



DOMINICAN REPUBLIC

Food for Progress

Safe Agriculture/Food Export (SAFE) Project

Final Evaluation

11/13/2021

Safe Agriculture/Food Export (SAFE) Project: Final Evaluation

Program: Food for Progress

Agreement Number: FCC-517-2015/008-00

Funding Year: Fiscal Year 2015

Project Duration: 09/29/2015-12/31/2021

Implemented by: National Cooperative Business Association CLUSA International (NCBA CLUSA)

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Cover photo: Cow at a farm in San Juan visited by the evaluation team

Introduction and Purpose section photo: Mural from COOPAGARESTE store in Hato Mayor

Evaluation Design and Methodology section photo: Enumerators testing tools with a female farmer in Monte Plata

Findings section photo: Farmer with cows in Dajabon

Conclusions section photo: Cow at a farm in San Juan visited by the evaluation team

Recommendations section photo: Herd of cows at a farm in Dajabon visited by the evaluation team

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List of Acronyms

Acronym	Full Term
ADHA	<i>Asociación Dominicana de Hacendados y Agricultores</i>
AGAMPTA	<i>Asociación de Ganaderos de Monte Plata</i>
ADIL	<i>Asociación Dominicana de Industrias Lácteas</i>
ADOPROLAC	<i>Asociación de Procesadores de Lácteos y Derivados</i>
AGRODOSA	<i>Aseguradora Agropecuaria Dominicana</i>
APHIS	USDA Animal and Plant Health Inspection Service
APROLECHE	<i>Asociación de Productores de Leche</i>
BAGRICOLA	<i>Banco Agrícola</i>
COMINOR	<i>Comisión Nacional de Normas del Ministerio de Industria Comercio y Mipymes</i>
CONALECHE	<i>Consejo Nacional para la Reglamentación y Fomento de la Industria Lechera</i>
COOPAGAMPTA	<i>Cooperativa de Ganaderos de Monte Plata</i>
COOPESUR	<i>Cooperativa Agropecuaria de Ganaderos del Sur</i>
COOPFEDEGANO	<i>Cooperativa de Ganaderos de Fedegano</i>
CRI/GENEX	Cooperative Resources International
DEC	Development Experience Clearinghouse
DIGEGA	<i>Dirección General de Ganadería, Ministry of Agriculture</i>
DIGEMAPS	<i>Dirección General de Medicamentos, Alimentos y Productos Sanitarios, Ministry of Health</i>
DR	Dominican Republic
EMBRAPA	<i>Empresa Brasileira de Pesquisa Agropecuaria</i>
FEDA	<i>Fondo Especial para el Desarrollo Agropecuario</i>
FEDEGANO	<i>Federación De Ganaderos del Noroeste</i>
FEGACIBAO	<i>Federación de Ganaderos del Cibao Central y el Nordeste</i>
FENACERD	<i>Federación Nacional de Comerciantes y Empresarios de la República Dominicana</i>
FGD	Focus group discussion
FFPr	Food for Progress
FSIS	USDA Food Safety and Inspection Service
HACCP	Hazard Analysis and Critical Control Points
IDB	Inter-American Development Bank

IDIAF	<i>Instituto de Desarrollo de Investigación Agrícola y Forestal</i>
INDOCAL	<i>Instituto Dominicano de Calidad</i> in the Ministry of Industry and Trade
JAD	<i>Junta Agroempresarial Dominicana</i>
KII	Key informant interview
LAVECEN	<i>Laboratorio Veterinario Central</i> , Ministry of Agriculture
LFS	Livestock field schools
M&E	Monitoring & Evaluation
MCCs	Milk Collection Centers
NCBA CLUSA	National Cooperative Business Association – Cooperative League of the USA
OIRSA	<i>Organismo Internacional Regional de Sanidad Agropecuaria</i>
ONE	<i>Oficina Nacional de Estadísticas</i>
PO	Producer Organization
PRO CONSUMIDOR	<i>Organismo de Defensa al Consumidor</i>
PROGANA	Local name of the SAFE project
REDDOM	<i>Fundación Rural Economic Development Dominicana</i>
SAFE	Safe Agriculture/Food Export Program – DR
SIDOCAL	<i>Sistema Dominicano para la Calidad</i>
SPS	Sanitation Performance Standards
TA	Technical assistance
TAMU	Texas A&M Agrilife Research, a member of the Texas A&M University system
US	United States of America
USDA	United States Department of Agriculture

Executive Summary

Project Background and Purpose

The Safe Agriculture/Food Export (SAFE) project, known as PROGANA in Spanish, is a five-year project funded by the United States Department of Agriculture (USDA), Foreign Agricultural Service (FAS) through the Food for Progress (FFPr) program. The project was funded by commodity donations through a Commodity Credit Corporation (CCC), with an initial estimated worth of US\$16,212,121 and implemented by the National Cooperative Business Association CLUSA International (NCBA CLUSA), along with its partners, the *Junta Agroempresarial Dominicana* (JAD), the Borlaug Institute for International Agriculture and its Center for Food Safety at Texas A&M University (TAMU), and Cooperative Resources International (CRI/GENEX).

The livestock value chain (beef and dairy) in the Dominican Republic is characterized by low levels of formality, weak value chain linkages, and lack of know-how on best practices. This has led to low productivity and quality and poor health and safety measures in the sector. For the dairy value chain, the majority of the stakeholders in the dairy sector see the improvement in productivity and quality of milk as the most achievable goal in the near term. This includes increased ability to meet domestic demand by addressing structural issues in the value chain – such as a lack of economies of scale and low levels of organization and cooperation among producers and other value chain stakeholders. For the beef value chain there is a greater opportunity for developing exports, especially if DR can achieve equivalence with US standards to allow exports to Puerto Rican markets.

Against this background, USDA launched the SAFE project which targeted 14,407 individuals in the value chain, including 13,200 producers and 1,207 public and private extension workers, beef and dairy processors, decision makers, public and private stakeholder representatives, and 60 producer organizations. The project targeted 11 dairy and beef producing provinces in the Dominican Republic (Santiago Rodríguez, Dajabón, Independencia, San Juan, Monte Plata, La Altagracia, Hato Mayor, El Seibo, María Trinidad Sánchez, Duarte and Puerto Plata), with two overall objectives:

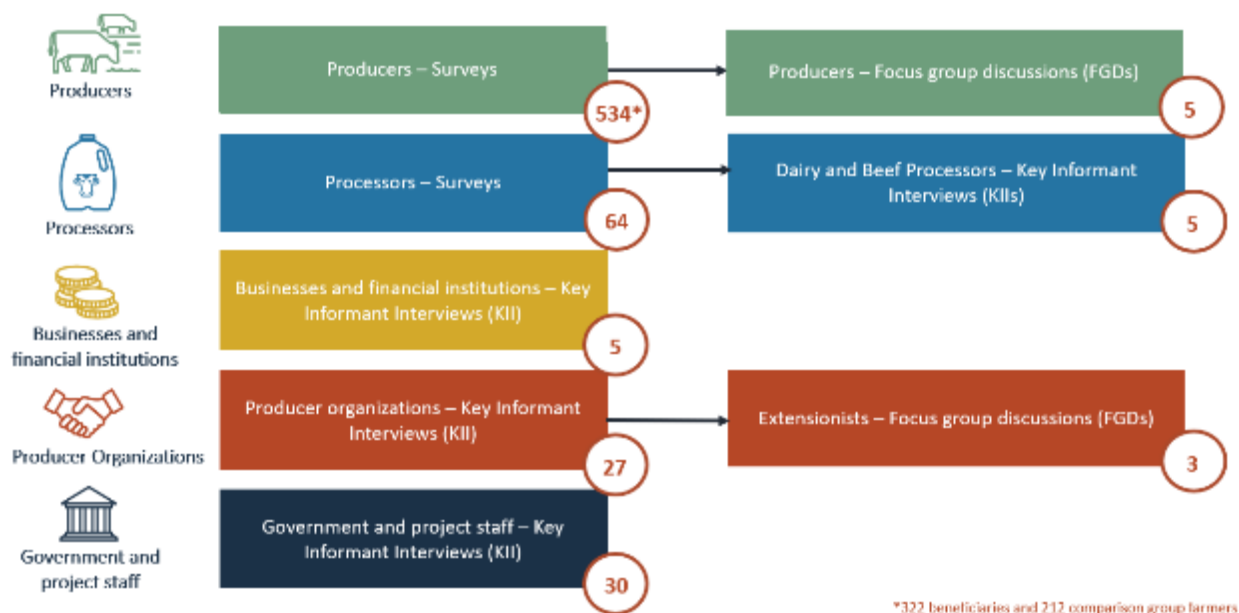
1. **Improve agricultural productivity** in the livestock (beef and dairy) value chain by increasing the use of improved techniques and technologies; improving farm management; increasing the availability of improved inputs and use of financial services; strengthening the capacity of government institutions and key groups; and increasing the leverage of private sector resources.
2. **Expand trade of beef and dairy products** by adding value to post-production; increasing the adoption of established standards; increasing access to markets; building linkages between buyers and sellers; improving post-harvest infrastructure; increasing the use and efficiency of post- production processes; improving the policy and regulatory framework; and strengthening the capacity of key organizations in the trade sector.

Evaluation Design, Methods and Limitations, and Questions

The purpose of the final evaluation is to provide an independent, third-party assessment of the performance of the SAFE project in achieving its objectives. The evaluation is focused on answering key questions related to the SAFE project's relevance, effectiveness, efficiency, impact, and sustainability and includes metrics on the project's progress against its targets for 89 project indicators (58 activity indicators and 31 results indicators as of the writing of this report). The also assesses adjustments made over the course of the project including those based on the midterm evaluation, identifies and documents lessons learned over the course of implementation, and makes recommendations for the future. The final evaluation of the SAFE project was conducted in three phases, as described below:

- Phase 1. Inception and Preparation for Field Work:** The evaluation team reviewed project documentation and secondary information, finalized the research methodology, and prepared and delivered to the SAFE team an inception presentation including an implementation plan. Data collection tools were drafted including surveys, key informant interview (KII) guides, and guides for focus group discussions (FGDs).
- Phase 2. Field Work:** Field work took place over a six-week period in the 11 target provinces and in Santo Domingo. Initial training and iteration and testing of the tools was conducted during the first week in Santo Domingo, before the evaluation team traveled to the provinces for primary data collection. Data was collected through a variety of means, including surveys, KIIs, and FGDs with key stakeholders and beneficiaries of the SAFE project. Figure E1 shows the approach used to collect data from each category of stakeholders:

E1. Data Collection Approach



- Phase 3. Analysis and Report:** Following data collection, initial analysis was carried out over the next two weeks, and a presentation on the preliminary findings was made to NCBA CLUSA and SAFE project staff. Following the presentation and subsequent discussions including a few additional key informant interviews and recommended readings, the Just Results team drafted

this report to provide the findings of the final evaluation to USDA, the SAFE project team, and other relevant stakeholders.

While the evaluation methodology was robust there are, as with any methodology, certain limitations and opportunities for errors and bias. This includes reliance on secondary performance information and data reported by the project. The evaluation team has attempted to mitigate any errors which might be present through triangulating information from multiple sources to inform our findings. In terms of primary data collection, some of the most relevant potential biases in this evaluation include positive response bias, selection bias, volunteer bias, and dominant response bias.

The data collection included project beneficiaries and a comparison group of producers that were eligible to participate in the project but did not receive any technical assistance or interventions. An analysis of data collected through surveys of the beneficiary and comparison group samples showed that differences between the groups in key characteristics including regional distribution, sex distribution, producer type, total land used, and average number of cows milked daily, was nominal (See Annex 2 for detailed analysis). The comparison group was effective for triangulating data collected on outcomes linked to project interventions collected through surveys, project M&E data, and other sources including interviews. However, because of study limitations, difference in outcomes between the participants and the comparison group cannot be attributed to project activities. More detail is provided on the approach and limitations of the study in the methodology section below.

Findings and Conclusions

The findings of the Final Evaluation of the SAFE project make clear that despite a slow start and external challenges posed by recurring droughts and the COVID-19 pandemic, the project achieved some significant accomplishments. These include most prominently:

1. Progress made towards achieving FSIS Equivalence for beef exports to the US, which most likely would have been achieved had not the pandemic delayed the audit scheduled for March 2020.
2. Improvements in HACCP, and sanitary practices and norms and through private co-investments in slaughterhouses participating in the SAFE project.
3. Proof of concept of the livestock field school methodology, enhanced by the use of private extensionists to provide hands-on training, technical assistance, and accompaniment for livestock producers.

Relevance: Seventy-eight percent of the beneficiary producers surveyed reported livestock field schools as being beneficial to them and 79% of processors and MCCs reported that they received high quality services from the project. However, challenges were also reported like low multi-stakeholder participation in project design, no early-stage foundational value chain assessments, and a lack of clarity of beneficiary focus in the design phase. Additionally, a failure to anchor program interventions upon an initial agreement with public sector and private sector stakeholders on goals and project design reduced stakeholder buy-in and sustainability of the project.

Effectiveness: Activities were effectively implemented with 90% of key activity indicators met at a 100% level or more. However, results achievement has been lower (68% of results indicators met at 100% level or more) due to delays owing to COVID-19. Progress towards achieving FSIS equivalence and high standards of sanitation in participating slaughterhouses, livestock field schools and private extensionists co-financed by the project, and adoption of practices to improve milk productivity were key

achievements of the project. Activities relating to improved access to finance and Seal of Quality for dairy products were less effective.

Efficiency: Delays in the first phase, challenges with the project's M&E systems, large scale of the project's implementation area, and lack of clear criteria for distributing grants were hard to overcome entirely and contributed to the shortfall in achieving the project's results indicator targets. However, staffing changes made in 2018 accelerated project activities and delivery of results was improved.

Impact: For producers participating in livestock field schools and associated technical assistance, impact on productivity has been significant, along with increased household incomes. Introduction of co-financed private extensionists has been well-received. Milk quality has improved, however, transportation and infrastructure at the MCCs remain challenging. Beef exports and trade has not seen significant market access growth, however, achieving equivalence could create significant positive impact. FSIS equivalence continues to be a driver of project impact and sustainability.

Sustainability: Techniques taught in the livestock field schools and improvements made in the slaughterhouses are still being used today. However, long-term sustainability will require continued engagement by local stakeholders; and if possible continued investments in project interventions. Most extensionists hired by the project have stopped providing support to the producers with project funding coming to a close. As of yet, no local actors have taken the lead, and while the technical capacities of POs have been strengthened, they have not embraced a leadership role in moving forward the project's objectives. JAD and APROLECHE, a local organization, has expressed interest in continuing support to the private extension program. The SAFE project should initiate and/or continue conversations with these organizations and the new government of DR to ensure the continuation the project's successful interventions.

Recommendations

The recommendations are designed to take the accomplishments of the SAFE project and build upon them in a way that leads to sustainable interventions that grow the beef and dairy sectors through increased productivity, quality, and trade. To develop them, the team drew from the findings of this evaluation, the lessons learned, and the insights of stakeholders we interviewed from the project team, the government, and the livestock (beef and dairy) value chain.

There are five recommendations for future projects in this area:

1. Collect data all along the value chain as a baseline for the project and for partners.
2. Continue to support livestock field schools and private extension services - with a partner (such as a milk buyer) that provides resources and commits to continue efforts.
3. Continue light support to beef value chain and other potential exporters.
4. Use grant funds to catalyze specific, project-based investment opportunities in both value chains. Meanwhile, encourage the private sector to offer financial services.
5. Lead a collective visioning process involving all stakeholders.

E2 below presents specific recommendations linked to SAFE project activities, including supporting data for which activities were more versus less successful.

E2. Successful vs. Unsuccessful Activities and Additional Recommendations for Future Projects

Successful Activities	Supporting Data	Recommendations
Livestock Field Schools	78% of producers surveyed said the livestock field schools were beneficial for them.	Finding sustainable financing sources for this activity (such as buyer contributions), and mainstreaming methodology with MEGALECHE in addition to the private extensionists.
Private Extension	Surveys show a 15% higher productivity for beneficiary producers than comparison group, in line with gains shown by farm visit data. Banks mentioned they considered the presence of high-quality extension services as a factor that reduced their credit risk.	More work with cooperatives to institutionalize the private extension services, and perhaps develop a system whereby cooperatives and/or members who provide/use these extension services can access funds. More discussion with government actors on how to organize extension and ensure the right incentives.
Selected grants to local organizations, that reinforce the practices taught in livestock field schools.	300+ milking parlors built with project financing. Inputs for producers. Grants supporting international TA	Better communication linked to grant and reimbursable funding. Allocate international TA effectively by responding directly to specific producer needs and supporting the adoption and follow up of new learning with producers.
Developing a Workaround for LAVECEN	Interviews and visits to laboratories; project records.	Possible <i>ad hoc</i> responsive support to encourage continued upgrading of local capacity. Important that this be done without taking on the large institutional issues that still exist.
Support to DIGEMAPS	DIGEMAPS own ability to tell their story is exceptional.	Review support to software for inspectors. A good initiative but appears back-office centric (a common issue with e-government software). Will require testing and iteration to ensure that the process for the enterprises is streamlined.
Support to Slaughterhouses (including mock audits, grants, HAACP training)	Two participating slaughterhouses (AGROCARNE and MERCARNE) passed the mock audit for FSIS Equivalence conducted by TAMU.	Network with Dominican Ambassador in Washington (as is being done) to make sure FSIS conducts the official audit soon.
Market Study (Puerto Rico)	Conducted by ASOCARNE President Enrique de Castro and Professor Greg Sullivan of Texas A&M University (TAMU).	Conduct additional market studies and follow up to what was done.

Activities that were not Successful	Supporting Data	Recommendations
Access to Finance	Only 41% of producers and 63% of processors we surveyed said they had access to finance after participation in project activities.	Needs to be designed in coordination with CONALECHE, <i>Banco Agrícola</i> , and private financial institutions. One intervention which may have potential would be to pilot financial products with savings and loan cooperatives linked to the associations of producers and buyers of milk. In partnership with private banks or microfinance institutions, technical assistance could be provided to one or two savings and credit cooperatives that want to work on the issue, financing product startup costs until break-even is reached.
Support to LAVECEN	Interview notes and project records.	It may be better not to engage with LAVECEN until the institutional issues have been resolved. Note that IDB is planning comprehensive support to LAVECEN.
Monitoring and Evaluation (M&E)	Every interview with project staff referenced the issues with M&E.	Identify possible conflicts and gray areas among multiple project objectives and clarify them. Allow for customization of results frameworks and ground-truthing with external stakeholders. Develop a value chain data framework with indicators that make sense to track from the perspective of local stakeholders; from those derive project-level data points, and only after that develop project-level targets and indicators. Budget for data collection about the value chain at the time of the baseline, the mid-term, and the final evaluation. Ensure project indicators adequately reflect changes in farming practices resulting from specific interventions, for example activities related to genetics and animal reproductive health, milk quality, animal feed, animal health, and farm management.



1. Introduction and Purpose

1. Introduction and Purpose

1.1. Project Context

Livestock Value Chain

The livestock sector (beef and dairy) in the Dominican Republic (DR) is an important source of local employment and considered to have high potential for growth. However, the sector has historically been underdeveloped and unproductive, providing 13.4% of employment but only contributing 5.8% to GDP, in large part due to low milk productivity and low exports.¹ No livestock census has been conducted since 1982, though we were informed that funding has now been secured to finally carry out an updated census (possibly in early 2022). This contributes to the generally poor quality of available data in the livestock sector.

For the dairy value chain, low levels of formality and know-how leading to low productivity (compared to peer countries) and low quality of milk have prevented the sector from growing and meeting domestic demand, despite laws in place for over 20 years mandating self-sufficiency in milk production.² Even with the COVID-19 pandemic reducing demand from the DR's burgeoning tourism industry, imports of dairy products have increased while prices have fallen, putting even more pressure on domestic producers.³ The majority of the stakeholders in the dairy sector see the improvement in productivity and quality of milk as the most achievable goal in the near term. This includes increased ability to meet domestic demand by addressing structural issues in the value chain – such as a lack of economies of scale and low levels of organization and cooperation among producers and other value chain stakeholders.

The beef value chain is likewise characterized by informality, with most beef-producing farms also dairy farms as well. Beef produced in the DR is mostly consumed domestically. However, unlike with dairy there is a greater opportunity for developing exports. Due to this perception among those in the sector and in the government, there has been a strong desire for the DR to achieve equivalence with US standards to qualify for exports to US, particularly with Puerto Rico.

It is in this context that the United States Department of Agriculture (USDA) funded the Safe Agriculture/Food Export (SAFE) project, to work with the government of DR and stakeholders in the sector to improve productivity, quality and to take actions necessary to achieve equivalence with USDA Food Safety and Inspection Service (FSIS) standards. This includes meeting prerequisites for beef exports to the US. To provide context for this final evaluation of the SAFE project, we first take a deeper look at the livestock value chain and its components (beef and dairy).

¹ OTSCORP. "Safe Agriculture/Food Export (SAFE) Program Dominican Republic Project Baseline Survey," October 13, 2016. *Sistema Presupuestario Dominicano, "Presupuesto Orientado a Resultados 2020-2023,"* 2019, pg 259.

<https://www.digepres.gob.do/wp-content/uploads/2019/10/Presupuesto-Orientado-a-Resultados-2020-2023.pdf>

² USDA FAS. "Opportunities and Challenges in the Dominican Dairy Sector," May 6 2019.

³ USDA FAS. "United States Agricultural Exports to the Dominican Republic Reached an All-Time High During 2020 in Spite of the COVID-19 Pandemic," February 22, 2021.

https://apps.fas.usda.gov/newgainapi/api/Report/DownloadReportByFileName?fileName=United%20States%20Agricultural%20Exports%20to%20the%20Dominican%20Republic%20Reached%20an%20All-Time%20High%20During%202020%20in%20Spite%20of%20the%20COVID-19%20Pandemic%20_Santo%20Domingo_Dominican%20Republic_02-10-2021

Value Chain Framework

Projects such as SAFE, which operate at the value chain level, are most likely to be effective when grounded in a value chain framework, supported by robust data collection at each level of the chain. A value chain project, to achieve its goals, requires the participation of stakeholders at all levels of the value chain and therefore should be founded on a shared vision agreed upon by these actors. Based on this data and shared vision, the management team can then prioritize interventions that address points of leverage⁴ within the value chain. While the SAFE project successfully completed activities at many different points of the beef and dairy value chains, there were gaps in the design as originally conceived, and in implementation over the project period that hindered the results and impact from adding up to be “greater than the sum of their parts” as a leveraged value chain intervention. We identify these design and implementation challenges in our recommendations and highlight that there is still potential to achieve leveraged impact.

The value chains for the beef and dairy subsectors in the Dominican Republic comprise a series of stakeholders (producers, processors, and buyers) that are aligned into vertical channels. Actors at different stages of each channel are linked to the next stage from production to commercialization. There are players that horizontally support the subsector participants; but the main dynamic involves relationships along the vertical axis, spanning industry functions from the farm level to the final consumer. While some farms specialize specifically in either dairy or beef, it is common for much of the local beef production to come from aging milk cows who are no longer as productive for milk.

Figure 1. Cattle Farm in Puerto Plata



Value chains are typically mapped with vertical channels flowing from the producer level at the base of the value chain up towards end markets (consumers and exports). The beef value chain in DR is comprised of two channels: (i) small family-owned farms – tending to be lower in productivity; and (ii) larger farms usually owning land over 300 hectares – and tending to be more highly productive. In turn, the dairy value chain can be divided into three channels: (i) small farms with less than 20 cows; (ii) medium farms owning between 20 and 50 cows; and (iii) large farms with more than 50 cows.⁵

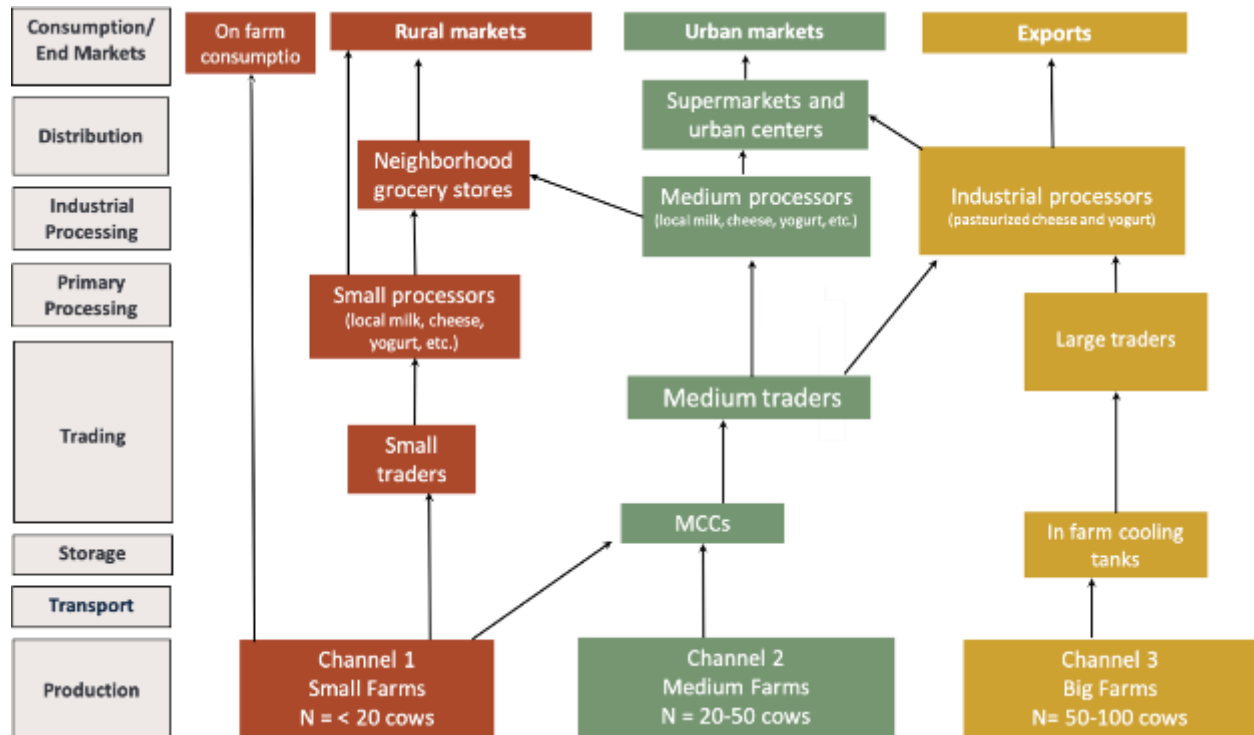
⁴ This term comes from the literature beginning as early as the 1980's at Michigan State University, as concepts from agricultural marketing schools were adapted for use in international development under the term “subsector analysis.” A point of leverage in a value chain may be the point where a large number of small producers come into contact with a single large buyer or type of buyer under certain conditions, or where a single government regulation affects the prices and/or production practices in the whole chain. These are prime points for intervention, where the cost of the intervention is small but the impact, because of the leverage effect, is much larger. See, for example: James Boomgard et. al. “Subsector Analysis: Its Nature, Conduct and Potential Contribution to Small Enterprise Development,” MSU International development Series Working Paper no. 26, 1986. <https://www.canr.msu.edu/fsg/publications/idwp-documents/idwp26.pdf> and Donald C.Mead and Carl Liedholm. “The dynamics of micro and small enterprises in developing countries,” *World Development*, Volume 26, Issue 1, January 1998, Pages 61-74. <https://www.sciencedirect.com/science/article/abs/pii/S0305750X97100109>

⁵ In a forthcoming report “*Los Pequeños Ganaderos en la RD: Una mirada prospectiva a este conjunto productivo*” by Eduardo Ottenwalder and Roberto Pepin (TBA), mapping is based on production capacity, level of formality, and dependencies, including vulnerability to climate change impacts.

Dairy Value Chain: We have approached the dairy subsector through a value chain map consisting of a number of different vertical functions, as well as relevant services at one or more levels (see Figure 2 below). Information is drawn from secondary research as well as from our evaluation team’s KIIs and surveys. Our analysis focuses on:

- Production
- Transport
- Bulk collection and storage
- Direct trading by farmers
- Artisanal processing
- Industrial processing
- Distribution
- Retail
- Importing
- Domestic consumption
- Exporting

Figure 2. Dairy Value Chain Map



At the farmer level, regardless of the size, the vertical value chain also includes support service providers that cut across one or more levels, including stakeholders such as: hired laborers (150,000+ employees); veterinarians; extensionists from MEGALECHE under DIGEGA in the Ministry of Agriculture, supported by CONALECHE; feed suppliers; farm and dairy equipment providers; genetic services; financial services (*Banco Agrícola*, CONALECHE and private lending from big processors); government agencies (CONALECHE

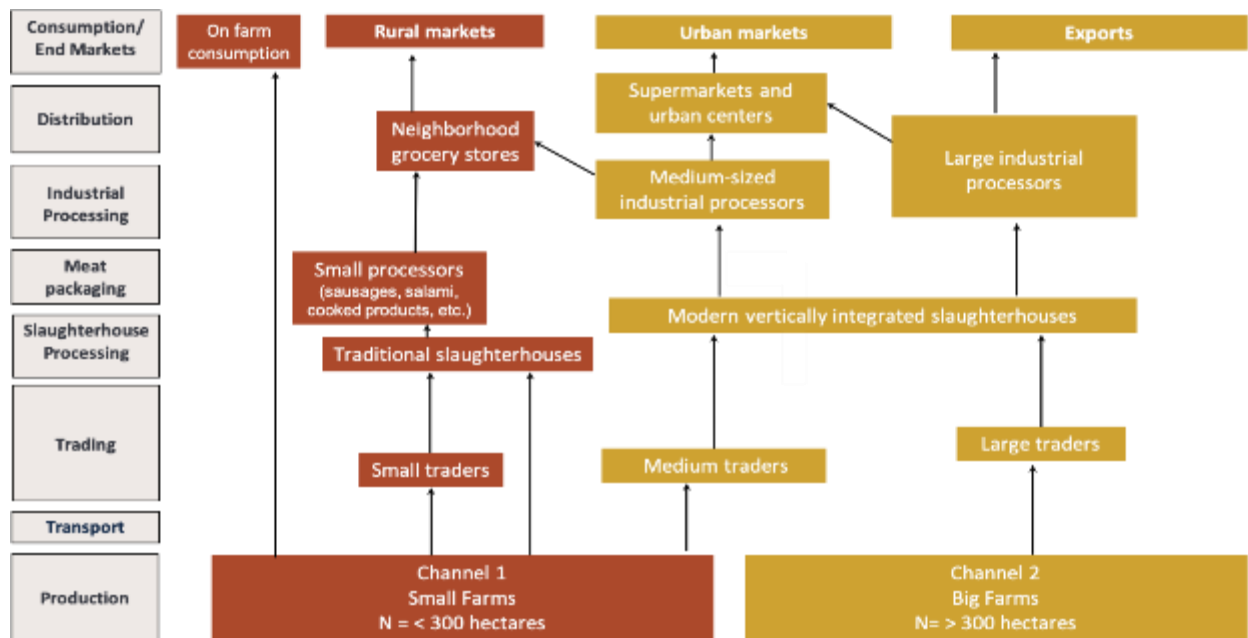
responsible for dairy policy development and implementation; DIGEGA responsible for livestock policy development and implementation; IDIAF responsible for investigation; ONE responsible for statistics); approximately 120 producer organizations, including JAD (80% of farmers are affiliated to a PO, and project grants and technical assistance and training were in great part delivered through them) and federations such as FEDEGANO and FEGACIBAO that provide training.

Beef Value Chain: The beef subsector includes different vertical functions and services that cut across one or more levels of the value chain (see Figure 3 below). Our analysis focuses on:

- Production
- Intra-farmer trade
- Small processors and meat packing facilities
- Slaughterhouses
- Industrial processing
- Distribution
- Retail
- Importing
- Domestic consumption
- Exporting

At the producer level, regardless of the size, the vertical value chain also includes Support Service Providers that cut across one or more levels, including stakeholders such as: hired laborers; veterinaries; laboratories (LAVECEN and LANA); extensionists (DIGEGA, PROGANA, and Cooperatives); feed suppliers; farm equipment providers; genetic services; product labeling and registry (COMINOR); financial services (*Banco Agrícola*); government agencies (DIGEGA, responsible for livestock policy development and implementation); and producer organizations.

Figure 3. Beef Value Chain Map



Value Chain Dynamics

If there are going to be changes in the dairy and beef subsectors, we must study the **forces and constraints** that drive these changes, and see which channels are growing or have the potential to grow most rapidly. By doing this, it should be easier to understand how we can control those forces and recommend possible ways for making changes. This section is based on the evaluation team's review of the literature supplemented by the evaluation interviews and surveys.

1. Primary Driving Forces

(i) Product demand and marketing strategies

Domestic demand is one of the principal driving forces for producing milk and beef cattle; selling fresh milk and meat; and producing other by-products. The domestic market for dairy products has room to grow, as long as the quality of local milk improves, and is able to compete with imported products already present nationally. In addition, there is ample room for the beef production to grow, as long as the Dominican Republic reaches equivalence and the industrial type of meat can be exported, allowing farmers to breed more heads of cattle in their current properties. In an overall increase output of cattle heads, all other meat cuts could be sold to the tourism sector that today consumes quality imported beef in quantities that currently outgrow national production. In addition, the specialty market could be tapped by marketing strategies, such as promoting products produced by low-income farmers in a developing country, or by certifying the product as being organic, among others.

All major players, with a few exceptional cases, commercialize beef and dairy products in the local market; these products don't have the quality to access the export market. Local prices are usually higher than international prices, due to structural sector limitations such as low production levels, lacking economies of scale and critical mass needed to access production factors at competitive costs.

(ii) Vertical Integration

The best socioeconomic results have occurred in the channels that efficiently integrate the highest number of functions from production to commercialization. Clear benefits can be seen in medium and large producers that reach quality and are able to supply consistent volume, therefore accessing the best prices. Grade A milk can fetch a premium price of \$0.56 (or RD\$32) per liter.

In the channels that are more vertically integrated, comprising medium and large producers, there is a better distribution of profits, with a higher proportion trickling down from the commercialization stage to the producers. Some differences can be seen between prices paid to cooperative member producers or those that have private supply agreements with large dairy buyers such as Rica and Nestlé, or one of the three largest slaughterhouses that produce the highest quality of meat currently commercialized to high-end supermarkets and distributors that

Figure 4. MCC in Maria Trinidad Sanchez



reach the tourism sector. For milk, this price difference can be between \$0.47 (RD\$27) and \$0.56 (RD\$32) per liter.

Jobs are created in a value chain, and the agricultural economy transformed, when people, goods, and processes move from left to right, from small farms on the left to medium sized and industrial farm channels on the right. The higher the producer can get in the vertical channel, the more he/she typically can participate in the labor force, and the more value is added to the product, resulting in increased socioeconomic benefits.⁶ for him. In channels 1 and 2 of the dairy value chain, the producer is closely linked to the MCC; in channel 3 some producers have private agreement with large processors that consistently buy their production and premium prices.

(iii) Value Added

The higher the producer can get in each of the five vertical channels, the more value is added to his/her product, resulting in an economic benefit for him/her. If SAFE had been designed at the outset with the right indicators to track this monetary return, we would have information about the total amounts of financial resources that are transferred from the intermediaries (processors-marketers) to the producers, and from the final buyers to the intermediaries. The difference in these amounts transferred is the value added as a result of the processing-commercialization functions in each channel. Having that information, the amount transferred to the intermediaries can be divided into the amount transferred to the producers, resulting in a “multiplier index” that could show how many times the value of the raw material was increased when sold to the final market. This data was not collected by the project and was outside the scope of the evaluation. In future projects, this data should be collected.

In all three channels the farmer has the opportunity to add value to its product when the fresh milk is transformed into by-products (cheese, yogurt, etc.), resulting in a financial benefit for the producer. The product is then sold to the *colmados* or, in case of higher quality products, to large supermarkets. There is low cooperative participation in adding value to the fresh milk, preventing a larger redistribution of profits among primary producers. Therefore, though there are some social factors considered in how the cooperative operations are set up, there is limited vertical integration to capture the value added by other stakeholder functions higher in the vertical chain. The “Small Channel” in both value chains is the one with the least vertical integration and, especially in the beef value chain, in part depends on coordination mechanisms with other stakeholders of the subsector. It is worth noting that these small producer channels are relevant – especially in the eyes of the government - not necessarily for economic and commercial reasons, but for reasons linked to food security, income stability, and slowing immigration towards urban areas.

2. Secondary Driving Forces

(i) Technological Change

The SAFE project aimed to vertically link producers to processing activities, therefore adding value to their products and increasing their financial return. An example is the dairy producers and their relationship with

⁶ Man-Kwun Chan. “Making Agricultural Value Chain Programmes Work for Workers: A Practical Guide for Development Donors and Practitioners,” Women in Informal Employment: Globalizing and Organizing (WIEGO) Technical Brief 4, January 2012. <http://www.fao.org/3/at405e/at405e.pdf>

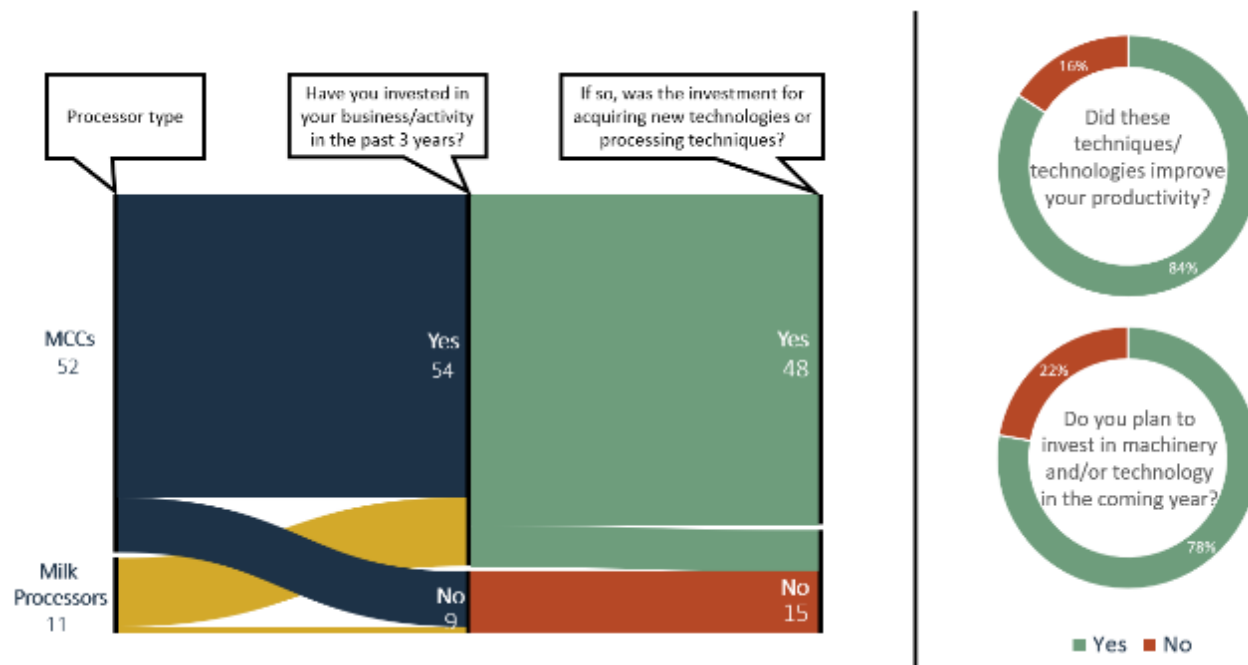
World Bank. “Sector Competitive Analysis Tools (SCAT),” pp. 140-144

MCCs: some simply submit their product, and others are part of POs that own MCCs. Under the program, this last group was more interested in incorporating new production technologies to improve quality, therefore influencing the price paid by the industrial processors.

(ii) Increased Revenue

Every producer interviewed, without necessarily having performed a cash flow analysis (most of them were small producers without financial knowledge), agreed that producing higher grade milk and more liters-per-cow-per-day (l/c/d) increased their revenue. Interviews with Nestlé agronomists indicated that project beneficiary producers were able to, on average, move up from grade “C” to grade “B” milk and above in quality. According to indicators collected by the SAFE project team, there was a 36% increase in the volume of grade “A” milk sold to processors by USDA supported milk collection centers indicating an increased production of higher-grade milk during the project period. With Nestlé, a large buyer for MCCs, buying milk at RD\$31 for the highest-grade milk and RD\$ 27 for the lowest grade milk (as indicated in interviews with Nestlé agronomists), improvement in grade led to a rise in revenue for the producers. The results indicators collected by the project indicated that 1022 dairy farmers were supplying grade “A” milk to USDA supported MCCs by the end of the project period. By incorporating production technologies and by changing supply relationships between the farmer and the MCCs, increased revenues were achieved. For instance, Figure 5, below shows how investments in technologies like cooling tanks, appropriate milk containers, etc. through the SAFE project led to improvements in productivity for MCCs and milk processors, as described by them in surveys conducted by the evaluation team.

Figure 5. Example of How New Technologies Enhanced Productivity of Milk Processors and MCCs



The higher the producer is integrated in the vertical channels, the more profitable their operation becomes. The multiplier effect of value added confirms this assumption. In addition, those channels that commercialized their product to market niches such as special yogurt and cheese were also more profitable.

(iii) Large Firm Characteristics

Large organizations, mainly at the processing and marketing functions, have opened new opportunities for small producers. At the production level most of the producers are small; at the consolidation level MCCs are considered small too. But at the processing and commercialization level there are all kinds of stakeholder sizes; some large organizations play the role of anchor companies, providing “demand-pull” in a market-driven value chain from producers to consumers.

Value Chain Constraints

Every level of the value chain faces its own set constraints and challenges. Table 1, below, lays out the constraints faced by value chain function as well as the organizations involved at each level to address these constraints, based on the evaluation team’s review of the literature and evaluation interviews. This table is an inventory, but further analysis should be done by projects working in the value chain, based on data collected at each level, to analyze these constraints and identify points of leverage where interventions can make the most impact.

Table 1. Constraints in the Livestock Value Chain by Function

Functions	Constraints	Organizations Involved
Whole Value Chain		
Governance of the subsector value chain	<ol style="list-style-type: none"> 1. Lack of statistical information to make decisions at the subsector level 2. Lack of intra and inter-institutional coordination between the links 	<ol style="list-style-type: none"> 1. CONALECHE, DIGEGA, <i>Oficina Nacional de Estadísticas</i> (ONE) <p>CONALECHE: Industry regulation and facilitating spaces for dialogue and intermediation between producers, processors, and suppliers of inputs. Provides resources to producers on soft loans</p>
Support Services		
Support services and inputs	<ol style="list-style-type: none"> 1. Low genetic improvement and limited technology in the extension system 2. Limited access to financing 3. Warehouses and supply businesses without financing alternatives such as agreement with industrial processors to deduct invoices from the milk remission 4. Production of alternative feed for livestock (for greater productivity and pasture quality) 	<ol style="list-style-type: none"> 1. DIGEGA and <i>Instituto de Desarrollo de Investigación Agrícola y Forestal</i> (IDIAF) 2. Lines of credit from CONALECHE, <i>Fondo Especial para el Desarrollo Agropecuario</i> (FEDA), and <i>Banco Agrícola</i>. 3. CONALECHE 4. CONALECHE y DIGEGA
Vertical Levels of the Value Chain		
Producers	<ol style="list-style-type: none"> 1. Low milk quality 2. Lack of universal traceability of livestock at the level of production, health, marketing, planning levels 2. Lack of training in good practices (associativity, federations and 	<ol style="list-style-type: none"> 1. CONALECHE 1. <i>Departamento de Sanidad Animal de la Dirección General de Ganadería</i> (DIGEGA) in the Ministry of Agriculture. 2. DIGEGA, MIC and CONALECHE 3. FEDA and del <i>Banco Agrícola</i>

	<p>organizations of producers and processors)</p> <ol style="list-style-type: none"> Lack of financing Non-existent insurance adapted to the sectors (very limited products through AGRODOSA, with no support for private livestock insurance) Seasonal price variability due to lack of heat synchronization (i.e., concentration of livestock births in certain periods of the year) Lack of knowledge of the cold chain and logistics Use of unsuitable packaging Lack of technical know-how in sustainable use of natural resources, pasture and forage management Lack of associativity among producers 	<ol style="list-style-type: none"> <i>Fundación REDDOM, Aseguradora Agropecuaria Dominicana (AGRODOSA)</i> Extension services of DIGEGA <i>Asociación de Productores de Leche (APROLECHE)</i> Cooperatives (e.g. COOPAGAMPTA, COOPESUR, COOPFEDEGANO) Associations: (e.g. <i>Asociación Dominicana de Industrias Lácteas (ADIL), Asociación de Procesadores de Lácteos y Derivados (ADOPROLAC), Asociación de Queseros, Asociación de Importadores de Leche; Junta Agroempresarial Dominicana (JAD).</i>
Intermediaries	<ol style="list-style-type: none"> Inadequate cold chain and logistics Inefficient collection routes 	<ol style="list-style-type: none"> Intermediation (East Region), which mostly sells to cheese manufacturers, and provide finance to and sell to truckers
Milk Collection Centers (MCCs)	<ol style="list-style-type: none"> Low milk quality due to lack of microbiological control, lack of certification in GAP and GMP. Need for group purchases of inputs and contracting of services Lack of infrastructure to disaggregate milk qualities (Currently MCCs take the price of the lowest quality aggregated milk) 	<ol style="list-style-type: none"> DIGEGA Alliance with universities and tech institutes. Processing cooperatives COOPAGAMPTA in Monte Plata; and COOPESUR in Santiago Rodriguez. Nestlé is the one that most encourages this concept. CONALECHE wants to replicate it. Producer organizations (POs)
Intermediation (East Region)	<ol style="list-style-type: none"> Inadequate cold chain and logistics 	<p>They mostly sell to cheese manufacturers, and sell to truckers who finance</p>
Artisanal processing (cheese)	<ol style="list-style-type: none"> Health and safety regulations not followed/enforced Cheeses not differentiated Inadequate cold chain and logistics 	<ol style="list-style-type: none"> <i>Instituto Dominicano de Calidad (INDOCAL)</i> in the Ministry of Industry and Trade INDOCAL

	<p>4. Lack of cooperation among cheese producers; lack of associativity to develop collective brands, with quality and origin identification.</p> <p>5. Lack of technical standards</p>	
Industrial processing	<p>1. Dominance of large processors</p> <p>2. Lack of strong producer organizations (POs)</p>	<p>1. Large milk processors (northeast and south): Rica, Induveca, Nestlé, <i>Pasteurizadora María</i> Pasteurized cheese and yogurt: MilkAgro, owned by <i>Grupo Mejía Arcalá, Geo, San Juan, Michel, Cambre, El Banilejo, and Oleaga</i></p> <p>2. There are three large cooperatives of small and medium-sized livestock farms: COOPAGAMPTA in Monte Plata, COOPESUR in Azua (with partners throughout the southern region) and COOPFEDEGANO, based in Santiago Rodríguez.</p>
National commercialization	<p>1. Differential payment based on quality not always applied correctly</p>	<p>1. <i>Federación Nacional de Comerciantes y Empresarios de la República Dominicana</i> (FENACERD) represents 65k <i>colmados</i> = 70% of domestic trade</p>
Imports	<p>1. Lack of appropriate labeling standards for milk imports.</p>	<p>1. <i>Dirección General de Aduanas y Pro Consumidor.</i></p>
Final consumption	<p>1. Lack of a massive campaign to consume Dominican milk</p>	<p>1. <i>Organismo de Defensa al Consumidor</i> (PRO CONSUMIDOR), Ministry of Health, CONALECHE, SIDOCAL (<i>Sistema Dominicano de la Calidad</i>)</p>
Exports	<p>1. Dairy: The sector's lack of economies of scale, critical mass of production, as well as high costs of production and low quality prevent it from being a competitive sector for exports in the near term.</p> <p>2. Beef: Has potential to become a competitive export sector, especially if FSIS Equivalence can be achieved to allow exports to US (especially Puerto Rico)</p>	<p>1 & 2. USDA, DIGEGA</p>

1.2. Project Description

The Safe Agriculture/Food Export (SAFE) project (known as PROGANA in Spanish) is a five-year project funded by the United States Department of Agriculture (USDA), Foreign Agricultural Service (FAS) through the Food for Progress (FFPr) program. On September 29, 2015 the SAFE project was awarded to the National Cooperative Business Association CLUSA International (NCBA CLUSA) as the leading implementer, along with its implementing partners.

The *Junta Agroempresarial Dominicana* (JAD) is the primary local partner, responsible for the provision of extension services and building producer capacity. Additional technical assistance was provided through two international partners, the Borlaug Institute for International Agriculture and its Center for Food Safety at Texas A&M (TAMU) – responsible for providing technical assistance on Sanitation Performance Standards (SPS) measures and food safety systems – and Cooperative Resources International (CRI/GENEX) – responsible for providing technical assistance on genetics and breeding. The project was funded by commodity donations through a Commodity Credit Corporation (CCC), initially estimated to be worth US\$16,212,121 once monetized.⁷ The project targeted 14,407 individuals, out of which 13,200 were producers and 1,207 public and private extension workers, beef and dairy processors, decision makers, public and private stakeholder representatives, and 60 producer organizations.

Figure 6. SAFE Project Implementation Areas



⁷ Commodities donated for initial project funding included 2,120 MT of yellow grease, 2,200 MT of inedible tallow, and 16,100 MT of crude degummed soybean oil (CDSO). Unfortunately, due to monetization shortfalls the project only received \$16,026,920.17 of the estimated total even after being awarded additional commodity by USDA in September 2020.

The project targeted 11 dairy and beef producing provinces in the Dominican Republic (Santiago Rodríguez, Dajabón, Independencia, San Juan, Monte Plata, La Altagracia, Hato Mayor, El Seibo, María Trinidad Sánchez, Duarte and Puerto Plata), with two overall objectives:

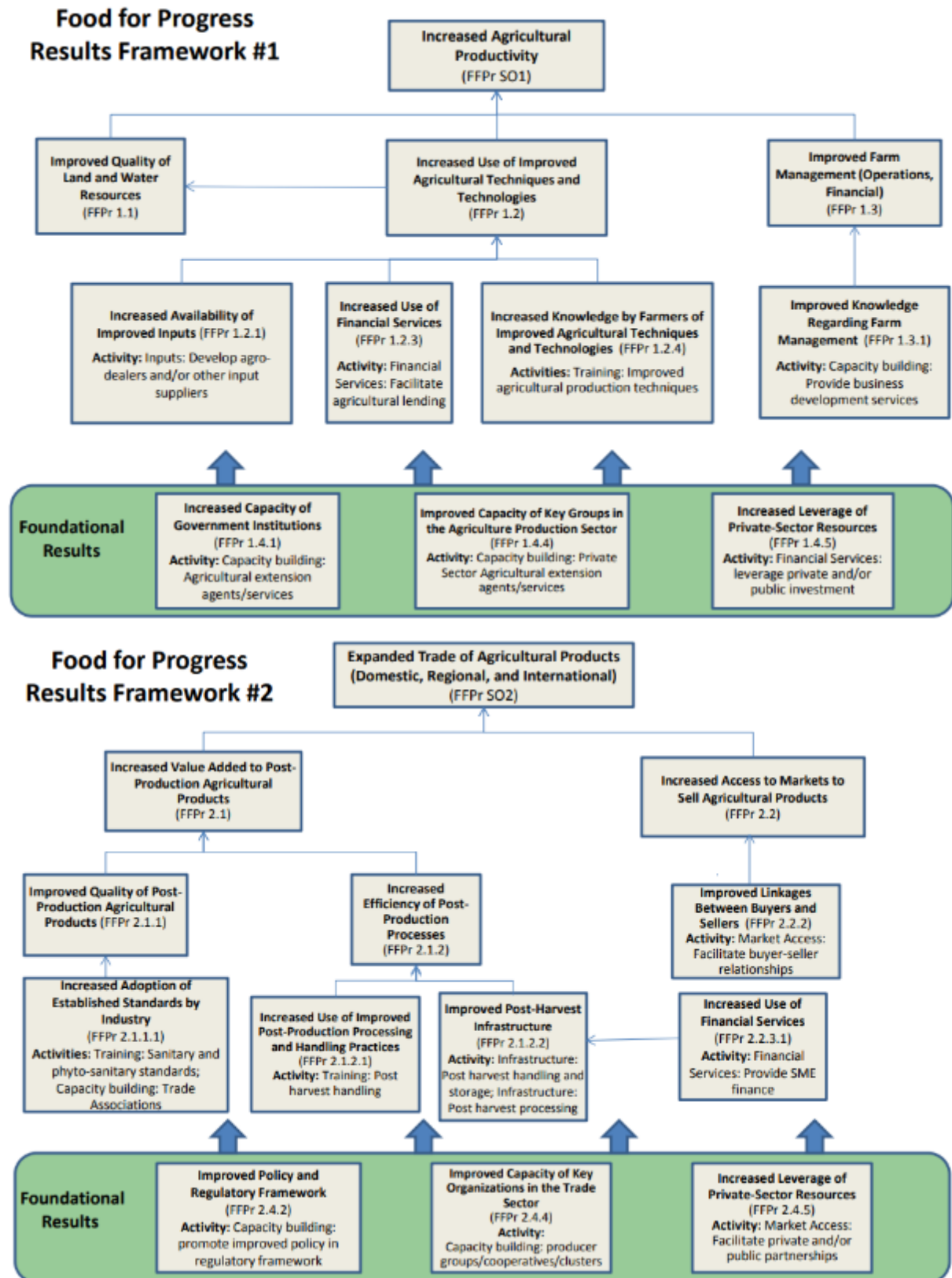
1. **Improve agricultural productivity** in the livestock (beef and dairy) value chain by increasing the use of improved techniques and technologies; improving farm management; increasing the availability of improved inputs and use of financial services; strengthen the capacity of government institutions and key groups; and increasing the leverage of private sector resources.
2. **Expand trade of beef and dairy products** by adding value to post-production; increasing the adoption of established standards; increasing access to markets; building linkages between buyers and sellers; improving post-harvest infrastructure; increasing the use and efficiency of post- production processes; improving the policy and regulatory framework; and strengthening the capacity of key organizations in the trade sector.

1.3. Results Framework

The SAFE project's approach to achieving its two objectives of increased agricultural productivity and increased trade, are articulated in the dual results frameworks shown in Figure 7 below. These frameworks represent the project's theory of change and are directly linked to the expected results for the Food for Progress projects. They draw closely from the Food for Progress program-wide results-framework.

To achieve these objectives, the project relied on 12 activities including: 1) improving farm management; 2) increasing the availability of improved inputs and use of financial services; 3) strengthening the capacity of government institutions and key groups; 4) increasing the leverage of private sector resources; 5) adding value to post-production; 6) increasing the adoption of established standards; 7) increasing access to markets; 8) building linkages between buyers and sellers; 9) improving post-harvest infrastructure; 10) increasing the use and efficiency of post- production processes; 11) improving the policy and regulatory framework; and 12) strengthening the capacity of key organizations in the trade sector.

Figure 7. SAFE Project's Results Frameworks



1.4. Purpose of the Evaluation and Research Questions

The purpose of this final evaluation is to provide an independent, third party assessment of the performance of the SAFE project in achieving its objectives. Previous evaluations of the SAFE project included a baseline study conducted by OTSCORPS and a mid-term evaluation conducted by J.E. Austin Associates.

The final evaluation is focused on answering key questions related to the SAFE project’s relevance, effectiveness, efficiency, impact, and sustainability and will include metrics on the project’s progress against its original targets for 89 project indicators (58 activity indicators and 31 results indicators as of the writing of this report). This evaluation will also assess the adjustments made over the course of the project including those based on mid-term evaluation, identify and document lessons learned over the course of the implementation, and make recommendations for the future. This final evaluation will also advance the broader Learning Agenda for USDA’s Food for Progress program by contributing findings to the dairy and beef value chains in the Dominican Republic related to priority agenda items including value creation (i.e., trade expansion and market development), market linkages, and quality and standards.⁸

The research questions for this Final Evaluation ask about the **relevance** of project design and activities for the stakeholders, the **effectiveness** of implementation, the **efficiency** of project organization and implementation, the **impact** of project activities on participants, and the **sustainability** of successful project interventions going forward. Table 2 below lists the key research questions for this evaluation.

Table 2. Final Evaluation Questions (EQ)

EQ	Relevance
1.1	To what extent has the project responded to the actual needs and interests of the target farmers, associations, groups, and other stakeholders?
1.2	To what extent does the project integrated or strengthen the national sectoral strategy to improve production and market access?
1.3	To what extent does the project fit into the strategies of the DR government?
1.4	What was the added value of the project considering perspectives from key stakeholders such as USDA/W, USDA/Santo Domingo, POs, and implementing partners?
Effectiveness	
2.1	To what extent have the expected results of the project been achieved?
2.2	What factors have been critical to the achievement or nonachievement of project objectives?
2.3	Has the project led the planned activities? Has it achieved the expected results?
2.4	What adaptations, if any, were made to the project’s implementation process in order to achieve project objectives and targets based on mid-term evaluation findings?
2.5	To what extent the activity changes after midterm evaluation results and recommendations were successful in improving effectiveness and ability of the project to achieve its expected results?
2.6	What were the planned and unplanned outcomes that can be attributed to the project?
2.7	What are the evolutions of the project indicators?
2.8	Has the implementation process (approach - methodology) been effective?

⁸ The Food for Progress Learning Agenda is available here: https://www.fas.usda.gov/sites/default/files/2020-03/learning_agenda_final.pdf#:~:text=Food%20for%20Progress%20Learning%20Agenda%20on%20Trade%20Expansion,timely%20research%20questions%20to%20inform%20evaluation%20and%20policy

2.9	What is the evidence and estimate by how much agricultural productivity and the marketing of agricultural products have been improved through project actions?
2.10	To what extent did the Livestock Farmer Field School methodology contribute to improved agrobusiness management, production and quality compared to traditional adult education methodologies?
2.11	To what extent did project activities prepare stakeholders to participate in virtual activities versus in-person as a result of the global pandemic from the novel coronavirus COVID-19?
2.12	To what extent did stakeholders benefit from the project's attempts to provide virtual trainings as a result of the pandemic?
2.13	To what extent did the technical assistance received by beneficiaries improve the management of their agrobusinesses, production and quality?
2.14	To what extent did beneficiaries adopt the project's improved practices and technologies and improve their agrobusiness's management, production, and quality?
Efficiency	
3.1	To what extent, appropriateness, and functionality have the various units/ levels of management and coordination (grants, project staff, M&E, local committees, USDA/W, USDA/Santo Domingo and others) supported the implementation of the project?
3.2	To what extent were the size and composition of the teams appropriate to the strategies?
3.3	To what extent do the various project activities support each other?
3.4	To what extent has the process of project implementation including finance and administration optimized time and resources?
Impact	
4.1	What was the impact of the project on: 1) Increased household income, 2) Increased agricultural productivity, 3) Increased market access and expanded trade, 4) Increased quality of agricultural products, 5) Increased public and private extension services
4.2	How does the beneficiaries' perception of the project's achievements, especially the increase in productivity and income vary across value chains and regions?
4.3	What is the legacy of the project? Organize achievement categories from most significant impact to least significant impact.
4.4	Which activities were the most successful and the least successful? Why? Breakdown by intervention / activity.
4.5	To what extent have beef and dairy ranchers' capacity to respond to on-farm shocks and daily activities improved as a result of the project, and why?
4.6	How has the project's activities strengthened local producer organization's governance, member services and equity, as well as incomes?
Sustainability	
5.1	To what extent have local actors (JAD, cooperatives and farmers' organizations, MCCs, Slaughterhouses, local government and civil society groups) been involved in the management of the project?
5.2	Which local counterparts have increased their capabilities to continue with the project's actions, and why?
5.3	Which partnerships were the strongest and why?
5.4	What is the probability that these actors will be able to provide succession?
5.5	Are the techniques and technologies used in the project easy to maintain locally? To what extent are the conditions for local control of these techniques and technologies guaranteed? Are people facing any additional challenges in light of the pandemic? Prioritize activities to continue after the project closes from most likely to least likely.
5.6	To what extent do the project interventions support and stimulate the local economy? When possible, consider adding tools to get insight on quantifying the project's impact on the local economy.
5.7	Which of the following project impacts are likely to be sustained and/or scaled-up after the project closes? 1) Increased household income, 2) Increased agricultural productivity, 3) Increased market access and trade, 4) Increased quality of products.

- 5.8 Identify and explain short and mid-term challenges to sustain program results, and what actions could be taken before the end of the project to mitigate those challenges, if any.
- 5.9 To what extent are local government actors likely to achieve FSIS equivalence and continue strengthening the food safety inspection system?
- 5.10 To what extent did modifying the traditional training methodology to the methodology in the “Collective Efficiency Schools” permit improved learning and application of the concepts?



2. Evaluation Design and Methodology

2. Evaluation Design and Methodology

2.1. Evaluation Design

The design of the final evaluation of the SAFE project followed a mixed methods approach using qualitative and quantitative analysis to address the evaluation's research questions. A quasi-experimental design was not employed since control group data was not collected during the early stages of the project. However, in agreement with NCBA CLUSA, the pre-post research design was supplemented with data collected from a comparison group (non-beneficiary producers). This was a helpful benchmark for the data collected from beneficiary producers. While not as robust, this comparison group provided useful insights. The process of creating the comparison group, its composition, and its limitations are discussed further below.

The evaluation implementation was organized into three main phases of work:

- Phase No. 1: Inception and Preparation for Field Work
- Phase No. 2: Fieldwork
- Phase No. 3: Analysis and Report

Because the evaluation was implemented during the COVID-19 pandemic, the following principles were followed by the evaluation team:

Just Results guiding principles for field work during the COVID-19 pandemic

1. Whenever work can be conducted remotely, it should be done so to avoid the risk of COVID-19 exposure.
2. All team members have the right to withdraw from the field or country, at any time.
3. PCR testing is required by all team members before entering the country and/or at the beginning of activities, even when not required by airlines and/or country guidelines.
4. Using protective personal equipment (PPE), using outdoor amenities, and social distancing is required whenever possible.
5. Large meetings must be generally avoided, and during in-person meetings, wearing masks and social distancing is mandatory for the team, including enumerators.
6. In the case of a positive COVID-19 test, or exposure to an individual who tests positive, team members are required to self-quarantine.
7. *Dominican Republic specific:* Curfews and local government regulations must be respected and adhered to, local media updates must be monitored, and government mask and social distancing mandates must be followed at all times.

Phase 1: Inception and Preparation for Field Work

In preparation for the field work for the final evaluation of the SAFE project, the evaluation team followed these steps:

- **Review of Project Documentation and Secondary Information:** Following an initial kick-off meeting, the SAFE team shared background materials which were reviewed and analyzed by the evaluation team. This included all relevant project documentation and secondary sources related to SAFE, including baseline and midterm evaluations, studies carried out under the project’s auspices, contracts and other administrative documents, reports on progress/monitoring/implementation of the project, and the SAFE project’s M&E database and indicators.
- **Finalization of Methodology and Inception Presentation:** The evaluation team also further refined and finalized the evaluation methodology, sampling approach, and plan for the field work. The methodology and approach, including a plan articulating clear steps for implementation was presented to the NCBA CLUSA team. This replaced a full inception report, due to an accelerated timeline to get to the field.
- **Finalization of Data Collection Tools:** Prior to field work, all data collections tools were finalized, including surveys, interview guides, and guides for focus group discussions (FGDs). Training materials for the initial enumerator training, held at the SAFE project and JAD offices in Santo Domingo, were also prepared.

Phase 2: Field Work

Field work included data collection in all 11 provinces targeted within the SAFE project, along with key stakeholders in Santo Domingo and elsewhere as required. Data collection and training of the enumerators took place over a six-week period. During the course of the evaluation team’s fieldwork, the following steps were taken:

- **Training:** Training was conducted at the SAFE and JAD offices in Santo Domingo over a 4-day period, as a joint learning and iterative editing process, to ensure the enumerators had a complete understanding of all the data collection tools to be used as well as to ensure the tools reflected the local context, and language commonly used by project stakeholders. Following training a day of testing and validation of the tools was carried out in Monte Plata, after which all tools were finalized.



- **Data Collection:** Data was collected through a variety of means, including surveys, KIIs, and FGDs with key stakeholders and beneficiaries of the SAFE projects (as described in detail in the section below).

Phase 3: Analysis and Report

Following the completion of data collection, initial data analysis was carried out over the next two weeks, and a presentation on the preliminary findings and conclusions of the evaluation was presented to NCBA CLUSA and SAFE project staff. Following this presentation, the Just Results team drafted this report to provide the findings of the final evaluation to USDA, the SAFE project team, and other relevant stakeholders.

2.2. Sampling Methods

Producer Surveys

For the producer surveys we used probabilistic sampling to obtain a random representative sample of beneficiary and comparison groups, using a multistage stratified approach to account for distribution by province. For beneficiaries, additional strata were used to account for the distribution by herd size, and number of follow up visits over the course of the project. The beneficiary and comparison group lists were drawn from the same two sources: SAFE beneficiary list developed since project inception, and the list of suppliers of the milk collection centers. Data cleaning was needed to select only the farmers.

Beneficiaries were defined as producers with whom the SAFE project worked and participated in at least one intervention and received at least one farm visit by project extensionists.

Comparison Group

The project baseline survey was sampled from the *Precenso Nacional Agropecuario* (ONE, 2016), a preliminary farm census conducted in 2015 which included a count of all farmers in the country through which all livestock farms in the 11 project provinces could be identified. From the cattle farms in the project provinces, a sample frame was defined – all farms of less than one Ha (16 *tareas*) in size and those larger than 312.5 Ha (5000 *tareas*) were excluded. This yielded a sample of 20,235 for the baseline survey, which was further stratified by farm size to yield a final sample of 476 farms – 513 were surveyed and 505 responded in the baseline survey⁹.

For the beneficiary group of farmers to be included in the project, NCBA CLUSA prioritized farmers that attended initial workshops and maintained sustained interest in the project activities, focusing on farmers that resided in the geographic scope of the project, owned their own or communal land, and supplied the milk collection centers or meat processors¹⁰. Because project participants were prioritized during selection based on their indications of willingness to participate in the project, it is possible that these participants exhibited higher willingness to seek project training and opportunities, which could have affected outcomes and also introduce bias into the sample of beneficiaries.

⁹ OTSCORP. "Safe Agriculture/Food Export (SAFE) Program Dominican Republic Project Baseline Survey," October 13, 2016.

¹⁰ Proyecto Fortaleciendo la Cadena de Valor de la Ganadería Dominicana (Progana) Safe Agriculture / Food Export Project (Safe) (USDA - DR). 27 March 2019. *Estrategia Y Plan De Trabajo Componente: Servicios Financieros*

During the evaluation, the team realized that a pre-post only research design would limit the full understanding of the project outcomes. Due to this, a comparison group approach was added with agreement with the NCBA CLUSA team. The comparison group comprised producers that were eligible to participate in the project but did not receive any of the interventions. These producers were similar to the beneficiary producers; however, the project lacked the resources to bring technical assistance and inputs for more producers and thus, they were not included in the project. In 2019, the project signed a memorandum of understanding with the Ministry of Agriculture of the Dominican Republic to provide resources to include more producers. However, due to the COVID-19 pandemic these resources had to be redirected to pandemic relief and thus, additional producers could not be added.

The comparison group sample was determined using the same methodology as the beneficiary producers' sample and drawn from producers whose contact information was already captured in the SAFE project's database, but who were not beneficiaries of the project. It is important to note that prior to sampling, data on farmers' provinces was available but farm size was unavailable.

An analysis of data collected through surveys of the beneficiary and comparison group samples showed that differences between the groups in key characteristics including regional distribution, sex distribution, producer type, total land used, and average number of cows milked daily, was nominal (See Annex 2 for detailed analysis). Farmers from the comparison group and farmers from the beneficiary group were distributed similarly across provinces. The same was true for sex distribution, with 90.2% of the beneficiary group reporting as male, and 86% of the comparison group reporting as male. The comparison group and beneficiary groups were also similarly disaggregated by producer type – whether the farmers produced milk, meat, or both milk and meat (See Figure 9). Looking at other metrics like total land use, the beneficiary group reported a mean total land use of 544 *tareas* and the comparison group reported a mean total land use of 498 *tareas*. Both groups also had similar average number of cows milked, with the beneficiary group averaging 19.4 cows milked and the comparison group averaging 20.9 cows milked. The difference in means for these two metrics (land use and cows milked) was not statistically significant (See Annex 2).

While the comparison group provides an otherwise similar set of producers to the beneficiary group, there still is a potential for some bias due to the fact that the comparison group can only be compared to the beneficiary group at one point in time (especially relevant, for example, is the lack of prior information on farm size). The comparison group is statistically valid across the metrics discussed above. However, there is possibility of selection bias since the comparison group producers were initially expected to be project participants but were not included in the final beneficiaries (See Limitations section). As stated earlier, due to study limitations, difference in outcomes between comparison and beneficiary groups cannot be attributed to project activities. Despite this, the comparison was effective in that it provided useful information to triangulate with data collected by the project through extensionist farm visits and project surveys (see discussion in Findings section).

Figure 9. Distribution of Producer Types in Beneficiary and Comparison Group Farmers

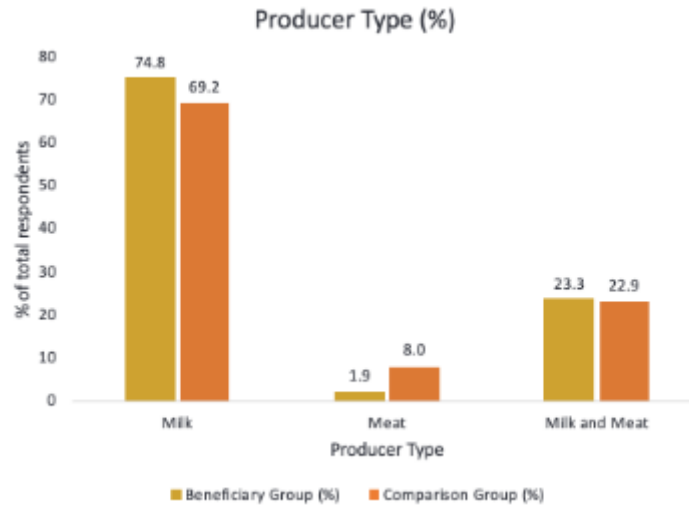


Table 3. Producer Sampling Frame by Province

Province	Beneficiary Group		Comparison Group			
	Population	Sample	Sample	Sample		
Dajabón	1008	18%	99	18%	90	18%
Duarte	244	4%	24	4%	22	4%
El Seibo	324	6%	32	6%	29	6%
Hato Mayor	276	5%	27	5%	25	5%
Independencia	186	3%	18	3%	17	3%
La Altagracia	383	7%	37	7%	34	7%
Maria Trinidad Sanchez	134	2%	13	2%	12	2%
Monte Plata	434	8%	43	8%	39	8%
Puerto Plata	848	15%	83	15%	76	15%
San Juan	1036	19%	101	19%	93	19%
Santiago Rodriguez	647	12%	64	12%	58	12%
Total	5520		541		493	

The sampling methodology followed a three-step process. In the first step we used the formula below to calculate the sample size, n , where p is the p-value, e is the error value, Ne is the population, and z is the z-score.

$$n = \frac{p * (1 - p) * z^2 / e^2}{1 + (p * (1 - p)) * \frac{z^2}{Ne^2}}$$

Calculated at 95% confidence interval and 4% error, we arrived at a sample sizes of 541 for beneficiary producers. For the comparison group, the sample was calculated based on a theoretical population of

50% of the beneficiary population which compares conservatively within what would be best practice if a control group had been taken.¹¹

In the second step, the size of each stratum was calculated using proportional allocation. Proportional allocation of sub-sample sizes is determined relative to their sizes in the total population using the following formula, where n_h is the sample size for the stratum, N_h is the population size for stratum h , N the total population size and n is the total sample size.

$$n_h = (N_h/N) * n$$

For both beneficiary producers the stratum used to calculate the sample included: province, herd size, and number of visits by project extensionists. For the comparison group only province was used, since information on herd size was not available and no visits were made to these producers by project extensionists.

In the final step, random samples were drawn according to the proportionate multi-stage random sampling technique described. Producers were selected randomly according to each stratum in the following stages: province, Farm size, Number of visits. We use the random value function in Excel to assign a random value which was used to draw the sample.

During implementation of the evaluation, issues with some of the contacts in the SAFE project's M&E database were determined which required a replacement sample to be drawn for producers who were not in fact beneficiaries of the project. These problems with the M&E database were the result of changing systems and data collection challenges early in the project. While the second leadership team had led a data audit which had fixed many of the problems, some issues remained (see the Efficiency section for further discussion).

Following additional information provided by the project team, a replacement sample was drawn to substitute those individuals in the original sample which were shown to not be producers or which could not be contacted after completing the series of required steps (i.e. contact by phone, physical address, asking extensionists for help, asking producer organizations for help). Those who were successfully contacted and were in fact producers, but chose not respond to the survey, were not replaced. The same stratified random sampling method was used to make replacements in such a way as to keep proportions nearly identical, while only drawing from farms with contact info and which are shown to be producers. These measures were taken to ensure that only producers were included and to maximize the enumerators chances of being able to contact them. These challenges and this replacement sample process led the field work to extend to six weeks rather than the original four weeks planned. As shown in Table 5 below, from a sample of 541 beneficiary producers contacted, 322 responded (60% response rate). From a sample of 493 comparison group producers contacted, 212 responded (43% response rate).

Processor Surveys

In addition to the surveys of producers, a smaller survey of all processors which were involved in some way with the project was also conducted. In this case, processors are defined to include milk collection centers (MCCs), milk processors (e.g., *queserías* and yogurt makers), and beef processors (e.g., slaughterhouses, meat packing). Because the number of processors included in the SAFE project's

¹¹ Mark H. White. "How Big Should the Control Group be in a Randomized Field Experiment?" April 20, 2018. <https://www.markhw.com/blog/control-size>

database was relatively small, the sample for the processor survey is equal to the entire population of those included in the SAFE project’s database.

Table 4. Sampling Frame for Processors

Province	Total	Breakdown of Sample Type		
		MCCs	Milk Processors	Beef Processors
Dajabón	14	11	3	0
Duarte	6	2	4	0
El Seibo	4	4	0	0
Hato Mayor	5	4	1	0
Independencia	0	0	0	0
La Altagracia	7	0	7	0
Maria Trinidad Sanchez	1	1	0	0
Monte Plata	8	5	3	0
Puerto Plata	16	11	5	0
San Juan	7	7	0	0
Santiago Rodriguez	16	15	1	0
Distrito Nacional	4	0	0	4
Total	88	60	24	4

Key Informant Interviews (KIIs) and Focus Group Discussions (FGDs)

KIIs consisted of in-depth interviews with individuals or small groups of 2-4 people from a single organization. Participants were chosen through purposive sampling starting with project staff, project partners, and key stakeholders involved in project activities including government stakeholders, producer organizations (POs), financial institutions, and various value chain actors. A snowball approach was used to access the largest number of relevant stakeholders, rather than defining an exact number of KIIs from the start.

Purposive methods were also used to select FGD locations and participants for FGDs with private extensionists and producers, taking into account location distribution and ease of access. SAFE project staff and extensionists who worked in the provinces with the project helped identify and gather participants. One FGD was also conducted at the SAFE project offices in Santo Domingo with MEGALECHE extensionists involved in the project. A summary of FGDs conducted is included in Annex 5.

2.3. Data Collection Methods

The evaluation team arrived in Santo Domingo the weekend of February 20-21, 2021 to train a team of nine enumerators and begin data collection. Training was conducted as a joint learning and iterative editing process, to ensure the enumerators had a complete understanding of all the data collection tools to be used and to ensure the tools reflected the local context, and vocabulary commonly used by project stakeholders. Testing and validation of the tools was carried out in Monte Plata, following the training, after which all tools were finalized for use. All tools including surveys, KII and FGD guides are provided in Annexes 4 and 5.

Figure 10. Data Collection Approach

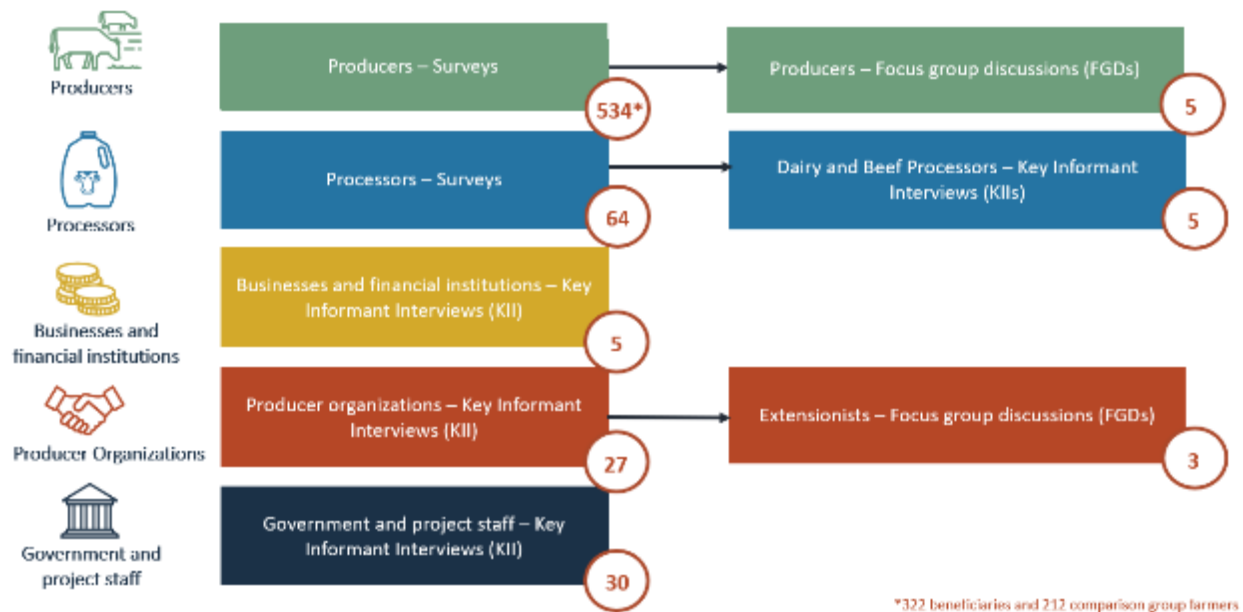


Figure 10 above shows the approach used to collect data from each category of stakeholders:

- Producers:** Data collected from producers came from two sets of tools, surveys of 322 beneficiary producers and 212 comparison group producers (as described in the Sampling Methods section above) and FGDs, to focus in on producer perceptions of value chain challenges as well as project performance.
- Processors:** We received 64 responses for our survey of processors – defined as milk collection centers (MCCs), milk processors (e.g., *queserías* and yogurt makers), and beef processors (e.g., slaughterhouses, meat packing). KIIs were also conducted with key processors who had been involved in some way with eth SAFE project, to gain more in-depth understanding of their perspectives. This included both smaller processors such as *queserías* (including *Deliciel* and *Queseria Rottis*) and larger entities like MERCARNE.
- Businesses and Financial Institutions:** Other businesses in the value chain who were connected to the project activities in some way, were also interviewed. This included domestic and international companies including Nestlé, Grupo Rica, and Organic Valley. KIIs with financial

institutions included those with some connection with the project or others active in the value chain (e.g., Banco ADOPEM, ADEMI). *Banco Agrícola* was contacted but declined to be interviewed.

- **Producer Organizations (POs):** KIIs were held with staff from dairy and beef associations, cooperatives, and federations both in Santo Domingo and in each of the provinces. FGDs were also held with private extensionists hired by POs through the project in select provinces.
- **Government:** KIIs with representatives of numerous government agencies related to the livestock value chain were conducted. This included *Dirección General de Ganadería* (DIGEGA), *Dirección General de Medicamentos, Alimentos y Productos Sanitarios* (DIGEMAPS), and *Instituto Dominicano para la Calidad* (INDOCAL) among others. An FGD was also conducted with MEGALECHE extension staff.
- **Project and Partner Staff:** KIIs with project and partner staff included NCBACLUSA and JAD staff based in DR as well as NCBA CLUSA headquarters staff, USDA counterparts, and international partners from GENEX and TAMU.

Table 5, below, shows the response rates for each of the surveys collected. For beneficiary producers and processors, the response rates were well within the expected range for this kind of survey. The comparison group response rate was somewhat lower than was hoped due to the quality of contact information available and a higher rate of unwillingness to take the time to be surveyed by the evaluation team.

Table 5. Survey Response Rates

Survey Type	Sample Size	Responses	Response Rate
Beneficiary Producers	541	322	60%
Comparison Group Producers	493	212	43%
Processors	88	64	73%

2.4. Data Analysis Methods

Quantitative data was collected through surveys using the Qualtrics platform, allowing for responses to be directly entered via smartphones or tablets to the platform, through an offline data collection application. In most cases, data was entered by enumerators during face-to-face sessions with respondents. However, for some respondents who could not participate in face-to-face surveys, they were either conducted over the phone or in a few cases sent a link to complete it themselves. Upon completion, survey data was aggregated into Excel spreadsheets for cleaning and analysis. Quantitative analysis was carried out using the following steps:

- **Data Validation and Cleaning:** Responses were first screened to ensure that answers were from the correct respondents identified through the sampling process. Responses were reviewed for completeness (mostly relevant for a small number of responses where the link had been sent to the respondent and the survey had been started but no answers inputted). Finally, the data was cleaned to ensure the removal of errors from the data set and ensure consistency (e.g. spelling of location names).
- **Descriptive Analysis:** An initial cut of the survey data was done to provide a first level of analysis on topics covered in the survey. This included look at descriptive statistics such as mean, median, percentage, and frequency. Data was disaggregated where applicable, by gender,

respondent type, and province. Basic comparisons of province, sex, and producer type distribution, as well as significance tests for difference in mean total land use and average number of cows milked, were used to ensure that the differences between the comparison group and beneficiary group were nominal (See Annex 2 for detailed analysis).

- **Inferential Analysis:** Based on initial insights from the descriptive analysis as well those derived from qualitative analysis and insights from the field work, multivariate analysis on select topics (e.g. milk productivity) was conducted. This included, in some cases, cross-applying survey data with other data, such as that collected over the course of the project and that collected in baseline and midline surveys.

Qualitative analysis was also conducted on data collected through KIIs, FGDs, and desk review. Coding of the KII notes was conducted using Dedoose to identify insights on specific topic areas and to better organize and cross-apply findings. This included codes for location, participant type, questions and response categories. An initial data reduction phase included selecting, focusing, simplifying, abstracting, and transforming the data that appeared in written-up field notes and transcripts. This allowed the evaluation team, using content analysis, to start identifying themes, looking for the most common responses to questions, identifying data and patterns related to the research questions. Triangulation of a data from multiple sources allowed the team to cross-verify findings and fill in gaps.

2.5. Evaluation Limitations

Due to the complexity of different components of the project, the geographical location of its activities, and certain limitations of the evaluation methodology, opportunities for errors and biases exist. This evaluation relies in part on secondary performance information reported in quarterly and annual reports as well as data from the SAFE project's M&E database. The quality of performance data will affect the accuracy of the findings in this evaluation. While the evaluation team believes in the general validity and the reliability of the performance data, it is important to note that issues with the M&E database (discussed above) may have led to potential distortions in some of the data, especially from the first two years of the project. The evaluation team has attempted to mitigate this by triangulating information from multiple sources to inform our findings.

A lack of available project data limited the type and quantity of questions that could be effectively asked during the evaluation. Had the relevant baseline, mid-term, and program level information been gathered, checked, cleaned, meticulously stored from the beginning of the project, and made available to the evaluation team prior to field work, more effective comparisons could be made. Questions like changes in household income, or proxies to measure the same, could have been measured to bolster the perception surveys conducted. A mitigation attempt for this lack of data was made in the form of the comparison group discussed previously.

Prior to the start and during the baseline data collection, there was no control or comparison group. This limited the evaluation team to the option of later constituting a comparison group, made up of producers that shared similar characteristics like total land use, number of cows milked, and province, sex, and producer type distribution with the beneficiary group. This provided useful data point to triangulate findings between the evaluation team's primary data collection, the project's M&E data, data collected by project extensionists, and other secondary data sources. However, in line with the

discussion in the limitations section, the results of this study should not be interpreted as showing causal impact.

As with all forms of data collection, potential for bias exists. Several of the biases most relevant for this evaluation include:

- **Positive response bias:** Certain questions about project outcomes may unintentionally lead to positive response bias where respondents may focus primarily on positive outcomes. This may be exacerbated by the fact that project beneficiaries may feel that positive responses may make assistance in the future more likely. The evaluation team did its best to mitigate this by framing questions in ways which were as objective as possible and cross-referencing responses with data from other sources.
- **Selection bias:** While great care was taken to ensure that survey samples closely reflected the population of project beneficiaries (as outlined under Sampling Methods above), the sampling frame is based only on data which was available on the project beneficiaries. While the evaluation believes this information was sufficient to provide a sample that closely reflected the population (e.g., disaggregation by province, type, herd size), it is possible that other factors that are not measured may have introduced bias into the selection. Because willingness to participate in project activities was a selection criterion for beneficiary farmers, there is a chance for selection bias. Their willingness to participate may have impacted the success of project outcomes. Thus, the difference in outcomes between the project beneficiaries and non-beneficiaries cannot be attributed to project activities.
- **Volunteer bias:** When it is not possible to enforce 100% response rate to the surveys, it is always possible that there is some level of volunteer bias present in the data. This would be the case if there were ways in which those in the sample who chose not to respond were different than the respondents; for example, if those with more negative views of project performance chose not to respond. The evaluation team's comparison of responses with the original samples does not indicate any obvious volunteer bias based on factors included in the sampling methodology, but the possibility cannot be eliminated entirely.
- **Dominant respondent bias:** Primary data collected from beneficiaries, especially when collected in group settings, may reflect the opinions of the most dominant groups without capturing the perceptions of less vocal groups. The evaluation team did its best to mitigate this potential bias in FGDs and group interviews by making sure that all parties understood they were free to express their views, by composing homogenous focus groups, and ensuring that moderators did their best to elicit equal participation.



3. Findings

3. Findings

3.1. Overall Findings

The evaluation team found that the SAFE project made progress towards its two overall objectives of the project improving productivity and expanding trade, but that continued work will be needed to achieve sustainable impact. Directly below we provide a high-level overview of progress towards the two overarching goals of the project, followed by a more in-depth look at the performance of the project related to questions of Relevance, Effectiveness, Efficiency, Impact, and Sustainability:

- 1. Improve agricultural productivity in the livestock (beef and dairy) value chain:** The livestock field schools, technologies, and technical assistance provided at the producer level were demonstrated by SAFE to contribute to substantial productivity improvements. However, the level of technical assistance and accompaniment which the project was able to provide and the results of the activities were less than anticipated due to organizational and design issues in the first two years of the project and the effects of the COVID-19 pandemic in the later years.
- 2. Expand trade of beef and dairy products:** Key milestones towards achieving FSIS equivalence for beef exports to the US are among the most important achievements of the SAFE project. While equivalence has not yet been achieved, this is in large part due to the indefinite postponement of the in-person audit because of the COVID-19 pandemic. There is optimism that the process will continue to move forward and equivalence will be granted, if the right actions are taken.

To monitor progress towards these objectives, the SAFE project tracked indicators related to the project's 12 activities as well as results indicators measuring outcomes of these activities (the 11 results included in the projects results framework). These 89 indicators, as of the time of the final evaluation, had been reduced from an initial 112 indicators originally approved by USDA for the project in 2016, based on recommendations from the baseline study¹². High-level indicators that measured the above objectives focused on changes in productivity through I/c/d and progress towards achieving FSIS equivalence. However, the vast majority of the indicators focused on trainings, assessments, and meetings. Changes in farming practices were measured but only in regard to governance, administration, and financial management.

The SAFE project has a high compliance with the final goals of the project's activity indicators. Of the 40 key activity indicators, 36 (90%) had 100% or greater achievement towards the original goals set by the project. Of the four remaining activity indicators, one shows 87% progress, another 74% progress, and the last two show 21% and 10% progress. In other words, at the time of the evaluation, almost all project activities demonstrated a high level of progress.

¹² The project contains 12 main indicators with 89 sub-indicators. However, these 89 indicators are markedly different and analyze and require separate data collection. These 89 indicators, while reduced from the initial 112, are still a very significant undertaking for monitoring and evaluations. For the purposes of this evaluation, we follow the terms employed by the SAFE project ("activity" and "results" indicator). The number of indicators in each category are also drawn from project documentation.

Table 6. Percentage Progress of Activity Indicators

Achievement	Indicators	% Reaching Level of Achievement
0%	0	0%
1 to 25%	2	5%
25 to 50%	0	0%
50 to 75%	1	2.5%
75 to 99%	1	2.5%
100%	36	90%
Total	40	

For several activities, the project far surpassed the initial targets. Table 7 below presents activities that exceeded the expected targets by up to 200%, with some activities achieving targets of up to 6,000% such as producer productivity training activities (target of 40 and achievement of 2,426) or financial services training sessions that were met in 2,150% (planned 8 sessions and 172 were achieved). Table 7 below presents the activity indicators that made the most progress, where the progress column shows the % progress compared with the original goal and in the last column the normalized progress with a maximum 100% progress allowed.

Table 7. Key Activity Indicator Progress

Num.	Indicator	Project Goal	Progress to date	% Progress towards the Goals	Progress (100% Max Curve)
6.14	Number of people who have received short-term training in agricultural productivity or food security as a result of USDA assistance	13,500	18,227	135%	100%
5.10	Number of training sessions in access to financial services for post-harvest technologies provided to companies	8	172	2,150%	100%
10.05	Number of employees of meat processors trained in healthcare systems and standards	42	368	876%	100%
8.50	Number of USDA-supported events aimed at promoting public-private partnerships to improve the dairy and meat chain at the farm, processor, and exporter level	8	50	625%	100%
8.20	Number of value chain linking meetings held between buyers and sellers in the dairy and beef sector	10	56	560%	100%
6.12	Number of people who have received short-term training (FFPr Indicator 16) (people in firms)	250	1,367	547%	100%
3.30	Number of partners in dairy producer/processor associations trained to establish or improve milk collection centers	320	1,353	423%	100%

6.13	Number of people who have received short-term training (FFPr Indicator 16) (government)	200	704	352%	100%
4.20	Number of meetings on regulatory policy and the regulatory framework for beef for public debate and/or consultation with stakeholders on the new policy or the new revised administrative regulation/procedure	87	228	262%	100%
12.05	Total individuals who benefit directly as a result of USDA assistance (FFPr Indicator 17)	14,406	25,397	215%	100%
10.08	Number of dairy processing facilities audited for SPS compliance	30	64	213%	100%
10.02	Number of employees in charge of processing dairy products trained in health standards	288	611	212%	100%
2.30	Value of grants provided to businesses (POs, dairy processors, and meat processors) to establish or improve an extension system	270,000	558,089	206%	100%
2.20	Number of grants provided to businesses (POs, dairy processors, and meat processors) to establish or improve an extension system	15	31	206%	100%
10.06	Number of milking and milk management training sessions conducted for milk producers	400	804	201%	100%
9.30	Number of public-private partnerships formed as a result of USDA assistance (FFPr Indicator 8)	20	40	200%	100%

There were a few lagging activity indicators. For example, one of the activity indicators with the lowest level of progress was that of "Number of people reached through the public information campaign of the quality seal." The seal of quality activities never fully got off the ground, due to lack of market readiness and political will (see the Effectiveness section below for further discussion). Another activity indicator with showing limited progress was "Number of business plans produced for meat and milk with USDA assistance" where the project planned to reach 3,750 but only reached 791 (21% progress). This was due to delays in the early years of implementation of the project and the COVID-19 pandemic.

Analyzing the project in stages of implementation, considering the periods 2016-2018 and 2019-2021, it can be seen that the project managed to significantly increase the level of progress as reflected by activity indicators. This coincided with project staff changes made in 2018, discussed further under the Efficiency section below. Table 8 clearly shows the acceleration of implementation, reflecting a much higher level of activity progress during the second period, from 175% of unnormalized target progress in the first period to 6,959% in the second period. When indicator target achievement is normalized to 100% maximum per activity indicator, we get a much more useful comparison, showing an improvement in average progress from 63 to 91% in the second period. It is important to clarify that in this table the activities achieved in each period are compared without accumulating in the second period the goals met in the first.

Table 8. Percentage Project Progress by Periods

Period	% of Average Progress	Progress (100% Max Curve)
2016 - 2018	175%	63%
2019 - 2021	6,959%	91%
% Change Between Periods	3,885%	45%

While the level of achievement for the activity indicators was high, the results indicators show more mixed results, due in part to unforeseen circumstances such as recurring droughts and the COVID-19 pandemic. Recurring droughts in 2016 and 2018, were reported in evaluation KIIs as well as previously in the midterm evaluation, as a major challenge for the livestock value chain. In particular, the droughts have had major implications for achieving targeted results related to increasing milk productivity.¹³

The COVID-19 pandemic was another external factor which has had a significant impact on achieving the project’s targeted results. The new project leadership (discussed further below under Relevance) made strides to make up for lost time in 2019 and early 2020, including setting up a campaign to increase the number of farms visited in late 2019. However, the arrival of the COVID pandemic in March 2020 brought all field work to a complete stop for three months, and when farm visits were finally allowed to continue it was at a slower pace due to COVID-related restrictions. Additional impact of COVID-19 includes the indefinite postponement of the FSIS audit to confirm equivalence (see Effectiveness below), and a significant slowdown of field activities generally. In addition, the pandemic had direct economic impact on the value chain due to reduced demand for dairy products from the tourism sector. Adaptations such as remote trainings, remote work, and safety measures including masking and social distancing were adopted by the project, as indicated in the key informant interviews.

Table 9 below, shows key indicators tracked by the SAFE project for each of the 11 results under the project’s Food for Progress Results Framework. As can be seen in Table 8 below, at the time of this evaluation six of these key indicators had not been met:

- **R1. Percentage increase in the average number of liters produced per cow per day:** This key measure of dairy productivity has a goal of 50% improvement by the end of the project. As will be explained further in the Impact section, milk productivity results were in fact quite positive for producers who received the full package of assistance. However, the limited scale of implementation, as well as potential issues with the original baseline measurement, has kept the project from meeting the original goal to date.
- **R5. Number of individuals who have applied new techniques or technologies as a result of USDA Assistance (FFPr indicator 2) (Total):** This indicator reached 83% achievement. The goal was not met, due to the inability to meet the goal for the sub-indicator for women (only 20% achievement). The reason for the gender disparity on this specific indicator was not found but may be due to the low relative number of female producers.
- **R5. Percentage increase in volume of grade "A" milk sold to processors by USDA-supported milk collection centers:** This is the key indicator for milk quality. Despite improvements in milk

¹³ J.E. Austin & Associates. “Safe Agriculture/Food Export (SAFE) Project Midterm Evaluation Report,” April 30, 2019, p. 61-65.

quality, progress fell short of the 50% improvement target, due to the shortened period of implementation of the livestock field schools as well as a continued need for infrastructure and management improvements at MCCs.

- **R7. Number of dairy farmers using improved milking and milk handling techniques as a result of USDA assistance:** Project delays in the first two years as well as the impact of the pandemic led to slower uptake in milking and milk handling techniques, resulting in only 58% achievement.
- **R9. Number of new markets to which beef is exported:** This is the key result indicator for equivalence, with a goal of 1 (Puerto Rico). It remains at 0% achievement until equivalence is obtained, although it should be noted that the project did provide technical assistance to a meat processor that began exporting to Guatemala.
- **R10. Number of agreements signed (Contracts, MOUs, etc.) between beef or dairy exporters and buyers in the US as a result of USDA assistance:** This indicator in large part relies on the previous indicator and the achievement of equivalence. The goal is 14 and achievement remains at 0% until equivalence can be achieved.

Table 9. Key Results Indicator Progress¹⁴

Indicator	Project Goal	Progress to Date	% Progress Towards Goals	Progress (100% max)
Result 1: Increased Agricultural Productivity				
Percentage increase in the average number of liters produced per cow per day	50	12	24%	24%
Total number of individuals benefitting directly as a result of USDA Assistance (FFPr Indicator 17)	14,430	25,397	176%	100%
Result 2: Private Sector Contribution				
Number of private sector institutions that are providing monetary or in-kind resources in support of agriculture productivity (e.g., in areas including research, market information, agricultural inputs, etc.) as a result of USDA assistance	60	60	100%	100%
Value of private sector investment/resources supporting agriculture research/extension that is consistent with government priorities as a result of USDA assistance	\$712,320	\$3,219,735	452%	100%
Result 3: Policies				
Number of policies, regulations and/or administrative procedures in each of the following stages of development as a result of USDA assistance (Stage 5) (FFPr indicator 12)	6	11	183%	100%

¹⁴ The complete table of results and activity indicators can be found in Annex 1.

Result 4: Improved Capacity of Key Groups in the Agriculture Production Sector (coops and smallholder farmers)				
Volume of milk supplied (million liters) by farmers to USDA supported milk collection centers	80	226	283%	100%
Result 5: Increased Use of Improved Agricultural Techniques and Technologies				
Number of farmers in the dairy and/or beef sector making farm decisions based on economic considerations or analysis as a result of USDA assistance	3,690	11,150	302%	100%
Number of individuals who have applied new techniques or technologies as a result of USDA Assistance (FFPr indicator 2) (Total)	11,875	9,856	83%	83%
Number of hectares under improved techniques or technologies as a result of USDA assistance. (FFPr Indicator 1) (Total)	4,802	12,726	265%	100%
Number of private enterprises, producer's organizations, water user's associations, women's groups, trade and business associations, and community-based organizations (CBOs) that applied improved techniques and technologies as a result of USDA Assistance (FFPr Indicator 7) (Total)	54	172	319%	100%
Percentage increase in volume of grade "A" milk sold to processors by USDA supported milk collection centers	100	36	36%	72%
Result 6: Improved Capacity of Key Organizations in the Trade Sector (processing organizations and trade associations)				
Number of beef Regulatory Policy and Regulatory Framework meetings for public debate and/or consultation with stakeholders on the proposed new or revised policy/regulation/administrative procedure	87	228	262%	100%
Result 7: Increased Use of Improved Post-Production Processing and Handling Practices				
Number of dairy farmers using improved milking and milk handling techniques as a result of USDA assistance	7,000	4033	58%	58%
Result 8: Improved post-harvest infrastructure				
Number of milk collection centers with USDA support using improved equipment to collect and chill milk	50	60	120%	100%
Result 9: Increased Access to Markets to Sell Agricultural Products				
Number of new markets to which beef is exported	1	0	0%	0%
Result 10: Improved Linkages between Buyers and Sellers				
Number of agreements signed (Contracts, MOUs, etc.) between beef or dairy exporters and buyers in the US because of USDA assistance	14	0	0%	0%

Result 11: Increased Use of Financial Services

Number of firms who are accessing credit through formal financial products as a result of USDA assistance	40	131	328%	100%
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The following sections cover in detail the findings of the evaluation team regarding the relevance of the SAFE project’s design, effectiveness of its activities, the efficiency with which its interventions were implemented, the impact which the project has had so far, and the sustainability of these impacts and their legacy.

3.2. Relevance

A. Alignment with Sector/Value Chain Needs

It is clear from this evaluation that the SAFE project provided a comprehensive program design and that its activities were relevant to the needs of the livestock sector (dairy and beef). Specifically, the project addressed major value chain challenges including low productivity, inconsistent milk quality, low access to extension services, and health and sanitary issues.

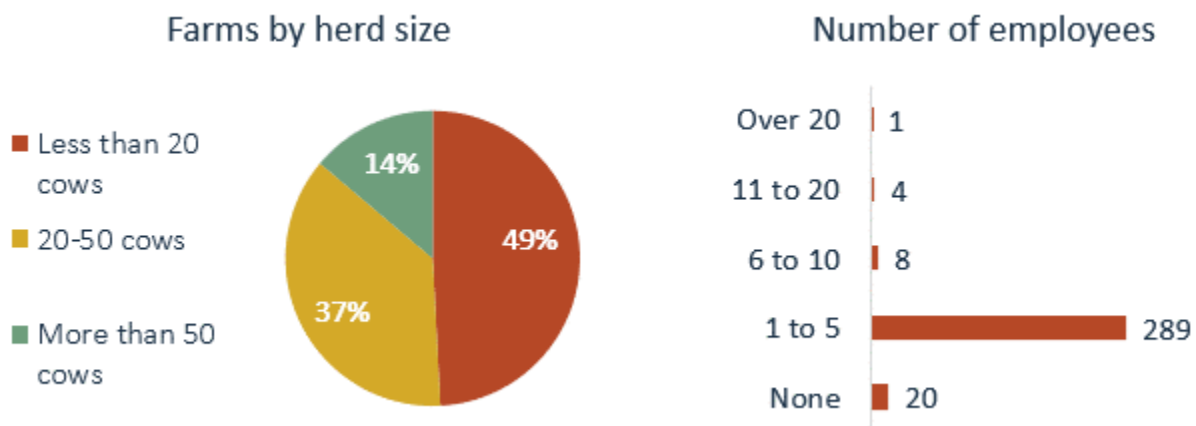
This view is widely evidenced by the positive perceptions of the project by a majority of the beneficiaries with whom the evaluation team spoke. KIIs with Producer Organizations showed overwhelming positive feedback on the project, with several specifically pointing out how the SAFE project has been one of the first projects in the Dominican Republic to work directly with producers. A key activity which met a need previously largely unmet, were the livestock field schools and associated technical assistance to producers. 78% of the beneficiary producers we surveyed reported the livestock field school methodology as being beneficial to them. MCCs and *queserías* also reported overall satisfaction with the technical assistance they received with 79% reporting that they received high quality services from the project.

However, project design also posed some challenges to project implementation and goal achievement. The first major challenge was that despite the breadth of the project’s scope with its whole-of-value chain approach, activities were not buyer-driven nor were design and implementation characterized by multi-stakeholder participation, to the extent which would be expected from a value chain project. Additionally, there was no foundational value chain assessment conducted at the early stages of the project, something that is typically a component of Food for Progress projects according to USDA stakeholders interviewed. SAFE project staff with whom we spoke also felt that an in-depth value chain analysis should have been done during the design stage of the project which would have helped clarify the value chain strategy to be used to achieve the goals of the project – to improve productivity and expand trade. Some measures were taken by the second project team in 2018-2019 to remedy some of these design issues, but by that point a significant amount of time had passed (see Efficiency section).

A second challenge with the project design is lack of clarity of beneficiary focus: an explicit decision was not taken about whether to target smaller producers with the most to gain in terms of productivity but with little potential to export, versus large and medium-sized producers with real export potential. In the end, at the producer level the project ended up focusing primarily on small farms (86% with less 50 cows or fewer, see Figure 11 below) based on the logic that they offered the largest gains to be made in terms of improving milk productivity and quality. The focus on small farms, many of which were described as

“subsistence” level farms, was critiqued by some agricultural experts involved in the project as being less effective than if the focus had been placed more on medium-sized farms. According to project staff, some opportunities were identified to have medium and large farmers serve as examples for smaller farmers. Indeed, this is an example of a viable strategy, that could have potential if it were explicitly articulated and consistently implemented.

Figure 11. Beneficiary Producers Tended to be Small-Scale Farmers with Few Employees (Survey)



A final design challenge was geographic scope, which covered 11 provinces all over the country. An unclear logic behind breadth and focus of provinces chosen for project intervention, which led to unequal results and inconsistent delivery across provinces. Some project staff as well as others with whom we spoke believed project interventions should have been focused on fewer specific provinces where a proof of concept could have been more thoroughly developed and then expanded to the rest of the country. Additionally, once the 11 provinces were selected, some interviewees noted that there was little flexibility. For example, one of the leading *queserías* in the country asked if the project could include some of the producers that supplied him in the technical assistance activities. These farms were located just across the provincial border in a province not included in the province design. The business owner claims the request was denied because the two farms were not in the intervention area.

B. Alignment with Government Priorities and Strategy

Project activities were clearly in line with government priorities, especially regarding achieving FSIS equivalence for beef exports to the US. This so far seems to have remained a priority with the ascension of the new government in August 2020. The new government also has emphasized increased attention to producers and improving milk productivity, which is in line with the SAFE project’s activities.

A key challenge early in the project was the failure to anchor program interventions upon an initial agreement with public sector and private sector stakeholders on key goals and aspects of measurement. A number of key government stakeholders we spoke with failed to appreciate the project, in part because they had a poor understanding of its activities and seemingly had not been involved with goal setting.

C. Relevance: Conclusions

- **EQ1.1 To what extent has the project responded to the actual needs and interests of the target farmers, associations, groups, and other stakeholders?**
The SAFE project's comprehensive design responds to the needs of value chain stakeholders, especially at the producer level, though project design should have included more multi-stakeholder participation in goal setting and definition of the scope.
- **EQ1.2 To what extent does the project integrate or strengthen the national sectoral strategy to improve production and market access?**
The SAFE project strengthened the national sectoral strategy for US market access, especially regarding the equivalence process, by skillfully moving the process forward, effectively maneuvering through long-standing obstacles (more on this in the section below).
- **EQ1.3 To what extent does the project fit into the strategies of the DR government?**
SAFE project activities align with government priorities regarding the equivalence process and improvements in dairy productivity. However, the government changed during the implementation of the project with President Abinader coming to power in August 2020. Efforts should be made to ensure the new government's buy-in if sustainability is to be achieved.
- **EQ1.4 What was the added value of the project considering perspectives from key stakeholders such as USDA Washington USDA DR, POs, and implementing partners?**
SAFE project activities align with USDA/USG development goals, objectives, and strategies. POs were very positive about the project's activities, on the whole, especially noting that it was the rare project to work substantially with producers. Government stakeholders and implementing partners had more mixed opinions, but generally considered the SAFE project to have provided quality technical expertise and positive impact.

3.3. Effectiveness

A. Overview of Project Effectiveness and Adaptation

In terms of implementing project activities, the SAFE project showed high effectiveness, with 90% of key activity indicators reaching 100% or greater achievement towards the original goals set by the project. However, achievement of the desired outcomes of the project have made slower progress, with only 68% of results indicators reaching 100% or greater achievement towards the original goals set by the project.

While the SAFE project got off to a slow start, without the COVID-19 pandemic the extent of the project's achievements would likely have been much greater in scale and scope. The lost social capital and credibility due to the initial years of struggling within the SAFE project limited what could be achieved by the second highly qualified and motivated team. Rebuilding credibility with the local community while working within local cultural norms that lean towards non-confrontational problem solving meant longer periods of required problem-solving efforts by the project team. This was mentioned in the KIIs with project staff and confirmed by the leader of the Dominican data collection team. However, the new leadership team hired in 2018 achieved rapid progress up until the start of the

COVID-19 pandemic (see the section on Efficiency below for further details). An audit to determine FSIS certification was scheduled for March 2020, but then delayed indefinitely as the pandemic lockdowns began. Lockdowns also slowed the progress being made in the field with extensionist farm visits and provision of technical assistance. Beyond the effects on the project itself, COVID-19 also had severe impact on the value chain as a whole with government budgets for supporting producers reduced, financial institution lending temporarily curtailed, and a drop in demand in dairy products due to the impact of the pandemic on the tourism sector, as indicated by key informant interviews.

B. FSIS Equivalence

Perhaps the most important objective of the SAFE project in the eyes of the DR government and many other stakeholders, was the second strategic objective of the project to expand exports of beef, through achieving equivalence with US food safety regulations under USDA's Food Safety and Inspection Service (FSIS). The equivalence process ensures that a country's food safety inspection and certain non-food safety requirements are equivalent with those of the US as a prerequisite for exports.

While the project has not yet met the two related results indicators for equivalence ("Number of new markets to which beef is exported" and "Number of agreements signed (Contracts, MOUs, etc.) between beef or dairy exporters and buyers in the US as a result of USDA assistance"), substantial progress has been made and it is likely that equivalence is imminent as long as the new government of DR continues to maintain support for the process.

The SAFE project has facilitated frequent meetings with the relevant government and private sector entities involved in equivalence since the inception of the project. This includes primarily DIGEMAPS and DIGEGA, public and private laboratories, as well as participating slaughterhouses, MERCARNE and AGROCARNE. Technical assistance to strengthen the beef inspection system and compliance with standards was also provided by the project, in large part through TAMU staff, to the slaughterhouses and initially also to the government-controlled laboratory, LAVECEN (*Laboratorio Veterinario Central*), which had been identified early in the project to do microbiology and chemical residue testing.

ASOCARNE President Enrique de Castro and Professor Greg Sullivan of Texas A&M University (TAMU) were also engaged by the project to conduct a Puerto Rican Beef Market Study in 2018, which identified a comparative advantage for beef exports from the DR, in the form of "manufactured trimmings" which don't compete with high quality cuts produced in the US and can be shipped cheaply by ferry.¹⁵ The main competitor for beef exports from the DR are those from Central America, but DR has a comparative advantage in price and shipping time, with shipping to Puerto Rico taking only 1-2 days and \$0.05/kg of beef from DR as opposed to 11 days and \$0.11/kg from Central America. Because DR beef can be shipped fresh and chilled it is preferred by meat processors of hamburger patties for the fast-food industry over that from Central America which is typically frozen.¹⁶

Early in the project it became clear that LAVECEN was unprepared institutionally and technically to work on Equivalence. An original plan for LAVECEN to be administered by *Organismo Internacional Regional de Sanidad Agropecuaria* (OIRSA), did not work in part because some of the government officials who controlled the lab were resistant to change and outside assistance (there is now new leadership at

¹⁵ SAFE Project. "Performance Report Summary – April 1st, 2018 – September 30, 2018," November 15, 2018.

¹⁶ Enrique de Castro and Gregory M. Sullivan. "Market Analysis Report of Dominican Republic Beef in Puerto Rico," TAMU Borlaug Institute, June 2018.

LAVECEN). In 2018, the SAFE project determined it would be best to find an alternative to LAVECEN rather than jeopardizing the progress towards meeting standards for equivalence.

In consultation with government stakeholders and FSIS a workaround solution was identified when it was discovered that there was no requirement for the laboratories to be government-operated in order to obtain equivalence. In October 2018, three alternative labs were identified and selected to undertake microbiological and chemical residue testing: *Instituto de Innovación e Biotecnología Industrial* (IIBI) and the *Laboratorio Agroempresarial Dominicano* (LAD) in the DR, and the *Laboratorio Nacional de Resíduos* (LANAR) located in Tegucigalpa, Honduras and administered by OIRSA. Under the new arrangement, LAVECEN's role is now limited to forwarding samples to LANAR in Honduras through OIRSA, circumventing the initial impasse and allowing the equivalence process to move forward. An agreement was project was made with the Ministry of Agriculture and OIRSA to split the cost of the chemical residue testing in Honduras, while the SAFE project covered 50% of the costs of microbiological tests done in DR at IIBI and LAD. A deal was made with COPA airlines to transport the samples, which was key for providing the cold chain transport necessary for preserving the samples at the right temperatures. Continued support from the SAFE project to LAD and DIGEMAPS to acquire specialty lab equipment, in the first quarter of 2021, has led to the beginnings of a local chemical residue testing program which should eventually reduce reliance on LANAR in Honduras.

By early 2020, the equivalence process had advanced to the point that participating slaughterhouses were deemed ready for the USDA/FSIS on-site official audit. A mock-audit on the Beef Inspection System, extensive to the laboratories and the slaughterhouses' components was conducted by experts from TAMU, focusing on documentation, operations, and verifications. In addition, SAFE provided support to DIGEMAPS to automate the process of documenting inspections. They concluded that all components of the system were ready for the FSIS audit.¹⁷ A rapid action plan was established, and an audit date of March 2020 was set. However, the outbreak of the COVID-19 pandemic in mid-March 2020 led to the indefinite postponement of the audit. The experts from TAMU with whom we spoke were confident that had the audit occurred, equivalence would have been achieved thanks to assistance from USDA through the SAFE project. This viewpoint was widely supported by other project staff, partner staff, and government stakeholders interviewed. Other value chain stakeholders who were informed on the subject, were confident that equivalence would continue to move forward as long as the new government of DR continues to keep it a priority, which has been the case so far.

C. Strengthened HACCP Systems and Private Investments in Slaughterhouses

A key achievement of the project, regardless of the final achievement of equivalence, has been extensive SPS (Sanitation Performance Standards) improvements in participating slaughterhouses. Technical assistance provided through a critical path route developed by TAMU staff, started in April 2018, to strengthen the Hazard Analysis and Critical Control Points (HACCP) systems of the three slaughterhouses participating on the Equivalence process has significantly improved the quality of sanitary practices and established new norms, a trend that stakeholders believe will be lasting.

¹⁷ SAFE Project. "Performance Report Summary: October 1, 2019-March 30, 2020," April 2020.

During the COVID-19 pandemic, the SAFE project adjusted its technical assistance to equivalence actors through collective efficiency schools (CES - a further adaptation of the farmer and livestock field school methodology) to a virtual format with 517 participants, including managers and staff of slaughterhouses and inspectors from DIGEMAPS. Key topics covered included HACCP, humane livestock practices, and sanitary measures and procedures.¹⁸ In addition to providing technical assistance, the SAFE project offered matching grants to beef processors to increase SPS-related processing infrastructure as well as financing to government stakeholders and laboratories for equipment. The SAFE team also facilitated an agreement between the DR government and the private sector to share the costs of required laboratory testing during the equivalence process. The private sector co-investments in particular have been key in ensuring buy-in for new norms and practices.

Figure 12. Team Leader Lara Goldmark Speaking with Eduardo Alvarez at MERCARNE



D. Livestock Field Schools

The livestock field school methodology – a methodology developed by the Food & Agriculture Organization (FAO) and adapted to the Dominican context¹⁹ – implemented by project staff, a core group of MEGALECHE’s, and trained private extensionists using an 80% hands-on and 20% theory approach has been a major achievement in the eyes of producers, POs, and project and partner staff. The methodology combines hands-on technical assistance in a peer learning format with training on farm management and other subjects, complimented by the *programa de coinversión productivo* (PCP) provided through the SAFE project’s grants program. The PCP, as reported in the midterm evaluation, included an input package of pasture seeds, fertilizers, jerrycans, *Empresa Brasileira de Pesquisa Agropecuária* (EMBRAPA) designed kits (a Brazilian-designed unit used to clean teats and improve hygiene during milking), and other inputs with a total value of US\$500-700 per producer.²⁰ Selected farms were used as demonstration farms where practices could be shown in action.

Figure 13. Feeding Cattle at a Farm in Hato Mayor



While there was some initial resistance from cooperatives and producers about trying an approach different than their previous experience, the livestock field schools began to generate enthusiasm as they were implemented. Producers and POs interviewed widely lauded the livestock field schools for equipping producers with improved practices and farm management skills, directly leading to substantial improvements in productivity and milk quality. Of producers surveyed, 78% said the livestock field schools were beneficial for

¹⁸ SAFE Project. “Main milestones of the equivalence process: Period March - September 2020,” November 12, 2020.

¹⁹ FAO. “Livestock and Farmer Field Schools,” Accessed May 2021. <http://www.fao.org/farmer-field-schools/ffs-overview/livestock/en/>

²⁰ J.E. Austin & Associates. “Safe Agriculture/Food Export (SAFE) Project Midterm Evaluation Report,” April 30, 2019, p. 33.

them, a finding supported by our producer FGDs which reported particular satisfaction with the hands-on approach and accompaniment from extensionists through repeated farm visits as producers began to implement what they had learned. We also received overwhelming positive feedback from the POs, although financing of the private extensionists beyond the length of the project may be a challenge per KIIs with project stakeholders.

Unfortunately, the livestock field schools -- like many of the project's activities -- only began in mid-2018. During the first two years of the project, producer-level technical assistance was delivered by government extensionists from MEGALECHE in classroom-type environments and sessions based at select lead farms. As reported by the midterm evaluation, there were many complaints about MEGALECHE's performance including lack of resources and lack of "motivation." MEGALECHE had only 50 agents for the whole country and we were also told by project staff that MEGALECHE had a requirement of only 50 farm visits per month, though amendments to the MEGALECHE agreements were added, which provided more support for extensionist visits. There were also reported cases of technical assistance being done over phone instead of in person and even claims of forged signatures on training reports.²¹ Whatever the truth of the claims may be, the fact was clear by early 2018 that the MEGALECHE technical assistance was ineffective in its current form. The SAFE project's renegotiated agreements with DIGEGA aimed to fix this and included incentive-based reimbursement of expenses for MEGALECHE extensionists who continued to work with the project through the second phase. It is important to note that those MEGALECHE extensionists who continued with the project, became valuable contributors.

The livestock field school methodology was spearheaded by the new project team and began implementation on July 22, 2018. This practical approach to technical assistance delivery was further enhanced by the introduction of private extensionists in mid 2019 (for the first time ever in DR, according to some POs we spoke with). The SAFE project reached an agreement with the POs involved to share the burden of the cost for the private extensionists, where the program would cover 80% and the PO would cover 20%. The idea was to evolve the proportion covered by each party over time, getting eventually to 50/50, however due to COVID-19 this did not happen.²² The cost aspect of the private extensionists is something that must be addressed for the livestock field school methodology to remain sustainable after the project is complete. Some stakeholders in POs pointed out that this is a task made more difficult due to the fact that MEGALECHE extensionists provide free services in theory, so producers and POs sometimes have trouble seeing the value of paying for private extension services. However, even government stakeholders we spoke to were positive about the introduction of private extensionists, and we heard that the private extensionists and MEGALECHE extensionists had even come to unspoken agreements about how to divide up areas of need, so there seems like there could be some political will to come to a solution. MEGALECHE has also expressed interest in adopting the livestock field school methodology among their extensionists on a country wide basis.

E. Seal of Quality

In addition to the technical assistance activities aimed at improving the quality of milk, the SAFE project's effort to promote the Seal of Quality (SoQ) in the DR was designed to create an incentive for consumers to pay a premium for higher quality milk. Training was provided by the project through

²¹J.E. Austin & Associates. "Safe Agriculture/Food Export (SAFE) Project Midterm Evaluation Report," April 30, 2019, p. 33.

²² There was originally an even more ambitious goal to develop business plans that utilized the revenues from increased milk production and quality to finance 100% of the cost of the extension system by the time the project funded grants expired. This did not go anywhere.

INDOCAL to milk processors to inform them of the requirements for obtaining the Seal of Quality for their products and some initial public information campaigns were conducted at the beginning of the project through trade fairs, with an additional campaign planned for the end of the project.

However, these efforts have very little success since the activities hardly got off the ground due to the market being unready. Project and partner staff with whom we spoke said that the Seal of Quality was given too much importance in the project design, despite a lack of political will (outside of some individuals at INDOCAL) and a dairy market which is not yet ready for it, with a high level of informality among milk processors (60% are informal, rarely comply with food safety standards, and can't qualify for Seal of Quality), and little willingness in the market to pay a quality premium, outside of bigger wholesale buyers like Nestle. While goals related to training have been met (the activity indicator "Number of value chain actors participating in the Seal of Quality" reached 113% completion), few people have been reached through the public information campaigns so far ("Number of people reached through the Seal of Quality public information campaign" was only 10.5% achieved as the writing of this report) and no products are yet using the Seal of Quality ("Number of products using the Seal of Quality in their marketing" had a goal of 25 and has 0% achievement).

F. Grants program and access to finance

The SAFE project's grants program cut across multiple project activities and provided funding for private extensionists, trainings, infrastructure, and agricultural inputs. Funding for the grants came in part from direct USDA funds and in part through cost sharing. The total value of the 119 grants is worth US\$2,073,497 after participant counterpart with actual project expenditures through April 16, 2021 at US\$1,241,637. Table 10 shows the breakdown of grants by the following activity types:

- Extension Systems
- Establish or Improve MCCs
- SPS For Meat Processors
- PCP
- Analysis
- Flexible Funds
- Milking Parlors

These grants are further divided under the following subtypes (some grants are applicable across multiple activities and subtypes):

- Extensionist training
- Agricultural inputs
- Private extensionists
- Technology application
- Equipment to cool and collect milk
- Physical infrastructure
- PDI and MCC sanitation
- Computers and systems
- Meat analysis
- Milk analysis

Table 10. Summary of SAFE Project Grants by Type and Calendar Year²³

Grant Type	Grants given	Grants - Total Value by Type					TOTAL VALUE
		2017	2018	2019	2020	2021	
Extension Systems	28	\$8,138	\$117,275	\$375,629	\$142,172	\$2,838	\$646,053
Establish or Improve MCCs	41	-	\$322,987	\$68,345	\$30,772		\$422,104
SPS For Meat Processors	5	-	\$48,552	\$99,225	-		\$147,778
PCP	20	-	\$197,150	\$237,814	\$24,728	\$5,486	\$465,178
Analysis	6	-	-	\$30,870	\$12,108	\$20,333	\$63,312
Flexible Funds	1	-	-	\$48,034	\$-		\$48,034
Milking Parlors	18	-	-	\$30,396	\$399,214	\$30,551	\$460,161
TOTAL	119	\$8,138	\$685,964	\$890,315	\$439,872	\$49,208	\$2,252,620

The grants program provided matching grants and financing for key inputs, services, and infrastructure vital to the SAFE project’s activities. Some of these grants are discussed under specific activities with which they are associated (e.g., private extensionists, co-investments at slaughterhouses). Grants also supported technical assistance from international and domestic experts in areas including SPS and genetics – including services provided by TAMU and GENEX. The work done by the SAFE project to support genetics and reproductive health for livestock was new in the D.R. and according to experts with whom we spoke, has a high potential for improving the productivity and quality of production.

Grants were widely perceived to be useful, however, there were concerns from project staff and value chain stakeholders alike about the application of certain grants and the mechanism for their distribution. For instance, a common concern, especially among producers, was a perception of a lack of transparency in the criteria for allocating farm-level grants (discussed further under Efficiency).

²³ Some grants were approved in one year but payment occurred over multiple disbursements, which may lead to different reporting in different sources. CLUSA’s financial reports differed from the technical semiannual performance reports to USDA as they only included disbursements but did not accrue the entire value of the approved grants. Some awarded grants were distributed across more than 1 activity because they addressed multiple purposes.

Among the most visible use of grants were the 300+ milking parlors built with project financing for producers (205 were built through the SAFE project's grant funds starting in 2019/2020, the rest were built prior to 2019/2020 fiscal year funded by JAD). The milking parlors, if used correctly, provide a dignified and sanitary place for producers to milk their cows, increasing the quality of the milk produced. Many of the producers and POs we spoke with were very pleased with the milking parlors and they are a visible legacy of the project's work. However, in some cases the impact appears to be mixed, with some producers not even using them (12% according to the milking parlor survey carried out by the project in 2019).²⁴ This highlights the importance of ensuring that stakeholders who receive project money have skin in the game when it comes to investments in infrastructure improvements and other items being financed by the project. While the milk parlors certainly had positive impact, it was noted by multiple project staff that milk parlors are a relatively expensive investment (about \$2,000 each), and perhaps equal or greater impact could have been had by redirecting these funds towards financing inputs for producers (only \$500-\$700 per producer).

Figure 14. Milking Parlor in Puerto Plata Funded by SAFE



While the grants program served an important purpose in providing financing for specific items related to project activities, the larger need is to address access to finance throughout the value chain. This is an area where both producers and processors we spoke were less satisfied compared to other SAFE project activities. Only 41% of producers and 63% of processors we surveyed said they had access to finance after participation in project activities. Unfortunately, baseline figures for access to finance were not gathered at the beginning of the project, however the findings from the midterm evaluation also confirmed that access to finance was rated as “poor” by respondents.²⁵

Despite a relatively strong financial system in the DR as a whole, the livestock sector lags significantly in access to finance. The sector is categorized under Agriculture, Livestock, Hunting and Forestry, which represented 6% of GDP in 2020, but only received 1.95% of the total loans granted in the country. The DR government has several public policies aimed at alleviating this funding gap, including programs such as the Special Fund for Agricultural Development (FEDA) which lends to producer associations to make investments in the sector to improve their productivity. FEDA has an annual budget for credit of RD\$ 1 billion or US\$ 17.2 million. In addition to FEDA, second-floor banking operates through the *Reservas del País Foundation*, which finances cooperatives and microfinance institutions and has assets of approximately RD\$ 3 billion or US\$ 51 million, with an estimated 10% aimed at the agricultural sector. There is also the *Banco Agrícola*, which in 2020 gave loans to the livestock sector totaling RD\$ 2,479 million or US\$42 million serving 2,153 producers in that year. There are also private lenders, such as ADOPEM and ADEMI, which are active in sector and based on our KIIs would like to lend even more at the producer level.

²⁴ Mildred Costes. “Consultoria Para Evaluar: Salas de Ordeño PROGANA,” SAFE project, March 24 2019.

²⁵ J.E. Austin & Associates. “Safe Agriculture/Food Export (SAFE) Project Midterm Evaluation Report,” April 30, 2019, p. 53 & 55.

Project delays in the first two years and COVID-19 pandemic delayed activities related to financial inclusion – as with other activities – and while some real progress was made, the project activities in this area were not well-designed. Financial access at the producer level is plagued by challenges with poor credit, exacerbated by the fact that loans to public lenders are most often not repaid. This and other systemic issues were not well addressed in the project design. Project staff KIIs indicated that management of loans to producers was ill-defined and loans tended to be large amounts, but only distributed to a relatively small number of producers. Additionally, the process for determining loan allocation was poorly defined and often very bureaucratic, with producers not receiving the money from financial institutions for an extended period after being extended the loan. The project did hire a consultant to work on access to finance mid-way through the project who had the right ideas to work with POs to create financial products that addressed some of these challenges. However, they were not fully implemented in part due to time constraints of the project at this point and also due to a lack of cooperation from government counterparts.

G. Effectiveness: Conclusions

- **EQ2.1 To what extent have the expected results of the project been achieved?**

Results achievement has been lower than expected, in part due to project delays and COVID-19. For key results indicators, 68% have been achieved.

- **EQ2.2 What factors have been critical to the achievement or nonachievement of project objectives?**

Critical factors to the non-achievement of select indicators can largely be categorized into three groups. The first were the organizational challenges experienced by the project leading to slow progress over the first two years of the project (explored further in the Efficiency section). The second factor was recurring droughts in 2016 and 2018 that set back progress in increasing milk productivity. To mitigate this, the project worked with the *Fundación REDDOM (Rural Economic Development Dominicana)* to implement drought adaptation strategies and address adaptation barriers including one virtual workshop via video conference, three workshops in San Juan (in Las Matas de Farfán, in Barranca and Yabonico), four workshops in Santiago Rodriguez and five workshops in Dajabón. Additionally, technical assistance was provided to fifteen farms where producers showed willingness to implement recommended practices, techniques or technologies with five farms are in San Juan, six in Santiago Rodriguez and five in Dajabón.²⁶ The third factor was the COVID-19 pandemic, which indefinitely delayed the FSIS audit to confirm equivalence, significantly slowed down project activities in the field, and affected value chain actors by decreasing prices significantly due to reduced demand from the tourism sector. Despite these negative factors, the new leadership team installed in 2018 was a major positive factor and led directly to the achievements the SAFE project was able to make despite the challenges, especially in three areas: moving forward the equivalence process to the audit stage, implementing the livestock field school methodology, and introducing private extensionists.

²⁶ Fundación REDDOM (Rural Economic Development Dominicana) for Fortaleciendo la Cadena de Valor de la Ganadería Dominicana (PROGANA). “*Consultoría Medidas de adaptación a sequía para productores Lácteos beneficiarios de PROGANA,*” SAFE project, December 2020, p.2 &3

- **EQ2.3 Has the project led the planned activities? Has it achieved the expected results?**

The SAFE project has been effective at carrying out the activities of the project, with 90% achievement for key activity indicators. Goal achievement for results indicators is at two-thirds with 68%, though key indicators related to equivalence, milk productivity, and milk quality have fallen short of original goals.

- **EQ2.4 What adaptations, if any, were made to the project's implementation process in order to achieve project objectives and targets based on mid-term evaluation findings?**

The SAFE project for the most part responded effectively to the midterm evaluation's recommendations, as follows:

1) Resolve problems and inconsistencies in the PROGIS M&E database: An audit of the M&E data was carried out, and inconsistencies addressed as best as possible retroactively. A new SharePoint database was built to house M&E data.

2) Adopt a value chain-wide approach to dairy quality upgrades: the mid-term evaluation did not sufficiently define what was meant by a "value chain-wide" approach, although we imagine that if specific recommendations had been developed they would have been similar to the recommendations we also make in this report, i.e., conducting a value chain analysis and using the associated quantitative data as part of the project's M&E system, investing in increased stakeholder consultation and participation to develop broad buy-in for a common sector vision, designing buyer-driven activities, and targeting specific points of leverage in the value chain for interventions. Specific activities focused on improving milk quality increased and progress was made on milk quality indicators. However, little progress was made on the Seal of Quality.

3) Advocate for inspection services and slaughterhouses to progress on the 'critical path' routes toward conformity with the FSIS standards: This was absolutely done. Great progress was made at participating slaughterhouses, and prior to COVID-19 related delays, the FSIS audit was scheduled, and it was considered likely by TAMU experts that the slaughterhouses were sufficiently prepared to pass the audit.

4) Audit project marketing and branding strategies to better inform the public that USDA is the project donor: Based on the project documentation we have seen and held discussions with project staff, it appears the concerns were addressed, with more prominent use of USDA marketing on SAFE project materials and activities.

- **EQ2.5 To what extent the activity changes after midterm evaluation results and recommendations were successful in improving effectiveness and ability of the project to achieve its expected results?**

While the late implementation of the midterm evaluation left a short time to put changes in place, the M&E audit and the acceleration of activities related to milk quality and slaughterhouse improvements represented substantial progress. There were other, iterative adaptations throughout the life of the project, including updates to performance indicators, budget and scope modifications to allow for staffing and role changes. On May 8, 2020, SAFE was awarded a no-cost extension through March 31, 2021 due to delays in monetization sales

and budget execution, followed by a costed extension awarded September 25, 2020 that modified the Period of Performance to December 31 2021 and to recognize the impact of Covid-19. As is traditional practice, these modifications were managed in-house, and not socialized with external stakeholders (i.e., to match the development and/or updating of a clearly articulated value chain strategy.) At the same time, there was high-quality work to update value chain strategies (especially beef, where the SAFE project worked with the Ministry of Agriculture to develop a “5 Axes Initiative for Livestock”). One challenging, but important, aspect of managing US-government funded projects is the management of inevitable changes (in scope, scale, or timing of projects) in the technical versus administrative domains. It is a fact that external stakeholders often point to the total budgetary amounts devoted to these programs and do not understand “where the money goes.”²⁷ While regular meetings were held with stakeholders during the last two years of the project, management challenges earlier on had already caused gaps in communication. A detailed set of recommendations about this issue goes beyond the scope of this evaluation; however, perhaps a useful starting place is the alignment, externally and internally, between (1) results frameworks, performance indicators, and activities, (2) stakeholder dialogue and joint activities that specifically refers to these indicators and tracks whether they link to results, and (3) an overarching “neutral” framework, such as the value chain map or other, that all actors can use to “hang” their analysis, track progress, highlight and disseminate their own activities, etc.

- **EQ2.6 What were the planned and unplanned outcomes that can be attributed to the project?**
Planned outcomes included improvements in milk productivity and quality as described above (as measured by liters-per-cow-per-day and volume of Grade A milk), as well as the completion of milestones towards the achievement of FSIS equivalence. Unplanned outcomes, due to the COVID-19 pandemic included positive opportunities for greater participation from slaughterhouse management due to remote trainings.
- **EQ2.7 What are the evolutions of the project indicators?**
The SAFE project, as of the time of this evaluation, tracked 89 indicators. This was reduced from an initial 112 indicators originally approved by USDA for the project in 2016, based on the baseline recommendations and approved by USDA on August 4, 2017. Additional indicators were modified or corrected due to persistent errors on October 18, 2018.
- **EQ2.8 Has the implementation process (approach - methodology) been effective?**
The project has been effective in carrying out the planned activities as per the program design, however problems with the initial design (see Relevance section) as well as management challenges in the early years that affected delivery of project activities (see Efficiency section) combined with external variables (droughts and COVID-19) prevented the project from achieving the desired results.

²⁷ See, for example the front-page story in the New York Times on Sunday June 6, 2021 referring to ‘the Contractor Problem,’ in a critical article about US efforts to fund economic development in Central America in order to reduce migration. “Billions in Aid, but the Migrants Keep Coming,” By Natalie Kitroeff and Michael D. Shear.

- EQ2.9 What is the evidence and estimate by how much agricultural productivity and the marketing of agricultural products have been improved through project actions?**

Productivity has improved substantially for those producers who implemented techniques and technologies provided through the livestock field schools and associated technical assistance (see the Impact section). Marketing of agricultural products through the Seal of Quality has not occurred.

- EQ2.10 To what extent did the Livestock Farmer Field School methodology contribute to improved agrobusiness management, production and quality compared to traditional adult education methodologies?**

The livestock field school methodology was very popular with producers and POs alike, despite some initial reticence prior to adoption. The hands-on methodology based on peer learning, along with accompaniment from extensionists through follow-up visits, was the key to the project's impact at the producer level.

- EQ2.11 To what extent did project activities prepare stakeholders to participate in virtual activities versus in-person as a result of the global pandemic from the novel coronavirus COVID-19?**

While some activities such as trainings were able to be conducted remotely, the pandemic had a negative impact on the project's ability to deliver on many activities. The indefinite delay of the FSIS audit for equivalence is a key example, as was the impact of the pandemic on the livestock field schools and farm visits by extensionists. One unforeseen benefit of virtual workshops was that owners and top managers of the slaughterhouses took part in the sessions, which was not always possible when they were conducted in person. GENEX was also able to transition to virtual trainings with high rates of participation.

- EQ2.12 To what extent did stakeholders benefit from the project's attempts to provide virtual trainings as a result of the pandemic?**

The Collective Efficiency Schools (CES) were moved to a virtual format during the COVID-19 pandemic, providing 517 slaughterhouse employees and DIGEMAPs staff with continued training on HACCP and other subjects pertaining to sanitary standards and other prerequisites for FSIS Equivalence. The effectiveness of the virtual format for these trainings was seen in the adaptation and implementation of the subject matter for the successful upgrading of the slaughterhouses to meet the required standards for FSIS Equivalence.

- EQ2.13 To what extent did the technical assistance received by beneficiaries improve the management of their agrobusinesses, production and quality?**

As part of the outreach conducted by the livestock field schools, SAFE provided technical assistance through public and private extension agents and external consultants on improved farm agricultural production techniques, integrated farm management, and business plan development. For producers who implemented the techniques and practices, there was a

significant impact on productivity and also improvements in milk quality. As a result of USDA assistance, the number of farmers in the dairy and/or beef sector making decisions based on economic considerations or analysis reached 302% of the project goal, the number of farmers applying new techniques or technologies reached 83% of the project goal. Percentage of volume of grade “a” milk sold to processors by USDA supported milk collection centers also increased by 36%²⁸ (see the Impact section for a deeper discussion).

- **EQ2.14 To what extent did beneficiaries adopt the project’s improved practices and technologies and improve their agrobusiness’s management, production, and quality?**
Improved practices and techniques were adopted at both the producer and processor level leading to significant improvements where they were used. However, the numbers of beneficiaries who adopted new techniques and technologies fell short in some areas. For the indicator “Number of individuals who have applied new techniques or technologies as a result of USDA assistance” the target for men was over 100% achieved, but the target for women was only 24% achieved. When disaggregated by type, only the application of new techniques or technologies related to breeding genetics hit 100% of its target, while the application of new techniques or technologies related to animal health (39.8%) and animal feed (48.1%) missed the targets by a large margin. The indicator “Number of dairy farmers using improved milking and milk handling techniques as a result of USDA assistance” was only 57.6% achieved. The indicator “Number of individuals who have applied improved farm management practices (i.e., governance, administration, or financial management) as a result of USDA assistance” was 100% achieved.

3.4. Efficiency

A. Organizational Challenges

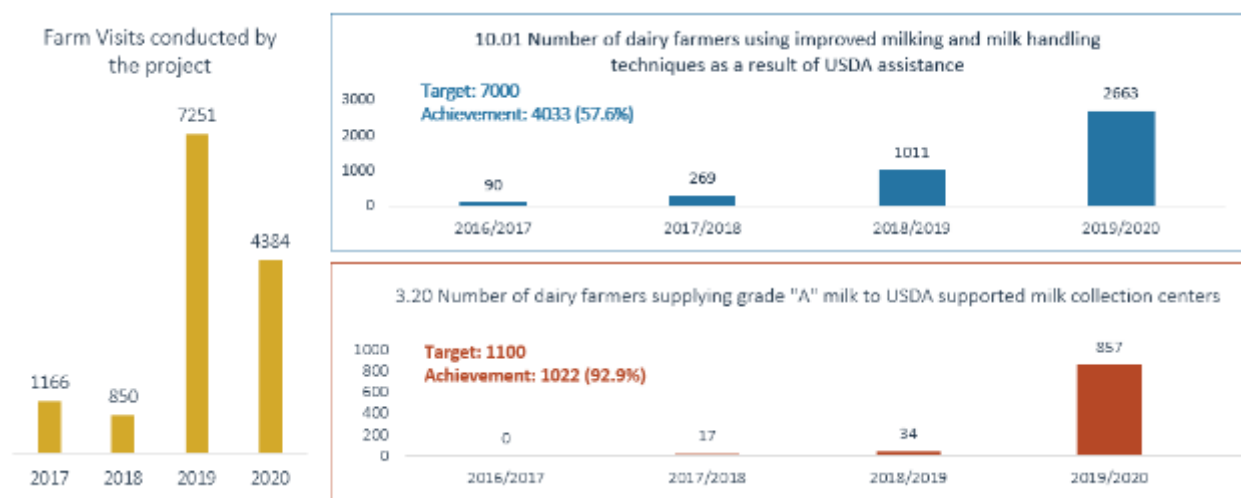
During KIIs project staff, project partners, and government stakeholders universally noted that organizational challenges hindered the projects' ability to make progress over the first two years. An initial challenge was delays in the monetization of commodities by which the project was funded, which took six months longer than planned. Over this period, changes in commodity prices contributed to a projected budget shortfall ranging from \$467k-\$710k in 2020 for which supplemental commodity was awarded to NCBA CLUSA in September 2020. This commodity was monetized in April 2021 leaving the project with an overall budget shortfall of \$185,000²⁹ When work on the project finally began following monetization, implementation was hindered by disagreements between the project’s implementing partners and a failure to properly implement the livestock field school methodology and provide technical assistance for producers (which seems due in part to a lack of a clear transfer of goals from proposal team to project team). Due to these challenges, implementation over the first two years of the SAFE project got off to a slow start, with progress mostly only made on trainings and holding initial meetings to start moving the equivalence process forward.

²⁸ The complete table of results and activity indicators can be found in Annex 1.

²⁹ A supplemental commodity award, which was monetized at \$407k, was granted in September 2020 which allowed the project to continue operations until the end of April 2021.

In early 2018, NCBA CLUSA decided to make some organizational changes, which led to the hiring of a new Chief of Party (CoP) and Technical Director. The project also brought on specialists for genetics (to coordinate with GENEX), PO strengthening, financial services, and extension services. The change in leadership team went a long way towards jump starting many of the project activities and – as we heard in several KIIs with stakeholders not involved directly with the project – to reestablishing trust with value chain and government actors. One interviewee summed up his perception of the project as “a program with too much bureaucracy. Most of the resources went to salaries and vehicles.” In 2018 the livestock field school methodology began to be correctly implemented and in 2019 private extensionists were established through POs with project support. As can be seen in Figure 15 below, the increase in project activities at the producer level correlate to the arrival of the new leadership team. The equivalence process also began to move forward quickly under new leadership.

Figure 15. Increase in Activity Following New Project Leadership in 2018, Demonstrated by Key Data



Another challenge that has plagued project implementation from the beginning is data integrity, caused at least in part by multiple changes in M&E systems. The initial M&E platform – LogAlto (in use from project start in 2016-January 2018) – was an off-the-shelf system which was difficult for extensionists to use in the field, due to its lack of offline capabilities. For this reason, the project hired K&F Consulting, which had successfully developed a system for another NCBA CLUSA project in El Salvador, to develop the PROGIS system from scratch. While this solved issues with offline data collection, there were many issues with the data whether due to the system itself or what was being input into the system. As was reported in the midterm evaluation, the PROGIS database had a number of errors including incorrect or missing beneficiary contact data, duplication of beneficiaries, and inconsistencies in the overall number of project beneficiaries. The midterm recommended that “SAFE staff should audit beneficiary contact data and update entries where required. Staff should also use this audit to resolve inconsistencies in overall beneficiary numbers and disaggregate by beneficiary type.”³⁰ The project followed up on this recommendation and hired a statistician to conduct a full audit of the data and replace PROGIS with a SharePoint database. This seems to have solved the major issues, but inconsistencies in some of the data remain and were experienced during the final evaluation (see comments in the Methodology section above).

³⁰ J.E. Austin & Associates. “Safe Agriculture/Food Export (SAFE) Project Midterm Evaluation Report,” April 30, 2019, p. 70.

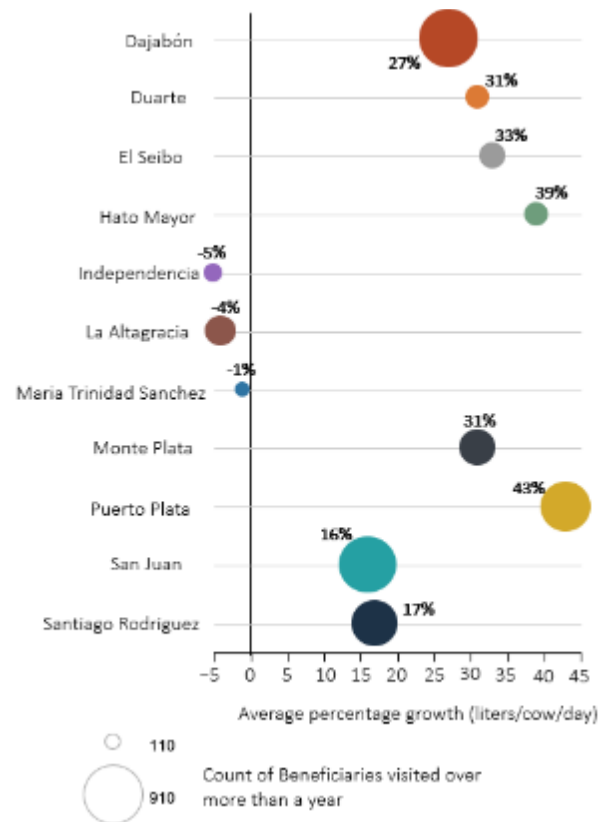
B. Scale and Implementation

The SAFE project’s broad ambitions to address the major issues in the whole sector are well-aligned with the Food for Progress mission and results framework as well as the needs of the sector. However, implementing a project at this scale also comes with its challenges in delivering on all its objectives, and doing so in a consistent manner across all implementation areas. While technical materials, staff, and individual activities were often excellent and effective, the broad scope of the project, combined with the lost time due to organizational inefficiencies discussed above, necessitated prioritization of activities by the project team and led to impact for a smaller number of beneficiaries.

A key example of the scale and scope of the project affecting results, in this case the broad geographic scope, was in technical assistance at the farm level, where the quality of assistance provided to producers varied widely from province to province. Some of the producers and POs we spoke with across provinces reported varying levels of technical assistance and follow up by extensionists. A large factor in this may be the number of extensionists available in each province, with some only having one present. In addition to quality of technical assistance, other potential factors such as infrastructure, may explain the wide discrepancies in improvements in milk productivity for some provinces according to the project’s farm visit data (see Figure 15 showing farm visit data for beneficiaries visited by extensionists over more than a year period). This is also in line with the variation in perceived impact on productivity, quality, and incomes from the producer surveys by province (see further discussion under the Impact section).

Beyond the scope and scale of the SAFE project’s activities, there were also implementation concerns brought up by beneficiaries. In particular, the SAFE project’s application of grants criteria was opaque for many beneficiaries, especially at the producer level. Our FGDs with producers in several provinces showed confusion with how the project selected beneficiaries, and which beneficiaries received assistance and grants. Who received milking parlors – and who did not – was a sore spot for some survey respondents and interviewees. This seems to have been a communication issue, rather than an actual lack of clear criteria as these were in fact written down and made available by the project. However, it is apparent that better communication of these criteria to potential beneficiaries may have prevented confusion. There were also concerns that the project did not always prioritize activities in a way that made sense. Some producers noted that in some cases funding went to build milking parlors, while the most pressing issue for producers was actually that their cattle were dying from lack of water.

Figure 16. Differing Results in Productivity Increases by Province May Reflect Differences in TA Quality



C. Efficiency: Conclusions

- **EQ3.1 To what extent, appropriateness, and functionality have the various units/ levels of management and coordination (grants, project staff, M&E, local committees, USDA/W, USDA/Santo Domingo and others) supported the implementation of the project?**

Despite initial inefficiencies and delays due to organizational challenges in the first two years of the project, the restructuring of project leadership in 2018 improved the efficiency of implementation and led to the achievement of most of the project's activity indicators (though with some notable exceptions and without activity completion always feeding directly into results).

- **EQ3.2 To what extent were the size and composition of the teams appropriate to the strategies?**

Following the staffing changes in 2018 and the proper implementation of the livestock field school methodology as originally intended – including the hiring of private extensionists – the team composition and size was appropriate to the strategies. However, organization of staff was at times too siloed by activity, with functions assigned based on which contractor or subcontractor hired staff, rather than the project working as a cohesive team.

- **EQ3.3 To what extent do the various project activities support each other?**

The project's activities are aligned with each other and Food for Progress results frameworks and are designed to achieve results that build on each other. However, the broad scope of the project posed challenges to implementation, especially when combined with project delays, leading to uneven implementation in some activities and fewer beneficiaries experiencing impact than originally planned. Due to the lack of a rigorous value chain framework, indicators in many cases were poorly designed or did not build upon each other (e.g., an activity indicator might be achieved 6,000% yet we see little progress towards the associated results indicators).

- **EQ3.4 To what extent has the process of project implementation including finance and administration optimized time and resources?**

The SAFE project's organizational challenges, as well as financial challenges related to the delays in monetization and less than expected returns due to variations in commodity prices, have prevented the project from optimizing the time and resources at its disposal. Nevertheless, the second leadership team made great strides in remedying this over the last two and half years of the project.

3.5. Impact

A. Project Impact

Market Access and Trade

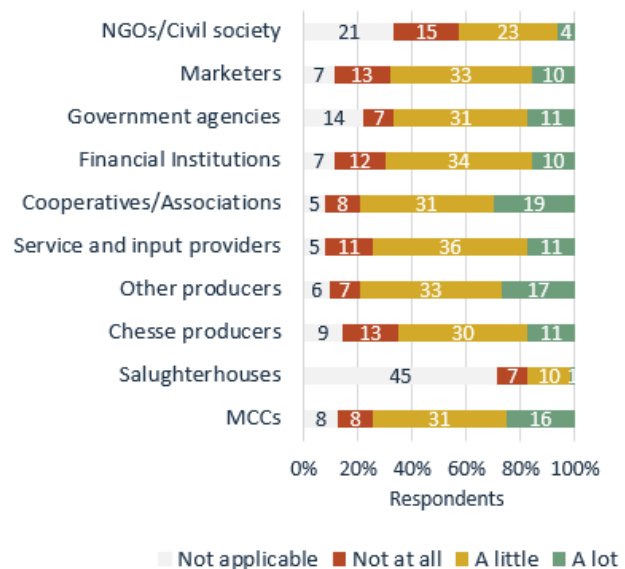
Progress on equivalence has made strides, as described above, and has potential for significant long-term impact if achieved. Additionally, there have been increased market linkages between some value chain actors, such as *queserías* we spoke with who were able to get their products into supermarkets they had previously failed to enter and MCCs and large processors which expanded the number of producers from whom they buy their supply of milk.

However as can be seen in Figure 17, at the processor level most survey respondents felt that their relationships with other value chain actors improved “a little.” There also seems to have been missed opportunities for increased linkages especially with larger buyers. In particular, more could have been done to work with Nestlé and Grupo Rica to develop ways to support the POs through co-financing extension services and other activities beyond the length of the SAFE project. According to at least one high-level interviewee, Grupo Rica has expressed interest in supporting continued technical assistance to producers.

Milk Productivity

The key measure of productivity in the dairy value chain is liters per cow per day (l/c/d). Historically the DR has had very low milk productivity, due to poor practices and the preponderance of small producers with less resources and access to know-how.³¹ The SAFE project’s baseline study cited a number of studies done on the topic over the years with estimates for the average productivity nationally coming in between 2.76-5.73 l/c/d.³² Official government estimates from DIGEGA came in at 3.73 l/c/d in 2015³³ and 5.4 l/c/d in 2018³⁴ and USDA FAS estimated in 2018 that the national average fell from 5.5 l/c/d in 2014 to 4.9 l/c/d in 2018.³⁵ Data from farm visits conducted as part of the SAFE project over its implementation period reflect numbers within these ranges (the averages for every province fell between 2.2 l/c/d and 6 l/c/d).

Figure 17. Processors Survey - your relationship with the following actors increased



³¹ For comparison, OECD data in 2018 shows developed countries average 12 l/c/d and LAC countries average 7.5 l/c/d *Sistema Presupuestario Dominicano, “Presupuesto Orientado a Resultados 2020-2023,”* 2019, p. 259.

<https://www.digepres.gob.do/wp-content/uploads/2019/10/Presupuesto-Orientado-a-Resultados-2020-2023.pdf>

³² OTSCORP. “Safe Agriculture/Food Export (SAFE) Program Dominican Republic Project Baseline Survey,” October 13, 2016.

³³ DIGEGA. “Memoria 2015,” 2015, p. 52. <http://www.ganaderia.gob.do/transparencia/index.php/plan-estrategico/informes?download=90:memoria-ganaderia-2015>

³⁴ *Sistema Presupuestario Dominicano, “Presupuesto Orientado a Resultados 2020-2023,”* 2019, p. 259.

<https://www.digepres.gob.do/wp-content/uploads/2019/10/Presupuesto-Orientado-a-Resultados-2020-2023.pdf>

³⁵ USDA FAS. “Opportunities and Challenges in the Dominican Dairy Sector,” May 6, 2019.

Despite this variety of evidence showing DR’s national productivity has traditionally been very low – as acknowledged by the baseline report itself – the baseline survey came out with a much higher average number of 7.5 l/c/d upon which the project’s goal of increasing milk productivity by 50% was based. As many of our KIIs with project staff and partners have pointed out, this number seems problematic, and potentially a major reason the SAFE project fell short of its goal (a 12% increase over the baseline was achieved). It is unclear exactly why the baseline numbers were higher than expected, but it may be related to the method for how the data was collected, with surveys of producers yielding more inflated responses than farm visits by extensionists. The numbers reported by our survey would seem to back this theory up as our averages for beneficiary and comparison group producers are 8.23 l/c/d and 7.14 l/c/d respectively.

To support transparency, objectivity and rigor, we take several different approaches to measuring the project’s impact on milk productivity. Our first approach takes the baseline number at face value and compares it with the l/c/d figures report by beneficiary producers in our end-line survey. The table below shows this comparison and the resulting 10% gain in productivity based on this calculation. However, due to the issues mentioned previously, we are not sure this is the most accurate approach, given the concerns with the baseline figures as well as changes endogenous to the value chain as a whole over the time period of the project.

Table 11. Baseline vs End-line Milk Productivity

Baseline Survey (l/c/d)	End-line - Beneficiaries (l/c/d)	% Gain from Baseline to End-line
7.5	8.23	10%

A second approach compares beneficiary producers with our non-beneficiary producer comparison group. This comparison group gives us a way of comparing the progress of beneficiaries compared to an otherwise similar set of producers at a single point in time. This approach better addresses the issue of the overall decline in milk productivity experienced by the DR over the last 3-5 years, reflected in some of the secondary sources cited above, due to droughts in 2016 and 2018 and other factors that affected the value chain as a whole.³⁶ The beneficiaries at the end-line survey had 15% higher average productivity in l/c/d than the comparison group. However, as stated earlier, these findings should not be interpreted as proof of causal impact attributable to project activities.

Table 12. Comparison Group vs Beneficiary Milk Productivity

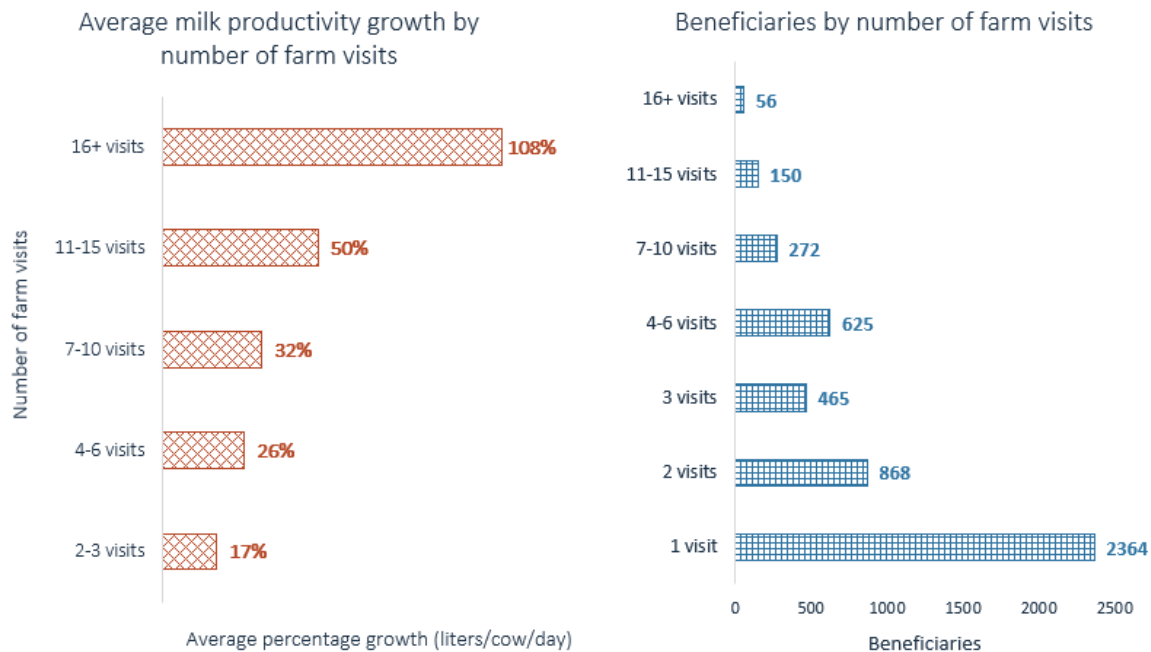
Comparison Group Survey (l/c/d)	End-line - Beneficiaries (l/c/d)	% Difference in Milk Yields between Comparison Group and End-Line Beneficiaries
7.14	8.23	15%

Our first two approaches give us a glimpse at the average improvement in milk productivity as measured by l/c/d for beneficiaries overall. However, it is clear from our KIIs with project staff as well as the farm visit data collected by extensionists, that the level of uptake of techniques and regularity of follow-up visits by extensionists to provide technical assistance varied greatly between beneficiaries. This leads to a third approach analyzing the progress in l/c/d as reported during farm visits by extensionists, which demonstrated much higher levels of productivity improvement for producers who received regular farm

³⁶ J.E. Austin & Associates. “Safe Agriculture/Food Export (SAFE) Project Midterm Evaluation Report,” April 30, 2019, p. 32.

visits over an extended period (see Figure 18 below). While the number of beneficiaries who received the level of support to increase productivity by 50%+ was only about 5% of the total (in part due to program challenges and the COVID-19 pandemic as discussed above under Efficiency), it provides strong evidence for the efficacy of the livestock field school methodology and technical assistance when fully implemented. The disparity in the number of farm visits to each producer was impacted by multiple factors. First, in the initial years of the project, these visits were not systematically organized, and data has not been collected for the same. In the latter years of the project, under new management, there was a campaign to recruit new producers that involved farm visits conducted by private extensionists, which is when farm visits were increased and data on productivity for more comprehensively collected. However, due to the proximity of private extensionists to livestock field schools, the producers that lived close to these field schools received the most visits. Secondly, as mentioned above in the evaluation design and methodology section, funding and COVID-19 related constraints limited project activities and impacted the number of farm visits.

Figure 18. Milk Productivity Growth, with Farm Visits as a Proxy for Level of Technical Assistance³⁷



Perceptions of producers, processors, and POs with whom we spoke are in line with this data on milk productivity, with increased productivity recorded at the farm and processing level due to the livestock field schools and associated technical assistance and grants delivered by the project³⁸. Seventy-five percent of beneficiary producers said the project led to increased productivity for their farm, while 76% of processors reported they were able to invest in new technology of which 84% reported this technology improved their productivity. Beneficiary producers perceived that project activities directly led to increased household incomes (71%) and increased sales (73%). For processors, 73% reported that they gained new clients due to project activities. As shown in the table below, perceptions of impact on

³⁷ Data is farm visit data drawn from project M&E database, collected by project extensionists.

³⁸ Average milk productivity growth was not measured by the evaluators for beneficiary producers who only received one farm visit, since these producers were not visited again by project extensionists to track productivity.

productivity and impact on household income vary significantly by province, with the eastern provinces tending to lag.

Table 13. Perceptions of Impact on Milk Productivity and Household Income Vary by Province

Province	Your productivity has increased		My household income has increased thanks to project activities	
	Total Responses	% Yes	Total Responses	% Yes
Dajabon	67	81%	68	75%
Duarte	17	71%	17	71%
El Seibo	15	40%	15	53%
Hato Mayor	10	50%	10	50%
Independencia	10	80%	10	90%
La Altagracia	19	47%	19	63%
Maria Trinidad Sánchez	7	100%	7	100%
Monte Plata	30	83%	30	83%
Puerto Plata	48	77%	48	67%
San Juan	43	74%	43	70%
Santiago Rodriguez	39	85%	40	70%

Milk quality

Measuring milk quality can be challenging and a cause of controversy between producers and MCCs. This is due to the fact that producers may produce grade “A” milk at the farm, but by the time it reaches the MCC it may have spoiled due to lack of proper cold storage during transport, or else producers may not even know the quality of the milk they produce but may believe MCCs are trying to rip them off when they tell them they must take a lower price for lower grades of milk. There are also issues at the MCC level, where milk is often mixed and one bad batch can ruin the quality of the whole quantity. The SAFE project activities to strengthen MCC management and milk handling practices for participating MCCs and processors as well as provide technical assistance and investments, such as milking parlors, at the farm levels were aimed at improving the milk quality sold by producers to MCCs and from MCCs to processors and retailers. The project also worked with CONALECHE on milk quality and INDOCAL to provide training for producers and MCCs on technical standards and food labelling standards, though in our KIIs with INDOCAL they noted that producer participation was low.

Figure 19. Dropping Off Milk at a MCC in Dajabon



The key results indicator for milk quality is “Percentage increase in volume of grade “A” milk sold to processors by USDA supported milk collection centers,” which was given an initial goal of 50% increase over the course of the project. As noted in the section above, this is one of the 6 results indicators

where the project fell short of meeting its targets, with a 36% improvement over the period of the project. Most of these gains were made over the last two years of the project, and it is likely that the first two years of minimal work in the field is the primary contributing factor for missing this target. Additionally, even where improvements were made at both the production and MCC levels, lack of proper cold storage during transport is a major obstacle to increasing milk quality which needs to be addressed.

Farm-level improvements in quality made through technical assistance by private extensionists as part of the livestock field schools, had some success in improving milk quality as well as productivity. One example, Association of Cattle Ranchers of Santiago Rodríguez (AGASAR) received a one-year matching grant from SAFE to support an extension agent who in turn provided technical assistance and training to the association’s producers, leading to an improvement in the association’s milk quality from Grade C to A, increasing the value of milk delivered to AGASAR’s MCC by 10% per liter.³⁹ While some producers and processors spoke glowingly of the project’s technical assistance and its impact on their milk quality, other processors told us that milk quality from the producers who supplied them had not improved for them or in one case was even worse than before (due to the drought and producers even diluting the milk with water at times). As can be seen in Table 13, below, the improvements in quality as perceived by surveyed beneficiary producers – varied significantly by province. As with the variations in perceptions of increased productivity and incomes, the lower perceived increases in quality also tend to be in the eastern provinces. Although the Dairy Industry Decree 392-19 (published in November 2019) calls for regular inspections, it was not clear to the evaluation team that these inspections were frequently conducted and data regarding such inspections was not available.⁴⁰

Table 14. Producer Perceptions of Increased Quality Due to SAFE Project Activities

Province	The quality of your products have increased	
	Total Responses	% Yes
Dajabon	67	81%
Duarte	17	71%
El Seibo	15	40%
Hato Mayor	10	50%
Independencia	10	80%
La Altagracia	19	47%
Maria Trinidad Sánchez	7	100%
Monte Plata	30	83%
Puerto Plata	48	77%
San Juan	43	74%
Santiago Rodriguez	39	85%

B. Project Legacy

The legacy of the SAFE project over the coming years will depend greatly on what actions are taken as the project closes to ensure the sustainability of its successful activities. This will be discussed further in the Recommendations section below. With the right follow-through, the SAFE project has a chance to

³⁹ SAFE Project. “Performance Report Summary: October 1, 2019-March 30, 2020,” April 2020.

⁴⁰ Decree 392-19 for the Dairy Industry. November 19, 2019.

leave a legacy of introducing best practices and building the capacity of the livestock sector and related government entities to raise quality and productivity to new heights.

The SAFE project is perceived to have been the first program in many years to address the needs of the livestock sector at the level of the producer.⁴¹ The introduction of private extensionists has been well-received by producers and POs alike and promises to be an important part the value chain for the foreseeable future, as long as a way to continue their financing is found beyond the end of the project. SAFE has provided 80% of the funding to this point and as the funding has ended, the POs renegotiated their agreements to pay the private extensionists and only four out of the original 28 remained as of the time of the final evaluation. Most POs have not continued paying the extensionists (though this may be in part due to COVID-19).

SAFE also made unprecedented progress towards readying DR to reinstate FSIS certification of equivalence. Should this be obtained, as expected in the near future, this will be an important legacy of the project. The project has built the capacity of health and agriculture ministries to inspect the slaughterhouses and private investments have been made (complemented with grants) to meet international quality standards. The upgrading of the beef sector's practices – including establishing quality norms and HACCP certification – are a fact whether or not equivalence is granted.

C. Impact: Conclusions

- **EQ4.1 What was the impact of the project on...**
 - 1) Increased household income:** 71% of beneficiary producers reported that their household incomes increased due to project activities.
 - 2) Increased agricultural productivity:** Milk productivity improved according to a number of approaches for measurement of l/c/d. Comparing the productivity of beneficiary producers with the comparison group we see 15% increase in l/c/d. This lines up favorably with data from farm visits, which show even higher rates of improvement for producers who received regular farm visits from extensionists for an extended period of time.
 - 3) Increased market access and expanded trade:** While great progress has been made towards achieving FSIS certification of equivalence, there will not be impact on expanded market access and trade until it is approved.
 - 4) Increased quality of agricultural products:** There was a 36% improvement in the indicator, "Percentage increase in volume of grade "A" milk sold to processors by USDA supported milk collection centers." This fell short of the 50% improvement target, due to the shortened period that the livestock field schools were operating as well as a continued need for infrastructure and management improvements at MCCs.
 - 5) Increased public and private extension services:** Few producers had frequent access to extension services prior to the SAFE project. Through the project, MEGALECHE extensionists were supplemented by private extensionists co-financed with POs, with great success. Finding sources for long term financing for private extensionists will be a primary challenge for sustainable impact.
- **EQ4.2 How does the beneficiaries' perception of the project's achievements, especially the increase in productivity and income vary across value chains and regions?**

⁴¹ There was a well-known program funded by the Food and Agriculture Organization (FAO) several decades ago that first introduced extension and other technical assistance to the sector (several of the second phase team members had worked on that project).

Perceptions of impact on household income seem to be lower in the eastern provinces (50% in Hato Mayor, 53% in El Seibo, 63% in La Altagracia) and generally seem to follow patterns of perception of milk productivity and milk quality improvements which are similarly lower in those same provinces.

- **EQ4.3 What is the legacy of the project? Organize achievement categories from most significant impact to least significant impact.**

If equivalence is achieved, as is expected, this will be the crowning legacy of the SAFE project. The introduction of private extensionists and the livestock field school methodology have changed mindsets and been well-received by producers and POs alike. If made sustainable, they should provide a lasting influence on the livestock value chain and the increasing productivity and quality of milk and beef.

- **EQ4.4 Which activities were the most successful and the least successful? Why? Breakdown by intervention / activity.**

The most successful activities were those pertaining on one hand to equivalence and increasing SPS practices for the beef sector and on the other hand the livestock field schools and the technical assistance on milk productivity and quality, breeding, and farm management, that was reinforced through the private extensionists. On the other hand, the Seal of Quality was not fully developed, due in part to a lack of political will and in part due to premature market conditions.

- **EQ4.5 To what extent have beef and dairy ranchers' capacity to respond to on-farm shocks and daily activities improved as a result of the project, and why?**

Training in farm management practices, as well as improvements in productivity and quality, have allowed producers to earn more revenue and more able to prepare financially for shocks such as recurring droughts and COVID-19. In other cases, infrastructure investments through the grants program, such as solar panels, have added to producer resilience according to KIIs with project stakeholders.

- **EQ4.6 How has the project's activities strengthened local producer organization's governance, member services and equity, as well as incomes?**

While producer organizations (POs) received extensive training and capacity building, the project did not sufficiently prepare POs to continue the successful activities beyond the end of the SAFE project. Further, production shortfalls and depressed prices due to COVID-19 have further weakened PO incomes and their ability to self-finance extension services and other support for their member producers. This is despite 71% individual beneficiary farmers reporting a perceived increase in income due to project interventions.

3.6. Sustainability

A. Technical Sustainability

While the project has shown areas of significant impact, the technical sustainability of the project is not assured, at the producer level especially. As has been mentioned above, as the private extensionists hired through the SAFE project's 80%-20% cost sharing with POs no longer continue to support the producers, as the project is coming to a close. While COVID-19 may play a factor in this, it is also clear that despite widespread acclaim of the private extensionists and the livestock field school methodology, the POs are unable or unwilling to fund them on their own. No plan has been put in place to ensure their

sustainability as project closes, risking a loss of momentum on one of the SAFE project's greatest areas of success.

Similarly, experts on various technical areas in the value chain (e.g., genetics) no longer provide services as there is no other initiative to continue funding their activities. However, one promising finding from the survey, is that 88% of beneficiary producers say that they will continue to be able to apply the techniques they learned through the livestock field schools after the project is completed. Improvements made through new norms regarding SPS and co-investments at slaughterhouses (and to some extent at MCCs) are also likely here to stay. However, a plan for continued support for these activities is necessary if impact is to be had over the long term for the livestock value chain.

B. Financial Sustainability

Likewise, the financial sustainability of project activities is not assured as the project did not generate a cost-recovery mechanism or other measure to allow its continuity. This is a flaw in the project's original design, and so far, there are no other public institutions or international donors prepared to continue funding for the project's successful activities. That said, there are several donor and government initiatives that could be tapped to support the sustainability of successful SAFE interventions, if an effort were to be made to understand their goals for the sector, and a collective vision was developed with buy-in from leading private sector actors.

Producer organizations and other stakeholders welcome continued interventions but have not taken ownership of the objectives as something they can mobilize resources for and manage progress against. While capacity building has helped expand the capabilities of local organizations in many ways, local leadership has not been built to carry on and expand on many of the successes of the project. Some of this is due to financial constraints. As many POs mentioned to us in KIIs, recurring droughts and the COVID-19 pandemic have sapped resources and made it even more difficult for them to support producers adequately.

C. Institutional Sustainability

Progress towards achieving FSIS Equivalence has built a great deal of momentum and there is short-term optimism among most stakeholders that it will be achieved. The key to sustainability will be maintaining political will with the new government. So far, political will seems to remain strong and working relationships between government entities involved in the equivalence process have been strengthened through the SAFE project. However, it will be important to develop a longer-term plan with the government and other value chain stakeholders, especially if some of the more problematic issues are to be addressed (e.g., laboratories, strengthening of the primary linkages of the beef value chains).

Figure 20. Team Leader Lara Goldmark Interviewing ADHA President Ricardo Barcelo



At the end of the SAFE project there remains great opportunity to modernize the MCCs and improve practices and norms related to hygiene at the producer level. As pointed out in a KII with Organic Valley, start-and-stop projects can be harmful when trying to implement long-term behavior change such as that necessary to improve milk quality. It will be necessary to ensure continuity of efforts as the SAFE project closes to ensure progress continues to move forward and that improvements are maintained. This should be done in such a way as to mitigate the effects of project start and stop which plague donor-funded programs. Convening government, international donors, and value chain actors will be an important first step towards ensuring sustainable progress in the livestock sector.

D. Sustainability: Conclusions

- **EQ5.1 To what extent have local actors (JAD, cooperatives and farmers' organizations, MCCs, slaughterhouses, local government and civil society groups) been involved in the management of the project?**

Local actors have played a key role in the management of the project. JAD was the key implementing partner of NCBA CLUSA for the SAFE project, responsible in part for supporting extension services and building producer capacity. In this role they played a significant part in activities at the producer level, despite challenges in the early years of the project with activity design and stakeholder coordination. Slaughterhouses and government agencies including DIGEGA and DIGEMAPS have played a key role in activities related to FSIS equivalence. Producer organizations were committed and participated, but their role is not best described as management.

- **EQ5.2 Which local counterparts have increased their capabilities to continue with the project's actions, and why?**

The most dramatic increase in capability was on the part of the government agency charged with regulating sanitary conditions of beef production (DIGEMAPS). Producer organizations and other stakeholders have increased their capacity but have not taken ownership of the project's objectives and activities moving forward. Measures must be taken to find sustainable ways to finance key project activities for sustainable impact to be made.

- **EQ5.3 Which partnerships were the strongest and why?**

Among the strongest partnerships of the SAFE project have been those related to preparing for equivalence, particularly those with DIGEMAPS and the slaughterhouses. At the producer level, partnerships with POs were also particularly strong with enthusiastic participation for the most part. POs, particularly livestock associations, were strategically important to the project due to their position as intermediaries with producers in the value chain who were a key beneficiary of

the project. The associations, through co-investments and operational support, played a key role in the hiring of private extensionists and support of the livestock field schools.

- **EQ5.4 What is the probability that these actors will be able to provide succession?**

With the new government, there are stakeholders keen to continue support for the growth of the sector. There are also international actors, such as the IDB which has an upcoming project which may have interest in supporting successful activities in the livestock sector. Specifically, there is an agricultural census planned and local stakeholders should advocate to ensure this moves forward. Financial institutions are also ready to be included at the table, as indicated by key informant interviews. Measures should be taken during the close-out of the project to convene government and other value chain stakeholders to find ways to continue building upon the achievements of the SAFE project, otherwise there is a low chance that local stakeholders will take ownership and provide succession for the project's activities.

- **EQ5.5 Are the techniques and technologies used in the project easy to maintain locally? To what extent are the conditions for local control of these techniques and technologies guaranteed? Are people facing any additional challenges in light of the pandemic? Prioritize activities to continue after the project closes from most likely to least likely.**

Yes, at both the producer and processor levels techniques provided by the livestock field schools and technical assistance are easy to maintain locally and should continue to be used beyond the end of the project. For beneficiary producers, 88% say that they will continue to be able to apply the techniques they learned after the project. One area where it will be more difficult to maintain without further support will be breeding/artificial insemination. An illustrative list of activities which should be prioritized for continuation, as discussed in the Recommendations, would be follow through on Equivalence, mainstreaming the livestock field school methodology, and finding sustainable ways to maintain the private extensionists.

- **EQ5.6 To what extent do the project interventions support and stimulate the local economy?**

Increased milk productivity and milk quality have direct impact on farmer incomes. As mentioned in the Impact section above, 71% producers surveyed told us that they perceived that their incomes increased due to SAFE project activities. If equivalence is achieved, there will be a clear opportunity for beef exports to Puerto Rico according to the market study conducted by the project. The ability to place this industrial meat product will allow meat producers to sell more of the higher end cuts to local supermarkets and hotels (assuming tourism recovers in the medium term.) To obtain more precise data, we suggest developing a detailed value chain map that contains quantitative indicators related to volumes, price points, and quality; in both the dairy and beef chains. Given that the project has recently gathered good quality data on the farm level for dairy production, emphasis should be placed on mapping buyers and supporting service actors. If additional farm-level data gathering is conducted, it should be done so in the context of the national agricultural census, planned as part of the Inter-American Development Bank's upcoming project. For the beef value chain, a quite viable value chain upgrading strategy has been discussed among the stakeholders involved in preparing for equivalence; this could serve as a road map.

- **EQ5.7 Which of the following project impacts are likely to be sustained and/or scaled-up after the project closes?** 1) Increased household income, 2) Increased agricultural productivity, 3) Increased market access and trade, 4) Increased quality of products.

Table 15. Impacts Most Likely to be Sustained or Scaled Post-Project

Increased household income	This should be able to be sustained; to scale up and continue increasing incomes, the below impacts will need to be continued.
Increased agricultural productivity	Major progress was made here but further support to livestock field schools and private extension will be needed in medium term. Productivity growth in terms liters/cow/day varied widely by province, with Puerto Plata and Hato Mayor exhibiting the largest growth at 43% and 39%, and Independencia and La Altagracia experiencing negative productivity growth of -5% and -4% respectively (see Figure 16).
Increased market access and expanded trade	This will depend on achieving equivalence. Further work is needed on the dairy side.
Increased quality of agricultural products	Progress was made here but further support is needed to obtain buy-in (i.e., contribution of resources) from value chain actors and scale up. Improved quality will require increased focus on mitigation of chemical dangers like pesticides, drugs, and natural toxins, biological hazards like pathogens (Salmonella, E Coli, etc.), and physical dangers like wear of equipment and careless handling.

For each of the impact mentioned above, there is potential sustained and scalable impact if the right follow-up measures are taken along with the government and other stakeholders. For producers who were direct beneficiaries of the project, the impacts on productivity and income should hold to some extent in any case, because the practices which producers learned through the livestock field schools are easy to maintain. Increased market access and trade will rely in large part on equivalence being achieved, and increased quality of products is an area where more work is still needed, though progress has been made.

- **EQ5.8 Identify and explain short and mid-term challenges to sustain program results, and what actions could be taken before the end of the project to mitigate those challenges, if any.** As described in detail through this report (see especially the Efficiency section), there have been several challenges to the achieving results. The delay in implementation of project activities over the first two years of the project prior to new leadership, problems with the M&E database, recurring droughts which affected milk productivity, and the COVID-19 pandemic. The project mitigated these challenges through installing new leadership, auditing the M&E data and implementing a new SharePoint-based M&E database, and through adjustments to program activities to address the droughts and pandemic. However, more could have been done starting at the program design phase (see Relevance section). Despite these challenges the project has achieved impact, but for this to be sustainable further action is needed (see Recommendations).

- **EQ5.9 To what extent are local government actors likely to achieve FSIS equivalence and continue strengthening the food safety inspection system?**

Most project, government, and value chain stakeholders we spoke with think it is likely that equivalence will be achieved. TAMU staff, who ran the mock-audit in preparation for the FSIS audit originally scheduled for March 2020, told us that they believe equivalence would have already been achieved had the COVID-19 pandemic not occurred and postponed the audit indefinitely.

- **EQ5.10 To what extent did modifying the traditional training methodology to the methodology in the “Collective Efficiency Schools” permit improved learning and application of the concepts?**

Adapting the collective efficiency schools (CES) methodology to a horizontal format similar to the livestock field schools was generally perceived by relevant stakeholders as a success, despite the forced move to a virtual format due to the pandemic. CES allowed the training of 517 slaughterhouse employees and DIGEMAPS staff in HACCP and other topics relevant for improving SPS measures and achieving equivalence.



4. Conclusions

4. Conclusions

The findings of the Final Evaluation of the SAFE project make clear that despite a slow start and external challenges posed by recurring droughts and the COVID-19 pandemic, the project achieved some significant accomplishments. These include most prominently:

1. Progress made towards achieving FSIS Equivalence for beef exports to the US, which most likely would have been achieved had not the pandemic delayed the audit scheduled for March 2020.
2. Improvements in HACCP, and sanitary practices and norms and through private co-investments in slaughterhouses participating in the SAFE project.
3. Proof of concept of the livestock field school methodology, enhanced by the use of private extensionists to provide hands-on training, technical assistance, and accompaniment for livestock producers.

Relevance: The SAFE project provided a comprehensive program design with activities that were relevant to the needs of the livestock sector (dairy and beef). Seventy-eight percent of the beneficiary producers we surveyed reported the livestock field schools as being beneficial to them and 79% of processors and MCCs reported that they received high quality services from the project. Nevertheless, there were several challenges from the beginning of the project. The first was the lack of sufficient multi-stakeholder participation in the project design, despite the whole-of-value chain scope of the project. Secondly, no foundational value chain assessment was conducted at the early stages of the project, to inform interventions and ensure realistic targets for results indicators. This was exacerbated by a lack of clarity of beneficiary focus in the design phase. Finally, a third challenge was the failure to anchor program interventions upon an initial agreement with public sector and private sector stakeholders on key goals and aspects of measurement, to achieve stakeholder buy-in and a clear plan for sustainability at the project's conclusion.

Effectiveness: The activities of the project were effectively implemented, with a high level of achievement (90% of key activity indicators achieved at 100% or more). However, results achievement has been lower (68% of results indicators reaching 100% or more), in part due to delays in the first two years of the project and the COVID-19 pandemic. Progress towards achieving FSIS equivalence is a major milestone for the livestock sector and the progress made in improving norms and sanitary practices at participating slaughterhouses is here to stay. At the producer level, the livestock field schools and private extensionists co-financed by the project were a major achievement, and piloted successful practices for improving milk productivity significantly. Activities related to access to finance and to the Seal of Quality for dairy products were less effective.

Efficiency: The major obstacle to results achievement for the SAFE project was the lack of progress made in the first two years of the project. Staffing changes made in 2018 greatly accelerated project activities, and the quantity and quality of results achieved in the last two years of the project speak for themselves. However, the delays in the first phase, challenges with the project's M&E systems, large scale of the project's implementation area, and lack of clear criteria for distributing grants were hard to overcome entirely and contributed to the shortfall in achieving the project's results indicator targets.

Impact: The SAFE project's activities demonstrated impact in several areas. Most notably, the project is one of the few to address the livestock producer level in the DR, and for those producers who participated in the livestock field schools and associated technical assistance the impact on productivity has been significant. Most producers surveyed for this evaluation also claim increases in household incomes due to project activities. The introduction of private extensionists has been well-received and promises to be an important part of the value chain if a way to continue their financing is found beyond the end of the project. Improvements in milk quality were made, but improvements including those in transportation and infrastructure at the MCCs are still needed to see the level of progress anticipated in the project's targets for milk quality. Increased market access for beef exports and trade have not seen any impact as of yet, but should equivalence be achieved as is anticipated by most stakeholders we spoke with, then the impact here could be significant as well. At the end of the day, the legacy of the SAFE project will depend very much on reinstatement of FSIS equivalence and on what actions are taken as the project closes to ensure the sustainability of its successful activities.

Sustainability: The SAFE project has had some notable successes, and the techniques taught in the livestock field schools and improvements made in the slaughterhouses are still being used today. However, long-term sustainability will require continued engagement by local stakeholders, and if possible continued investments in project interventions. Most extensionists hired by the project already have stopped providing support to the producers as the project's funding has come to a close. As of yet, no local actors have stepped up to take the lead, and while the technical capacities of POs have been strengthened, they have not embraced a leadership role in moving forward the project's objectives. JAD did indicate that in interviews for this evaluation that they are interested in continuing to support the private extension program, and APROLECHE is another local organization that expressed interest in supporting work to further develop the sector. These organizations are potential catalysts for a coordinated local effort to ensure sustainability. The SAFE project should initiate and/or continue conversations with these organizations and the new government of DR to ensure the continuation the project's successful interventions.



5. Recommendations

5. Recommendations

These recommendations are designed to take the accomplishments of the SAFE project and build upon them in a way that leads to sustainable interventions that grow the beef and dairy sectors through increased productivity, quality, and trade. To develop them, the team drew from the findings of this evaluation, the lessons learned, and the insights of stakeholders we interviewed from the project team, the government, and the livestock (beef and dairy) value chain. We include a frank discussion of several major issues that might normally be considered beyond the scope of a routine evaluation. This is because we have been encouraged to do so in our interviews with USDA, program staff, and local stakeholders; and because we genuinely believe there is potential to build on the work of the SAFE project to continue to upgrade the livestock value chain in the Dominican Republic. It is therefore with the best intentions that we: (i) raise issues related to the original project design, overarching objectives, and associated results frameworks; (ii) recognize management and implementation challenges; (iii) question expectations for working with data; (iv) identify how, where, and to what degree project activities appear to have generated impact; and finally (v) suggest a path forward, with the clear understanding that there is still more work to do. Recommendations related to items (i-iv) are general, while those related to (v) are designed to be immediately actionable in the current context in the Dominican Republic.

Project design, objectives, and results frameworks

Livestock value chains globally pose many unique challenges, requiring constant intensive care in the form of feeding, watering, management, and healthcare⁴². The Dominican Republic is no exception, and there are additional particularities: small market size and island location, recurring droughts, split oversight responsibility between the Ministry of Agriculture and Health, and a custom in some cases of delegating farm management to third parties.

The SAFE project was designed to achieve two objectives, (1) raise productivity, and (2) increase exports. These two objectives do not always naturally pull in the same direction, even when they are for the same product - as smaller producers most in need of improving productivity generally differ from larger producers with export potential. In the case of SAFE, the productivity objective is more relevant for milk while the export objective is more relevant for beef – yet this was not explicitly clarified. Nor was it clear whether the goal was to work with small, medium, or large producers. Perhaps it should have been.

Any value chain has multiple problems at multiple levels. There is a tendency for large donor projects, and especially those funded by the US government, to make large lists of those problems, and to check off the outputs of problem-solving efforts as they are implemented, and then to expect that these will add up. Sometimes they don't⁴³. In the case of SAFE, this can be reflected in the efforts to contact and train large numbers of livestock producers and other stakeholders (sometimes reaching up to 6,000% of targets). Yet, these efforts did not translate into full achievement of the higher-level productivity and quality goals in the dairy value chain. We suggest that the use of a generic USDA results framework

⁴² Don Humpal. Agricultural expert. *Key Informant Interview*. September 2021.

⁴³ See William Easterly. "Multilateral development banks: promoting effectiveness and fighting corruption: "Accountability for multilateral development banks"," Committee on Foreign Relations United States Senate, 2006.

http://williameasterly.files.wordpress.com/2010/09/senateforeignrelationscommittee_oraltestimony_032806.pdf

and the discussion of complexity theory and competing accountability demands in Sarah Holzapfel. "Boosting or Hindering Aid Effectiveness? An Assessment of Systems for Measuring Donor Agency Results," *Public Administration and Development*, vol. 36, no. 1, February 2016, pps 3-19. <https://onlinelibrary.wiley.com/doi/full/10.1002/pad.1749>

within which FFPr projects operate and design their own sub-framework is practical, yet in the reporting from implementers to USDA, may lead to a glossing over of the particular challenges that projects experience and the discussion about how activity indicators are feeding into results. There are also too many indicators, and too many activities, to manage effectively. There was so much effort put in by SAFE staff to conduct outreach in all eleven provinces in order to achieve these goals, whereas it may have been more beneficial to work with a smaller geographical area at first, reaching proof-of-concept with behavior changes achieved through the livestock field schools and the accompanying productivity and quality improvements, and then expanding to other regions. This may also have been more manageable for JAD, the local implementation partner, to handle⁴⁴.

USDA should recognize project results frameworks and ensure that everyone (project team, USDA, external stakeholders) agrees the objectives are feasible to achieve and that activity level outputs can indeed be expected to trigger the achievement of outcomes. External stakeholders can be a valuable voice in this case because they may be more willing than an implementer to holler when they see something wrong. Quality and productivity indicators should be consistent with the measurements used in local markets (unless a part of the intervention is to change measurement norms) so that private sector partners can see clearly the value that is being created. This ground truthing of the results framework and indicators with stakeholders can take time; and should be repeated periodically. If the indicators aren't interesting to the stakeholders (which is sometimes the case) that should be a red flag that the project is overly output-focused.

Below is an analysis of three key challenges the program faced. Following that is a table that presents recommendations for future projects to develop the livestock value chain, whether funded by USDA, other donors active in the Dominican Republic. The final paragraphs detail a set of actions that are appropriate to take regardless of international donor involvement – i.e., relevant for government and local business leaders; and are based on the insights and ideas of local stakeholders interviewed during the evaluation.

1) Management and implementation challenges

Successful leaders of development projects know how to solve problems and work with stakeholders, including donors, to adjust and adapt activities and goals so that the project continues to move in the general direction of the desired outcomes, even if in some cases these are not identical to the planned or expected activities and outcomes. What makes a good – adaptive – leader, however, is not always aligned with the way donors and their implementers screen candidates to be project director at the proposal and project initiation phase⁴⁵.

In the case of SAFE, there was general agreement that the first project management team did not perform as well as hoped, and we as the evaluation team took that statement at face value and don't

⁴⁴ As one stakeholder put it, "JAD was in way over their head with the size and scope of the program, so that impacted how effective they actually were in coordinating these activities, communicating with all the stakeholders, and getting to know the strengths and weaknesses of support institutions in order to strengthen them."

⁴⁵ Screening is more related to credentials, technical experience, and past experience with similar projects or donors. Management experience is considered, but management is not the same as leadership, and development requires leadership. "Soft" skills and ability to persuade are not considered, at least "on paper." Given that project award decisions are made at the same time as staffing decisions, and these are conducted by reviewing proposal documents, there is little opportunity for more nuanced evaluations of project leaders. Some USAID and MCC selection processes recently have begun to require a presentation by the project team prior to award, as CLUSA did before awarding the evaluation contract to Just Results.

recommend spending much time or energy trying to analyze it. We also were told – and in this case the data speaks for itself - that the second project team made incredible strides and that due to them the project was able to achieve the results that it did. This also we do not contest and we commend that second team for its hard work, talent, and performance. That said, it is important not to personalize the performance of projects and rather, ask the question why it was difficult to perform, and how the project could have been better set up for success in the first place.

Most initiatives (start-up business, non-profit, fund-raising campaign, etc.) are asked to start small, prove themselves, and then expand.⁴⁶ Many donor-funded projects, in an effort to solve large problems, set up large teams and structures right from the get-go, without requiring these teams and structures to prove that they can perform and deliver results. Each project is unique, as is each team - and yet so many projects in international development face personnel issues, especially at the beginning. Project directors and component leaders with the right technical qualifications may not mesh well; individuals appointed to represent their organizations in consortium arrangements are not always adequately backed by their organizations nor are they necessarily knowledgeable in how to manage the institutional partnership and make the project work at the same time. At the end of the day, all of this distracts immensely from what should be the most important task at hand: engaging with stakeholders, developing buy-in for a collective vision, and rolling out project activities not for their own sake, but as catalysts for a larger process of transformative change.⁴⁷ How to do that is likely to change over the life of any project; therefore, activities and budgets should be expected to change.

In the case of SAFE, the lost social capital and credibility that came with the early years of struggling, meant that there were serious limits to what the second, highly qualified and motivated, team could do. Cultural norms in the Dominican Republic also favor non-confrontational problem solving, which often takes longer than direct, less diplomatic methods. This was mentioned in the KIIs with project staff and confirmed by the leader of the Dominican data collection team. This is why, when we see what was achieved in such a short time (the increases in milk productivity for farmers receiving multiple visits, the progress towards equivalence, and the successful work-around to ensure the availability of laboratory testing services) we can only say that even more could have been achieved in that same time period if the system for financing and overseeing these types of projects was a bit more flexible in terms of permitting – even demanding – changes in focus and resource allocation as needed.

2) Working with data

Every member of the evaluation team will acknowledge that the data challenges encountered greatly affected the ability to complete the work in a timely manner. Once they were solved, we were able to get what we needed, however, there were many more questions we could have asked and many more comparisons that could have been made if – and only if --- the relevant baseline, mid-term, and program-level information had been gathered from the beginning, checked, cleaned and stored in an

⁴⁶ Neil C. Churchill and Virginia L. Lewis. "The Five Stages of Small Business Growth," *Harvard Business Review*, May 1983. <https://hbr.org/1983/05/the-five-stages-of-small-business-growth>

⁴⁷ Lavagnon A. Ika and Jennifer Donnelly, "Success conditions for international development capacity building projects," *International Journal of Project Management*, vol. 35, no. 1, January 2017, pps 44-63. <https://www.sciencedirect.com/science/article/abs/pii/S0263786316301855>

Radmila Miković, Dejan Petrović, Marko Mihić, Vladimir Obradović, and Marija Todorović. "The integration of social capital and knowledge management – The key challenge for international development and cooperation projects of nonprofit organizations," *International Journal of Project Management*, vol. 38, no. 8, 2020, pps. 515-533. <https://www.sciencedirect.com/science/article/abs/pii/S0263786320300569>

organized fashion, and made available prior to the field work. Questions like changes in household income, which admittedly can be quite difficult to measure, might have been addressed via some proxies. In the DR as elsewhere, most farmers don't keep accurate production records or financials, sometimes related to a lack of education or training but often linked to local customs and norms, as well as fear of increased taxes. As has been done for decades however in other fields such as microfinance or nutrition, there are sometimes proxies for income (such as ownership of cellphones, eating patterns, home improvements, farm improvements) that can be tracked to complement perception data. In this report, the best that could be done was a self-reported perception of "my income increased" or "my income did not increase" due to participation in project activities. The same goes for changes in agricultural practices. Other data such as that related to milk quality or prices, would be valuable for the private sector. Likewise, the registry of producers that the project now possesses, after the work to clean and confirm producer contact information, is something that surpasses what the Ministry of Agriculture has. The Inter-American Development Bank has approved a loan to finance an agricultural census; the Dominican Republic will be borrowing millions of dollars to pay for this census. USDA just spent millions of dollars for a project that gathered data that is relevant to this census.

Going forward, it is recommended to develop a plan by which data collected by the SAFE project (and ideally other development projects) can be pooled and shared with government counterparts, and that lessons learned, and systems developed to track data contribute to the efforts of those institutions to develop and maintain their own systems. Of course, this must be done without violating data privacy principles. The SAFE project did take a step in the direction, by transferring SAFE transferred ownership of the project's PROGIS database to DIGEGA in March 2021.

As mentioned earlier in the section on value chains, and related to the programmatic recommendations that follow, value chain data should be gathered and made available to stakeholders in order to encourage improved performance, competition, reward productivity and quality, increase awareness about how good hygiene and other practices relate to quality and price. Whether or not quality price premiums are being charged is a valuable piece of information that should also be tracked. The days of data serving solely for the project to manage its own activities or report to the client are over. Data is ultimately one of the most valuable assets a program can leave behind, and great care should be taken to consider the best way to do this that contributes to overall health and transparency of a system.⁴⁸

Good data management is considered a best practice, not to be confused with spending money on software. The data framework and use case should drive information technology choices rather than the other way around⁴⁹. As can be seen by the fact that at the end the SAFE project ended up with an adequate system using Microsoft Access and PowerBI with SharePoint for storage and sharing, there are more often than not perfectly adequate off-the-shelf systems available for data storage and management.

⁴⁸ Cameron Neylon. "Compliance Culture or Culture Change? The role of funders in improving data management and sharing practice amongst researchers." *Research Ideas and Outcomes*, vol 3, October 19, 2017.

<https://riojournal.com/articles.php?id=21705>

⁴⁹ Office of Management and Budget (OMB). "Monitoring and Evaluation Guidelines for Federal Departments and Agencies that Administer United States Foreign Assistance," January 11, 2018. <https://www.whitehouse.gov/wp-content/uploads/2017/11/M-18-04-Final.pdf> and IFAD. "A Guide for Project M&E," 2002.

<https://www.ifad.org/documents/38714182/39723123/toc.pdf/e7c718e2-56b9-4f60-b404-3f31448a38a2> pp. 6-7.

3) Impact and targets are not the same

The second SAFE project team naturally gravitated towards the activities that would have the greatest impact, because they were directly related to the higher-level objectives (i.e., exporting beef and increasing milk productivity). However, as discussed above they were limited by a number of factors, some related to project design and others to how international development projects are typically administered. In other words, by the new team took their positions, there was no way to question whether the project should be working in eleven provinces; no particular incentive to focus on areas of the value chain where the greatest leverage, or impact, could be achieved, and no mechanism set up to engage with buyers in a way that would bring a “demand-pull” logic into the change process. Table 16 below summarizes the areas where implementation led to impact and includes supporting data; offers comments on what could have been done (or can still be done) to enhance that impact, and also identifies the areas where impact was not achieved.

Table 16. Successful vs. Unsuccessful Activities and Recommendations for Future Projects

Successful activities	Supporting data	Recommendations
Livestock Field Schools	78% of producers surveyed said the livestock field schools were beneficial for them.	Finding sustainable financing sources for this activity (such as buyer contributions), and mainstreaming methodology with MEGALECHE in addition to the private extensionists.
Private Extension	Surveys show a 15% higher productivity for beneficiary producers than the comparison group. This is in line with gains shown by farm visit data. Banks mentioned they considered the presence of high-quality extension services as a factor that reduced their credit risk.	More work with cooperatives to institutionalize the private extension services, and perhaps develop a system whereby cooperatives and/or members who provide/use these extension services can access funds. More discussion with government actors on how to organize extension and ensure the right incentives.
Selected grants to local organizations that reinforce the practices taught in livestock field schools.	300+ milking parlors built with project financing. Inputs for producers. Grants supporting international TA (e.g., artificial insemination and breeding) and private extensionists (80%-20% cost sharing with POs)	See recommendations below on grant and reimbursable funding. Find ways to allocate international TA effectively by responding directly to specific producer needs and supporting the adoption and follow up of new learning with producers.
Developing a Workaround for LAVECEN	Interviews and visits to laboratories; project records.	Possible <i>ad hoc</i> responsive support to encourage continued upgrading of local capacity. Important that this be done without taking on the large institutional issues that still exist.

Support to DIGEMAPS	DIGEMAPS own ability to tell their story is exceptional.	Review support to software for inspectors. A good initiative but appears back-office centric (a common issue with e-government software). Will require testing and iteration to ensure the process for the enterprises is streamlined.
Support to Slaughterhouses (including mock audits, grants, HAACP training) Market Study (Puerto Rico)	Two participating slaughterhouses (AGROCARNE and MERCARNE) passed the mock audit for FSIS Equivalence conducted by TAMU. Conducted by ASOCARNE President Enrique de Castro and Professor Greg Sullivan of Texas A&M University (TAMU).	Network with Dominican Ambassador in Washington (as is being done) to make sure FSIS conducts the official audit soon. Conduct additional market studies, and follow up to what was done.
Activities that were not successful	Supporting data	Recommendations
Access to Finance	Only 41% of producers and 63% of processors we surveyed said they had access to finance after participation in project activities.	Needs to be designed in coordination with CONALECHE, <i>Banco Agrícola</i> , and private financial institutions. One intervention which may have potential would be to pilot financial products with savings and loan cooperatives linked to the associations of producers and buyers of milk. In partnership with private banks or microfinance institutions, technical assistance could be provided to one or two savings and credit cooperatives that want to work on the issue, financing product startup costs until break-even is reached.
Support to LAVECEN	Interview notes and project records.	It may be better not to engage with LAVECEN until the institutional issues have been resolved. Note that IDB is planning comprehensive support to LAVECEN.
Monitoring and Evaluation (M&E)	Every interview with project staff referenced the issues with M&E.	Identify possible conflicts and gray areas among multiple project objectives and clarify them. Allow for customization of results frameworks and ground-truthing with external stakeholders. Develop a value chain data framework with indicators that make sense to track from the perspective of local stakeholders; from those derive project-level data points, and only after that develop

project-level targets and indicators. Budget for data collection about the value chain at the time of the baseline, the mid-term, and the final evaluation. Ensure project indicators adequately reflect changes in farming practices resulting from specific interventions, for example activities related to genetics and animal reproductive health, milk quality, animal feed, animal health, and farm management.

The path forward

Below are more general recommendations that build on insights and ideas shared during interviews by local value chain stakeholders. These apply more broadly to the development of the value chain and need not be associated with the particular activities that were implemented by SAFE.

Recommendations for future projects in this area fall under five general themes:

1. Collect data all along the value chain as a baseline for the project and for partners.
2. Continue to support livestock field schools and private extension services - with a partner (such as a milk buyer) that provides resources and commits to continue efforts.
3. Continue light support to beef value chain and other potential exporters.
4. Use grant funds to catalyze specific, project-based investment opportunities in both value chains. Meanwhile, encourage the private sector to offer financial services.
5. Lead a collective visioning process involving all stakeholders.

Below are some additional thoughts about how, and in what sequence, to implement the recommendations.

1. Start with lean team and budget and add people and resources as the project proves itself. Maintain the ability to engage consultants and organizations in the provinces, making the project more field centered. Do not personalize project performance, nor underestimate the importance of institutional partnerships and the effort and skills it takes to maintain them.
2. Conduct a thorough value chain analysis including quantitative data on price points, number of enterprises, etc., that will serve as the scaffolding to conceive and organize all interventions. Data collected will be systematized and maintained for tracking over the course of interventions and used to render tangible and quantifiable the coordination of, and synergies with, corresponding interventions by government agencies and other donors.
3. Convene sector vision workshops to design a systems approach to value chain interventions (one for dairy and one for beef). All stakeholders must be represented, including producers, processors, POs, businesses, government, and all active (and inactive but potential) donors. This is the key for ensuring sustainability. The first workshop could be national, followed by provincial level workshops

in up to three provinces where uptake has been high for the new practices, such as: Puerto Plata, Monte Plata, Duarte, Santiago Rodriguez, and Dajabón⁵⁰. The sector vision workshops could serve as a platform for local institutions to make long-term commitments towards the overall vision.

Interventions to be discussed and iterated through the sector vision workshops could include:

- Systematic outreach to buyers and development of a demand-pull strategy for each sub-sector (beef and dairy).
- Work with government to simplify government procedures that affect the livestock sector (e.g., procurement, food safety), and review and reform of procedures and regulations related to cooperatives and associations.
- Continued support for successful interventions from SAFE – perhaps organized differently – including:
 - a) expansion of private extensionists (requires conversation with government about role of MEGALECHE, and with government, donors, and buyers about ways to finance extension services through matching grants or other means)
 - b) Continuation of livestock field school (LFS) methodology, and expansion of its use throughout the country (potential for CONALECHE to support and MEGALECHE to adopt as well).
- Upgrading the dairy value chain to build on the successful interventions of the SAFE project:
 - a) Support for improved pastures, livestock feed, and equipment.
 - b) Continued support for genetic improvements and artificial insemination practices building on the work done by the SAFE project.
 - c) Strengthen transport infrastructure, especially cold storage, to prevent milk quality degradation between farm and MCC.
 - d) Address need for access to electricity, including provision of solar panels.
- Continued light support to the beef value chain to build on success of achieving Equivalence:
 - a) Strengthening of the primary link in the beef value chain to ensure continued ability to export, including continued progress on productivity, health, genetics, and traceability.
 - b) Implement an automated meat inspection management system: while not required for Equivalence this will streamline processes that are currently conducted manually allowing for greater focus on other areas of need (this is an initiative which has already been proposed by the project).
 - c) Include the cost of the official meat analysis in the national budget, so DIGEMAPS can cover both microbiology and chemical residue tests.
 - d) Examine potential for a national fund for the beef sector, similar to CONALECHE for the milk sector.

4. Develop a small grants program that minimizes administrative burden but requires proactive goal setting and resource contributions from organizations seeking grants. Prior to grant announcements

⁵⁰ Similarly, if one were to turn back time to the beginning of the project, the recommendation would have been to concentrate in provinces with significant dairy activity where the livestock field schools could have served as a major proof-of-concept and then expanded to the rest of the country. Those provinces could have been, for example: Dajabon, Santiago Rodriguez, Puerto Plata and San Juan.

or awards, develop a set of common-sense criteria in meetings with value chain stakeholders, and ensure a communications strategy is in place so that potential beneficiaries are aware of them and that they are easily accessible. One method that has worked well in other programs is to ask participants to make commitments in each visioning workshop, and then use grant funding to support -- via partial funding -- initiatives that stakeholders have committed to. In this system the scope is less important than the commitment -- i.e., even things that might seem to be slightly out of scope could be worth supporting in a minor way, in order to build stakeholder commitment and help "crowd in" other actors, funders, and lead to achievements⁵¹. The lean team should recruit other donors, including corporate value chain actors, to contribute to the fund, or to offer their own branded support for activities through a secretariat that is set up to follow through on the workshops and housed in a local institution. The feasibility of including reimbursable funds (i.e., a blended finance fund) in addition to grants should be explored. Any grants provided should have a clear and transparent selection protocol and clear incentives for recipients to self-finance or match contributions so that activities do not become dependent on the long-term continuation of grants. An additional possibility mentioned above, could be the creation of a pilot rotating fund in conjunction with an association and a financial institution like ADEMI or ADOPEM and give them technical assistance and funding until it has achieved a break-even point that proves sustainability.

5. As has been discussed throughout this report, the SAFE project had two overarching objectives related to improving the performance of the livestock sector in the Dominican Republic; one in the beef value chain (increased exports through achieving FSIS equivalence), and the other in the dairy value chain (increasing productivity as measured by liters/cow/day). While these two high level indicators were clearly tracked, the more detailed indicators used to track progress did not provide supporting evidence. The vast majority of indicators focused on training, assessments, and meetings. Changes in farming practices were measured, but only in regard to farm management practices including governance, administration, and financial management.

A set of indicators precisely tailored to the interventions is recommended for future projects (or would have been beneficial if integrated during mid-course adjustments to this project). For example, the livestock field schools specifically targeted a set of good practices, including genetics and animal reproductive health, milk quality, animal feed, animal health, and farm management. Some examples of indicators that could have been tracked in order to better capture changes in key farming practices related to the overarching objectives of the project are: 1) % of dry cows per farm, 2) % of pregnant cows per farm, 3) % of milking cows; 4) kilograms (kg) beef per animal per day; 5) kg of dry mass per animal; 6) increased profitability and household income.

Figure 21 indicates points in the value chain (indicated in blue ovals) where potential activities listed above can be included in future projects.

⁵¹ FHI360 for USAID Hygiene Improvement Project. *Whole System in the Room Strategizing Tools*. Retrieved from - <http://hip.fhi360.org/file/29602/WSR%20Strategizing%20Tools.pdf>

Tinc, Pamela J., Paul Ayers, John J. May, Mark A. Purschwitz, Samantha Park, Barbara Bayes, and Julie Sorensen. "Implementing a National Tractor Safety Program: Using "Whole System in a Room" to Mobilize Partners and Implement Solutions." *Journal of Agromedicine* 21, no. 2 (2016): 127-131.

DFID. *Tools for Development: A handbook for those engaged in development activity*. March 2003. Retrieved from - http://www.mspguide.org/sites/default/files/tool/dfid_toolsfordevelopment.pdf

Figure 21. Potential Activities for Future Projects

