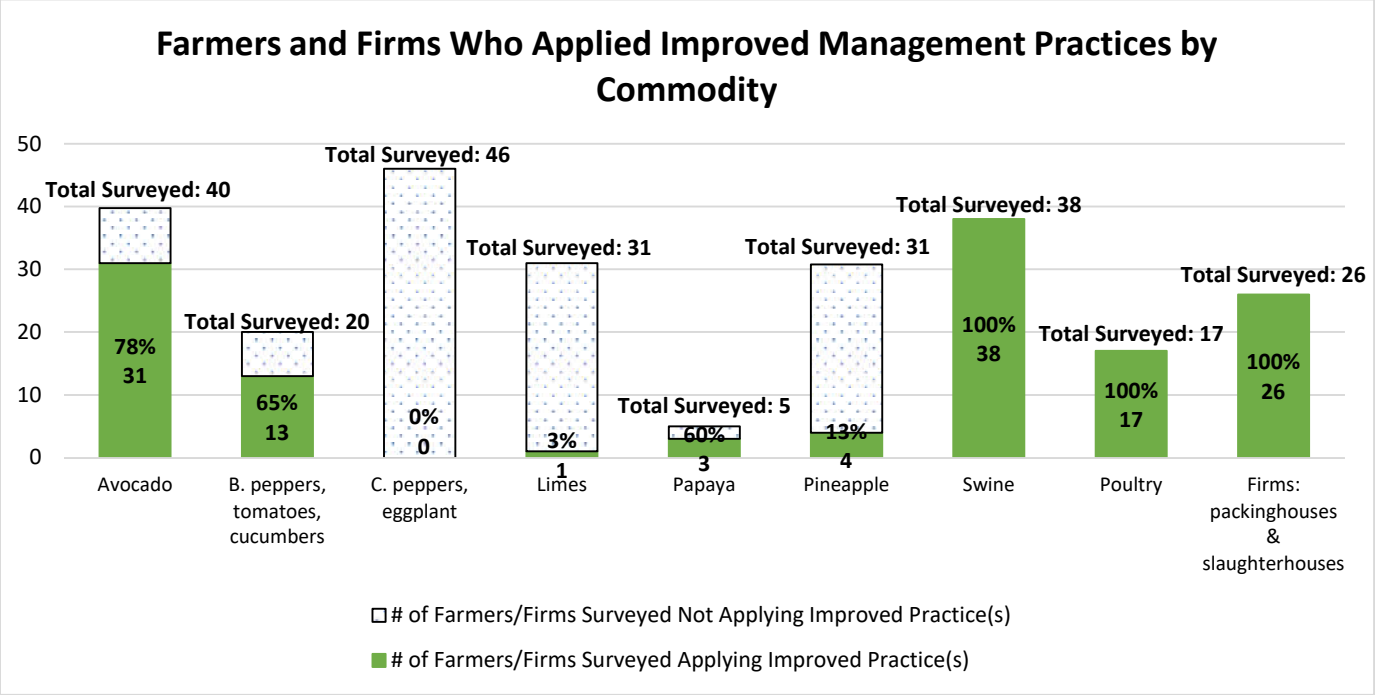
Figure 12: Chart showing number of farms and farm size classification by commodity



FFPr Indicator #4: Number of individuals in the agriculture system who have applied improved management practices or technologies with USDA assistance.

Specific improved management practices and/or technologies referenced for this indicator were obtained from FFPr indicator #4's definition from the TraSa Project Performance Monitoring Plan (PMP.)

Figure 13: Number and Percentage of Farmers & Firms Surveyed Applying at Least 1 Improved Management Practice or Technology (FFPr Indicator #4)



Fruit and Vegetable Farmers. For FFPr Indicator #4 (see Figure 13, a total of 51 farmers (29 percent) out of the sample had applied one or more recommended practice. As enumerators conducted surveys on-site, this allowed them to politely ask interviewees for any proof of improved management techniques or technologies (e.g. certifications, procedures, registries, banners or visual aids in the field, presence of sanitary facilities, such as latrines on specific locations on the farm, pesticides kept in specific safe areas on farms, and clearly identified, among others). The application levels vary significantly by commodity with the maximum adoption and application of improved management practices or technology by avocado farmers: 78 percent of avocado farmers sampled applied at least one improved practice; and 65 percent applied 4 or more out of 6 monitored practices. See Table 9 below for details on the specific practices. Farmers of chili peppers (C. Peppers) and eggplants did not apply even one improved practice or technology. Very low application rates were seen for lime farmers as well. Annex F has further details broken down by commodity. Although not actively targeted at sampling, of the sample of farmers and firms surveyed, 41 were EQ Program participants, out of which the majority (18 or 44 percent) were avocado farmers.

Fruit and Vegetable/Crop Farmers. Of the 40 avocado farmers surveyed, 31 (78 percent) had adopted at least one improved management practice or technology. Similarly, 13 out of 20 (65 percent) of bell peppers, tomatoes, and cucumber farmers; 3 out of 5 (60 percent) papaya farmers; all 38 (100 percent) of swine farmers, and all 17 (100 percent) of poultry farmers applied at least one improved management practice or technology. Lower adoption rates were seen for farmers of chili peppers and

eggplants (0 percent); limes (3 percent), and pineapple (13 percent). Table 9 and Table 10 below show the specific practices or technologies adopted by crop farmers and livestock farmers respectively.

Table 9: Improved Management Practices or Technology Types Adopted by Surveyed Crop Farmers[28]

Improved Management Practice or Technology[29] Adopted by Surveyed Crop Farmers	# of Farmers that Adopted the Practice/Technology	% of Farmers that Adopted the Practice/Technology
Improved Postharvest Handling Practices	34	19%
Integrated Pest Management (IPM)	43	24%
Security Measures & Sanitary Control	33	19%
Compliance with Good Agricultural Practices	48	27%
Workers Trained in Food Safety Issues	42	24%
Compliance with Food Security Modernization Act (FSMA) Safety Standards	19	11%

Livestock Farmers. All 38 (100 percent) swine farmers and 17 (100 percent) poultry farmers surveyed had adopted one of more of the recommended practice. A detailed breakdown of these figures is provided in Table 10 below.

Table 10: Improved Management Practices or Technology Types Adopted by Surveyed Livestock Farmers

Improved Management Practice or Technology Adopted by Surveyed Livestock Farmers	# (& Percentage) of Swine Farms that Adopted the Practice/Technology	# (& Percentage) of Poultry Farms that Adopted the Practice/Technology
Implementation of a Nutrition & Animal Feeding Plan	38 (100%)	17 (100%)
Implementation of a Facility Cleaning & Disinfection Plan	38 (100%)	12 (71%)
Biosecurity Measures of Production & Facility Monitoring	38 (100%)	12 (71%)
Registration & Compliance with Animal Vaccination Program	4 (11%)	17 (100%)
Registration & Control of Animal Movement	38 (100%)	17 (100%)

[28] Refers to farmers in the TraSa crop value chains (and not the livestock value chains).
[29] These practice names were taken directly from the TraSa PMP without a further breakdown of sub-practices under main practices, as such the data collection team did not ask for more specifics.

Registration with Department of Animal Health	5 (13%)	0 (0%)

Packinghouses. All 26 packinghouses (100 percent) sampled had adopted at least one improved management practice or technology. Table 11 depicts the range of application across the different management practices and technologies as detailed in TraSa's PMP.

Table 11: Improved Management Practices or Technology Types Adopted by Surveyed Packinghouses

Improved Management Practice or Technology Adopted by Surveyed Packinghouses	# of Firms that Adopted Practice/Technology	% of Firms that Adopted Practice/Technology
Improved Postharvest Handling Practices	8	31%
Integrated Pest Management (IPM)	8	31%
Security Measures & Sanitary Control	10	38%
Compliance with Good Agricultural Practices	7	27%
Workers Trained in Food Safety Issues	10	38%
Compliance with Food Security Modernization Act (FSMA) Safety Standards	9	35%

Slaughterhouses. Out of the two slaughterhouses surveyed (one swine and one poultry), both applied one or more recommended improved management practices or technologies. See Table 12 and Annex F of this report for more details.

Table 12: Improved Management Practices or Technology Types Adopted by Surveyed Slaughterhouses

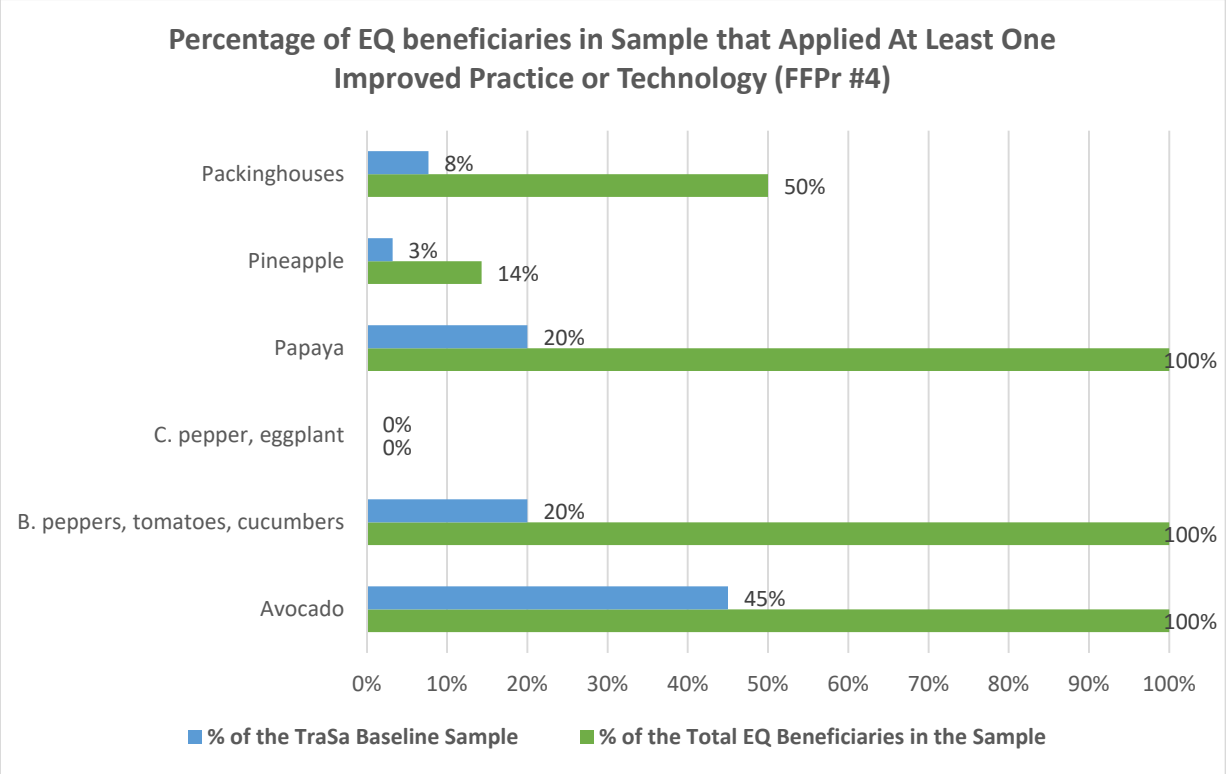
Improved Management Practice or Technology Adopted by Surveyed Slaughterhouses	# (& Percentage) of Swine Slaughterhouses that Adopted Practice or Technology	# (& Percentage) of Poultry Slaughterhouses that Adopted Practice or Technology
Implementation of a Nutrition & Animal Feeding Plan	1 (100%)	1 (100%)
Implementation of a Facility Cleaning & Disinfection Plan	1 (100%)	0 (0%)
Biosecurity Measures of Production & Facility Monitoring	1 (100%)	1 (100%)
Registration & Compliance with Animal Vaccination Program	1 (100%)	1 (100%)
Registration & Control of Animal Movement	1 (100%)	1 (100%)
Registration with Department of Animal Health	1 (100%)	1 (100%)

FFPr Indicator #4: EQ Program Beneficiaries. Of the 41 EQ participants in the sample, 26 of them (63 percent) had applied at least one improved management practice or technology. A commodity-wise distribution of these participants has been provided below in Figure 14 and Table 13.

Table 13: EQ Beneficiaries (from Sample) Breakdown for FFPr Indicator #4

Commodities	# of EQ Beneficiaries in the Sample	# of EQ Beneficiaries in the Sample who Applied At least 1 Improved Management Practice or Technology (FFPr Indicator #4)
Avocado	18	18
Bell peppers, tomatoes, cucumbers	4	4
Chili peppers, eggplants	7	0
Papaya[30]	1	1
Pineapple	7	1
Packinghouses	4	2

Figure 14: Chart showing Percentage of EQ Beneficiaries that Applied at least 1 Improved Practice or Technology (FFPr Indicator #4)



[30] This one (1) papaya grower grows papayas and pineapples. Under EQ Project, he received support as a pineapple grower.

Table 14: TraSa Baseline Study Sample & Proportion of Participants from EQ in the Sample

Commodities	Total # of Participants in TraSa Baseline Sample	Participants in EQ Project	% of EQ participants in sample
Avocado	40	18	45%
Bell peppers, tomatoes, cucumbers	20	4	20%
Chili peppers, eggplants	46	7	15%
Limes	31	0	0%
Papaya	5	1	20%
Pineapple	31	7	23%
Swine	38	0	0%
Poultry	17	0	0%
Slaughterhouses	2	0	0%
Packinghouses	26	4	15%
Total	**258**	**41**	**16%**

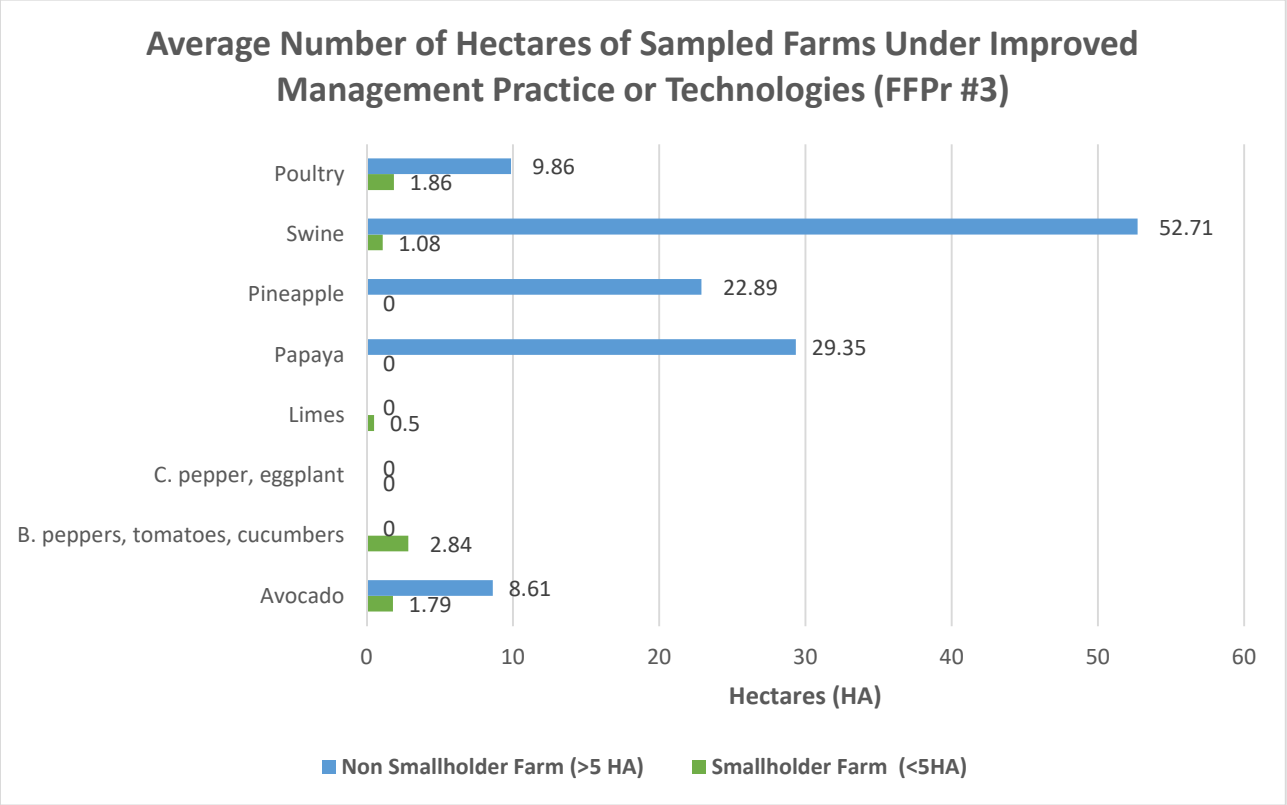
Baseline Value[31] for FFPr Indicator #4: Number of individuals in the agriculture system who have applied improved management practices or technologies with USDA assistance: 906.

FFPr Indicator #3: Number of Hectares under Improved Management Practices or Technologies with USDA Assistance. This chart on Figure 15 details the average hectares of farmland on which at least one management practice (as defined under FFPr Indicator #3 in the TraSa PMP) is being applied.[32] As is evident from FFPr Indicator #4, and Figure 15, those commodities for which improved management practices were not applied (such as chili peppers and eggplants) do not have any farmland hectarage logged for this indicator. A more detailed breakdown of farmland hectarage under improved management practices can be found in Annex F of this report. Data collected for commodities provide an average number of hectares under improved management practices or technologies and Annex F provides some additional measures such as maximum and median number of hectares. Using the information in Annex F, the evaluation team has extrapolated based on a target population of 1,200 farmers (i.e. only beneficiary group with applicable hectarage) to estimate the total number of hectares under improved management practices or technologies to serve as a baseline value. This is also provided in Annex A: TraSa Baseline Values.

[31] Calculations for each baseline value are included in Annex A of this report where the table of all the baseline values have been included.

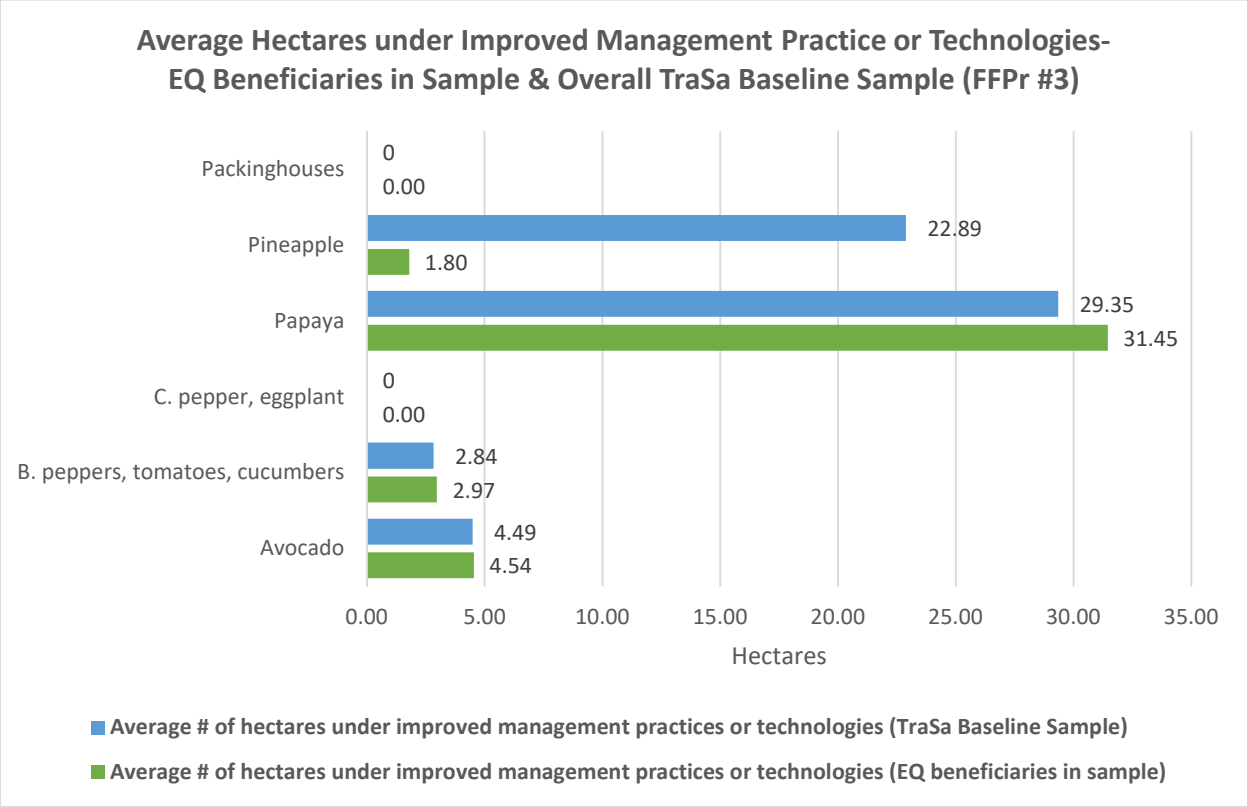
[32] Only farm data has been included for this indicator since firms operations do have hectarage as a qualifying unit of measure for application of improved practices or technologies. See Methodology section's 'Baseline value determination' for more details.

Figure 15: Average Number of Hectares of Sampled Farms Under Improved Management Practices Disaggregated by Smallholder & Non-smallholder Farms



FFPr Indicator #3: EQ Program Beneficiaries. On average, EQ beneficiaries in the sample apply more improved management practices or technologies on their farms than the overall TraSa baseline sample for papayas, bell peppers, tomatoes, cucumbers, and avocados. See Figure 16 below and Annex F: Datasets for more details.

Figure 16: Chart showing Average Hectares on which Farmers Apply Improved Management Practice or Technologies: EQ Beneficiaries in Sample & Overall TraSa Baseline Sample



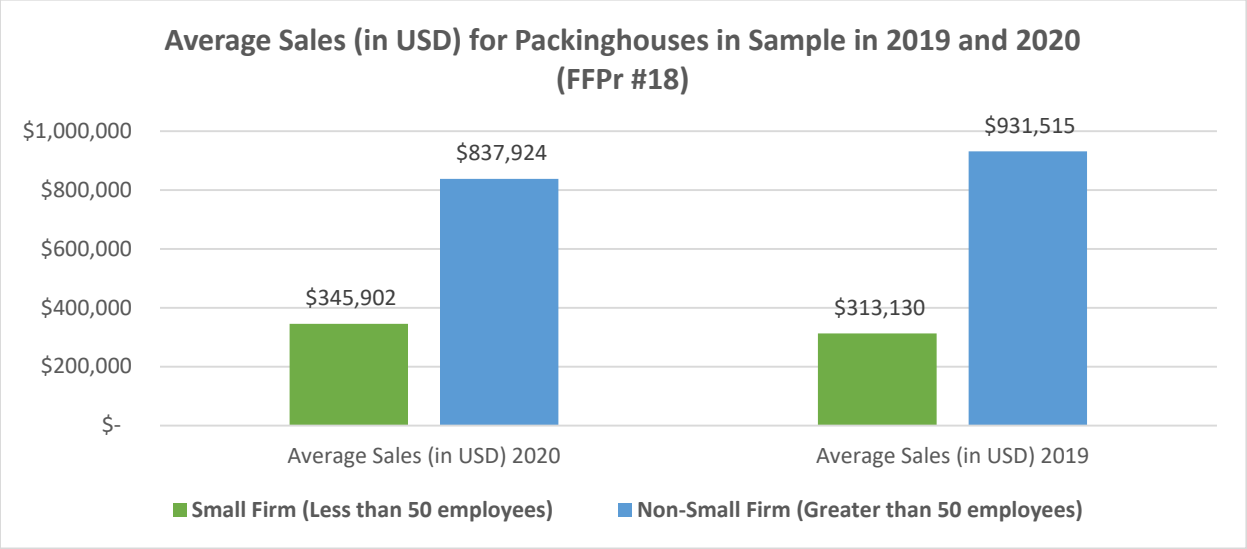
Baseline Value for FFPr Indicator #3: Number of Hectares under Improved Management Practices or Technologies with USDA Assistance: 3,662 hectares[33] (HA.)

FFPr Indicator #18: Value of annual sales of farms and firms receiving USDA assistance. As explained in the methodology section, TraSa intends to establish feasible targets for this indicator by capturing data from 1,200 farms and 110 firms. Given COVID-19 and the possible effect the pandemic may have had on sales for firms, the evaluation team collected data for both 2019 and 2020 disaggregated by small firms, with less than 50 employees, and medium and large (non-small) firms, with more than 50 employees. The sampled small firms saw a 10 percent increase from 2019 in their average 2020 annual sales, while non-small firms saw a 10 percent decrease in average annual sales in 2020. Figure 17 a and b show the sales breakdown disaggregated by small and non-small firms in 2019 and 2020,[34] and smallholder and non-small holder farms respectively. Using the information in Annex F, the evaluation team has extrapolated to estimate the total value of annual sales for farms and packinghouses that serves as a baseline value. For farms however, the evaluation team asked farmers for their exports sales data since exports are applicable to their product sales to packinghouses- see Figure 17b below.

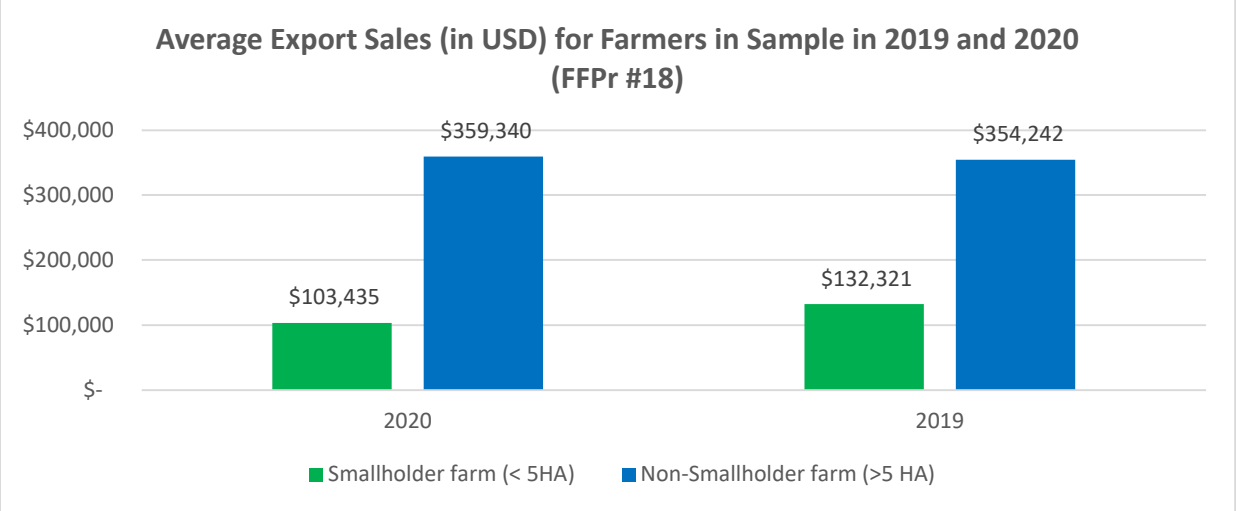
[33] Three farms with farm size larger than 150 HA were removed from the calculation of the baseline value for this indicator. Annex F: Datasets provides more details as does Annex A.

[34] Recognizing that average annual sales value comparison between EQ beneficiaries in the sample with the overall baseline sample for FFPr#19 will not generate meaningful data for analysis (given EQ does not have three of TraSa's value chains: lime, swine, and poultry farms), this information is not included in the report. Annex F: Datasets however have the total and average sales of EQ beneficiaries

Figure 17a: Chart showing Average Sales (in USD) for Sampled Packinghouses in 2019 and 2020 (FFPr #18) Disaggregated by Small & Non-Small Firms



17b: Chart showing Average Sales (in USD) for Sampled Farmers in 2019 and 2020 (FFPr #18) Disaggregated by Small & Non-Small Firms



Average export sales for farmers (which capture their sales to packinghouses[35]) had decreased from 2019 to 2020 for smallholder farmers, i.e. those that have less than five hectares (HA), while exports to packinghouses increased for non-smallholder farmers (those with more than five HA) from 2019 to 2020.

Regarding slaughterhouses, since the evaluation team surveyed only one poultry and one swine slaughterhouse due to limitations faced with contacting these stakeholder groups,[36] the annual sales

[35] Farmer survey asked farmers for their average annual exports in 2019 and 2020. This captures the sales to packinghouses because TraSa intends to collect farmer data directly from packinghouses. Using farmer export data vs. overall sales data helps provide a more accurate estimate of farmer sales as applicable to the TraSa project (considering TraSa intends to collect farmer sales data from packinghouses and only export sales from farmers are relevant to packinghouses.) Since swine and poultry are not exported, their farmer export sales have not been included in this indicator's baseline.

[36] See section on *Evaluation Limitations* for more details on our experience.

values collected represent the absolute values (and not an average). As such, the evaluation team acknowledges that this is not an adequate representation of the sector and these figures have not been included in the baseline value calculation for FFPr Indicator #18-see table 15.

Table 15: Total Value of Annual Sales for Slaughterhouses (in USD) in 2019 and 2020

FFPr Indicator #18: Total Value of Annual Sales of Slaughterhouses (in USD)	2019[37]	2020[38]
Poultry Slaughterhouse (n=1)	$1,180,935	$1,705,794
Swine Slaughterhouse (n=1)	$14,303,211	$23,838,686

Baseline Value for FFPr Indicator #18: Value of annual sales of farms and firms receiving USDA assistance: $85,876,862 (2020); and $92,288,554 (2019). Disaggregations for these values can be found in Annex A.

FFPr Indicator #19: Volume of commodities sold by farms and firms receiving USDA assistance. Figure 18 a and b show the average volume of commodities sold by sampled packinghouses and farmers in 2020 and 2019 (in metric tons). Like FFPr Indicator #18, since the evaluation team surveyed only one poultry and one swine slaughterhouse due to limitations faced with contacting these stakeholder groups,[39] values for the volume of commodities sold represent the absolute values (and not an average)-see table 16. As such, the evaluation team acknowledges this limitation in being an accurate representation of the sector, and these figures have not been included in the baseline value calculation for FFPr Indicator #19. Average values collected for FFPr Indicator #19 for farms and packinghouses that were sampled have been extrapolated to provide the total volume of commodities sold by farms and firms in Annex A: TraSa Indicators Baseline Values.

Table 16: FFPr Indicator #19 Total Volume of Commodities Sold by Slaughterhouses

FFPr Indicator #19: Total Volume (in metric tons MT) of Commodities Sold by Slaughterhouses	2019	2020
Poultry Slaughterhouse (n=1)	638	638
Swine Slaughterhouse (n=1)	4,352	4,836

[37] Exchange rate used for 2019 was RD$51.30: 1 US$.
[38] Exchange rate used for 2020 was RD$53.56: 1 US$.
[39] See section on *Evaluation limitations* for more details on our experience.

Figure 18 a: Average Volume of Commodities (in MT) Sold by Firms in 2019 & 2020

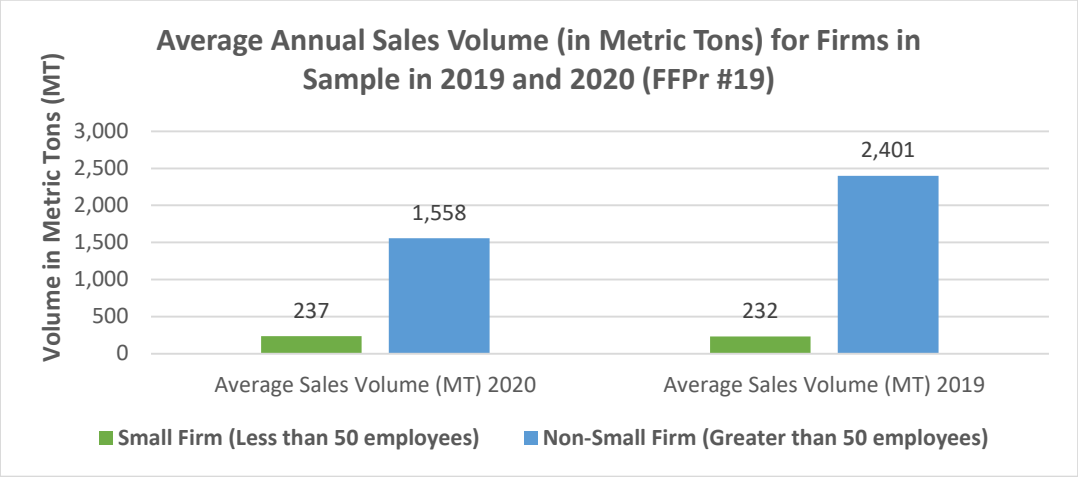
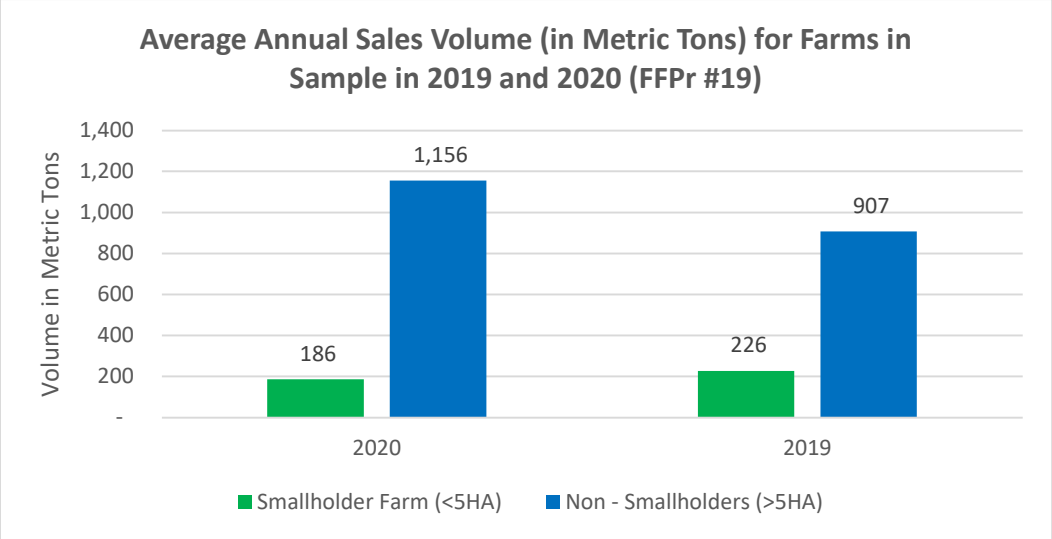


Figure 18 b: Average Volume of Commodities (in MT) Sold by Farms in 2019 & 2020



Baseline Value for FFPr Indicator #19: Volume of commodities sold by farms and firms receiving USDA assistance: 149,450 metric tons [MT] (2020); 182,680 metric tons [MT] (2019). Disaggregations for this indicator can be found in Annex A of this report

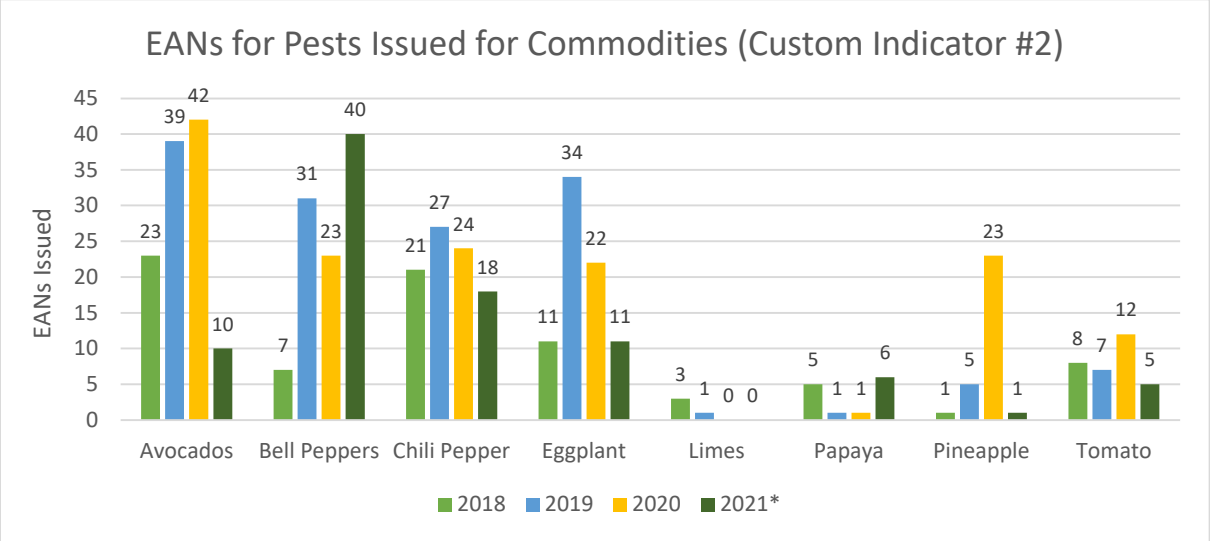
Custom Indicator #2: Percent change in APHIS EANs for selected commodities. Regarding Custom Indicator #2, which records the amount of Emergency Action Notifications (EANs) for the DR in the last year, the evaluation team has collected EAN data for the last three years from the U.S. Animal and Plant Health Inspection Service (APHIS) office in Santo Domingo and this information is detailed in Table 17 below. Annex F of this report provides the calculations for percentage change in APHIS EANs and a commodity-wise breakdown of EANs issued for pests in selected commodities.

Table 17: Total EANs Issued from 2018-2021 (present)[40]

Sum of # of EANs Reason	2018	2019	2020	2021 (Through May 2021)	Total
Pests	668	870	895	506	2,939
Prohibited Product	10	16	12	4	42
Prohibited Animal Product	4	12	10	14	40
Lack of Documentation	1	14	10	4	29
Contaminant- Seed	2	2	9	1	14
Lacking International Standards for Phytosanitary Measures (ISPM) 15 Marking	4	3	2	2	11
Contaminant-Other	3	1	5	1	10
Lack of Documentation/Certification	1	3	-	-	4
Prohibited Plant Product	-	-	-	3	3
Prohibited Commodity	1	-	-	-	1

Between 2018 and 2020, there has been a 34 percent increase in the number of pests EANs recorded by USDA/APHIS. While the data for 2021 is incomplete, the 506 recorded by May 2021 indicates that the trend for increased EANS will be maintained for 2021. See Figure 19 for commodity-wise breakdown of EANs issued between 2018 and 2021.[41] Ideally, the EANs would take into account the level of trade, which would permit accurate comparisons for evaluation. Currently as presented, the EANs do not reference the level of trade. While APHIS does not provide this information, a reasonable approximation could be developed by relating the EANs to the monthly and annual imports from the DR in USDA's Global Agricultural Trade System. By integrating this data, TraSa could generate for example "EANS per MT of Avocados Exported", or "EANS per Dollar of Tomatoes Exported". These measures could be a powerful metric of the impact of the project on products commonly exported to the U.S.

Figure 19: Emergency Action Notifications Issued on Commodities (*partial year until May 2021)



Baseline Value for Custom Indicator 2: Percent change in APHIS EANs for selected commodities: 0 percent for baseline year.

[40] Data provided directly from APHIS for calendar year only.

[41] Evaluation Team was unable to receive cucumber data for this time period from APHIS database

Custom Indicator 4: Number of firms that pay to use improved cold chain inspection areas.

The National Port System is made up of 13 main port precincts, of which six are under the direct administration and operation of the State.[42]

Table 18: List of Ports in the DR

Port	Location (Province)
1. Puerto Arroyo Barril Samaná	Zona Nordeste Provincia Samaná
2. Puerto de Azua	Zona Sur
3. Puerto de Barahona	Región Sur Provincia Barahona
4. Puerto de Manzanillo	Zona Noroeste Provincia Montecristi
5. Puerto de Puerto Plata	Zona Sureste Provincia San Pedro de Macorís
6. Puerto de San Pedro de Macorís	Zona Sur Provincia de Pedernales
7. Puerto de Cabo Rojo	Zona Sur Provincia de Pedernales
8. Puerto Río Haina	Zona Sur Provincia Santo Domingo
9. Puerto Santo Domingo	Santo Domingo
10. Puerto Amber Cove	Puerto Plata
11. Puerto de La Romana	La Romana
12. Puerto Multimodal Caucedo	Boca Chica, East Santo Domingo Province
13. Puerto de Boca Chica	Boca Chica, East Santo Domingo Province

Two of the major seaports have major plans to expand their fresh produce handling facilities: Puerto Multimodal Caucedo is currently building its logistics park that will provide up to 300,000 m² of custom warehouses, available for rent within the Port of DP World Caucedo.

The Caucedo port is located in Caucedo, Boca Chica and it is used mainly for handling cargo imports from the Caribbean zone. This port is managed by DP, has transformed the youngest port in the country into its most modern one. The port of Caucedo is home to the Caucedo Logistics center, which is the first and currently only free trade zone housed within a port facility in the nation.

Port of Haina, being close to Santo Domingo, moves a lot of the country's imports and exports. It was second only to Caucedo port in moving containers with 27 percent of the containers moving from this port after Caucedo's 66 percent. This port is used mainly for regional shipments.

Regarding Custom Indicator #4, which records the number of firms willing to pay for improved cold chain inspection areas, TraSa intends to work with two cold chain terminals at Port of Haina and Caucedo and some airports. The scope of the baseline study focused on data from Haina and Caucedo, per the TraSa Evaluation Plan and TraSa PMP. As such, Port of Haina has around 157 firms, while Caucedo has 36 firms that are currently paying for cold chain inspection areas. As part of TraSa Sub-Activity 1.7: Support Development of Cold Chain Activities, the TraSa Director of SPS and Cold Chain will be liaising with relevant personnel at cold chain inspection areas and thus can routinely track the increase or decrease in the number of firms willing to pay for cold chain services at these two ports.

[42] https://portuaria.gob.do/nuestros-servicios/

Baseline Value for Custom Indicator 4: Number of firms that pay to use improved cold chain inspection areas: 211.

Custom Indicator 5: Percent change in facility income from project-supported testing labs. There are around six laboratories in the DR that conduct tests for TraSa's priority value chains, three of which are publicly-run, and the other three privately-owned. TraSa intends to work with three private laboratories in the DR, over the life of project. TraSa Sub-Activity 4.6: Provide Technical Assistance to Private Laboratories will begin in Year 2 following completion of the market opportunity and business analysis described in TraSa Sub-activity 1.5: Support the NTFC with Test Procedures. To prepare for implementation, the TraSa director of SPS & cold chain intends to meet with the two private SPS service labs in the DR during Year 1 to discuss the results of the study and identify focus areas for technical assistance. For the purpose of this baseline study, TraSa required the evaluation team to collect data from two of these laboratories, details of which follow.

Table 19 below details the key informants interviewed for collecting data related to custom indicator #5. In order to protect personally identifiable information (PII) of these two labs, the following section has anonymized the findings by providing the labs unique identifier codes.

Table 19: Stakeholders Interviewed for Custom Indicator #5

Custom Indicator #5 Stakeholders Interviewed	Number of Key Informants Interviewed	Interview Modality (In-person/Virtual)
Laboratory 1 (L1)	1	In-Person
Laboratory 2 (L2)	1	In-Person
Total Number of Interviews Conducted	**2**	

Key Themes that emerged from these key informant interviews (KIIs) are articulated below.

Representatives for the above-mentioned laboratories (in Table 19) are critical to provide testing and evaluation service to the fruit and vegetable and livestock sectors. These labs test for both plant and animal diseases and are also responsible for evaluating agricultural commodities and foods for pesticide and antibiotic residues, mycotoxins, and heavy metals.

Laboratory 1 (L1): This private laboratory conducts microbiological and chemical tests to any fruits and vegetables. Likewise, it conducts quality tests for swine and poultry that focus on identifying the presence of bacteria and fungi, such as: Total count of aerobic mesophylls; total coliforms; *E. Coli*; *E coli O157*; *E coli STECs*; *E. aureus*; *Total Enterobacteriaceae*; *Salmonella sp*.; *Listeria monocytogenes*; sulfite reducing organisms; *Pseudomonas sp.;* fungi and yeasts. It achieved ISO-IEC/17025 certification; ensuring quality procedures are in place. This laboratory has received support from IDB and USDA FFPr SAFE/PROGANA Project, among others. Although the number of sanitary and phytosanitary tests increased in 2019, it faced a significant reduction in 2020 due to the lower demand for these tests given reduced volume of sales/exports due to COVID-19; with some recovery during 2021. At this moment, resources are needed for calibration services of equipment, validating methodologies, and training of staff. The specific types of tests conducted by L1 include microbiology tests, tests to determine moisture in food samples, chromatography and spectrometry tests that determine levels of pesticide residues in fruits and vegetables, tests to determine levels of heavy metals and minerals in soil, water, and plants, entomology and phytopathology analyses of samples for identification of pests and diseases in different crops and more recently this type of analysis in meats. The income generated by the different

laboratories operated by L1 amounted to a total of $222,815 in 2019.[43] During August and September 2019, the Microbiology Laboratory readjusted its facilities to the criteria required to comply with the ISO / IEC 17025: 2017 Standard. In 2019, L1 achieved the first audit of the Conformity Assessment, by the Dominican Accreditation Body (ODAC). With this audit, L1 can compete with international laboratories in obtaining reliable results as demanded by the markets. Another achievement of L1 was to continue offering *E. coli O157: H7* assays to meat products for export to the U.S.

The U.S. Food Safety Inspection Service (FSIS) authorized L1 to perform these analyzes on the grounds that it meets the standards and competence for them. Additionally, they also included the analysis of *salmonella* in meats. Last year the technical staff of the laboratory directly assisted L1 partner producers in the field.

Laboratory 2 (L2). This laboratory is focused on the analysis of pesticides; mainly for fruits and vegetables. They conduct 35 to 50 tests per month. Demand dropped in 2020, but it is recovering in 2021. Their main customers are from La Vega, Valverde, and Santiago. They have received funding from the Dominican Government, IDB, European Union, and USDA though Grant Agreement FCC-517-2009/005-00. Their operation requires to be strengthened in the following areas: infrastructure, reference materials, calibrations, certain materials, methodologies, and exchanges with other laboratories. Specific tests to determine pesticide residues in fruits and vegetables, water analysis, and food analysis include *Aerobic Mesophilic CPP*, Hydrogen Potential (pH) in water, *CPP E. coli* Hydrogen, Potential (pH) in solid foods, *CPP Enterobacteria*, Hydrogen Potential (pH) in soils, Total Coliform CPP, Turbidity, *CPP Salmonella*, Electrical Conductivity (in water), *CPP Staphylococcus aureus*, Electrical Conductivity (in soils), CPP Total Dissolved, Solid Molds and Yeasts (STD), *NMP E. coli*, Hardness, NMP Fecal Coliforms, Salinity, NMP Total Coliforms, Biological Oxygen Demand (BOD), *NMP Pseudomonas*, Biochemical Oxygen Demand (DBQO), Reactive phosphate (orthophosphates), Bulk density (food and forage), Dry Matter, Apparent density in soils, Soluble Solid, Texture in soils, Titratable Acidity, Particle size, Viscosity, Volatile matter, Consistency, Higher calorific value, Nitrites (In Sausages), Fixed carbon, Methoxy content (pectins), Total organic carbon (in soils), Galacturonic acid (pectins), Total organic matter (in soils), Degree of Esterification (pectins), Fat in milk, Water soluble pectin and total pectin, Refractive index, Crude fat in meat and sausages, HLB Total, Ash Percentage, Total Solids (at 20 Celsius), Humidity (at 20 Celsius), Total sugars Ash, and pH Total acidity.

Income for L2 reduced significantly from $71,000 in 2019 to $7,722 in 2020 which can be attributed to the adverse impact of the pandemic on their work, and not because the need for testing dropped due to improved SPS protocols adopted by clients. Lab representatives remarked that their income is steadily increasing in 2021. Representatives were unanimous in their concern for the lack of lab resources including testing equipment, reference materials, and reagents. Furthermore, the annual accreditation of the labs was a challenge: to receive them required a major effort of time and resources, but without the accreditation the industry would have to depend upon labs in the U.S. for professional services. There was also a universally recognized need for additional staff and training. Clearly this is a sector that can benefit greatly from collaborative support from the TraSa Project, the resources of the Interamerican Development Bank, and the responsible government authorities.

Additional insight can be gleaned when TraSa contracts SPS laboratory business opportunity consultants to conduct a study that identifies market opportunities for private labs to offer SPS and food safety

[43] Evaluation Team was not privy to 2020 income information from L1.

testing services, prior to commencing sub activity 4.6: Provide Technical Assistance to Private Laboratories under Activity 4- Training: Sanitary and Phytosanitary Standards (SPS) in Year 2.

Baseline Value for Custom Indicator 5: Percent change in facility income from project-supported testing labs: 0 percent change in baseline year; FY2020 Baseline Value for Income: $180,399.

FFPr Indicator #11: Number of host government or community-derived risk management plans formally proposed, adopted, implemented, or institutionalized with USDA assistance. For FFPr Indicator #11, 12 key informant interviews (KIIs) were conducted in-person and virtually, primarily by the evaluation team Leader, during his field visit in May 17 to 20, 2021 to gather required information regarding the TraSa Project. Representatives from Fundación REDDOM, I4DI's local partner also attended some of these meetings. The evaluation team used its qualitative KII instrument (included as an Annex) as a guideline for the interviews with clear thematic areas outlined to guide the discussion. KII instrument helped to focus the discussion on the responsibilities and resources of the various agencies of the Ministry of Agriculture, Customs, and other government agencies. Meetings generally lasted 45 minutes to an hour and took place where possible in the offices of the key informant. Some were virtual meetings and took place in the office of Fundacion REDDOM. Discussions continued to include IESC and its previous interactions with their offices, related to past programs and TraSa. Key informants (KIs) were in general enthusiastic regarding their interactions with IESC and the expectations for the project, and generally appreciative of being part of an evaluation effort, with most having interacted with IESC in some capacity. None of the key informants mentioned their institutions having existing risk management plans and as such, that should be a key area of focus for the TraSa Project.

Table 20: FFPr Indicator #11 Stakeholder Groups Interviewed

FFPr Indicator #11 Stakeholder Groups Interviewed	Number of Key Informants Interviewed	Interview Modality (In-Person/Virtual)
Customs Agency of the Dominican Republic	3	Virtual
Ministry of Public Health	1	Virtual
Ministry of Agriculture, Office of Agricultural Trade Agreements, (OTCA-Oficina de Tratados Comerciales Agrícolas)	2	In-Person
Ministry of Agriculture, Office of Food Safety (DIA-Departamento de Inocuidad Agroalimentaria)	1	In-Person
Ministry of Agriculture, Plant Health (Sanidad Vegetal)	1	In-Person
Ministry of Commerce, Department of Foreign Trade	1	Virtual
Office of Agricultural Affairs, U.S. Embassy, Santo Domingo[44]	2	In-Person
Inter-American Development Bank (IDB)[45]	1	Virtual
Total Number of Interviews Conducted (FFPr Indicator #11)	**12**	

Key themes that emerged from the lines of inquiry have been summarized below as it relates to FFPr Indicator #11.

[44] The team leader also met with and interviewed two key informants from the Office of Agricultural Affairs within the U.S. Embassy in Santo Domingo and one key informant from the IDB in the Dominican Republic. These institutions are stakeholders in the sense that they represent key international institutions who would support and interact with the host-government and community-derived risk management plans which the TraSa project will help develop.

[45] See previous footnote.

Thematic Area 1: General Perception of the Sanitary and Phytosanitary System of the DR

Key informants interviewed were involved in some aspect of the SPS system of the DR and had useful contextual information to provide to the evaluation team. The extent of their involvement varied depending on the specific key informant but key perceptions are captured below.

State of SPS Systems in the DR. Overall, the respondents had positive things to say about the SPS systems stating that much work had been done to improve systems, particularly related to food safety, over the last five to ten years. Some respondents cited previous work with IESC on the USDA FFPr EQ Program as being helpful towards this initiative. Respondents recognized that continual improvements were necessary for the development of the sector and that meeting SPS requirements for exports was like trying to hit a moving target. Some respondents indicated that much work still needed to be done to keep up with the demands of consumers, particularly those in the U.S.

Resource Constraints. Respondents noted the limitations in resources available to them in relation to their responsibilities and the availability of resources at their disposal to undertake those responsibilities. Respondents expressed the need for more trained staff, more efficient laboratories for testing, more resources for risk analysis, and more comprehensive software to interact with the sector and for their staff.

Service Sustainability. Respondents stated that the sustainability of services by projects like TraSa was one of their chief concerns. While very appreciative of the interventions of TraSa and similar projects, respondents remarked that TraSa resources would eventually be withdrawn after the life of project.

Thematic Area 2: Challenges of the Fruit and Vegetable Sector.

Respondents described a broad range of challenges to the sector and these have been articulated below.

Regulations. Government officials that the ET interviewed referred to several challenges that related to their specific responsibilities, with some indicating that the sector had difficulty meeting the challenge of the higher standard for exporting to the U.S. and Europe. In this regard, it is not necessarily the challenge presented by minimum residue levels or other such publicly mandated requirements, but the overall upgrading of product quality.

Product Quality. While there were some organizations that were fully capable of meeting quality standards, there were a broad range of farmers and packinghouses that could not raise their standards. These standards related to appearance, sugar content (brix), packaging quality, and most importantly to consistency. Consistency in this regard related to both the quantity and quality of the products delivered. Some organizations were well developed and had well established contractual relationships with DR-based distributors and exporters; some had contracts directly with importers in the U.S. This ability to integrate organizations along the value chain from farm to distribution in the U.S. was seen as a solution to maintain quality of the delivered product.

Improper Insecticide/Pesticide Usage. Several respondents described the fruit and vegetable sector's difficulty with the proper use of insecticides, in that they struggle to find the right balance of use. When they use too little insecticides, their products are often refused because of insect infestations; when they use too much insecticide, their products are refused because of the minimum residue levels are exceeded. In many instances, they are using the wrong insecticides. The confusion regarding pesticide registrations and their proper use is part of the problem. This will be an area of focus for the TraSa Project and key informants were nearly unanimous in their support for the effort.

Duality of Farming in the DR. Other expressed some concerns related to the need to provide training at the farm level. There is a wide variety of skills and resources in the farms. Some were well financed and could adapt well to a higher level of food safety and plant health regulation, while others would not likely be receptive, based on a lack of resources or personal interest. As such, respondents showed some understanding of this duality of the sector. Many of the larger organizations were fully integrated: some of them produced avocados, mangos, and other products on land they owned or leased. These organizations had direct control over how products were planted, farmed, and harvested, and were thus able to ensure higher quality at the farm level. While this was a difficult task and required them to manage a more complex organization with a broad range of activities, the efficiencies that they were able to capture were significant. Many of the more developed growers and packinghouses fully understand and adhere to the rules and regulations that govern their industry, while the smaller growers and packinghouses are unable to implement them properly.

Electric Power Generation. Another problem of the industry identified by respondents related strongly to the difficulty of electric power generation and distribution. This was an endemic problem which led to inefficiencies, especially for those with the need to automate their processes and maintain a cold chain for distribution and exports. This was a challenge that could be met by the larger organizations with access to the better services offered in companies in the special economic zones (SEZs). Furthermore, the larger organizations could use their overall economic scale to purchases temporary generators to keep their plants running in case of failure by the national grid. In this regard, the intermittent service of the grid encouraged the dual structure of the market.

National Testing Laboratory Capacity. Several respondents identified the national laboratories as a constraint to the sector citing outdated testing equipment and inability to process important tests related to the presence of pest and diseases in a timely manner. Lab staff would require significant training on how to use the equipment and correctly interpret and communicate test results.

One key informant indicated that the new government that had just recently gained office would need to understand and appreciate the importance of the SPS program effort. This key informant was deeply engaged with the development of the legislation to support the international development bank loans that were to be used primarily for the Ministry of Agriculture on a broad range of activities, including food safety and animal health. The key informant expressed some frustration with the DR's parliament, which had not yet committed the government to the loans, but was however appreciative of USDA's effort and that it would supplement the program.

Thematic Area 3: Informational Needs of the Industry

Improved Software and Technology for the Sector. There was wide agreement related to the information needs of the various government agencies; it was often expressed in terms of new software for use by all agencies involved, including the Ministry of Agriculture. There was a lack of consensus on what common software was needed for the sector. Some were specific regarding their needs: they wanted software related specifically to improving their own office interactions, while others expressed wanting broader access to information of all types: to be better informed in order to make better and more timely decisions.

The Department of Customs stated that their greatest need was to acquire electronic detection equipment since they currently lacked such equipment for inspections. In the absence of detection equipment, customs officials had to frequently open containers and search cargo by hand. The amount of time and labor required for inspections led to higher wait time at the ports. The department intends

to buy more detection equipment but given budget limitations for their office, this is proving to be a difficult endeavor.

Increased International Integration. The effort to formulate policy and perform the necessary interactions with international institutions like the WTO and the CAFTA-DR Secretariat was an important function of information sharing between various agencies. Some respondents explained how they informed the Ministry of Commerce's Department of Foreign Trade regarding important aspects of their work so that they could properly meet the obligations of international agreements.

Thematic Area 4. Legal and Institutional Framework

Regulatory Framework. Currently in the DR, there are several regulations on food safety, and plant and animal health that lack overall coherence, and as such regulatory review being a TraSa Project mandate is favorably seen given this status.

Extent of Integration with International Markets. Given the heavy reliance on exports, there is a need for the DR's SPS policies and procedures, within its existing legal and institutional framework, to be integrated and better communicated with international markets. This is underpinned by the need to clearly and regularly share information related to the DR's international commitments.

Thematic Area 5: Coordination Mechanisms of the Government Agencies: Interventions and Effectiveness

Several meetings are held in the agricultural sector in the DR to inform different agencies regarding the policies of the Ministry of Agriculture, Ministry of Public Health, and other agencies that regulate the sector. In general, there is coordination among these agencies and sector actors with respondents expressing positive outcomes from the collaboration between agencies and sector actors.

The Ministry of Commerce is responsible for the coordination of the Government of the DR's positions for the Sanitary and Phytosanitary (SPS) Agreement for the World Trade Organization (WTO) and a broad range of other agreements, including the CAFTA-DR agreement with the U.S. and Canada. They were also responsible for the DR's positions in the WTO's Trade Facilitation Agreement. As the Ministry plays a coordinating role to gather positions from a broad range of agencies and then make decisions to form the Government's policies, the evaluation team interviewed an official from the Ministry's Department of Foreign Trade. The key informant has been part of teams that have acted as the point of contact for commercial interactions, and their office was the first one contacted when shipments were refused at international borders. In this regard the key informant was well informed about the challenges of the sector and expressed support for IESC's efforts at the farm and packinghouse level: this was the best place to have an impact, not only to improve the current situation but also to have an impact on training young people to learn to manage the supply chain.

Thematic Area 6. Previous Interactions with Projects Similar to the TraSa Project

Several key informants had previous experience with USDA and IESC on other projects, particularly on the EQ Program and to a lesser extent PROGANA. Some of their interactions were as participants in IESC activities, but in general they were observers of previous projects. Key informants were generally positive regarding The EQ Program overall and thought that IESC was well positioned to continue work in the DR. One key informant described experiences working with IESC on the USDA FFPr EQ Program on training related to the WTO's Trade Facilitation Agreement. One focus of that project was related to improving the effectiveness of agencies involved in processing products and documents for imports and

exports. Their interactions with IESC were positive and they looked forward to working with IESC on the TraSa Project.

They all agreed that cooperation and collaboration could be improved. They were interested in the improvement of the overall sector and identified two elements of cooperation: one being with the businesses that they are regulating and the other at the interagency level.

Baseline Value for FFPr Indicator #11: Number of host government or community-derived risk management plans formally proposed, adopted, implemented, or institutionalized with USDA assistance: 0

4. Conclusions

I4DI determined that the sector is in many respects well-positioned to improve its food safety and animal health standards. There was broad recognition among government and industry officials that improvement of the SPS system would support the continued growth of the fruit and vegetable and poultry and swine value chains. Many of those interviewed referred however to the overall lack of resources to support the sector, including the need for additional equipment, staff, and information technologies.

The quantitative survey revealed an industry dominated by middle-aged men on farms and in processing firms that varied greatly in scale. For example, small holder lime farms had less than $10,000 in annual sales; conversely, large poultry operations had annual sales of greater than $2 million.

Key informant interviews and quantitative surveys revealed a wide distribution of adaptive practice. A large portion of chili pepper and eggplant farmers, for example, had not adopted a single improved production practice, while poultry and swine producers were broadly implementing at least one improved practice. Some were large firms that were growing, processing, and distributing with high overall product quality and SPS standards, while other generally smaller organizations were struggling to raise their quality and SPS standards. Overall, the avocado, poultry, and swine farmers and processors were well advanced in their adoption of a number of improved practices.

The evaluation team's experience with getting the required data from swine and poultry slaughterhouses has been difficult with them being wary to share their data. Many required special appointments with written clearance from relevant authorities to access their facilities and gather their information. This may pose a challenge to TraSa programming when working with swine and poultry slaughterhouses, and appropriate lead time needs to be accounted for when working with these stakeholder groups.

Representation of women in the sector (in both permanent and temporary employment) is low, thus targeted training and interventions will be required to draw this demographic in to the sector. This can provide the TraSa Project access to a more diverse beneficiary pool.

The wide variance of attainment among the various subsectors was apparent in the data and confirmed in key informant interviews. There is broad agreement among the government representatives interviewed that the sector needs the services that will be provided by the TraSa Project. Overall, the sector is broadly receptive to the TraSa Project and its intended interventions, and willingly and in some respects enthusiastically participated in the baseline surveys and questions by the I4DI team.

5. Recommendations

The evaluation team's research for the baseline study provided an overall picture of the SPS systems of the DR and a basis for recommendation of IESC to consider:

- **Sustainability of Government Resources.** The lack of resources for the government is a constraint to the development of the sectors and threatens the project's sustainability. The TraSa Project may want to help to develop, along with government agency representatives, a sustainability plan that maintains the projects most essential services from all four project activities[46] after the project is over. The action for IESC in this regard relates to FFPr Indicator #11: Number of host government or community-derived risk management plans formally proposed, adopted, implemented, or institutionalized with USDA assistance.

- **Stakeholder Communication Planning.** An integrated approach is necessary and the TraSa Project may want to put special emphasis on collaboration and communication among government and industry. There was general agreement among KIs that the various government ministries that support and regulate the sectors would need to communicate and collaborate better. Accordingly, the TraSa Project may want to focus its efforts on this front under Activity 1: capacity building of government institutions, and Activity 2: develop an improved policy and regulatory framework.

- **Gender Outreach.** Given the representation of women in the industry (per the findings of this baseline study) is low, the TraSa Project may want to consider some targeted outreach or tailored interventions focused on women so as to ensure a more diverse beneficiary pool that includes more women when furthering TraSa Project interventions under Activity 4: Train private sector firms, farmers, laboratories, and consumers about food safety standards and procedures.

- **National SPS Strategy.** A national strategy to improve the SPS system is needed with the tendency for managers being to focus on specific day to day problems is at the expense of long-term solutions. The TraSa Project's interventions may want to incorporate long-term SPS strategy for the DR from Year 1 onwards when planning interventions under Activity 1: Capacity building of government institutions, and Activity 2: develop an improved policy and regulatory framework.

- **Tailored Laboratory Support.** The laboratories are not functioning well and need special emphasis. They have inadequate resources and staff are unable to support the sector in a fully professional manner and COVID-19 has adversely impacted their work in 2020 with their income dropping exponentially. This drop in income is more attributable to the negative impact of COVID-19 and less because of improved SPS systems in the DR. Interventions under Activity 4: train private sector firms, farmers, laboratories, and consumers about food safety standards and procedures aimed at testing labs may need to take this economic hit into consideration since ramping up income for these labs may take longer time than what TraSa Project may have originally anticipated. Additionally, the DR has notified category C for 8 disciplines: 5.3: Test

[46] TraSa Project activities include: 1) capacity building of government institutions, 2) develop an improved policy and regulatory framework, 3) improve the industry's cold chain facilities and procedures, and 4) train private sector firms, farmers, laboratories, and consumers about food safety standards and procedures.

Procedures, 7.4: Risk Management, 7.6 Average Release Times, 7.8 Expedited Shipments, 7.9 Perishable Goods, 8.0 Border Agency Cooperation, 10.2 Acceptance of Copies, and 10.4 Single Window. They have notified for technical assistance on all of these, but have not identified the donor/agency, nor any progress. In this regard, this is an opportunity for TraSa to provide some specific assistance. In the evaluation team's view, 5.3 Test Procedures and 7.4 Risk Management would relate very strongly to the support the laboratories. Support for 7.6 Average Release Times, might also be one that TraSa could support. While this relates more often to imports, the procedures adopted by customs and other border agencies can apply to both exports and imports. Support on this front could directly be conducted as part of TraSa's envisioned Activity 4 interventions.

- **Accessibility of Port Authority Data.** While the evaluation team has been able to secure the required data from the respective port authorities for Custom Indicator #4: Number of firms that pay to use improved cold chain inspection areas, this has been a time-consuming process. The TraSa Project may encounter similar delays in getting the required information from these authorities over the life of project in planned interventions under Activity 3: Improve the industry's cold chain facilities and procedures. TraSa's director of SPS and cold chain will need to establish early and clear communication channels with port authorities in Haina and Caucedo, as well as airports (once finalized), and send routine requests for information (RFI) in order to receive timely data regarding importers and exporters that frequent cold chain inspection areas in said ports.

- **EAN Reporting.** It is apparent from the number of Emergency Action Notification (EANS) that pest infestations of export cargoes remain a problem in the fruit and vegetable sector and is an impediment to growth. Returned or destroyed cargoes that result from infestations are a risk that impacts the industry broadly and should be a focus of the TraSa Project. With regard to the tracking EANS as part of Custom Indicator #2: Percentage reduction in APHIS EANS for selected commodities, APHIS through its Agricultural Risk Management (ARM) database provides weekly reports that describe the product, pest, port, and action taken to rectify (either treatment or disposal). With this frequency and specificity of data, TraSa can effectively monitor the impact of its work. The evaluation team recommends TraSa should to the extent possible, acquire the reports and share them with stakeholders. The EANS should also be summarized monthly or quarterly to identify trends for program managers. USDA APHIS Plant Protection and Quarantine (PPQ) Weekly Non-Compliance Reports for the Trade Request Form has been included as an Annex to this report for TraSa's consideration. Furthermore, the EANS will perform best as an indicator if they could take into account the volume and value of exports of the specific products. As such, TraSa can use USDA's Global Agricultural Trade System (GATS) to gather monthly U.S. imports from the DR and apply these to the EANS. IESC could generate an "EAN per unit of trade" for accurate measures of impact over the life of the project. These can be compared to the same measure before the project began to measure project impact.

- **Inclusion of Additional TFA Indicator.** Recommendation on additional custom indicators: An indicator that TraSa may want to consider relates directly to the DR's participation in the WTO Trade Facilitation Agreement (TFA). The DR has provided eight "Category C" notifications to the WTO, indicating that they need assistance to meet the requirement of specific TFA disciplines. Some of these disciplines are related strongly to TraSa services. For example, the TFA's disciplines for testing procedures and risk management will be influenced to some degree by TraSa's assistance to the testing laboratories. TraSa should consider possibly adding a new

custom indicator related to the disciplines: Number of "Category C" notifications adjusted to "Categories A or B" by the end of the project (or some other reference to time). A successful outcome for such an indicator would, however, require significant interaction by TraSa with the DR's SPS authorities. IESC would need their full support to be successful in such and effort.

Overall recommendation for the TraSa Project:

An Event Study: Some Measures to Consider

USDA and IESC want to understand whether the TraSa Project has/had an impact on the supply chains in the DR. They may want to consider an "event study", widely used in in econometrics to model quantitative results over time. In many respects, TraSa studies and evaluations can be perceived as "event studies" whereby an economic activity, in this case the markets for a wide variety of fruits and vegetables, will receive services from the TraSa Project. A properly developed event study considers past measures of market activity, and observes the impact, if any, of the event, and then observes the same market activity after the event to evaluate its full impact over time. This may be conducted through one of TraSa's external consultancies planned over the life of project.

Exports: Why They Work as an Overall Measure of Impact of the TraSa Project

An event study to consider for the purposes of TraSa is the impact of the services on exports of the DR. While exports are not the only measure to consider, they represent an opportunity to evaluate project impact because they generate helpful data. An exporter must declare the value of the products at the port to the DR's Census Bureau for the calculation of taxes and measurement of national accounts. The value of the products is in this regard administratively compelled in ways that surveyed sales reports are not. They are also gathered and reported monthly, with only a 60-day time lag. This generates a substantial amount of data that can be analyzed continuously throughout the project and after it is completed.

From exports sales, especially those gathered from the census reports, that are publicly available, TraSa can also identify the name of the exporting and importing firm, the volume and value of the sale, and the reported price of the product. This connects the sale to the exporter; additional information related to contracting may be able to tie the packinghouse and/or producer to the export. Perhaps most importantly, export data is often available over time: in the DR there are data from 2016. The ability to capture the economic activity of the markets for these products in the past and compare them to the same measure during and after the project sets the stage for an opportunity to evaluate the impact of the TraSa Project in an in-depth quantitative manner. Should IESC be interested in pursuing an event study independently or in conjunction with an existing scheduled study or assessment, the evaluation team can provide further guidance on operationalizing this study.

TraSa Project Targets[47]

Per the Baseline Study TOR, the evaluation team is responsible to provide a discussion to verify the realism of all proposed performance targets as developed in TraSa Attachment D: Performance Indicators Modification I. Table 21 provides a rationale or recommendation for existing TraSa Targets.

Table 21: Table Providing Evaluation Team's Recommendations for TraSa Indicator Targets

Indicator Name and Number	TraSa Baseline Value	TraSa Final Target from PMP[48]	Rationale & Recommendation on TraSa Targets
FFPr Indicator #18: Value of annual sales of farms and firms receiving USDA assistance	Firms (2020): $54,777,968 Farms (2020): $31,098,894	$35,240,000	TraSa intends to measure this indicator at the *firm* level for both farm and firm data, since farmers sell to firms to reach international markets, i.e. exports. To avoid double counting sales and still have credible information at the farm level, TraSa should measure farm and firm data separately; this would also be useful to cross-reference sales information between firms and farms. Along with this, a specific target for sales at farm level should be considered since the current target for FFPr 18 takes into account only firms sales. Target for this indicator (captured at the packinghouse level-both farmer and firm sales- see rationale for this under table 6, section on Baseline Value Determination, and Evaluation Limitations related to slaughterhouses) should be revised to reflect two key elements: a) 5 percent yearly increase on TraSa's intended annual targets as presented in Attachment D: Performance Indicators Modification I; and, b) the targeted number of beneficiaries TraSa intends to work with each year, as confirmed by TraSa, i.e Y1= 2 packinghouses, Y2=65 packinghouses, Y3=110 packinghouses, Y4=110 packinghouses, Y5=110 packinghouses. Based on parameters (a) and (b) above, the projected target value for indicator FFPr Indicator #18 in FY2025 should be increased to $66,582,962. Likewise, the evaluation team recommends setting a sales value target for farms at $37,318,673 for FY2025 based on the baseline values projected for farm sales. See Annex F for more details.

[47] Additional analysis can be found in Annex F: TraSa Datasets.

[48] Information from TraSa PMP and Attachment D: Performance Indicators Modification I of the TraSa Cooperative Agreement

Indicator Name and Number	TraSa Baseline Value	TraSa Final Target from PMP[48]	Rationale & Recommendation on TraSa Targets
FFPr Indicator #19: Volume of annual sales of farms and firms receiving USDA assistance (in MT)	Firms (2020): 70,978 MT Farms (2020): 78,481 MT	33,582 MT	The same approach to establish revised targets for FFPr Indicator #18 should be undertaken for FFPr Indicator #19 (Volume of commodities sold by farms and firms) and as such, final target for indicator FFPr Indicator #19 should be increased to 86,274 metric tons. Similarly, volume of sales target for FY2025 at farm level can be projected at 94,178 MT.
FFPr Indicator #3: Number of hectares under improved management practices or technologies with USDA assistance	3,662 HA	4,558 HA	TraSa's target for indicator FFPr Indicator #3 (Number of hectares under improved management practices or technologies), will likely be attained as the baseline value established by this study (i.e. 3,662 HA) is below intended total target.
FFPR Indicator #4: Number of individuals in the agriculture system who have applied improved management practices or technologies with USDA assistance	906	3,969	TraSa's final target will likely be attained as the baseline value for this indicator is 906.
FFPr Indicator #11: Number of host government or community-derived risk management plans formally proposed, adopted, implemented or institutionalized with USDA assistance	0	27	The target set for this indicator is consistent with the baseline study findings, and will be attained by TraSa as the baseline value for this indicator is 0 and there is overwhelming appreciation from the government for IESC's prior work with them.
Custom Indicator #2: Percent reduction in APHIS	0 percent[49] CY2020: 147 Pest EANs	15 percent	The target set for this indicator is consistent with the baseline study findings. Rationale for baseline value is corroborated with appropriate disaggregations in Annex A below

[49] Based on data received from APHIS for 2020.

Indicator Name and Number	TraSa Baseline Value	TraSa Final Target from PMP[48]	Rationale & Recommendation on TraSa Targets
EANs for selected commodities			
Custom indicator #4: Number of firms that use improved cold chain inspection areas	211	3,420	The target set for this indicator is consistent with the baseline study findings. Rationale for baseline value is corroborated with appropriate disaggregations in Annex A below
Custom indicator #5: Percent increase in facility income from project-supported testing labs	0 percent FY2020: $180,399	10 percent	The target set for this indicator is consistent with the baseline study findings. Rationale for baseline value is corroborated with appropriate disaggregations in Annex A below

Annex A: TraSa Project Baseline Values for Performance & Context Indicators

Table 22: TraSa Project Baseline Values with Relevant Disaggregations

Indicator Name	Proposed Baseline Value[50]
FFPr Indicator #3: Number of hectares under improved management practices or technologies with USDA assistance[51]	**3,662 HA**
▪ **Crops (i.e. fruits and vegetable) farms (smallholder, i.e < 5 HA farm)**	**299 HA**
○ **Avocado**	175 HA
○ **Bell peppers, cucumbers, tomatoes**	122 HA
○ Chili peppers, eggplants	-
○ **Limes**	1 HA
○ **Papaya**	-
○ **Pineapple**	-
▪ **Crops (e. fruits and vegetable) farms (non-smallholder, i.e > 5 HA farm)**	**1,179 HA**
○ Avocado	568 HA
○ Bell peppers, cucumbers, tomatoes	-
○ Chili peppers, eggplants	-
○ Limes	-
○ Papaya	382 HA
○ Pineapple	229 HA
▪ **Livestock (swine and poultry) farms (smallholder, i.e < 5 HA farm)**	**224 HA**
○ **Swine**	131 HA
○ **Poultry**	93 HA
▪ **Livestock (swine and poultry) farms (non-smallholder, i.e > 5 HA farm)**	**1,961 HA**
○ Swine	1,635 HA
○ Poultry	325 HA
FFPr Indicator #4: Number of individuals in the agriculture system who have applied improved management practices or technologies with USDA assistance[52]	**906**
▪ **Crops (i.e. fruits and vegetable) farms (smallholder, i.e < 5 HA farm)**	**176**
○ Avocado	98

[50] Rounded up to the nearest whole number

[51] Average hectares under improved technologies and practices was estimated by multiplying the proportion of sampled farms that applied improved technologies and practices by the targeted LOP project participants (LOP) with applicable hectarage, i.e 1200 unique farmer beneficiaries. Note that three large farms with hectarage greater than 150 HA have been removed for the purpose of calculating the baseline value for Indicator 3.

[52] This value is estimated based on the proportion from sample of farmers and individuals who apply at least one improved practice multiplied by their respective target populations/ unique beneficiaries (i.e. 1,200 farmers, and 675 individuals) that TraSa plans on engaging throughout LOP- See table 6 for more details

Indicator Name	Proposed Baseline Value[50]
○ Bell peppers, cucumbers, tomatoes	43
○ Chili peppers, eggplants	-
○ Limes	2
○ Papaya	19
○ Pineapple	14
▪ **Crops (i.e. fruits and vegetable) farms (non-smallholder, i.e >5 HA farm)**	**119**
○ Avocado	66
○ Bell peppers, cucumbers, tomatoes	28
○ Chili peppers, eggplants	-
○ Limes	2
○ Papaya	13
○ Pineapple	10
▪ **Livestock (swine and poultry) farms (smallholder, i.e. < 5 HA farm)**	**171**
○ **Swine**	121
○ **Poultry**	50
▪ **Livestock (swine and poultry) farms (non-smallholder, i.e. > 5 HA farm)**	**114**
○ Swine	81
○ Poultry	33
▪ **Individuals[53]**	**326**
FFPr Indicator #11: Number of host government or community-derived risk management plans formally proposed, adopted, implemented, or institutionalized with USDA assistance	**0**
FFPr Indicator #18: Value of annual sales (in USD) of farms and firms receiving USDA assistance[54]	**Firms (2020): $54,777,968 Farms (2020): $31,098,984**
▪ **Firms**	
○ Total Annual Sales Value, Small Firm 2020	$26,288,552
○ Total Annual Sales Value, Non-Small Firm 2020	$28,489,416
▪ **Farms**	
○ **Crops (i.e. fruits and vegetable) farms (smallholder, i.e < 5 HA farm)**	**$8,716,405**
▪ Avocado	$758,571
▪ Bell peppers, cucumbers, tomatoes	$5,019,692
▪ Chili peppers, eggplants	$2,852,148
▪ Limes	$85,994
▪ Papaya	-
▪ Pineapple	-

[53] These include people in government, technicians, who receive training and technical assistance from TraSa

[54] To estimate the value of annual sales value (in USD), average sales for farmers and firms in sample were multiplied by the total target population (i.e. 110 firms, and 1,200 farmers). Average exports sales value was the data point from the farmer survey used for farmers' sales value determination.

Indicator Name	Proposed Baseline Value[50]
○ **Crops (i.e. fruits and vegetable) farms (non-smallholder, i.e >5 HA)**	$22,382,489
▪ Avocado	$1,792,055
▪ Bell peppers, cucumbers, tomatoes	-
▪ Chili peppers, eggplants	10,154,856
▪ Limes	1,342,992
▪ Papaya	$2,466,552
▪ Pineapple	$6,626,034
FFPr Indicator 19: Volume of commodities sold by farms and firms receiving USDA assistance[55]	**Firms (2020): 70,978 MT Farms (2020): 78,481 MT**
▪ **Firms**	
○ Total Annual Sales Volume, Small Firm 2020	18,001 MT
○ Total Annual Sales Volume, Non-Small Firm 2020	52,977 MT
▪ **Farms**	
○ **Crops (i.e. fruits and vegetable) farms (smallholder, i.e < 5 HA farm)**	**16,473 MT**
▪ Avocado	3,205 MT
▪ Bell peppers, cucumbers, tomatoes	8,173 MT
▪ Chili peppers, eggplants	4,931 MT
▪ Limes	163 MT
▪ Papaya	-
▪ Pineapple	-
○ **Crops (i.e. fruits and vegetable) farms (non-smallholder, i.e > 5 HA farm)**	**62,009 MT**
▪ Avocado	7,572 MT
▪ **Bell peppers, cucumbers, tomatoes**	-
▪ **Chili peppers, eggplants**	17,558 MT
▪ **Limes**	2,551 MT
▪ **Papaya**	11,347 MT
▪ **Pineapple**	22,981 MT
Custom Indicator # 2: Percent change in APHIS EANs for selected commodities[56] (Using CY2020 as the base year[57]):	**0 percent CY2020: 147**
▪ # of Pest EANs for Avocados (2020)	42
▪ # of Pest EANs for Bell Peppers (2020)	23
▪ # of Pest EANs for Chili Peppers (2020)	24
▪ # of Pest EANs for Eggplant (2020)	22

[55] To estimate the value of annual sales volume (in MT), average sales for farmers and firms in sample were multiplied by the total target population (i.e. 110 firms, and 1,200 farmers). Average exports sales volume was the data point from the farmer survey used for farmers' sales volume determination.

[56] Information for cucumbers was not available. For TraSa's tracking purposes, TraSa can sign up for a weekly non-compliance report from APHIS, which will help with weekly, monthly disaggregated data for commodity EANs. This form has been included as an Annex to this report

[57] Data provided directly from APHIS for calendar year only.

Indicator Name	Proposed Baseline Value[50]
▪ # of Pest EANs for Limes (2020)	0
▪ # of Pest EANs for Papaya (2020)	1
▪ # of Pest EANs for Pineapple (2020)	23
▪ # of Pest EANs for Tomatoes (2020)	12
Custom Indicator # 5: Percent change in facility income from project-supported testing labs[58]	**0 percent FY2020: $180,399**
▪ Laboratory 1 (L1) (Using FY2020 as the base year)	$174,072
▪ Laboratory 2 (L2) (Using FY2020 as the base year)	$6,327
Custom Indicator # 4: Number of firms that pay to use improved cold chain inspection areas	**211**
▪ Number of firms that pay to use improved cold chain inspection areas at port of Haina	175
▪ Number of firms that pay to use improved cold chain inspection areas at port of Caucedo	36
Context Indicator #1 Value of agricultural exports in USD, 2020	**$1.96 billion**
Context Indicator #2 Volume of agricultural exports in metric tons (MT), 2020	**2.42 million MT**
Context Indicator #3 Value of agricultural imports in USD, 2020	**3.12 billion MT**
Context Indicator #4 Volume of agricultural imports in MT, 2020	**8.21 million MT**

[58] Period covering FY2020 i.e. October 2019-September 2020, and overall value for Laboratory 1, and Laboratory 2

Annex B: Bibliography

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- DR National Statistics Office (ONE)
- **Harvard Atlas of Economic Complexity**
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- Knoema Data Services, New York, NY (for exports and imports of the Dominican Republic)
- OECD/DAC Network on Development Evaluation (2019.) Better Criteria for Better Evaluation: Revised Evaluation Criteria Definitions and Principles for Use
- United Nations (UN) Comtrade database
- USDA FFPR Trade Safe (TraSa) Cooperative Agreement, Attachment D: Performance Indicators
- USDA FFPR Trade Safe (TraSa) Evaluation Plan (February 1, 2021)
- USDA FFPR Trade Safe (TraSa) Performance Management Plan (January 20, 2021)
- USDA Foreign Agricultural Service Food Assistance Division, (February 2019.) Food Assistance Indicators and Definitions
- USDA Foreign Agricultural Service Food Assistance Division, (February 2019.) Monitoring and Evaluation Policy
- USDA-Foreign Agricultural Service's Global Agricultural Trade System (GATS.)
- USDA Food for Progress Learning Agenda: Trade Expansion and Agricultural Market Development
- World Trade Organization Data

Annex C: Data Collection Instrument

Table of Contents

QUANTITATIVE INSTRUMENT: QUESTIONNAIRE 1-FRUITS AND VEGETABLES FARMERS

TraSa Baseline Study Survey Guide for Enumerators

Survey Format:

The interviewer engages the beneficiary/participant selected for interview in an open discussion structured around predetermined questions as identified in the specific questionnaire prepared for each target beneficiary type.

1) Verbal consent is asked by the lead interviewer and provided by each participant.
2) If possible, a second researcher assists the lead interviewer in taking notes of responses and general observations and will record the session with informed consent obtained from the key informant prior to the start of the discussion. Confidentiality and anonymity will be ensured. The second researcher notes the time of day, location of interview, and other relevant details as provided in the Survey Guide.
3) The interview should last a maximum of 45 minutes and follow the Survey Guide as closely as possible. Guides have been built with the specific background of the participant in mind; therefore, some questions are designed to apply only to certain types of respondents.

Notes on the Use of this Guide:

Before beginning the questionnaire, introduce yourself and the study to: 1) help establish the purpose for the interview; 2) explain who is involved in the process; 3) establish credibility for the interview and yourself as the interviewer; 4) explain confidentiality rules and note taking approach you plan to use; 5) explain why their cooperation is important in collecting the information you need; and 6) explain what will happen with the collected information and how the community/industry and project will benefit.

[ENUMERATOR TO READ OUT LOUD]:

Good Morning/ afternoon/ evening. Hello, my name is_____, and I work for the Institute for Development Impact (I4DI)/Fundacion REDDOM. We are conducting this survey for the USDA Food for Progress funded 'Trade Safe' Project implemented by the International Executive Service Corps [IESC]. As a representative of <farm/firm> potentially being supported by TraSa, you have been identified as a key stakeholder with valuable insight on your commodity/livestock product within the DR trade/export industry. As you know, the TraSa Project aims to improve the efficiency, coordination, and transparency of the trade, commercialization, and safety of food and agricultural products namely in tomatoes, peppers, cucumbers, avocado, papaya, eggplant, limes, swine, and poultry. TraSa will help facilitate these improvements by supporting the implementation of science and risk-based sanitary and phytosanitary (SPS) measures, standards, and regulations. The purpose of this survey is to understand the current situation and how this project can contribute to significant improvement. Through the course of this survey, I will take time to explain the topics and questions we are about to cover. To this end, I would like to talk to you and gather your responses for this study. This interview should roughly take about 60 minutes of your time.

I would like to assure you that the data collected through this interview are completely confidential. Your name will not appear in any document that relates to the interview. Your responses will be grouped with

other interview responses and will be used for research purposes only. Data from all interviews will be aggregated and will only be used for purposes of analysis. Please feel free to ask me any questions or share concerns you may have during or at the end of the interview. Do you agree to participate in the interview? May we record and take notes during this interview? May we also take photographs of you, your farm/firm premises during this questionnaire? [Mark Consent]

QUESTIONNAIRE 1-FRUITS AND VEGETABLES FARMERS

Location:

Start Time:

Consent: [ ] Questionnaire [ ] Audio Recording [ ] Photographs

End Time:

Respondent Profile: <Name, Title, Organization>

Date:__/_____/ 2021 (dd/mm/yyyy)

Enumerator Name: ____

Enumerator ID: _____

1.0 Basic Information					
1.1 Name of Producer					
1.2 Age					
1.3 Telephone Number					
1.4 Do you have a spouse?	Yes	___ No	Children	___Yes	____No
1.5 Occupation					
1.6 Municipality			Place		
1.7 Coordinates (If interview has been *in situ*)					
1.8 If you have employees, please state how many	Permanent Employees		Temporary Employees		
	Male	Female	Male	Female	
2.0 Terrain Information					

	Mark [X] if applicable	Tenure	Tareas
2.1 Indicate the status of the farm (form of tenure) and the tareas size		**1.** Ownership with title	
		2. Ownership without title	
		3. Lease	
		4. Borrowed	

	Mark [X] if applicable	Terrain Conditions	Tareas
2.2 Indicate the ground conditions		**1.** Llana/Flat	
		2. Ladera suave/Gentle hillside	
		3. Ladera pronunciada ("Jaida")/Steep hillside	

3.0 Crop information for indicators # 3 and # 4

Indicator #4	3.1 Do you apply any of the following practices or technologies on your farm? Mark with an X the practices and technologies that apply. (Interviewer should ask for any evidence of practices applied, such as registries used or certification, among others)
	3.1.1 Compliance with safety standards (FSMA). Do you have a safety plan or equivalent?
	3.1.2 Workers trained in food safety issues
	3.1.3 Compliance with Good Agricultural Practices standards according to some certification (eg. Global GAP, Primus Lab or equivalent)
	3.1.4 Security measures and sanitary control
	3.1.5 Integrated pest management (pest monitoring, use of beneficial insects, among others)
	3.1.6 Improved postharvest handling practices
	3.1.7 Indicate the type of crop you harvest and apply improved practices
Indicator #3	3.2 If the answer above is yes, on how many tasks do you apply the improved technologies or practices? (15.9 tareas equal 1 hectare)

Cultivation	Tareas (15.9 tareas equivalen a 1 hectárea)	Cultivation	Tareas

1. Pineapple		Others (Please Specify Below)	
2. Avocado		**10.**	
3. Tomato		**11.**	
4. Cucumber		**12.**	
5. Bell Pepper		**13.**	
6. Thai chili		**14.**	
7. Papaya		**15.**	
8. Lime		**16.**	
9. Eggplant		**17.**	

4.0 Risk Information

4.1 In the last 12 months, have you been attacked with any pests or diseases in your crop?	__Yes	__No

4.2 If you answered 'Yes', please indicate with an **X** the measures taken to control/manage pests/disease

1. Phytosanitary control	
2. Cultural Practices	
3. Integrated pest management	
4. Others (Please Specify)	

5.0 Sales in volume and in RD $ - Information for indicators # 18 and # 19

Indicator #19	5.1 Around how many of the following products did you grow and sell last year and in 2019? Please indicate the quantity in quintals or in units.					
Cultivation	**Year 2019**			**Year 2020**		
	Quantity	**QQ / Units**	**Average Price**	**Quantity**	**QQ / Units**	**Average Price**
Pineapple						
Avocado						
Tomato						

Cucumber						
Bell Pepper						
Thai chili						
Papaya						
Lime						
Eggplant						

5.2: Around how much income did you generate from your farming operation last year and 2019?		
Income in RD$	2020:	2019:
Income in US$	2020:	2019:
5.2: Did you export last year and in 2019, or was your product exported through a third party - packinghouse, for example? If yes, what was the value of the exports?		
Export value in RD$	2020:	2019:
Export value in US$	2019:	2020:

QUANTITATIVE INSTRUMENT: QUESTIONNAIRE 2 PACKINGHOUSES/ SLAUGHTERHOUSES

TraSa Baseline Study Survey Guide for Enumerators

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3) The interview should last a maximum of 45 minutes and follow the Survey Guide as closely as possible. Guides have been built with the specific background of the participant in mind; therefore, some questions are designed to apply only to certain types of respondents.

Notes on the Use of this Guide:

Before beginning the questionnaire, introduce yourself and the study to: 1) help establish the purpose for the interview; 2) explain who is involved in the process; 3) establish credibility for the interview and yourself as the interviewer; 4) explain confidentiality rules and note taking approach you plan to use; 5) explain why their cooperation is important in collecting the information you need; and 6) explain what will happen with the collected information and how the community/industry and project will benefit.

[ENUMERATOR TO READ OUT LOUD]:

Good Morning/ afternoon/ evening. Hello, my name is_____, and I work for the Institute for Development Impact (I4DI)/Fundacion REDDOM. We are conducting this survey for the USDA Food for Progress funded 'Trade Safe' Project implemented by the International Executive Service Corps [IESC]. As a representative of <farm/firm> potentially being supported by TraSa, you have been identified as a key stakeholder with valuable insight on your commodity/livestock product within the DR trade/export industry. As you know, the TraSa Project aims to improve the efficiency, coordination, and transparency of the trade, commercialization, and safety of food and agricultural products namely in tomatoes, peppers, cucumbers, avocado, papaya, eggplant, limes, swine, and poultry. TraSa will help facilitate these improvements by supporting the implementation of science and risk-based sanitary and phytosanitary (SPS) measures, standards, and regulations. The purpose of this survey is to understand the current situation and how this project can contribute to significant improvement. Through the course of this survey, I will take time to explain the topics and questions we are about to cover. To this end, I would like to talk to you and gather your responses for this study. This interview should roughly take about 60 minutes of your time.

I would like to assure you that the data collected through this interview are completely confidential. Your name will not appear in any document that relates to the interview. Your responses will be grouped with other interview responses and will be used for research purposes only. Data from all interviews will be aggregated and will only be used for purposes of analysis. Please feel free to ask me any questions or share concerns you may have during or at the end of the interview. Do you agree to participate in the interview? May we record and take notes during this interview? May we also take photographs of you, your farm/firm premises during this questionnaire? [Mark Consent]

QUANTITATIVE INSTRUMENT: QUESTIONNAIRE 2- PACKINGHOUSES/ SLAUGHTERHOUSES

Location:

Start Time:

Consent: [ ] Questionnaire [ ] Audio Recording [ ] Photographs

End Time:

Date:_____/_____/ 2021 (dd/mm/yyyy)

Enumerator Name: _____

Enumerator ID: _____

1.0 Basic Information					
1.1 Name of owner / manager					
1.1 Age					
1.2 Telephone Number					
1.3 Do you have a spouse?	____Yes	____No	Children?	____Yes	____No
1.4 Occupation					
1.5 Municipality			Place		
1.6 Coordinates (If interview has been in situ)					

	Permanent employees		Temporary employess	
1.7 If you have employees, please state how many	Male	Female	Male	Female

2.0 **Information about the operation for indicator # 4**	
Indicator #4	2.1 Do you apply any of the following practices or technologies in your packing house? Mark with an X the practices and technologies that apply. (Enumerator should ask for any registry or certification)
	2.1.1 Compliance with food safety standards (FSMA)
	2.1.2 Workers trained in food safety issues
	2.1.3 Compliance with Good Agricultural Practices standards according to some certification (Global GAP, Primus Lab or equivalent)
	2.1.4 Security measures and sanitary control
	2.1.5 Improved postharvest handling practices.
	2.1.6 Cold chain product management
	2.1.7 Others

3.0 Sales in volume and in RD $ - Information for indicators # 18 and # 19

Indicator #19	3.1: About how many of the following products did you pack and sell last year? Please indicate the quantity in boxes (KG or Lbs.)							
Cultivation/ Livestock	**Year 2019**				**Year 2020**			
	Quantity	**Unit**	**Average Price**	**Total (US$)**	**Quantity**	**Unit**	**Average Price**	**Total (US$)**
Pineapple								
Avocado								
Tomato								
Cucumber								
Bell Pepper								
Thai chili								
Papaya								
Lime								
Eggplant								
Swine								
Poultry								

Indicator #18	3.2 About how much was your operating income last year and in 2019?	
Income in RD$	2020:	2019:
Income in US$	2020:	2019:
Export	3.3 Did you export last year, or was your product exported through a third party - packing house, for example? If yes, what was the value of exports?	
Value of Exports RD$	2020:	2019:

Value of Exports US	2020:	2019:

4.0 **Risk Information**		
4.1 In the last 12 months, have you been attacked with any pests or diseases in the commodities you work with?	__Yes	__No
4.2 If you answered 'Yes', please indicate with an **X** the measures taken to control/manage pests/disease?		
1. Phytosanitary control		
2. Cultural Practices		
3. Integrated pest management		
4. Others (Please Specify)		

QUANTITATIVE INSTRUMENT: QUESTIONNAIRE 3- SWINE FARMERS

TraSa Baseline Study Survey Guide for Enumerators

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[ENUMERATOR TO READ OUT LOUD]:

Good Morning/ afternoon/ evening. Hello, my name is_____, and I work for the Institute for Development Impact (I4DI)/Fundacion REDDOM. We are conducting this survey for the USDA Food for Progress funded 'Trade Safe' Project implemented by the International Executive Service Corps [IESC]. As a representative of <farm/firm> potentially being supported by TraSa, you have been identified as a key stakeholder with valuable insight on your commodity/livestock product within the DR trade/export industry. As you know, the TraSa Project aims to improve the efficiency, coordination, and transparency of the trade, commercialization, and safety of food and agricultural products namely in tomatoes, peppers, cucumbers, avocado, papaya, eggplant, limes, swine, and poultry. TraSa will help facilitate these improvements by supporting the implementation of science and risk-based sanitary and phytosanitary (SPS) measures, standards, and regulations. The purpose of this survey is to understand the current situation and how this project can contribute to significant improvement. Through the course of this survey, I will take time to explain the topics and questions we are about to cover. To this end, I would like to talk to you and gather your responses for this study. This interview should roughly take about 60 minutes of your time.

I would like to assure you that the data collected through this interview are completely confidential. Your name will not appear in any document that relates to the interview. Your responses will be grouped with other interview responses and will be used for research purposes only. Data from all interviews will be aggregated and will only be used for purposes of analysis. Please feel free to ask me any questions or share concerns you may have during or at the end of the interview. Do you agree to participate in the interview? May we record and take notes during this interview? May we also take photographs of you, your farm/firm premises during this questionnaire? [Mark Consent]

QUANTITATIVE INSTRUMENT: QUESTIONNAIRE 3- SWINE FARMERS

Location:

Start Time:

End Time:

Consent: [ ] Questionnaire [ ] Audio Recording [ ] Photographs

Date:_____/_____/ 2021 (dd/mm/yyyy)

Enumerator Name: _____

Enumerator ID: _____

1.0 Basic Information	
1.1 Name of Producer	
1.2 Age	
1.3 Telephone Number	

1.4 Do you have a spouse?	Yes	No	Children	___Yes	____No
1.5 Occupation					
1.6 Municipality			Place		
1.7 Coordinates (If interview has been *in situ*)					
1.8 If you have employees, please state how many	Permanent Employees		Temporary Employees		
	Male	Female	Male	Female	

2.0 Information on pig farming for FFPr indicators # 3 & # 4	
Indicator #4	2.1 Do any of the following practices are applied in your farm? Mark with an X the practices that that are applied. (Enumerator should request any available documentation or prove when applicable).
	2.1.1 Registration with the Department of Animal Health.
	2.1.2 Registration and control of animal movements inside and outside the facilities.
	2.1.3 Registration and compliance with the vaccination program.
	2.1.4 Biosecurity measures of production and monitoring facilities
	2.1.5 Implementation of a cleaning and disinfection plan for the facilities.
	2.1.6 Implementation of a nutrition and animal feeding plan.
Indicator #3	2.2 If the answer above is positive, how often do you apply productive management practices?

Number of practice	***Frequency with which it is applied (Daily / Weekly, Biweekly, Monthly, among others)***

3.0 Sales in volume (KG) and in value (RD $) - Information for indicators # 18 and # 19						
Indicator #19	3.1: Approximately how many Kgs of swine/pork did you sell last year? Please indicate the quantity in units.					
Livestock	**Year 2019**			**Year 2020**		
	Quantity (KG)	**Average price (RD$/KG)**	**Total (RD$)**	**Quantity (KG)**	**Average price (RD$/KG)**	**Total (RD$)**
Pigs for meat						
Pigs for breeding						
Indicator #18	3.2 Approximately, how much was the income from the sale of pork in 2019?					
Income (RD$)						
Income (US$)						
Indicator #18	3.3 Approximately, how much was the income from the sale of pork last year (2020)?					
Income (RD$)						
Income (US$)						

4.0 Risk Information		
4.1 In the last 12 months, have you been affected by some diseases in your livestock?	__Yes	__No
4.2 If the answer is YES, indicate with an X the disease that it affected and what measures you use to control and manage the diseases?		

Diseases	**Measures used for disease control and management**
_____Swine cholera	
_____Salmonella	
_____Porcine Circovirus	
_____Porcine Reproductive and Respiratory Syndrome (PRRS)	

_____Swine Influenza	
____Other (please specify)	

QUANTITATIVE INSTRUMENT: QUESTIONNAIRE 4- POULTRY FARMERS

TraSa Baseline Study Survey Guide for Enumerators

Survey Format:

The interviewer engages the beneficiary/participant selected for interview in an open discussion structured around predetermined questions as identified in the specific questionnaire prepared for each target beneficiary type.

1) Verbal consent is asked by the lead interviewer and provided by each participant.
2) If possible, a second researcher assists the lead interviewer in taking notes of responses and general observations and will record the session with informed consent obtained from the key informant prior to the start of the discussion. Confidentiality and anonymity will be ensured. The second researcher notes the time of day, location of interview, and other relevant details as provided in the Survey Guide.
3) The interview should last a maximum of 45 minutes and follow the Survey Guide as closely as possible. Guides have been built with the specific background of the participant in mind; therefore, some questions are designed to apply only to certain types of respondents.

Notes on the Use of this Guide:

Before beginning the questionnaire, introduce yourself and the study to: 1) help establish the purpose for the interview; 2) explain who is involved in the process; 3) establish credibility for the interview and yourself as the interviewer; 4) explain confidentiality rules and note taking approach you plan to use; 5) explain why their cooperation is important in collecting the information you need; and 6) explain what will happen with the collected information and how the community/industry and project will benefit.

[ENUMERATOR TO READ OUT LOUD]:

Good Morning/ afternoon/ evening. Hello, my name is_____, and I work for the Institute for Development Impact (I4DI)/Fundacion REDDOM. We are conducting this survey for the USDA Food for Progress funded 'Trade Safe' Project implemented by the International Executive Service Corps [IESC]. As a representative of <farm/firm> potentially being supported by TraSa, you have been identified as a key stakeholder with valuable insight on your commodity/livestock product within the DR trade/export industry. As you know, the TraSa Project aims to improve the efficiency, coordination, and transparency of the trade, commercialization, and safety of food and agricultural products namely in tomatoes, peppers, cucumbers, avocado, papaya, eggplant, limes, swine, and poultry. TraSa will help facilitate these improvements by supporting the implementation of science and risk-based sanitary and phytosanitary (SPS) measures, standards, and regulations. The purpose of this survey is to understand the current situation and how this project can contribute to significant improvement. Through the course of this survey, I will take time to explain the topics and questions we are about to cover. To this end, I would like

to talk to you and gather your responses for this study. This interview should roughly take about 60 minutes of your time.

I would like to assure you that the data collected through this interview are completely confidential. Your name will not appear in any document that relates to the interview. Your responses will be grouped with other interview responses and will be used for research purposes only. Data from all interviews will be aggregated and will only be used for purposes of analysis. Please feel free to ask me any questions or share concerns you may have during or at the end of the interview. Do you agree to participate in the interview? May we record and take notes during this interview? May we also take photographs of you, your farm/firm premises during this questionnaire? [Mark Consent]

QUANTITATIVE INSTRUMENT: QUESTIONNAIRE 4- POULTRY FARMERS

Location:

Start Time:

End Time:

Consent: [ ] Questionnaire [ ] Audio Recording [ ]

Photographs Date:_____/_____/ 2021 (dd/mm/yyyy)

Enumerator Name: _____

Enumerator ID: _____

1.0 Basic Information					
1.1 Name of Producer					
1.2 Age					
1.3 Telephone Number					
1.4 Do you have a spouse?	Yes	No	Children	___Yes	___No
1.5 Occupation					
1.6 Municipality	___	__	Place		
1.7 Coordinates (If interview has been *in situ*)					
1.8 If you have employees, please state how many	Permanent Employees		Temporary Employees		
	Male	Female	Male	Female	
2.0 Information on poultry operation for FFPr indicators # 3 and # 4					

Indicator #4	2.1 Do any of the following practices are applied in your farm? Mark with an X the practices that that are applied. (Enumerator should request any available documentation or prove when applicable).
	2.1.1 Registration with the Department of Animal Health.
	2.1.2 Registration and control of animal movements inside and outside the facilities.
	2.1.3 Registration and compliance with the vaccination program.
	2.1.4 Biosecurity measures of production and monitoring facilities
	2.1.5 Implementation of a cleaning and disinfection plan for the facilities.
	2.1.6 Implementation of a nutrition and animal feeding plan.
Indicator #3	2.2 If the answer above is positive, how often do you apply productive management practices?

Number of practice	***Frequency with which it is applied (Daily / Weekly, Biweekly, monthly, among others)***

3.0 Sales in volume (KG) and in value (RD $) - Information for FFPr indicators # 18 and # 19						
Indicator #19	3.1 Approximately how many Kgs of poultry did you sell last year & in 2019? Please indicate the quantity in units.					
Livestock	**Year 2019**			**Year 2020**		
	Quantity (KG)	**Average price (RD$/KG)**	**Total (RD$)**	**Quantity (KG)**	**Average price (RD$/KG**	**Total (RD$)**
Indicator #18	4.2 Approximately, how much was the income from the sale of poultry in 2019?					
Income (RD$)						
Income (US$)						
Indicator #18	4.3 Approximately, how much was the income from the sale of poultry last year (2020)?					

ncome (RD$)	
Income (US$)	

4.0 Risk Information

4.1 In the last 12 months, have you been affected by some diseases in your livestock?	__Yes	__No

4.2 If the answer is YES, indicate with an X the disease that it affected and what measures you use to control and manage the diseases?

Diseases	**Measures used for disease control and management**
_____Gumboro	
_____Hepatitis	
_____Newcastle	
_____Pododermatitis	
_____Bronchitis	
_____Gumboro	
Other (Please specify)	

QUALITATIVE INSTRUMENT: INTERVIEW 1- NATIONAL GOVERNMENT INSTITUTION REPRESENTATIVES

KII Format:

The researcher/interviewer engages the key informant selected for interview in an open discussion structured around predetermined questions as identified in the specific KII Guide prepared for each target key informant.

1) Verbal consent is asked by the lead interviewer and provided by each key informant(interviewee).
2) If possible, a second researcher assists the lead interviewer in taking notes of responses and general observations and will record the session with informed consent obtained from the key informant prior to the start of the discussion. Confidentiality and anonymity will be ensured. The second researcher notes the time of day, location of interview, and other relevant details as provided in the KII Guide.
3) The interview should last a maximum of 60-90 minutes and follow the KII Guide as closely as possible. Guides have been built with the specific background of the key informant in mind; therefore, some questions are designed to apply only to certain types of respondents.

Notes on the Use of this Guide:

Throughout this document in introduction sections and within question, there will be sections of text that follow the marking: **[NOTE TO INTERVIEWER]**. This is information meant to inform the interviewer about the overall purpose of the interview as well as the function of specific portions, related technical definitions, and other helpful background.

In contrast, text that follows the marking: **[READ OUTLOUD]**is meant to be read to key informants to facilitate the interview and inform the interviewees of the process. Questions marked in **this shade of orange** are the key questions that must be asked to initiate the conversation about a particular topic.

"Follow up questions" are included to highlight all important aspects of each key question that must be covered during the conversation, but they may or may not need to be explicitly asked depending on how the interviewee responds to the initial question. Only ask follow up or probing questions if the flow of the interview conversation is not yielding this information naturally.

Prompts (found in parentheses) are provided within the guide as part of question lists in order to offer context and depth to the conversation as necessary. They are also not meant to be read out loud.

QUALITATIVE INSTRUMENT: INTERVIEW 1- NATIONAL GOVERNMENT INSTITUTION REPRESENTATIVES

Date of Interview:

Location: <Virtual/ In-Person Location>

Start Time:

Consent: [ ] Interview [ ] Audio Recording

End Time:

Respondent Profile: <Name, Title, Organization>

Topic 1: General Perception of the Sanitary and Phytosanitary System of the Dominican Republic

[NOTE TO INTERVIEWER]: The questions included in this section are designed to draw out the various perspectives of the office related to the functions of the SPS systems of the Dominican Republic.

[READ OUTLOUD]: *Thank you for agreeing to this interview. The first set of questions I will ask will be about your perception of the Sanitary and Phytosanitary systems of the sector. We would like to understand better how the system operates.*

KII Questions	Notes
What are the responsibilities of this office related to the SPS systems of the Dominican Republic?	
Follow-up question: Can you describe for me a recent accomplishment of your office?	
What are the resources of your office and how are they used?	
Follow up question: Are these resources adequate for your responsibilities?	
Are you familiar with the Tra Sa project and its objectives?	
Follow up question: In which aspect of you work do you think that TraSa can most help you achieve your goals?	

Topic 2: Challenges and opportunities of the fruit and vegetable (or swine and poultry) sectors of the Dominican Republic

[NOTE TO INTERVIEWER]: The questions included in this section are designed to draw out the perspectives of the various challenges and opportunities of the fruit and vegetable and livestock sectors challenges and opportunities. We want the informant to reflect on the sector(s) as a whole and expand broadly on the industry.

[READ OUTLOUD]: *The next set of questions I will ask will be about the current challenges and opportunities of the sector. We need to get a better understanding of what you perceive as potential threats and opportunities to your office.*

KII Questions	Notes
What are the greatest challenges of the fruit and vegetable and (and/or livestock) sectors of the Dominican Republic?	
Follow-up: What does the sector most need to overcome these challenges?	
How do you think that the TraSa project can help the sector overcome these challenges?	
To be effective in raising the Dominican Republic's Sanitary and Phytosanitary standards, several agencies must cooperate. In this regard how do perceive the level of cooperation between your agency and others?	
Follow-up: How could you increase cooperation with other agencies?	

Regarding cooperation with industry, do you have a coordinating role with industry representatives? Or is you relationship with the industry strictly regulatory?	

Topic 3. Informational Needs

[NOTE TO INTERVIEWER]: The questions included in this section are designed help us determine the adequacy of information for the functioning of the sector. Transparency it a necessary condition for public and private interactions

[READ OUTLOUD]: *The free flow of information is necessary for a functioning of the sector. We need a better understanding of information flows through the sector in order to provide adequate trainings.*

KII Questions	Notes
What are the informational needs of your organization?	
Follow-up: Are your information resources adequate for your organization?	
What information do you gather from other organizations and how is it used?	
Follow-up: What information do you share with other organizations?	
Is there reluctance to share information between agencies? Also between the organizations in the sector(s) that you work with?	

Topic 4. Legal and Institutional Framework

[NOTE TO INTERVIEWER]: The questions included in this section are designed help us determine the adequacy of the legal and institutional framework of the sector. Without adequately developed rights and obligations, the sector will not function well. We need to also understand the regulatory environment of all stakeholders in the sector to provide meaningful support.

[READ OUTLOUD]: *The next set of questions will be related to legal and institutional framework of the sector.*

KII Questions	Notes
Can you describe for me the legal environment of the sector?	
Follow-up: Are the current regulations (including for risk management) sufficient or do they need some serious revisions?	
Is the sector adequately regulated? Are the regulations well understood and enforced?	
Do you have adequate resources to enforce the regulations?	
If you could improve the regulations of the sector, what would they include?	

Topic 4. Coordination mechanisms of the office: interventions and effectiveness

[NOTE TO INTERVIEWER]: The questions included in this section are designed help us determine how the office intervenes in markets to support the sector.

[READ OUTLOUD]: *The next set of questions I will ask will be related to the kind of support that has been received from projects like TraSa in the past, and to identify the several types of support that have been most beneficial to your lab.*

KII Questions	Notes

What coordinating role does your office play in the support of the sector?	
Follow-up: How is coordination achieved between your office and the private sector?	
How does this office intervene in the sector?	
Are these interventions effective in bringing about the changes that your office wants to achieve?	
Do you have other coordinating functions that you can describe?	

Topic 5. Previous interactions related to similar to TraSa

[NOTE TO INTERVIEWER]: The questions included in this section are designed help us determine how previous projects have interacted with the sector. This relates to our effort to attribute the trainings and other interventions to the TraSa project.

[READ OUTLOUD]: *The next set of questions I will ask will be related to the kind of support that has been received from projects like TraSa in the past, and to identify the several types of support that have been most beneficial to your office.*

KII Questions	Notes
What other projects have you worked with in the past?	
Were these projects helpful? Please explain.	
In what way do you think that TraSa is different?	
How do you think that TraSa can succeed in its objectives?	

QUALITATIVE INSTRUMENT: INTERVIEW 2- PRIVATE TESTING LABS

Date of Interview:

Location: <Virtual/ In-Person Location> Start Time:

Consent: [ ] Interview [ ] Audio Recording

End Time:

Respondent Profile: <Name, Title, Organization>

INTRODUCTION

[NOTE TO INTERVIEWER] Before beginning the Key Informant Interview, introduce yourself and the study to: 1) help establish the purpose for the interview; 2) explain who is involved in the process; 3) establish credibility for the interview and yourself as the interviewer; 4) explain confidentiality rules and note taking approach you plan to use; 5) explain why their cooperation is important in collecting the information you need; and 6) explain what will happen with the collected information and how the community/industry and project will benefit.

[READ OUTLOUD]: *Good Morning/ afternoon/ evening. Hello, my name is_, and I work for the Institute for Development Impact (I4DI)/Fundacion REDDOM. We are conducting this interview for the USDA Food for Progress funded 'Trade Safe' Project implemented by the International Executive Service Corps [IESC]. As a representative of <Lab name> that is intending to conduct work supported by TraSa, you have been identified as a key stakeholder with valuable insight on sanitary and phytosanitary (SPS) tests in DR. As you know, the TraSa Project aims to improve the efficiency, coordination, and transparency of the trade, commercialization, and safety of food and agricultural products namely in tomatoes, peppers, cucumbers, avocado, papaya, eggplant, limes, swine, and poultry. TraSa will help facilitate these improvements by supporting the implementation of science and risk-based sanitary and phytosanitary (SPS) measures, standards, and regulations. The purpose of this interview is to understand the SPS testing conducted for TraSa's priority commodities, and change (increase) in income from pre-identified, high-demand SPS tests in public and private sector labs supported by the project. Through the course of this interview, I will take time to explain the topics and questions we are about to cover to better understand the program's impact on the goal of addressing the needs of women. To this end, I would like to talk to you and gather your responses for this study. This interview should roughly take about 60 minutes of your time.*

I would like to assure you that the data collected through this interview are completely confidential. Your name will not appear in any document that relates to the interview. Your responses will be grouped with other interview responses and will be used for research purposes only. Data from all interviews will be aggregated and will only be used for purposes of analysis. Please feel free to ask me any questions or share concerns you may have during or at the end of the interview. Do you agree to participate in the interview? May we record and take notes during this interview? [Mark Consent]

Topic 1: SPS Testing

[NOTE TO INTERVIEWER]: The questions included in this section are designed to draw out the various perspectives of labs about the kinds of SPS tests being requested to be conducted by clients such as importers, associations etc.

[READ OUTLOUD]: *Thank you for agreeing to this interview. The first set of questions I will ask will be about overall SPS testing requested over the last three years. As it relates to your work in helping make these services available and more accessible, we want to better understand your perspective on the kinds of tests that are being requested by importers, or other associations that bring products or commodities into the DR.*

KII Questions	Notes
What types of SPS tests are being requested by clients in the following commodities: tomatoes, peppers, cucumbers, avocado, papaya, eggplant, limes, swine, poultry? **Follow up question if any:**	
Follow up question:	
What types of tests have been most requested when clients request secondary testing of commodities?	
Follow up question:	

Topic 2: Increase/Decrease in SPS tests

[NOTE TO INTERVIEWER]: The questions included in this section are designed to draw out the various perspectives of labs about whether the number of SPS tests requested on TraSa priority commodities have increased or decreased over the last three years.

[READ OUTLOUD]: *The next set of questions I will ask will be about the number of SPS tests requested on TraSa priority commodities and whether they have increased or decreased over the last three years*

KII Questions	Notes
Have the number of SPS tests requested by importers for example in the past three years increased or decreased?	
Follow up	

Topic 3. Technical Assistance & Capacity Building Support

[NOTE TO INTERVIEWER]: The questions included in this section are designed to draw out the various perspectives of labs on the kind of support they have received from TraSa-type projects and to identify which types of support have been the most beneficial.

[READ OUTLOUD]: *The next set of questions I will ask will be related to the kind of support that has been received from projects like TraSa in the past, and to identify the several types of support that have been most beneficial to your lab.*

KII Questions	Notes
Has your lab received support in the past from projects similar to TRASA such as IDB PROGRANA, USDA EQ, etc. If yes, what components of those project support was most helpful?	
Follow up Q.1: Were there any areas of support that wasn't particularly helpful?	
Follow up Q.2: What could the program have done differently or better to address these problems?	

Annex D: Evaluation Team Scope of Work

USDA FFPR TRADE SAFE (TRASA) PROJECT OVERVIEW

TraSa Project's goal in the Dominican Republic is to advance the country's sanitary and phytosanitary (SPS) and food safety system by supporting the implementation of science- and risk-based SPS and food safety measures, standards, and regulations leading to improved efficiency, coordination, and transparency of the commercialization, trade, and safety of food and agricultural products. TraSa's three objectives are as follows:

- Strengthened public and private institutions and coordination mechanisms that intervene in local SPS policy to facilitate the adoption of science-based and technically sound SPS regulations and measures.
- Improved technical capacity of public and private sector institutions involved in SPS to streamline collaboration and implement transparent, risk-based SPS regulations.
- Enhanced collaboration among the public and private sectors to develop a cold-chain system that meets international standards for food safety and the prevention of foodborne diseases by facilitating infrastructure investment in cold chain systems.

TraSa will achieve goal and objectives through four interrelated activities as follows:

- **Activity 1: Capacity Building: Promote Improved Policy and Regulatory Framework.** IESC will build the capacity of government institutions to implement science and risk-based SPS and food safety measures, standards, and regulations to facilitate trade in food and agricultural products. While the beneficiary focus for this Activity is with government institutions, IESC will engage and leverage private organizations in the development of evidence based applied research and other products to build and sustain this effort and encourage collaboration. IESC will assess government institutional capacity in SPS; provide training to public sector employees, including lab technicians, on implementation of SPS and food safety systems; and, support the public sector in implementing plans to address national priorities. IESC will work with the Dominican Government to improve the single window into a more fully integrated risk management system at the interagency level to result in increased efficiency and transparency of trade. IESC will also develop a research collaboration and professional development initiatives between government institutions and university systems to build a sustainable community of practice around SPS issues and support the public sector. IESC will provide technical assistance and training to Customs, the Ministry of Agriculture, and other ministries, agencies, or border agencies as appropriate to implement SPS-related risk management systems at the border and maintain cold chain while conducting inspections. For this activity, beneficiaries include public institutions and public sector employees involved in SPS, food safety, and trade facilitation.

- **Activity 2: Capacity Building: Government Institutions.** IESC will build the capacity of Dominican government institutions to develop a modernized SPS and food safety related policy and regulatory framework to respond to the needs of the Dominican Republic's trade agreements

and international best practices. IESC will assess the legal and institutional framework for SPS policy; build the capacity of the National SPS Committee, support the National SPS Committee in addressing priority issues; and, provide technical assistance, including the delivery of training, to National SPS Committee members to facilitate SPS-related process reforms. IESC will support the National Trade Facilitation Committee (NTFC) in the development of policies required to implement the SPS-related aspects of the World Trade Organization Trade Facilitation Agreement including test procedures, risk management systems, border agency cooperation, and trade in perishable goods (including cold chain). IESC will build public sector capacity to effectively engage the private sector and other stakeholders in policy reform initiatives and knowledge sharing. For this activity, beneficiaries include national public-private coordinating committees, government agencies, universities, and trade associations.

- **Activity 3: Cold Chain Improvement.** IESC will manage sub grants for the development of cold chain infrastructure to enable implementation of SPS and food safety standards. IESC will assess market opportunities for cold chain investments, facilitate public private partnerships to catalyze market driven investment in cold chain systems while also targeting pragmatic low-cost solutions for farmers. This will include small equipment grants for farmer cooperatives and small businesses, awarded through a competitive process. IESC will provide training in cold chain technologies and practices, as well as support cold chain traceability systems. Beneficiaries of this activity are in the private sector, including airport and seaport operators, transportation and logistics companies, warehousing and storage facility operators, importers, exporters, wholesalers, major retailers, aggregators, producer cooperatives, and farmers

- **Activity 4: Training: Sanitary and Phytosanitary Standards.** IESC will provide training to private sector firms, farmers, labs, and consumers. The activity will support the private sector's understanding of and compliance with international SPS and food safety standards. The training to farmers and firms will include SPS and food safety practices, such as integrated pest management, post-harvest handling, and good agricultural practices/good manufacturing practices, as well as use of traceability technology and the single window (VUCE) and other applicable systems. IESC will also provide technical assistance to private labs in conducting SPS and food safety testing in accordance with international standards as well as other applicable systems. IESC will raise consumer awareness of food safety through media campaigns. Beneficiaries of this activity include producers, firms, private labs, and consumers.

TraSa's approach and methodology combines best practices for SPS, trade facilitation, and human and institutional capacity building based on USDA, USAID, and World Bank experiences as well as the TraSa Project team's own expertise.

The project will ultimately benefit more than 7,000 beneficiaries in the public sector, private sector, and research institutions as well as the larger population of consumers. During the first year of the project, most beneficiaries will be from the public sector with more extensive work with the other beneficiary groups beginning in the second year.

TRASA BASELINE STUDY OBJECTIVE AND SCOPE STATEMENT:

- Undertake a comprehensive approach to evaluating project performance and impact, including proposing key evaluation questions that aim to assess sanitary and phytosanitary (SPS) measures, standards, and regulations. Propose, design, and manage data collection methodologies and approach to data analysis; and,
- Highlight learning as a key focus for the project and demonstrate how TraSa will build evidence to help answer at least five key learning questions determined by IESC with input from USDA in advance of each evaluation from the FFPr Learning Agenda.

In compliance with USDA's monitoring and evaluation (M&E) policy, IESC TraSa's contractor will conduct the TraSa Baseline Study. The overall objectives of the TraSa Baseline Study and subsequent evaluations are to establish baseline values for indicators and impartially evaluate the TraSa Project performance plan indicators and progress against indicator-related baselines and targets. The analysis of progress against indicator targets will define areas of shortfalls that will inform project improvements or needed modifications as well as areas of success that may highlight opportunities for the project to scale or replicate successful interventions leading to greater impact.

The baseline study will examine both administrative and programmatic aspects of TraSa related to data capture, measurement, and intervention impact. The contractor's evaluation team will include various positions, all of which will have a detailed scope of work.

A third-party contractor, per USDA's Food and Agricultural Services Food Assistance Division (FAD) Monitoring and Evaluation Policy (page 7, February 2019) is described below:

- Is financially and legally separate from the participant's organization;
- Has staff with demonstrated knowledge, analytical capability, language skills and experience in conducting evaluations of development programs involving agriculture, education, and nutrition;
- Uses acceptable analytical frameworks such as comparison with non-project areas, surveys, involvement of stakeholders in the evaluation, and statistical analyses;
- Uses local consultants, as appropriate, to conduct portions of the evaluation; and,
- Provides a detailed outline of the evaluation, major tasks, and specific schedules prior to initiating the evaluation.

The Contractor's evaluation team, including enumerators, must ensure that the evaluation adheres to ethical guidelines as cited in the FAD Monitoring and Evaluation Policy.[59] Pages 7 to 8 of that policy states the following:

> *"Monitoring and evaluation activities should appropriately balance the desired creation of evidence with the protection of human subjects, including safeguarding the dignity, rights, safety, and privacy of participants. Evaluators are responsible for applying ethical principles in all*

[59] For additional guidance, interested parties should review American Evaluation Association's Guiding Principles for Evaluators: https://www.eval.org/p/cm/ld/fid=51.

stages of the evaluation, and for raising and clarifying ethical matters with stakeholders during the course of the evaluation."

EVALUATION KEY AUDIENCE

The key audience for the Baseline Study includes the IESC TraSa Project staff, including the TraSa Steering Committee comprised of key U.S. government and Dominican government stakeholders, USDA staff, and other USDA implementers.

The key audience for the Midterm and Final Evaluations include the above as well as IESC TraSa's international partners, the University of Purdue, Global Cold Chain Alliance- World Food Logistics Organization (GCCA- WFLO), LixCap and local partners as applicable, TraSa participants and beneficiaries, and trade associations and agencies within the government of the Dominican Republic. These evaluations also intend to benefit other USDA implementers, NTFC, and the development community in general.

USDA will make all final versions of the evaluation reports publicly available. IESC and the offeror will ensure public copies of the evaluation reports are free of personally identifiable information (PII) and proprietary information.

METHODOLOGY FOR EVALUATIONS

The IESC TraSa contractor will operate according to the approved TraSa Evaluation Plan. The evaluations will employ a variety of qualitative and quantitative methods (surveys, focus group discussions with and direct observation of target beneficiaries, and key informant interviews with government officials and relevant public/private stakeholders, as well as IESC TraSa Project staff and USDA representatives). The details around survey design and interview questions will be finalized in conjunction with the selected contractor. An overview of and the methodology for the evaluations are as follows:

BASELINE EVALUATION

Purpose and scope. Baseline data is central to measuring progress on performance indicators and assessing project outcomes and impacts using evaluation methods. The TraSa Baseline Study will lay the groundwork for all future monitoring and evaluation activities by undertaking the following:

- Establishing baseline data (and trendline, as applicable) for eight performance indicators (five standard and three custom) prior to the start of project activities;
- Establishing baseline data and trendline for four context indicators;
- Verifying realism of all proposed targets; and,
- Thoroughly documenting fit-for-purpose data collection methods for relevant indicators to ensure the same can be applied throughout the life of the project to the extent possible, increasing the likelihood of data reliability.

The TraSa Baseline Study will mainly obtain data for the following eight performance indicators:

1. Custom Indicator 4: Number of firms that pay to use improved cold chain inspection areas;
2. FFPr Indicator #4: Number of individuals in the agriculture system who have applied improved management practices or technologies with USDA assistance;

3. FFPr Indicator #11: Number of host government or community-derived risk management plans formally proposed, adopted, implemented or institutionalized with USDA assistance;
4. FFPr Indicator #3: Number of hectares under improved management practices or technologies with USDA assistance;
5. FFPr Indicator #18: Value of annual sales of farms and firms receiving USDA assistance;
6. FFPR Indicator #19: Volume of commodities sold by farms and firms receiving USDA assistance;
7. Custom Indicator #2: Percent change in APHIS EANs for selected commodities; and,
8. Custom Indicator #5: Percent change in facility income from project-supported testing labs

For these eight indicators, the TraSa Baseline Study needs to: 1) document the current management practices used; 2) establish hectares under improved management practices; 3) establish value and volume of sales; 4) identify any existing risk management plans; 5) establish the number of Animal and Plant Health Inspection Service (APHIS) Emergency Action Notifications (EAN) for the baseline year in order to measure improvement accurately; and 6) establish the current income from and prices of pre-identified, high-demand SPS tests.

The anticipated methodology is a survey. The baseline will help the project answer the following questions:

- What are the baseline values for the indicators?
- Do the targets need revision or adjustments?
- Does the project theory of change still hold?
- Are the assumptions still valid?
- What activities should the project focus most on?
- Do the proposed project interventions meet the needs of the project participants?
- Are the proposed project interventions aligned with the country's agriculture and/or development investment strategy?
- Are the proposed project interventions aligned with USDA and US Government's goals and objectives?
- Do the proposed activities compliment, overlap, or conflict with prior USDA, USG or other activities working on SPS issues?

In addition to the above, the TraSa Baseline Study will provide baselines from the DR Ministry of Agricultural Statistics, DR National Statistics Office (ONE), ITC Trade Map, UN Comtrade database, and other reliable sources for the following four context indicators:

- Context Indicator #1 Value of agricultural exports in U.S. dollars;
- Context Indicator #2 Volume of agricultural exports in metric tons (MT);
- Context Indicator #3 Value of agricultural imports in U.S. dollars; and,
- Context Indicator #4 Volume of agricultural imports in MT.

The contractor will submit the sampling methodology to IESC for approval before the TraSa Baseline Study commences. The estimated sample size will be designed to reflect a representative sample for each type of beneficiary population. It must ensure a 95 percent confidence level with a five to 10 percent margin of error. The table below is a snapshot of IESC's proposed sampling strategy.

Table 1: Sampling Strategy			
Indicator	Estimated Project Population	Proposed Sampling Methodology	Expected Sample Size
FFPr Indicator #4 (individuals applying improved practices)	1,875	Stratified, cluster	139
FFPr Indicator # 3 Number of hectares under improved management practices or technologies with USDA assistance.	1,875	Stratified cluster	139
FFPr Indicator #18 Value of annual sales of farms and firms receiving USDA assistance.	1,875	Stratified cluster	200
FFPr Indicator #19 Volume of commodities sold by farms and firms receiving USDA assistance.	1,875	Stratified cluster	200
FFPr Indicator #11 (host government, any level)	10	All will be reached for interviews	10
Custom Indicator #5 (project-supported testing labs)	2	All will be reached for interviews	2

It is important to manage expectations at the outset to enable a smooth data collection process during the life of the project without imposing undue burden to beneficiaries. As such, the TraSa technical staff, in coordination with the TraSa Baseline Study contractor, will take the opportunity to set expectations with pre-identified beneficiaries on reporting responsibilities (the “what” and “how often” to report) at the initial baseline surveys and/or interviews. A mutual understanding of the reporting requirements will ensure that data will be available on a frequency needed by the project to inform implementation and semi-annual reporting, as well as special studies and the TraSa Midterm and TraSa Final Evaluations.

Annex E: Conflict of Interest Forms

N/A

Annex F: TraSa Baseline Study Datasets

Target Population for TraSa

Target population	FFPr #3	FFPr #4	FFPr #18	FFPr #19
Farms	1200	1200	1200	1200
Firms	0	0	110	110
Individuals: Government	0	261	0	0
Individuals: Private sector	0	414	0	0
Total	**1200**	**1875**	**1310**	**1310**

Target population for indicators FFPR #3 by commodity				
Commodities	**Total**	**Smallholders**	**Non-smallholders**	**%**
Avocado	212	127	85	17.67%
Bell peppers, tomatoes and cucumbers	109	66	43	9.08%
Chili peppers and eggplants	234	141	93	19.50%
Limes	122	73	49	10.17%
Papaya	54	32	22	4.50%
Pineapple	184	110	74	15.33%
Pork	202	121	81	16.83%
Poultry	83	50	33	6.92%
	1200	**720**	**480**	

Target population for indicators #4 by commodity				
Commodities	**Total**	**Smallholders**	**Non-smallholders**	**Individuals**
Avocado	212	127	85	
Bell peppers, tomatoes and cucumbers	109	66	43	
Chili peppers and eggplants	234	141	93	
Limes	122	73	49	
Papaya	54	32	22	
Pineapple	184	110	74	
Pork	202	121	81	
Poultry	83	50	33	
Individuals: Government	261	Not applicable		261
Individuals: Private sector	414	Not applicable		414
	1875	**720**	**480**	**675**

Target population for indicators #18 and #19			
Commodities	**Total**	**Smallholders**	**Non-smallholders**
Farmers	1200	720	480
Firms	110	76	34
Total	**1310**	**796**	**514**

Size of Farms and Firms (Sample)

	Sample		Size of operations	
Farmers by commodity	**Smallholder farmers (Less than 5 Hectares)**	**Non-Smallholder farmers (5 Hectares or more)**	**Smallholder farmers (Less than 5 Hectares)**	**Non-Smallholder farmers (5 Hectares or more)**
Avocado	31	9	78%	23%
Bell peppers, tomatoes and cucumbers	20	0	100%	0%
Chili peppers and eggplants	41	5	89%	11%
Limes	21	10	68%	32%
Papaya	1	4	20%	80%
Pineapple	16	15	52%	48%
Pork	34	4	89%	11%
Poultry	12	5	71%	29%
Packinghouses	18	8	69%	31%
Slaughterhouses	1	1	50%	50%
Total				

Processors	**Small (Less than 50 employees)**	**Medium (50 - 249 employees)**	**Big (More than 249 employees)**	**Small (Less than 50 employees)**	**Medium (50 - 249 employees)**	**Big (More than 249 employees)**
Packinghouses	18	8	0	69%	31%	0%
Slaughterhouses	1	0	1	50%	0%	50%

Commodities	Overall Population[1]: Farms	Overall Population[2]: Firms (Packinghouses / Slaughterhouses)	Smallholder farmers (Less than 5 Hectares)	Smallholder FIRMS
Avocados	789	28	611	19
Bell peppers, tomatoes, cucumbers	400	11	400	8
Chili peppers, eggplants	867	35	587	24
Limes	450	2	232	1
Papaya	200	2	179	1
Pineapple	684	12	483	8
Swine	750	4	519	3
Poultry	311	4	156	3
Total	**4,451**	**98**	3,168	67

SAMPLE METRICS

Overall Population of Farmers & Processors that Meet TraSa Target Population Characteristics	
Small-holders	*3235*
Non Small-holders	1,314
Confidence Level	95%
Z Value	1.96
Margin of Error	6%
Minimum Sample Size	258
• *Farms*	*228*
• *Firms*	*30*

FFPR #4

Indicator	Estimated quantity for baseline	Type	Commentary
FFPr Indicator 4: Number of individuals in the agriculture system who have applied improved management practices or technologies	**580**	Farms	In order to estimate the number of farmers that applied improved management practices or technologies, we have considered the percent of people applying at least one of the recommended practices, and multiplied this number by the targeted population.
	326	Individuals	

Type of operation	Smallholders	Non-Smallholders	Total
Fruits & Vegetables Farms	176	119	**295**
Swine & Poultry Farms	171	114	**285**

			Target population				Farms			Individuals
Commodities	**Applying at least 1 improved practice**	**%**	**Farms**	**Smallholders**	**Non-smallholders**	**Individuals**	**Estimated quantity for baseline (Farms)**	**Smallholders**	**Non smallholders**	
Avocado	31	78%	212	127	85		164	98	66	
Bell peppers, tomatoes and cucumbers	13	65%	109	66	43		71	43	28	
Chili peppers and eggplants	0	0%	234	141	93		-	-	-	
Limes	1	3%	122	73	49		4	2	2	
Papaya	3	60%	54	32	22		32	19	13	
Pineapple	4	13%	184	110	74		24	14	10	
Pork	38	100%	202	121	81		202	121	81	
Poultry	17	100%	83	50	33		83	50	33	
		Total	**1200**	**720**	**480**	**675**	**580**	**347**	**233**	**326**

FFPR #3

Indicator	Estimated quantity for baseline	Commentary
FFPr Indicator 3: Number of hectares under improved management practices or technologies.	**3,661.70**	Average hectares under improved technologies and practices by estimated population of farms where improved technologies and practices are applied.

Commodities	Hectares under improved practices or technologies		
	Smallholders	Non-Smallholders	Total
Fruits & Vegetables	298.54	1,178.71	1,477.25
Swine & Poultry	223.68	1,960.77	2,184.45
Total	**522.22**	**3,139.48**	**3,661.70**

FFPr Indicator 3: Number of hectares under improved management practices or technologies.				Population applying improved practices or technologies		Hectares under improved practices or technologies	
Commodities	Average	Small-holders (Average Ha under improved practices)	Non small-holders (Average Ha under improved practices)	Small-holders	Non small-holders	Small-holders	Non smallholders
Avocado	4.49	1.79	8.61	98	66	175.42	568.26
Bell peppers, tomatoes and cucumbers	2.84	2.84	0	43	28	122.12	-
Chili peppers and eggplants	0	0	0	0	0	-	-
Limes	0.50	0.5	0	2	2	1.00	-
Papaya	29.35	0	29.35	19	13	-	381.55
Pineapple	22.89	0	22.89	14	10	-	228.90
Pork	6.51	1.08	20.19	121	81	130.68	1,635.39
Poultry	4.21	1.86	9.86	50	33	93.00	325.38

FFPR #18 2020, 2019

Indicator	Estimated quantity for baseline (US$)			Commentary
	Type	2020	2019	
FFPr Indicator 18: Value of annual sales of farms and firms (2020).	Firms	54,777,968.00	55,469,390.00	To estimate the value of annual sales, average sales in sample were multiplied by the total target population. Average exports was used for farmers.
	Farms	31,098,893.86	36,819,164.00	
	Farms - Smallholders	8,716,404.86	11,252,702.00	
	Farms - Non - Smallholders	22,382,489.00	25,566,462.00	

Commodities	2020			2019		
	Smallholders	Non-Smallholders	Total	Smallholders	Non-Smallholders	Total
Firms	26,288,552.00	28,489,416.00	54,777,968.00	23,797,880.00	31,671,510.00	55,469,390.00
Total	**26,288,552.00**	**28,489,416.00**	**54,777,968.00**	**23,797,880.00**	**31,671,510.00**	**55,469,390.00**

	Average Sales 2020		Average Sales 2019		Total Sales (2020)		Total Sales (2019)	
Commodities	Smallholders	Non smallholders	Smallholders	Non smallholders	Smallholders	Non-Smallholders	Smallholders	Non-Smallholders
Firms	345,902	837,924	313,130	931,515	26,288,552.00	28,489,416.00	23,797,880.00	31,671,510.00
Total					**26,288,552.00**	**28,489,416.00**	**23,797,880.00**	**31,671,510.00**

Farms FFPR #18

Indicator	Estimated quantity for baseline (US$)		Commentary
	2020	2019	
FFPr Indicator 18: Value of annual sales of farms and firms (2020).	**31,098,893.86**	**36,819,164.00**	To estimate the value of annual sales, average sales in sample were multiplied by the total target population.
Smallholders	**8,716,404.86**	**11,252,702.00**	
Non-Smallholders	**22,382,489.00**	**25,566,462.00**	

FFPr Indicator 18: Value of annual sales of farms (2020).*				
Commodities	Average		Total (US$)	
	Small-holder	Non-Smallholder	Small-holder	Non-Small-holder
Avocado	5,973	21,083	758,571	1,792,055
Bell peppers, tomatoes and cucumbers	76,056	-	5,019,692	-
Chili peppers and eggplants	20,228	109,192	2,852,148	10,154,856
Limes	1,178	27,408	85,994	1,342,992
Papaya	-	112,116	-	2,466,552
Pineapple	-	89,541	-	6,626,034
Pork	-	-	-	-
Poultry	-	-	-	-
*This refers only to exports.	**Total**		**8,716,405**	**22,382,489**

FFPr Indicator 18: Value of annual sales of farms (2019).*			
Average		Total (US$)	
Small-holder	Non-Small-holder	Small-holder	Non-Small-holder
5,205	15,153	661,035	1,288,005
92,159	-	6,082,494	-
28,784	96,894	4,058,544	9,011,142
6,173	60,663	450,629	2,972,487
-	21,895	-	481,690
-	159,637	-	11,813,138
-	-	-	-
-	-	-	-
Total		**11,252,702**	**25,566,462**

FFPR #19 2020 2019

Indicator	Type	Baseline (Tonnes)		Commentary
		2020	2019	
FFPR Indicator 19: Volume of commodities sold by farms and firms (2020).	**Firms**	**70,978.12**	**99,266.00**	To estimate the volume of commodities sold, average sales in sample were multiplied by the total target population.
	Farms	**78,481.47**	**83,414.46**	
	Farms - Smallholders	**16,472.95**	**20,106.00**	
	Farms - Non - Smallholders	**62,008.52**	**63,308.46**	

Commodities	2020			2019		
	Smallholders	Non-Smallholders	Total	Smallholders	Non-Smallholders	Total
Firms	18,001.36	52,976.76	70,978.12	17,632.00	81,634.00	99,266.00
Total	**18,001.36**	**52,976.76**	**70,978.12**	**17,632.00**	**81,634.00**	**99,266.00**

	Average Sales (Tonnes 2020)		Average Sales (Tonnes 2019)		Total Sales (2020)		Total Sales (2019)	
Commodities	**Smallholders**	**Non smallholders**	**Smallholders**	**Non small-holders**	**Small-holders**	**Non-Small-holders**	**Small-holders**	**Non-Small-holders**
Firms	236.86	1558.14	232	2401	18,001.36	52,976.76	17,632.00	81,634.00
Total	**236.86**	**1,558.14**	**232.00**	**2,401.00**	**18,001.36**	**52,976.76**	**17,632.00**	**81,634.00**

Farms FFPR #19

Indicator	Estimated quantity for baseline (Tonnes) 2020	Estimated quantity for baseline (Tonnes) 2019	Commentary
FFPR Indicator 19: Volume of commodities sold by farms and firms (2020).	**78,481.47**	**83,414.46**	To estimate the volume of commodities sold, average sales in sample were multiplied by the total target population.
Smallholders	**16,472.95**	**20,106.00**	
Non-Smallholders	**62,008.52**	**63,308.46**	

FFPR Indicator 19: Volume of commodities sold by farms and firms (2020).*					**FFPR Indicator 19: Volume of commodities sold by farms (2019).***			
	Average		**Total (US$)**		**Average**		**Total (US$)**	
Commodities	**Small-holder**	**Non-Smallholder**	**Small-holder**	**Non-Smallholder**	**Small-holder**	**Non-Smallholder**	**Small-holder**	**Non-Smallholder**
Avocado	25.24	89.08	3,205	7,572	20.89	60.80	2,652	5,168
Bell peppers, tomatoes and cucumbers	123.84	-	8,173	-	143.16	-	9,449	-
Chili peppers and eggplants	34.97	188.79	4,931	17,558	51.44	173.17	7,253	16,104
Limes	2.24	52.07	163	2,551	10.29	101.15	751	4,956
Papaya	-	515.78	-	11,347	-	100.05	-	2,201
Pineapple	-	310.55	-	22,981	-	471.33	-	34,878
Pork	-	-	-	-	-	-	-	-
Poultry	-	-	-	-	-	-	-	-
*This refers only to exports.	**Total**		**16,473**	**62,009**	**Total**		**20,106**	**63,308**

Excluded from Sample

Farmers	Commodity	Hectares	FFPr #3	FFPr #4	FFPr #18 (In US$)		FFPr #19 (In Tonnes)	
					2020	2019	2020	2019
Pineapple 1	Pineapple	226.4150943	44.03	1	$102,688.57	$155,945.42	909.09	1,380.57
Pineapple 2	Pineapple	157.2327044	157.23	1	$378,080.66	$426,315.79	2,272.73	2,562.68
Swine 1	Swine	150.29	150.29	1	1,503,808.81	$ 1,404,779.69	3,156.00	3,096.00

Slaughterhouses	Commodity	FFPr #18 (In US$)		FFPr #19 (In Tonnes)	
		2020	2019	2020	2019
Slaughterhouse 1	Poultry	1,705,794.39	1,180,934.58	638.18	638.18
Slaughterhouse 2	Pork	23,838,685.59	14,303,211.35	4,836.36	4,352.73

EQ Project in Sample

Exporting Quality Project participants in Sample		
Participants in sample	41	**16%**
Sample	258	

Commodities	Participants in EQ Project	FFPr Indicator 4: Number of individuals in the agriculture system who have applied improved management practices or technologies	FFPr Indicator 3: Number of hectares under improved management practices or technologies. (Average hectares)
Avocado	18	18	4.54
Bell peppers, tomatoes and cucumbers	4	4	2.97
Chili peppers and eggplants	7	0	-
Limes	0	0	-
Papaya	1	1	31.45
Pineapple	7	1	1.80
Pork	0	0	-
Poultry	0	0	-
Slaughterhouses	0	0	-
Packinghouses	4	2	-
Total	**41**	**26**	**3.26**
%		**63%**	

Commodities	Participants in EQ Project	FFPr Indicator 18: Value of annual sales of farms and firms (2020).	FFPr Indicator 18: Value of annual sales of farms and firms (2019).	FFPR Indicator 19: Volume of commodities sold by farms and firms (2019).
Avocado	18	$100,439.00	$ 83,622.00	562.77
Bell peppers, tomatoes and cucumbers	4	$408,687.00	$ 403,509.00	687.96
Chili peppers and eggplants	7	$204,085.85	$ 661,270.96	1,913.85
Limes	0	$ -	$-	-
Papaya	1	$70,440.63	$ 97,309.94	301.41
Pineapple	7	$ 1,756,796.12	$ 611,637.00	2,057.34
Pork	0	$ -		
Poultry	0	$ -		
Packinghouses	4	$ 1,149,002.00	$ 1,281,920.00	1,570.00
Slaughterhouses	0	$ -		-
Total	**41**	**$ 3,689,450.60**	**3,139,268.90**	**7,093.33**

Commodities	Participants in EQ Project	FFPr Indicator 18: Value of annual sales of farms and firms (2020).	FFPr Indicator 18: Value of annual sales of farms and firms (2019).	FFPR Indicator 19: Volume of commodities sold by farms and firms (2019).
Avocado	18	$ 5,579.94	$ 4,645.67	31.27
Bell peppers, tomatoes and cucumbers	4	$102,171.75	$ 100,877.25	171.99
Chili peppers and eggplants	7	$29,155.12	$ 94,467.28	273.41
Limes	0	$ -	$-	-
Papaya	1	$70,440.63	$ 97,309.94	301.41
Pineapple	7	$250,970.87	$ 87,376.71	293.91
Pork	0	$ -	$-	-
Poultry	0	$ -	$-	-
Packinghouses	4	$287,250.50	$ 320,480.00	392.50
Slaughterhouses	0	$ -	$-	-

Commodities	Participants in EQ Project	% of EQ participants in sample
Avocado	18	45%
Bell peppers, tomatoes and cucumbers	4	20%
Chili peppers and eggplants	7	15%
Limes	0	0%
Papaya	1	20%
Pineapple	7	23%
Pork	0	0%
Poultry	0	0%
Slaughterhouses	0	0%
Packinghouses	4	15%
Total	**41**	**16%**

Baseline VS Targets

Indicator	Baseline	Target 2025
FFPr Indicator 3: Number of hectares under improved management practices or technologies.	3,661.70	4,558.00
FFPr Indicator 4: Number of individuals in the agriculture system who have applied improved management practices or technologies	906	1,642
FFPr Indicator 18: Value of annual sales of farms and firms (2020).	$54,777,968.00	$35,240,000.00
FFPR Indicator 19: Volume of commodities sold by farms and firms (2020).	70,978.12	33,582.00

Indicator	Year 1	Year 2	Year 3	Year 4	Year 5
Target beneficiaries for indicators #18 and #19	2	65	110	110	110
FFPr Indicator 18: Value of annual sales of farms and firms.	$995,963	$ 33,987,239	$ 60,392,710	$63,412,345	$ 66,582,962
FFPR Indicator 19: Volume of commodities sold by farms and firms.	1,291	44,039	78,253	82,166	86,274

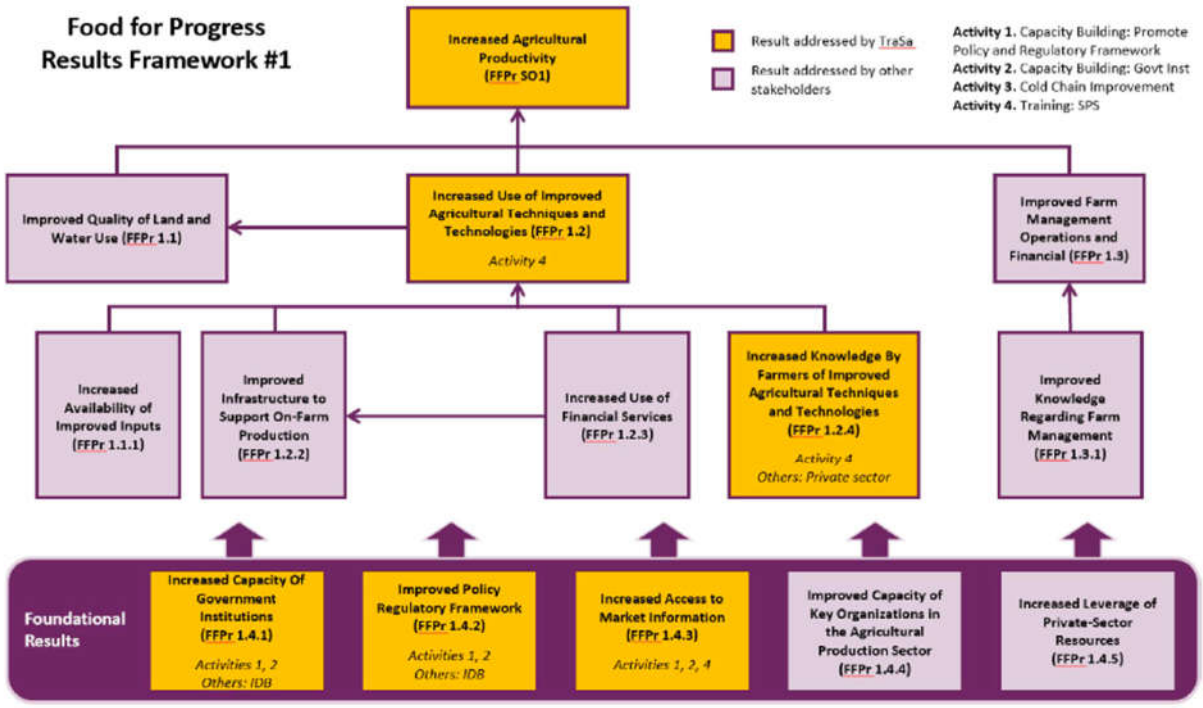
At farm level	Year 5
Target beneficiaries for indicators #18 and #19	Target
FFPr Indicator 18: Value of annual sales of farms and firms.	$37,318,672.63
FFPR Indicator 19: Volume of commodities sold by farms and firms.	94,177.76

Annex G: TraSa Results Framework and Critical Assumptions

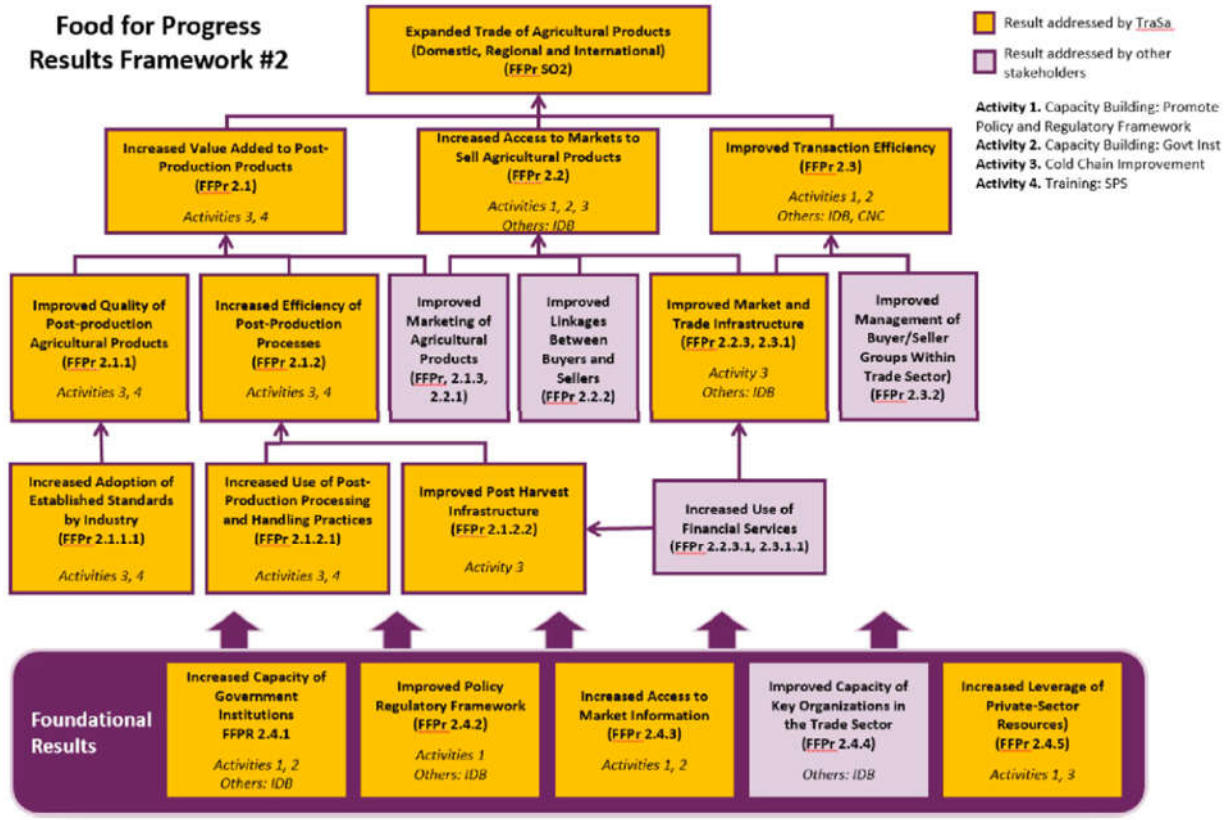
TraSa Project and FFPr Results Frameworks

The International Executive Service Corps (IESC) Trade Safe (TraSa) project in the Dominican Republic (DR) directly contributes to both Food for Progress (FFPr) Frameworks 1 and 2, as visually shown by the yellow highlighted boxes. TraSa Project's Theory of Change (detailed in Section 1.3 of the TraSa Baseline Study Report) reflects the results pathways outlined in Figures 1 and 2 below.

FFPr Results Framework#1



FFPr Results Framework #2



Critical Assumptions for the TraSa Project

The activity-specific critical assumptions for TraSa that support the theory of change and are necessary for the success of the project, but over which IESC and the implementing team will have no direct control, follow below.

- Legal and regulatory framework activities led by the IDB-funded Agricultural Health and Innovation Project will commence without significant delay or changes to its scope. In the unlikely event that this critical assumption does not hold, TraSa has the flexibility to adapt its activities while retaining the opportunity to effect meaningful change. Activities would have a slight shift in emphasis but will largely stay the same. For example, in Activity 1, TraSa would place a heavier emphasis on fundamental policy reform and less on crop/sector specific plans.
- Key public sector agencies, including national organizing bodies, remain resourced enough with an adequate number of staff holding policymaking, technical, and managerial responsibilities in SPS, food safety, and trade facilitation. This affects Activities 1 and 2 wherein the sustainable approach is to work through and strengthen established entities rather than create parallel structures. The project also assumes that there will be no major changes to agriculture or trade policy as a result of recent elections that will impact TraSa's direction.
- There is a shared responsibility between the public sector and private sector to maintain investments in infrastructure, including cold chain systems. This affects the long-term sustainability of infrastructure investments that the project will address by emphasizing market-based solutions, e.g., market-based fees, with the private sector. For

any infrastructure support to the public sector, we will first require a demonstrated commitment from the recipient agency to support the recurring costs.

- There is no devastating infestation of exotic pests and diseases, particularly from the porous land border with Haiti. TraSa will support the Government of the DR to build relationships with government counterparts in Haiti on risk management and border cooperation at the policy level and will train inspectors at key border crossings with Haiti that present high SPS risk.
- The rate of COVID-19 infections remains manageable and in line with Ministry of Public Health expectations. It is likely that the Ministry will be more focused on COVID-19 issues than SPS and food safety issues at the beginning of the project. TraSa will be flexible to accommodate their needs in coordination with USDA. While most activities are adaptable, the ones that have the potential to be impacted by COVID-19 restrictions are those that significantly benefit from in-person interactions, e.g., farmer field school training. A key element of our adaptability is location: the proposed project team, including the Chief of Party (COP) is already in the DR working on the DR Exporta Calidad (EQ) Project. TraSa will also monitor unintended positive effects of COVID-19 on activities, e.g., the uptake of online-based transactions may be fast-tracked.