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DISCLAIMER: the author's views expressed in this publication do not necessarily reflect the views of the United States Department of Agriculture (USDA) or the United States Government (USG).

Project Baseline Study

Status of the Livestock Sector in Eleven Provinces of the Dominican Republic

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ACRONYMS

ADHA	Asociación Dominicana de Hacendados y Agricultores
AGAMPTA	Asociación de Ganaderos de Monte Plata
BAGRÍCOLA	Banco Agrícola de la República Dominicana
BCRD	Banco Central de la República Dominicana
CAFTA-DR	Central America Free Trade Agreement – Dominican Republic
CBI	Cooperative Business International
CEPAL	Comisión Económica para América Latina y El Caribe
CONALECHE	Consejo Nacional para la Reglamentación y Fomento de la Industria Lechera
CTC	Consejo Técnico Consultivo del Proyecto
DIGEGA	Dirección General de Ganadería, Ministry of Agriculture
DR	Dominican Republic
FAD	Food Assistance Service of FAS
FAS	Foreign Agriculture Service of USDA
FEDA	Fondo Especial de Desarrollo Agropecuario
FTA	Free Trade Agreement
FEDEGANO	Federation of Livestock Farmers of the Northwest
FFPr Indicator	Food for Progress indicator
IAD	Instituto Agrario Dominicano
IDIAF	Instituto de Investigaciones Agrícolas y Forestales
JAD	Junta Agroempresarial Dominicana
LAVECEN	Laboratorio Veterinario Central, Ministry of Agriculture
lcd	Liters of milk per cow per day (l/c-d), an indicator of farm productivity
MA	Ministry of Agriculture
M&E	Monitoring & Evaluation
MoH	Ministry of Health
NCBA CLUSA	National Cooperative Business Association – Cooperative League of the USA
ONE	Oficina Nacional de Estadística
PMP	Performance Monitoring Plan (indicators to measure Project performance)
PO	Producers Organization (<i>Asociations and federations</i>)
PROGANA	Local name of the SAFE Project
REDDOM	Rural Economic Development Dominicana
SAFE	Safe Agriculture/Food Export Program – DR or PROGANA (the Project)
SO	Strategic Objective
SPS	Sanitary and Phytosanitary Standards – USDA
TAMU	Texas A&M University
TOR	Terms of Reference
USDA	United States Department of Agriculture

Project Baseline Study

Status of the Livestock Sector in Eleven Provinces of the Dominican Republic

EXECUTIVE SUMMARY

The Baseline Study aims to describe the current state of the livestock sector in the 11 provinces¹ of the Dominican Republic, selected for Project implementation. It has four specific objectives:

- i. To determine Project baseline values and sources for PMP indicators, which include 16 FFPr standard (mandatory) indicators;
- ii. To establish a reference point (baseline) for mid-term and final evaluations;
- iii. To assist in the identification of activities to be supported by the Project; and,
- iv. To contribute to the livestock subsector on-going diagnosis and provide a basis for further analysis.

This description includes local expert opinions on probable causes of problems commonly identified in the sector. The available literature was reviewed and various instruments to collect primary information were used, namely, a Farm Survey of 505 farms in the 11 provinces and surveys of milk collection centers (MCC) and small beef and dairy processors. Focus groups and extensive interviews with farmers and farm visits were also part of primary sources used.

The study's central elements are the description of the two "value chains" (dairy and beef) and the state of the main "support services" to the sector: extension services, credit, producer organizations, input suppliers and public policy.

The Project,² as designed by NCBA CLUSA following USDA guidelines, has two Strategic Objectives (SO): (1) to increase productivity in the livestock sector and (2) to expand trade of livestock products for the target value chains (dairy and beef). These objectives will be achieved through a sequence of "results" and "activities" stated in the **Results Frameworks** developed for the Foreign Agricultural Service (FAS), Food For Progress (FFPr) projects. Expected results include increased use of improved agricultural techniques; improved farm management; implementation of trade measures (US equivalency requirements) to facilitate beef exports; and, increasing the volume and quality of milk available to the dairy processing industry.

¹ La Altagracia, El Seibo, Hato Mayor, Monte Plata, Duarte, Maria Trinidad Sanche, Puerto Plata, Santiago Rodríguez, Dajabon, Independencia y San Juan.

² The "Project" in this document refers to the: "USDA/NCBA CLUSA Safe Agriculture/Food Export Program (SAFE) - Dominican Republic", known locally as "*Fortaleciendo la Cadena de Valor de la Ganadería Dominicana*" (PROGANA).

Most Project “activities”, the basic units of Project implementation, will be financed by “*cofinanciamientos*” or matching grants (grants that require a contribution by beneficiaries).³ Some activities, such as promotional or informational events, document preparation for regulatory reforms and related goods and services may be financed by grants without matching contributions or by direct expenses by the implementing unit.⁴

These “activities” refer to outputs or set of goods and services necessary to achieve a given result or outcome as stated in the **Results Frameworks (Annex 1)**. The University of Texas, Borlaug Institute, and Cooperative Business International (CBI) will assist the Project in the development of techniques and technologies and training, activities in support of the livestock sector.

The 11 provinces for Project implementation, of a total of 31 provinces in the country, were selected on the basis of areas covered by 5 federations of livestock farmers’ associations that operate nationally and the provinces most representative of dairy and beef farming, according to NBCA CLUSA staff.

Information sources on the livestock subsector in the Dominican Republic are limited. The last agricultural census took place in 1982, although there are various studies, reports, presentations, small surveys and - above all – local expert knowledge, especially on the dairy “value chain”. These sources complemented the main primary source of this study: The Project Baseline Farm Survey.

The Project concept refers to “value chains” in dairy and beef, not only the primary farming activity; therefore, in addition to the Farm Survey, three smaller surveys were conducted for this study: (i) Survey of Milk Collection Centers (MCC); (ii) Survey of slaughterhouses; and (iii) Survey of small dairy processors (cheese, yogurt and sweets artisan operations). Information from these surveys was complemented with two focus groups on extension services and producer organizations (PO) and semi-structured interviews of input suppliers and policy analysts. One of these interviews, small meat packing establishments, became a small survey that identified relevant issues on sanitary regulation, financial viability and technical assistance.

The small surveys did not have the statistical rigor of the Farm Survey, but they were designed on the basis of extensive background information (qualitative, for the most part) on each activity and its relevancy within the value chain, according to local experts and extension personal. For convenience and time limitations, data collection for these surveys followed the routes of the Farm Survey.

The livestock sector in the DR has some basic and general characteristics: duality, informality and low productivity. There are a few highly productive farms and many traditional, low-productivity, small family units; a few modern beef processors ready to export and many municipal slaughterhouses that can barely meet minimum sanitary standards; a few large dairy processors that supply major supermarkets and a national school program and numerous “cheese makers” (*queserías*) that process low-quality milk and operate in questionable sanitary conditions. Very few farms keep cattle registers. Most small dairy and

³ The Project will encourage leveraging of resources from private sector sources, either from beneficiaries’ own funds, bank loans or other sources.

⁴ NCBA CLUSA implementing unit is preparing a manual for this purpose.

beef processors lack sanitary permits. The “quality-price structure” in the dairy value chain is considered a perverse⁵ incentive for dairy farmers.

In the aggregate, the agricultural sector employed 575,499 people in 2015, 13.4% of total employment (according to ONE statistics) and accounted for only 5.8% of GDP (according to BCRD data), reflecting its low productivity with respect to other sectors of the economy. Women participation was only 5.6% of total employment in agriculture. In livestock farms only 2% of farm workers are women, while 5% are farm owners, according to the Baseline Farm Survey.

Approximately 1.0 million hectares are dedicated to cattle farming (ONE, 2016); 54% of all farms are less than 6.25 hectares (100 tareas) in size, 88% less than 312.5 Ha (5,000 tareas). There are 319,676 farm units in the country, according to *Precenso* data; 47,910 are cattle farms; of these, 27,265 are located in the 11 provinces selected for Project implementation; 15.4% are less than 1 Ha in size, less than 1% are larger than 312.5 Ha. The rest, 84% (20,335 farms), were selected to design the sampling frame for the farm survey.

Most production of beef is sold in the domestic market. Beef exports were less than US\$1.0 million, dairy exports reached US\$8.0 million in 2014. Beef imports were US\$36.0 million and milk imports (powder and liquid) were US\$129.0 million (Ministerio de Agricultura, 2015). These figures reflect the opportunities of the livestock sector to increase its share of the respective markets and explains the Project’s Strategic Objectives directed to increasing productivity and trade expansion.

It is important to recognize that the livestock sector operates in a cultural, social and political context that affects its performance. Many farmers, small, medium and large, do not operate their farms as business enterprises, but as holders of wealth or assets, and even as status symbols; some of them are operated by caretakers, not business managers. Enforcing sanitary regulations on small processors of cheese and cooked meats would have a serious impact on their finances as they run low cost, low quality, low price operations. Producer Organizations (PO), besides providing an array of services to their members, have effective political influence in the rural sector. Adequate regulations exist but enforcement is weak because – among other reasons – it could have adverse social, economic and political impacts on farmers and consumers.

Dairy farming. Two fundamental indicators of dairy farm productivity in the context of Project objectives are: the number of liters per cow per day (l/c-d) or “lcd”; and, the quality of milk delivered to MCCs. The various studies coincide on the low productivity of dairy farms by reporting lcd indicators regarded as very “low”, lower than 7.0 lcd.

⁵ Quality grades are not determined by farmers or MCC but by processors; a farmer could take grade A milk to the MCC but, because of MCC handling, it gets mixed with lower grades and the farmer gets paid for grade B or C, which carry lower prices, a disincentive for farmers to deliver grade A milk.

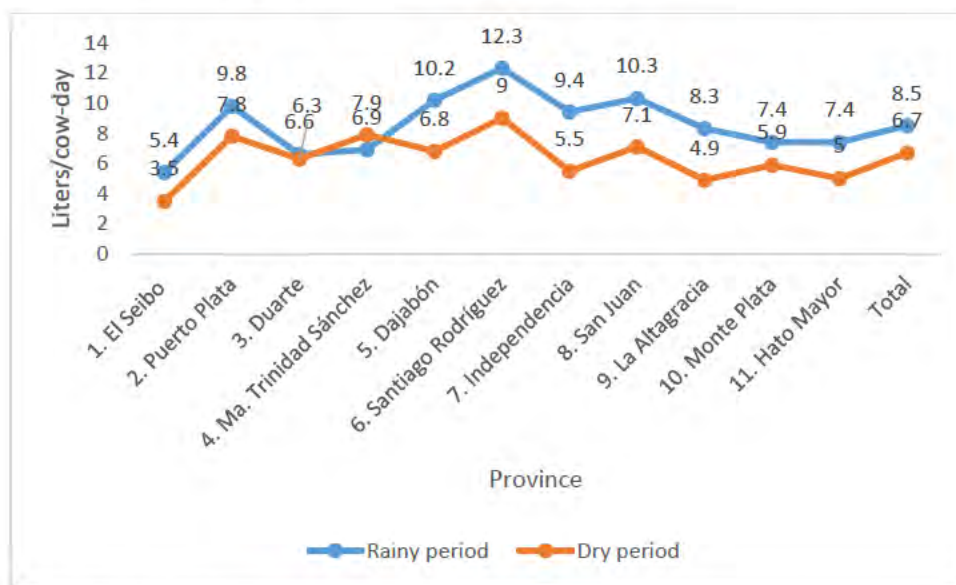


Figure 1. Dairy farm productivity: liters per cow per day

According to the Farm Survey, average lcd for all farms in the sample of 505 farms was 7.5 (standard deviation: 2.58). There is a significant difference between the rainy (8.5) and dry (6.7) periods for most provinces. It also shows a wide range, with many farms below 5.0 lcd and several provinces with averages above 9.0 lcd. Project target is set at 11.25 lcd in 2020, a 10% annual increase from baseline value. Several provinces and many farms already report higher values, which reflect the need to assist below average productivity farms that show potential for feasible development.

With respect to “quality of milk delivered to MCCs”, another key indicator of farm productivity, a basic problem is that most farms do not have testing or grading facilities or equipment, or cooling tanks, so they have to rely on the MCC to determine quality when milk is delivered. Transportation from farm to MCC (time and temperature, among other factors) could be the main determinant of milk quality delivered to MCCs.

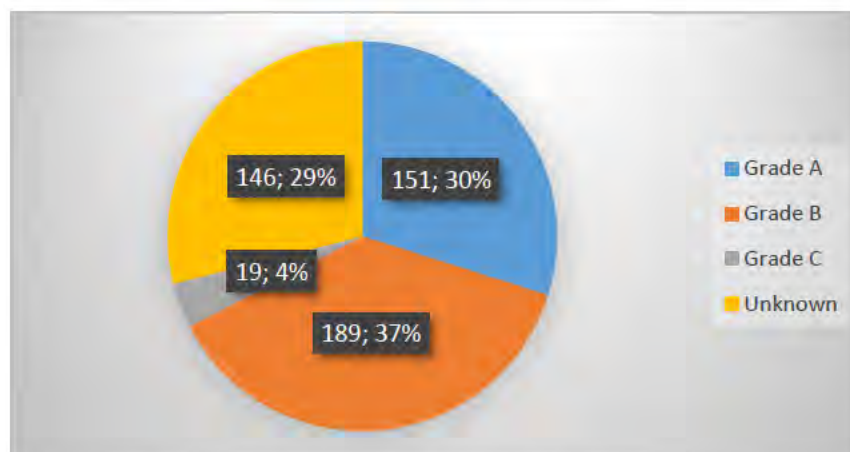


Figure 2. Quality of milk delivered to MCCs, according to farmers

A large fraction (30% or 151 farms) of respondents did not know the quality of milk they produce, 41% produced grades B and C milk; only 29% (146 farms) produced grade A milk. Most farmers (62% or 151 farmers) declared that their milk has never been rejected at the MCC. Only 8% of farms had been rejected more than twice.

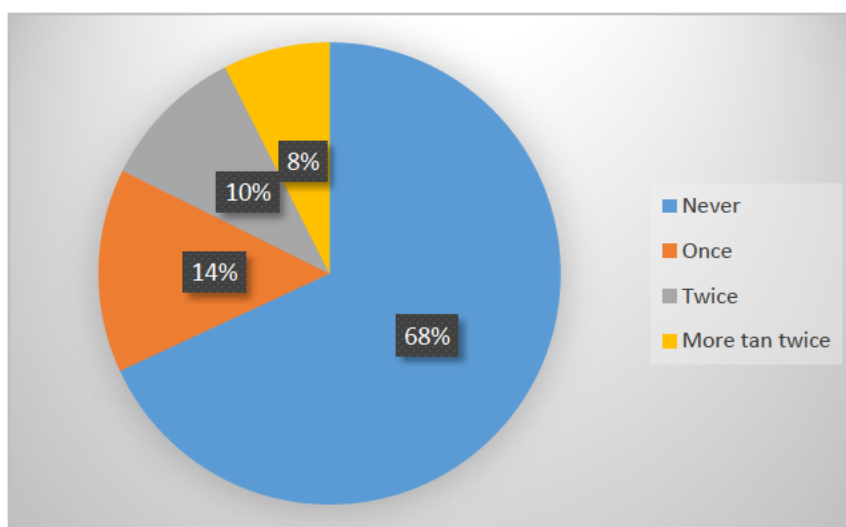


Figure 3. Frequency of rejections at MCC

Clearly, the Project may implement activities to help farmers improve the percentage of milk A and reduce the rejections at the MCC, although it will be necessary to identify those factors that contribute more efficiently to achieve these results. One of these factors is the improvement of MCCs.

Milk collection centers (MCC) are the main link between dairy farmers and different forms of artisanal and industrial milk processing. After milk is received from farmers, MCC are responsible for distributing it to end buyers or processors, collect revenue from sales and distribute them to farmers. MCC discount DR\$1 per liter for their service and plant maintenance.

One of the important procedures in MCC is measuring milk quality at the time of delivery by farmers. Of the 57 MCC only one has a laboratory, which performs 6 tests: antibiotics, acidity, somatic cells, fat, peroxide, and water content by Cryoscopy test. All 57 MCC perform acidity test and 30 antibiotics test. These two tests are not sufficient to determine milk grade received by the MCC, therefore, final grading is determined by processors independently of milk grade brought to the centers.

The main deficiencies in MCC are associated with equipment and facilities to ensure a safe and sanitary environment for handling milk. Washing is deficient, 51 MCC lack washing system vapor tanks, containers and utensils, 49 MCCs have no pump or mechanical washing system, just 5 have this equipment, half of the MCC do not wash providers' milk containers in the collection center, as a preventive measure when reused, they do not consider that washing in farm is less effective because it increases the bacterial load due to the time elapsed. Although most MCC (48) believe that they are isolated from sources of pollution, the facilities of 49 of them do not have wastewater treatment, direct effluent from washing accumulates in traditional sewer systems, many MCC are not connected to evacuation networks, which can be a local source of infection, 60% of MCC personnel do not have a health card, 60% show deficiencies in the control of rodents and insects.

According to MCC operators, the problems that most affect their operation are: i) the price of electricity, ii) the quality of the milk delivered by farmers, iii) the selling price of milk, which has suffered heavy downward variations in the last year, iv) the price of inputs, v) access to finance, vi) lack of training, vii) deficient facilities and viii) the state of the roads.

Investment in improving MCCs is most likely to be highly efficient because of their impact on the quality-price structure that affects farmers' incentives to produce higher quality milk and obtain higher prices at a modest investment cost.

Dairy processors. As with every other instance in the dairy and beef value chains, there is a wide range of milk processors sizes, technologies and quality characteristics. For the large processors (Rica, Nestlé, Parmalat and others), that transform raw milk into consumer products, like liquid milk sold at local supermarkets, and even powder milk (imported and domestic), the main issues are related to trade regulation, in particular, subsidies of imported dairy products in the countries of origin and tariffs, which are complex and constantly changing, in the framework of various trade agreements.

The main questions for this group are related to the feasibility of expanding the local processors' share of the domestic market, namely: can they compete with subsidized imports? Is national production of milk sufficient (in quantity and quality) to meet processor' potential demand? National brands have a massive presence in the domestic market but, according to (Ponce Ceballos, Pastor, 2016), *"La importación de leche fluida se incrementó 30 veces del 2012 al 2015 y sigue subiendo"* (Imports of liquid milk increased 30 times between 2012 and 2015 and keep increasing).

To the extent that Project objectives (FFPr SO2) call for *"Expanded trade of agricultural products, domestic, regional and international"*, NCBA CLUSA, its CTC and its partner JAD, the MA and other agencies in charge of international trade policy should follow up recommended policy adjustments to promote an increasing and competitive share of the local dairy market within the framework of current trade agreements. (See *"Recommendations for developing a National Livestock Improvement Program"* (Ponce Ceballos, Pastor, 2015) and **section 5.5**).

Small dairy processors. At the other end of the spectrum, some one-room artisan cheese manufacturers process low quality milk under questionable sanitary conditions. This group, which includes medium size establishments, use 60%⁶ of national milk production (Ponce Ceballos, Pastor, 2016), mostly lower grade milk. However, even these low-price producers feel affected by "cheap cheese imports". They also act as shock absorber when there is an excess of lower quality milk in the market. There are social as well as economic issues in the possible transformation of this market; they generate jobs and keep low quality milk suppliers viable.

According to (Ponce Ceballos, Pastor, 2016), *"The problem is not only the high cost of domestic cheese, which cannot compete with imported products, but the low efficiency, quality and performance of small and medium processors"*.

A survey was conducted among small cheese manufacturers (*"queserías"*), yogurt and sweets processors. It is estimated that there are 520 small processors nationally, mainly artisan cheese manufacturers (Thinkbig, 2015). There is no official registry of these establishments, most of them function informally. Of 26 visited, only one had a sanitary permit, which is required by law; most processors interviewed do not have odor extraction equipment or adequate washing equipment, do not manage liquid or solid waste properly, do not control the presence of insects or rodents in their facilities, half of personnel in operations do not have health cards. Of these, 20 establishments produced 18,171 lbs. of dairy products, mainly

⁶ Another source (Thinkbig, 2015) estimates this consumption at 50%; CONALECHE's estimate cited in (Ponce Ceballos, Pastor, 2015) is 54%.

cheese, and processed 72,500 liters of milk daily. This group generated 111 permanent and 24 part-time jobs and women's participation was over 50%. All respondents cited as main concerns: costs of electricity and competition (domestic and international prices).

Although most plants surveyed do not meet sanitary standards, they are quite dynamic. They receive on average 28,000 liters of milk daily directly from 390 farms and 6 MCC at an average price of RD\$18; 80% of cheese factories take in "warm milk", only one of 19 receives cold milk; 38% perform quality control tests. Contamination risk is high due to lack of adequate equipment and handling practices.

The beef value chain. Literature and information on the beef value chain is limited, most literature on livestock is concentrated on the dairy subsector. When survey respondents were asked about the farm's "type of production", only 17 respondents (3.4%) indicated "beef"; 81 (16%) responded: "double purpose" (beef and dairy). Most farmers, (407 or 80.6%), perceive their own farms as dairy farms. However, when technical details were requested, 65 respondents (12.9%) described beef operations taking place in their farms, although they could be also "double purpose" farms, 38 of 65 "beef farms" also produce milk and reported its quality. According to this criterion (technical aspects of production), 430 farms (85%) were reported to produce milk. Some have marginal operations as beef cattle farms. These results mainly reflect the informality of the sector, only 2.6% of farms maintain cattle registers, very few farms specialize in beef or milk.

The most frequently discussed general issues in the beef value chain are related to the possibilities and requirements for exporting to the U.S. market, its impact and the efficiency of beef cattle farming as measured by the age and weight at which cattle is taken to the slaughterhouse. However, most farms do not keep registers, only 13 of 65 beef producing farms do so. The beef value chain also shows an extreme duality in its structure, with a few modern, vertically integrated post-farm operations, likely to qualify for exports in the short-run, and many small processors that produce low cost, low quality, low price consumer products (various types of sausages and other cooked products).

Beef cattle farming. Cattle raised for beef is estimated at 572,000 heads in 2016 (Morrobel, José A., 2016). According to the Farm Survey, there is an average of 147.2 heads per farm, which means that in the 11 Project provinces there are 383,383 heads or 67% of the national estimate. As mentioned, according to the Farm Survey, only 65 (12.9%) of 505 farms declared to specialize in beef production by responding to the related technical questions. More than half (38) of beef farms also produced milk, delivered it to MCC and reported their quality. Cattle race or brand is often mentioned – more so in dairy farms – in terms of the need to adapt cattle to local conditions. Most beef farms use "mestiza" as the main or only race of cattle for beef production. Only in one Project-selected province (Duarte), Brahma is used. The work by TAMU and CBI on livestock technology should contribute to this assessment.

With respect to the main problems identified by beef farmers, more than 50% of farmers report the quantity and quality of pastures as two of the five main problems, closely follow by prices of balanced feed, water sources and the price of medicine.

Beef producing farms sell their stock to intermediaries, slaughterhouses (small and industrial or Types A and B), meatpacking establishments and other farmers.

Technical assistance is a main issue with respect to beef farms. Half of beef farms surveyed reported having received technical assistance. However, close to one-half of beef farms expressed their need to receive

technical assistance in the same topics. An in-depth evaluation should be made with respect to the effectiveness of technical assistance provided.

Slaughterhouses, beef processors. According to (Morrobel, José A., 2016), there are 162 slaughterhouses nationally, where an average of 700 units are processed daily. However, this average sums-up a wide range, from small municipal facilities that process as few as one unit per day to modern large processors with more than 800 units per day. Only 7 beef processors supply 85% of the domestic market, according to this source. Slaughterhouses-beef processors may be classified in three general categories:

Type A: Modern beef processors, vertically integrated, which could become exporters in the short-run, when equivalence standards are in place, they require minor adjustments. There are between 5 and 10 establishments identified in this category.

Type B: Private traditional slaughterhouses that provide services to beef distributors, require substantial adjustments and investments, and are unlikely to be eligible for export in the short run.

Type C: Municipal slaughterhouses that require substantial improvements to meet minimum sanitary and environmental requirements.

A survey was prepared with a list of 76 items between facilities and procedures required by a modern slaughterhouse (Type A). The 2 modern facilities in the sample, the same facilities that the government's working group has identified to be most likely eligible for exporting in the short-run when equivalence is established, have identical scores: 70/76, while the municipal slaughterhouses only had 12/76.

The main constraints currently are related to the government's capacity to appoint and train permanent inspectors in each facility as required by equivalence standards. Also, laboratory capacity needs to be improved. There are two consultant reports on microbiology tests and methods related to LAVACEN requirements and beef export possibilities to the U.S. (Cook, Jr., L. Victor, 2015) and MoH inspection personnel required by equivalence standards (McDermott, Steven, 2015). They provide detailed recommendations on the specific aspects that must be implemented. There is a MA-MOH working group and a CTC monitoring subcommittee working on these issues in the context of the equivalence objective, which is fairly advanced. The current state of procedures development for achieving equivalence, the capacity of at least 5 candidates for exports and the status of LAVACEN may be taken as baseline indicators for Project monitoring and evaluation.

Small beef processors – meatpacking establishments. Cooked meat (beef and pork), in the form of sausages, salamis and other popular delicatessen, is consumed by more than 90% of the Dominican population. Production is supposed to be regulated by *Comisión Nacional de Normas del Ministerio de Industria y Comercio* (Cominor) (National Standards Commission of the Ministry of Industry and Commerce). Regulation 329 is comprehensive in establishing the regulatory framework applicable to this sector, however, no official registry exists of meatpacking plants. Some sources, estimate the existence of more than 100 establishments (Esteban Delgado, s. f.) in the country, only 20 are said to be registered (Evaristo Rubens, 2012).

Most production seems to take place outside current standards. 15 interviews were programmed for this assessment but only 5 responded. Many processors do not allow visits or provide information, even though some of the work takes place in the open, it literally spills onto the streets. Hygienic conditions are evidently inadequate and processors are cautious in providing information.

In the sample of 5 plants visited, 3 function without association to any organization; 2 belong to the “*Asociación de Productores de Embutidos*” (Sausage Producers Association). They employ a total of 37 women and 152 men on a full-time basis.

Four plants purchase from 83 suppliers 93.000 Kg of beef and pork products per month to produce mainly salami, ham and ham spread. No information on sales was available. The most common operational deficiencies observed are: the absence of hot water supply for washing facilities and utensils; lack of proper timing for post-grinding and temperatures above 7°C; 3 plants do not have protocols for environmental management; plants do not apply HACCP or control of critical points, even though they are part of Regulation 329; there are no training plans. Only one processor reported not having received technical assistance, the rest have received public and private assistance.

Improvement of sanitary conditions and compliance with regulations are clear priorities. This sector is not expected to participate in exports but the domestic market (including the tourist sector) also requires quality and safe products. It must be recognized also that compliance with sanitary and quality standards may imply increasing costs, but it is a tendency that should be promoted.

Public and private support services. Support services (Producer associations, extension agents, input and credit suppliers, and public policies and their enforcement) are the vehicles by which the Project will implement activities that generate results and eventually achieve Project objectives as designed by the Results Frameworks. For this reason, it is important to assess their current capacity and requirements.

Credit and Credit Extension. Livestock financing comes mainly from *Banco Agrícola de la República Dominicana (BAGRÍCOLA)*, a public sector bank, and CONALECHE, a public sector program with participation of private sector organizations in partnership with BAGRÍCOLA. Other lenders such as private commercial banks and cooperatives have a minor share of financing in this subsector.

Lending to milk producers is facilitated by payment arrangements through processors from the proceeds of milk purchases and PO intermediation (“bridge credit”). Some PO take loans from banks for on-lending to members. According to the Farm Survey, 59% of respondents claimed to have received credit in the last three years. The share of private banks is only 13%, 72% of farmers in the sample went to CONALECHE and BAGRÍCOLA for financial services.

At the end of the first trimester of 2016, BAGRÍCOLA had the equivalent of US\$42.5 million in 4,019 loans outstanding in the Project selected provinces. The average balance was \$10,571. During the last 14 years, CONALECHE made 2,611 loans in the 11 selected provinces with a total of RD\$1,844 million (US\$40.3 million), an average of US\$10,500 per loan. Interest rates vary but are lower than commercial rates.

A variety of activities are eligible for this type of credit: cattle purchases; farm improvements, including construction and repairs of farm infrastructure, in-farm housing, milk marketing costs, and cheese manufacturing. Quarterly follow up of BAGRÍCOLA and CONALECHE lending to livestock farmers is recommended.

Almost all credit agents have technical backgrounds in agriculture (agronomic engineers, mainly), none in financial areas. Moreover, 9 of 25 have not received training while on the job and none has received training in credit extension or financial aspects, despite the fact that 13 of 25 agents have more than 5 years on the job; 7, between 1 and 5 years; and, only 5 have been on the job less than one year.

Most credit extension agents (24 out of 25) identified training requirements in credit, finance, project formulation and evaluation and related topics. Many agents mentioned as requirements “farm or real estate assessment”, which reflects the fact that most of their duties only require analysis of property values related to mortgages or collateral required by banks, and loan collection.

Credit extension is at an elementary level, concentrated in verifying property values and collecting payments. It is necessary to upgrade extension services to the level of financial advisory (not only to farmers but to POs and processors), especially in an environment expected to demand investments in new techniques and technologies.

Since the Results Frameworks call for “Increased use of financial services” and “Improved farm management (operational and financial)”, the Project, in coordination with *Banco Agrícola*, but open to credit cooperatives and other private credit suppliers, should design a training program in credit extension concentrated on financial aspects, in particular the financial viability of new processes as more farms are operated as business concerns instead of the prevailing informal model. It is expected that this would improve access to formal credit sources, which would be required by the implementation of “improved techniques and technologies” and other Project activities.

Technical assistance and extension services. Information on technical assistance (TA) services provided and required was requested from every instance of the dairy and beef value chains, with similar results. The majority of farmers and processors have received TA but require additional assistance on the same topics. An in-depth analysis of TA effectiveness is required; in particular, the relevancy of TA contents and its implementation. It is important to observe that the Project emphasizes implementation of “techniques and technologies” as the main instrument of improving productivity and expand trade.

MEGALECHE is a DIGEGA (Department of MA) program operated for the last 15 years to provide extension services for dairy farmers. Its extension agents are either veterinary doctors or agronomic engineers, some with training in animal sciences and related topics. There are 36 field technicians working at the national level. All of the MEGALECHE focus group participants (24) have received training in dairy-related areas during the last four years and all of them expressed the requirements of additional training in various areas related to their work (animal health, nutrition, milk quality, reproductive aspects, etc.).

No performance reports are available. Implementation of new “techniques and technologies” will require additional training of extension agents. The private sector extension system needs strengthening through POs.

Producer Organizations (PO) are a fundamental element in the structure of the livestock sector, they are also strategic partners in Project implementation. Almost all Project activities will involve a PO, beneficiaries will be members of a PO. Grants will be made mainly through POs. In order for POs to fulfill its role in Project implementation activities, they will have to meet criteria established by the Project; and, in order to meet these criteria, many of them will require assistance to strengthen their capabilities. Project success will be determined to some extent by the performance of POs and the Project’s contribution to their strengthening.

According to the Farm Survey, more than 80% of farmers in the sample belong to an association, 5.5% to a cooperative; 14% are independent.

In the 11 target provinces, there are 5 federations organized according to region: Cibao Central, FEDACIBAO; Costa Norte, FEDEGANORTE; Línea Noroeste, FEDEGANO; Región Este, FEDAGARE; Región Sur, FEGASUR. According to these federations, they represent more than 250 cattle farming associations nation-wide.

REDDOM conducted an inventory of POs that lists 123 associations of which 83 operate in the Project area. This inventory identified 58 associations (of a total of 83) in the Project area with 4,250 members. It is estimated that 30% of cattle farm operators (approx. 20,000) in the Project area are members of a PO associated with a federation.

With respect to these associations technical, financial and management capacity, two groups are clearly distinguished. One group – 10 to 14 associations – present adequate operational capacity, offices and physical infrastructure, functioning organizational structure, adequate communications and accounting procedures. A second group – 5 to 7 associations – require strengthening, lack physical infrastructure for operations, organizational procedures, accounting systems and Internet. They have a high rate of overdue membership payments. This group requires further individual diagnosis in order to determine viable activities necessary to meet eligibility criteria for Project support.

The most active associations sell agricultural inputs to their members. The 6 largest POs sold more than DR\$2.5 million (US\$54,700) per month; 15 POs that operate MCCs took in 1.869.800 liters of milk in June 2016, 12 associations represented in the focus group hosted 63 training events, 14 POs provided technical assistance in the month of June 2016 (137 farm visits) 9 associations have agreements with financial institutions on behalf of their members, 11 POs have agreements with government institutions for technology transfer activities, 12 have executed training events in the last year. Association members have a positive perception of their organizations.

Because of their institutional and financial capacity, these associations, as well as their federations could be important assets as vehicles for Project implementation. For example, they could co-finance and assist in the implementation of improvements to MCCs taking into account that associations – even those that need strengthening – usually own and operate MCCs; larger association could assist those with less capacity in aspects of capacity improvement and operation of MCCs; federations or larger associations could assist – through their current or improved extension systems – in the implementation of techniques and technologies developed by the Project.

Policy, implementation and compliance. Project strategic objectives are either related to policy or complementary to policy, in particular, equivalence standards for beef exports, milk price policy and sanitary measures in the domestic dairy and beef markets. Policies may be in place but implementation and compliance need improvement. These aspects are well-known among local experts and authorities, for example: (Ponce Ceballos, Pastor, 2015), (Ponce Ceballos, Pastor, 2016), (Gómez, Arnaldo J., 2016) and others previously cited.

Establishing equivalence standards is one of the main objectives of the beef value chain. Work in this area is well-advanced; MoH and MA have a working group; NCBA CLUSA has been involved, a CTC committee has been monitoring it. However, challenges remain, especially with respect to central government budget allocation to implement the required inspection system, including laboratories. Evaluations and recommendations by (Cook, Jr., L. Victor, 2015) and (McDermott, Steven, 2015) need implementation.

As discussed in previous sections, the current milk price-quality structure is not conducive to an efficient market, it is not an incentive for farmers to produce grade A milk. Transportation of low quality milk and use of peroxide need to be addressed. The Project may contribute to resolution of these issues. Solutions as simple as providing MCCs with a second or third tank to separate grades, together with improving testing equipment at centers, could make substantial marginal contributions.

Recommendations. The Baseline study covers a wide variety of areas that require attention to improve dairy and beef value chain performance and, given the limited amount of resources at Project disposal, it is important to focus on strategic activities such as those related to the price-quality structure in the dairy chain such as improving MCCs and finalize requirements for U.S. equivalence in beef exports.

Availability and quality of basic information is a main constraint for adequate monitoring and evaluation of any program or project. There are specific areas where significant improvements can be implemented with complementary resources: farm cattle registry; small cheese and beef processors registry and sanitary permits as basis for regulatory compliance; private sector extension agents' registry; MCC registry; among others.

Specific recommendations are made in section 8 of the main report in order to assist Project implementation with respect to the specification of general activities and priorities to meet PMP and FFPr indicators.

Limitations of the Baseline Study. The amount of time and resources assigned to the Baseline Study was far too short. Information sources were limited. Much time had to be allocated to the conciliation of different sources on the same subject (MCC, small processors of beef and dairy products), despite the kind cooperation of officials in all institutions consulted. ONE's Precenso needed verification and updating.

There is no information and there was no survey of intermediaries in the beef cattle market. This is relevant for analysis of the beef value chain. Farmers do not have cattle registers or scales and there is an advantage in favor intermediaries. This is also important for its implications on the equivalence work and future exports.

In-depth analysis is needed on the effectiveness of technical assistance. In all instances of the value chains it was reported that technical assistance had been received in numerous topics and that it was required in the same topics. Further analysis is required to determine results, especially given the Project's focus on techniques and technologies to improve productivity and expand trade.

Baseline Study

Status of the Livestock Sector in Eleven Provinces of the Dominican Republic

1. Introduction⁷

The Project,⁸ as designed by NCBA CLUSA following USDA guidelines, has two Strategic Objectives (SO): (1) to increase productivity in the livestock sector and (2) to expand trade of livestock products for the target value chains (dairy and beef).

These objectives will be achieved through a sequence of “results” and “activities” stated in the **Results Frameworks (Annex 1)** developed for the Foreign Agricultural Service (FAS), **Food For Progress (FFPr)** projects. Expected results include increased use of improved agricultural techniques, improved farm management and implementation of trade measures (US equivalency requirements) to facilitate beef exports and increase the volume and quality of milk available to the dairy processing industry.

Project “activities”, the basic units of Project implementation, will be financed by “*cofinanciamientos*” or matching grants (grants that require a contribution by beneficiaries).⁹ Some activities, such as promotional or informational events, document preparation for regulatory reforms and related goods and services may be financed by grants without beneficiaries’ monetary contributions or by direct expenses by the implementing unit.¹⁰ These “activities” refer to outputs or sets of goods and services necessary to achieve a given result or outcome. In the Results Frameworks (**Annex 1**) they correspond to items not numbered under an FFPr result. The University of Texas, Borlaug Institute, and Cooperative Business International (CBI) will assist the Project in the design and development of techniques and technologies, activities in support of the livestock sector, identified in the Results Frameworks as “improved knowledge” and training.

Eleven of the 31 provinces in the country were selected for Project implementation on the basis of areas of work covered by 5 federations of livestock farmers’ associations that operate nationally and the provinces most representative of dairy and beef farming, according to NCBA CLUSA RD staff. These federations and the respective provinces are:

FEDEGANO – Santiago Rodríguez y Dajabón
FEDEGANORTE – Puerto Plata y María Trinidad Sánchez
FEGACIBAO – Duarte

⁷ This version includes USDA comments to a final draft presented on 13 September 2016.

⁸ The “Project” in this document refers to the: “USDA/NCBA CLUSA Safe Agriculture/Food Export Program (SAFE) - Dominican Republic”, known locally as “*Fortaleciendo la Cadena de Valor de la Ganadería Dominicana*” (PROGANA).

⁹ The Project will encourage leveraging of resources from private sector sources, either from beneficiaries’ own funds, bank loans or other sources.

¹⁰ NCBA CLUSA implementing unit is preparing a manual for this purpose.

FEGASUR – San Juan e Independencia

FEDAGARES – Monte Plata, El Seibo, Hato Mayor y La Altagracia.

Project grants and matching grants will be financed from the proceeds of monetizing 16,100 metric tons (MT) of Crude Degummed Soybean Oil and 4,320 MT of Yellow Grease Tallow over a five-year period (October 2015 – September 2020), although implementation is only starting as of October 2016, with an estimated cost of \$21.03 million (NCBA CLUSA, 2015). NCBA CLUSA will contract Cooperative Business International (CBI) as a monetizing agent. CBI will also provide technical services in livestock development.

This Baseline Study aims to describe the current status of the livestock sector in the 11 provinces of the Dominican Republic selected for Project implementation, it has four specific objectives:

- i. To determine Project baseline values and sources for PMP indicators (**Annex 2**), which include 16 FFPr Standard Indicators;
- ii. To establish a point of reference (baseline) for mid-term and final evaluations;
- iii. To assist in the identification of activities to be supported by the Project;
- iv. To contribute to the livestock subsector on-going diagnosis and provide a basis for further analysis.

The structure of this report follows these objectives. In **section 1**, a description of the main primary and secondary data sources is presented. **Section 2** is intended to provide a brief statement of the livestock sector as a frame of reference for dimension and context; **sections 3 and 4**, organized by the two value chains (dairy and beef) and their main components, provide a description of their current state (baseline). **Section 5** describe the instruments (support services) available for implementing Project interventions; they are the vehicles by which the Project will channel direct and indirect interventions (“activities” as in the Results Frameworks) to achieve Project Strategic Objectives (SO1 and SO2). **Sections 6-9** summarize the baseline contribution to the four specific objectives of the Baseline Study. **Section 10** presents conclusions, recommendations and limitations of the Baseline Study.

This study was made possible with the valuable assistance of the NCBA CLUSA technical staff in Santo Domingo, including members of the Project’s CTC (*Consejo Técnico Consultivo*).

2. Method

2.1 Context

Information on the livestock subsector in the Dominican Republic is limited. The last agricultural census dates from 1982. In 1998, a “National Registry of Agricultural Producers” was prepared by the then *Secretaría de Estado de Agricultura (SEA)* and – based on this registry – a survey of livestock farms was published (SEA, 1999) directed to medium and large farms. In 2015, the Ministry of Agriculture published a summary of agriculture sector statistics for the period 2002-2014 (Ministerio de Agricultura, 2015) based on various government agency sources, including the Ministry’s own Department of Agricultural Economics.

In the absence of census data, various studies and programs have conducted their own surveys of specific regions or subsectors, most notable on the dairy subsector (see **References**). There are also numerous brief reports and presentations, as well as experts and informants with considerable knowledge of the subsector. It seems that at a general level, the subsector – dairy in particular – has been well-diagnosed, although it requires more in-depth study of specific technical issues and, above all, implementation of recommendations and effective regulation enforcement.

The various studies of the dairy subsector contain similar findings and recommendations. Final design and implementation of investment projects and effective communication to translate recommendations into actions at the farm level and primary processing are needed; the many programs and projects supported by the government in cooperation with international organizations seem to have had modest results or lack information to assess their impact, although there are some successful experiences (see, for example: (Valerio, Daniel, 2016) and others).

In 2015, the *Oficina Nacional de Estadística (ONE)* conducted a preliminary farm census, the *Precenso Nacional Agropecuario* (ONE, 2016) as preparation for the *VIII Censo Nacional Agropecuario 2015*. The planned census was not implemented, apparently for budgetary reasons. According to ONE:

“The Precenso Nacional Agropecuario 2015 was an operation to collect information on the location of productive units [farms] and identification of farmers aimed at the realization of the VIII Censo Nacional Agropecuario.” (Translated from (ONE, 2016) by author.)

The *Precenso* was clearly the most appropriate source to design the sampling frame of the Project Baseline Farm Survey described in the next section. It was recent (published in April 2016) and included a count of all farms in the country in which all livestock farms in the 11 Project provinces could be identified.

The Project concept refers to “value chains” in dairy and beef, not only the primary farming activity; therefore, in addition to the farm survey, three smaller surveys were conducted for this study: (i) Survey of Milk Collection Centers (MCC); (ii) Survey of slaughterhouses; and (iii) Survey of small dairy processors (cheese, yogurt and sweets artisan operations). Information from these surveys was complemented with two focus groups on extension services and producer organizations (PO). Extension agents and POs are key actors for project implementation.

Structured as well as informal interviews were carried out with dairy distributors (that compete with imported dairy products), small beef processors (small meatpacking establishments),¹¹ financial institutions that serve the livestock sector (BAGRÍCOLA, CONALECHE, FONDAGRO), public regulatory agencies (including CTC committee members for beef and dairy) and private input suppliers.

Information was also collected from farmers and PO officials during farm visits. Experts, key informants and NCBA CLUSA staff contributed significantly to understanding the sector’s structure and performance and designing data collection instruments.

This report is not intended as diagnosis of the livestock sector; as baseline, it is mainly descriptive of the sector in the Project provinces. However, it makes frequent observations with regard to evident relations among variables and behaviors that could help future Project implementation, monitoring and evaluation and in-depth studies of specific areas.

Finally, it is important to recognize that the livestock sector operates in a cultural, social and political context that affects its performance. Many farmers, small, medium and large, do not operate their farms as business enterprises, but as holders of wealth or assets, and even as status symbols; some of them are operated by caretakers, not business managers. Enforcing sanitary regulations on small processors of cheese and cooked meats would have a serious impact on their finances as they run low cost, low quality, low price operations. Producer Organizations (PO), besides proving an array of services to their members, have effective political

¹¹ A planned structured interview became a survey of 5 plants as interviewers were allowed these plant visits.

influence in the rural sector. Adequate regulations exist but enforcement is weak because – among other reasons – it could have adverse social, economic and political impacts on farmers and consumers.

2.2 Farm survey sampling

The main instrument of baseline information was the Farm Survey, a sample of 505 farms conducted during July-August 2016. Table 1 presents a summary of the data provided by ONE for the 11 provinces selected by the Project. ONE provided the database of *Precenso Agropecuario Nacional 2015*, with basic variables by region, province, municipality, size and other – mainly farm identification variables, from which a stratified sample by size was derived. A questionnaire (Annex 5) was designed and applied to the sample of farms.

Table 1 – Number of cattle farms by province (all and selected provinces) according to size, 2015									
Target Provinces	Total	Size in Tareas (16 tareas = 1 Ha.)							Information not available
		Less than 8	8 - 20	21 - 40	41 - 70	71 - 199	200 - 799	More than 800	
National Total	47,910	4,334	4,973	5,632	5,820	9,013	8,851	3,573	5,720
1. El Seibo	1,505	168	123	113	150	303	328	231	93
2. Puerto Plata	2,999	338	296	293	335	617	724	343	53
3. Duarte	1,258	79	76	113	158	316	306	156	54
4. María Trinidad Sánchez	2,267	90	115	179	199	318	381	154	831
5. Dajabón	3,001	86	203	371	464	688	708	125	356
6. Santiago Rodríguez	3,803	264	338	381	428	611	512	98	1,171
7. Independencia	775	85	148	156	118	137	79	25	27
8. San Juan	5,368	239	896	1,054	982	1,173	684	177	163
9. La Altagracia	1,376	183	108	80	112	178	324	202	189
10. Monte Plata	3,963	325	379	643	470	843	729	329	245
11. Hato Mayor	950	51	58	63	84	127	232	136	199
Total 11 target provinces	27,265	1,908	2,740	3,446	3,500	5,311	5,007	1,976	3,381
Source: <i>Precenso</i> database (ONE, 2016, Table 11)									

The *Precenso* identified 202,711 “productive units” (farms) in the country (ONE, 2016), of which 47,910 are cattle farms. More than one-half of these farms are located in the 11 target provinces (27,265). In order to define the sampling frame, all farms of less than one Ha (16 tareas) in size were excluded as well as those larger than 312.5 Ha (5000 tareas). This procedure yielded 20,235 farms (shaded area in Table 2).

Farm sizes excluded are due to the assumption that these farms are unlikely to be Project beneficiaries: small farms (less than one Ha) are family, subsistence farms, not commercially viable; they are beneficiaries of other programs. The number of large farms (more than 5,000 tareas or 312.5 hectares) is 156 (Table 2) in the selected provinces, according to *Precenso* information. Some of these farms were excluded from the sampling frame because they were likely not to have livestock farming as a formal or main activity, according to local extension agents.

The sample derived from this sampling frame was based on a stratified design by farm size in order to ensure that farms are representative of the sampling frame. This technique divided the sampling frame in four strata according to farm size for the purpose of obtaining homogeneity within a stratum and heterogeneity among strata; it allows representativeness of all farm sizes in the sampling frame and higher statistical precision, as a result of less variability within each stratum and optimum sample size. It used the Lavallée-Hidiroglou method for stratification of asymmetric distributions, such as farm size, and minimum sample size with higher statistical

precision. In addition, size proportional sampling without replacement was used within each stratum with a relative sampling error of 3%. Table 3 shows the resulting farm sample grouped by size.

Table 2 – Sampling frame, number of farms by size categories for selected and other provinces			
<i>Size (tareas)</i>	<i>Selected provinces</i>	<i>Other provinces</i>	<i>Total</i>
0 (less than 1 tarea)	940	1,372	2,312
1 - 3	415	473	888
4 - 8	722	758	1,480
9 - 15	1,416	1,262	2,678
16 - 25	1,799	1,230	3,029
26 - 45	3,086	1,951	5,037
46 - 100	6,273	4,115	10,388
101 - 500	6,672	5,037	11,709
501 - 1,000	1,272	1,075	2,347
1001 - 5,000	1,133	934	2,067
5001 - 10,000	96	74	170
More than 10,000 tareas	60	25	85
No information	3,381	2,339	5,720
Total	27,265	20,645	47,910
Sampling frame	20,235		

Source: Selected from Precenso database (ONE, 2016)

Field work. During field work, a small number of farms identified in the sample – in the large size category – could not be found, leading to the conclusion that the sampling frame contained errors, since survey enumerators were familiar with local livestock farms' characteristics. The number was small (a few of the 93 farms in the largest size category shown on Table 3). For the most part the sampling frame was accurate. This caused the sample to be slightly adjusted.

Table 3 - Farms sample: number of farms by size category	
<i>Size groups in tareas</i>	<i>Number of farms</i>
17 – 160	150
170 – 560	121
600 – 1600	112
1700 - 4829	93
Total	476

Source: Baseline Study Farm Survey 2016

The statistical procedure yielded a sample of 476 farms. However, 513 farms were surveyed, of which 505 responded (seven were “inactive”, they were no longer livestock farms, and in one farm there was no one to provide most of the information requested). Therefore, 29 farms were added to the final sample (Table 4) in order to use all information collected. Normally in field work with on-farm interviews there is a loss of observations but in this case we obtained a larger sample. The additional information does not affect original sample design, on the contrary, additional observations reduce the margin of error.

Size distribution was also adjusted because of the additional farms surveyed. This implied that 11 farms larger than 5,000 tareas (321.5 Ha) were included, the largest one being a 794 Ha farm. Therefore, final sample size was 505 farms distributed by province (Table 4) and size (Table 5). Each farm in the sample was identified according to *Precenso* codes and visited during July – August 2016.

Table 4 – Farms sample, number of farms by province		
Province	Number of farms	%
Dajabón	51	10.1%
Duarte	38	7.5%
El Seibo	58	11.5%
Independencia	11	2.2%
Altagracia	38	7.5%
María Trinidad Sánchez	37	7.3%
Puerto Plata	67	13.2%
San Juan	61	12.1%
Santiago Rodríguez	31	6.1%
Monte Plata	90	18.0%
Hato Mayor	23	4.5%
Total	505	100.0%

Source: Baseline Study Farm Survey 2016

Average farm size was 57.8 Ha, the smallest farm surveyed was 1.25 Ha and the largest 794 Ha. The sample farms employed 2,591 men and only 55 women. Most farm owners (84.4%) belong to a local PO. Other sample results are given in the relevant sections below.

Table 5 – Farm sample, size distribution	
Farm size Tareas (Hectares)	Number of farms
20 – 950 (1.25-59.4)	364
951 – 3,500 (59.4-218.7)	117
3,501 – 6,000 (218.7- 375)	18
6,001 – 8,000 (375-500)	4
Larger than 8,000 (500)	2
Total	505

Source: Baseline Study Farm Survey 2016

2.3 Instruments

The Farm Survey questionnaire (Annex 5) was designed with the participation of NBCA CLUSA local staff and consulted with local experts. It was longer than planned because of the need to have primary information on livestock farming as the planned census was not implemented. The questionnaire contained 70 questions organized in 8 sections:

- A. Farm identification. Includes general information, besides location: pasture area, farm production type, land tenancy and employment by gender, permanent and temporary.
- B. Farm association. Whether the farm owner/operator belongs to a PO.
- C. Financing: loans received by amount and source.
- D. Beef production. General aspects of beef production if applicable, including technical assistance.
- E. Milk production. General aspects of milk production if applicable, including technical assistance.
- F. Farm planned investments. Farm infrastructure and equipment, technology.

- G. Technical aspects. Farm operation and management.
- H. Infrastructure and operation.

Prior to actual collection of data, a draft questionnaire was tested with 25 farm owner/operators representing the northern region (Luperón, Puerto Plata), which traditionally produces milk and dairy products; the area of El Seibo where the activity is relatively new and the conditions of pastures and infrastructure are more precarious; and, a farm in Independence province in the southern region. Test results were discussed with project officers, enumerators, team coordinator and general coordinators in a focus group setting.

The test, in addition to the previous preparatory activities, provided valuable information for final questionnaire design and planning in order to ensure that its content was compatible with conditions of production and processing on the field. In particular, the following results were obtained (from Pre-test Report):

- Contact procedures with producers was established for three of the 11 provinces from local leaders and PO, this procedure is applicable in the other provinces according to the information collected to date.
- Compatibility of questionnaires contrasting the reality in the field with the theoretical formulation designed in office.
- Communication aspects with producers were clarified with respect to wording or presentation of questions.
- Specific names of grasses, types of financial products available, alternatives for recognition of cattle breeds, forms of milk transport and measuring options of available technology in scenarios where other programs exist were revised.
- Issues that should receive special help from the interviewer, especially in financial calculations and some environmental issues were identified.

These results were included in the final version of the questionnaire (**Annex 5**).

2.4 Farm survey, data collection

The data collection team was led by a livestock expert with extensive knowledge of the sector in the Dominican Republic. A team of supervisors and enumerators was organized. A manual with detailed instructions was prepared by the team statistician and discussed with supervisors and enumerators in several training sessions. Enumerators for the most part were local extension agents who have detailed knowledge of local farms and their owner or operators. This characteristic allowed an immediate verification of answers provided by respondents to assure data quality; in most cases, the enumerator-extension agent knew the farm details as well as the respondent. Field work was carried out in 15 work days. Each province had a local team of enumerators-extension agents.

Upon questionnaire completion, it was verified by supervisor and immediately uploaded on an Internet-based platform for a second round of verification by the baseline team statistician. After resolving suspected inconsistencies, some of which required on-farm verification, it was downloaded in an SPSS database.

2.5 Other surveys: Milk Collection Centers (MCC), beef processors and dairy processors

These surveys were not statistically rigorously designed because of the lack of information on possible sampling frames. In each case a background study of the respective activity had to be carried out, as described below, before designing a small survey. An additional survey on small beef processors was conducted as it was impractical to conduct a survey of large modern establishments together with small informal operations using the same formal instrument.

Milk Collection Centers (MCC). Information on MCCs is scattered, unsystematic and outdated. From the available sources it is inferred that there are over 100 MCCs in the country. Several press articles in 2015 reported 90 centers (Today Digital, 2015), (Listin Diario, 2015), while CONALECHE reports 95 (CONALECHE, 2015) (see Table 7.1 in Annex 7); according to this source, 59 MCCs are located in the 11 provinces covered by the Project. Some MCCs close temporarily for lack of milk supply, especially during the dry period.

Integrating information from various sources, 102 MCCs were identified in the 11 provinces (see **Table 11**). Of these, 57 were selected due to their proximity with farms in the farm survey, as information was collected simultaneously, although the two surveys are independent. **Annex 7** presents the questionnaire used for data collection in MCCs.

Slaughterhouses – Processors. **Annex 8** presents the questionnaire used to collect information on slaughterhouses. However, survey preparation activities indicated that there are substantial differences among slaughterhouses. There are at least 3 clear categories: (i) the large and modern slaughterhouses- processors, vertically integrated, some of which are candidates for exports in the short-run; (ii) private slaughterhouses that serve the domestic market and would require large investments to qualify as export candidates; and, (iii) the municipal slaughterhouses, small, often operated as individual concessions, that provide local services and face basic sanitary issues. In this context, the survey was oriented to verify compliance with a check list of facilities and procedures that a regular slaughterhouse should have. On the basis of this assessment 12 slaughterhouses were selected: 2 are most likely candidates for exports, one is representative (not statistically) of private slaughterhouses (according to local experts) and nine were municipal slaughterhouses selected during Farm Survey data collection.

As mentioned, an additional informal survey was conducted of small meat packing establishments (section 4.3) and other “informal” surveys were conducted among participants of the focus groups on extension and PO.

Small dairy processors. Although dairy processors include large suppliers of milk and other dairy products to supermarkets as well as a large number of informal “*queserías*” (small cheese, yogurt and sweets manufacturers), the survey was directed to the latter because of their relevance to the domestic market and the share of the domestic milk supply produced by dairy farms (54%). Relevant issues for large processors are related to international trade regulation, while the small cheese manufactures face issues of sanitary standards, quality and competitiveness in the local market. **Annex 9** presents the questionnaire used to collect survey information for small, artisanal dairy processors. This survey was conducted on 26 small processors, producers of cheese, yogurt and sweets. They were selected in parallel to the Farm Survey data collection process.

While these surveys do not have the statistical rigor of the Farm Survey, they do provide a realistic view of the dairy and beef value chains that could be compared to future observations, according to the four objectives of the Baseline Study. These surveys had a “qualitative sampling frame” because the samples were based on the empirical knowledge of experts and field technicians consulted, mostly local extension agents that served as enumerators in Farm Sample data collection.

2.6 Other data collection instruments

Because extension agents and POs are key elements in value chains operations and in Project implementation, two **focus groups** were organized, as described in sections 5.1 – 5.3, in order to understand their role in the value chains, their capacity and requirements. **Structured interviews** were conducted with input suppliers (Section 5.4) and policy experts (Section 5.5).



Figure 4. Focus group, extension agents MEGALECHE
(5 July 2016 at JAD)



Figure 5. Focus Group, credit extension agents, BAGRÍCOLA
(5 July 2016 at JAD)

3. Overview of the livestock subsector

The agricultural sector of the Dominican Republic employed 575,499 people in 2015, 13.4% of total employment (according to ONE statistics); however, it accounted for only 5.8% of GDP (according to BCRD data). Women accounted for only 5.6% of total employment in agriculture. In livestock farms only 2% of employees are women, while 5% are farm owners, according to the Baseline Farm Survey (see Tables A.10.1 and A.10.2 in **Annex 10**). Women participation increases along the value chain stages; in MCCs, it is 23% (see **section 3.2**). Approximately 220,000 persons (5.1% of total employment) were employed in the livestock sector, accounting for less than 1.5% of GDP. (Ministerio de Agricultura, 2015).

This low average productivity (as reflected by the relation between shares of GDP and employment) is qualified by wide ranges for most variables that characterize the sector: few highly productive farms and many traditional, low-productivity, small family units; a few modern beef processors ready to export and many municipal slaughterhouses that can barely meet minimum sanitary standards; a few large dairy processors that supply major supermarkets and a national school program and numerous “cheese makers” (*queserías*) that process low-quality milk and operate in questionable sanitary conditions.

Approximately 1.0 million hectares are dedicated to cattle farming (ONE, 2016); 54% of all farms are less than 6.25 hectares (100 *tareas*) in size, 88% less than 312.5 Ha (5,000 *tareas*). There are 319,676 farm units in the country, according to *Precenso* data; 47,910 are cattle farms; of these, 27,265 are located in the 11 provinces selected for Project implementation; 15.4% are less than 1 Ha in size, less than 1% are larger than 312.5 Ha. The rest, 84% (20,335 farms), were selected to design the sampling frame for the Farm Survey.

Most production of beef is sold in the domestic market. Beef exports were less than US\$1.0 million, dairy exports reached US\$8.0 million in 2014. Beef imports were US\$36.0 million and milk imports (powder and liquid) were US\$129.0 million (Ministerio de Agricultura, 2015). These figures reflect the opportunities of the livestock sector to increase its share of the respective markets and explains the Project’s Strategic Objectives directed to increasing productivity and trade expansion.

According to the Farm Survey, most farms are dairy farms (80.6%), contrary to the generally-held view that most farms are “double purpose” (dairy and beef) farms. Some studies (CEPAL, 2016) report up to 70% double purpose farms. DIGEGA projected a total of 1,590,531 heads of cattle for the 11 provinces in 2016; 30% beef farms, 16%

dairy and 54% double purpose.¹² The reasons for these disparities seem to be the ambiguity and lack of precision of the definitions, but also the informality of the sector; keeping male calves temporarily in a dairy farm does not make it a “double purpose farm” or producing milk temporarily in a beef farm does not make it a “double purpose farm”. The high figures of double purpose and dairy farms indicate mostly the informality of livestock farming, the lack of specialized production and the different definitions used.

Table 6 – Number of farms by province according to “type of production”				
Provincia	Dairy	Beef	Dairy and Beef	Total
1. El Seibo	55	1	2	58
2. Puerto Plata	55	3	9	67
3. Duarte	35	3	0	38
4. María Trinidad Sánchez	33	2	2	37
5. Dajabón	48	0	3	51
6. Santiago Rodríguez	21	0	10	31
7. Independencia	9	1	1	11
8. San Juan	45	1	15	61
9. La Altagracia	25	5	8	38
10. Monte Plata	76	1	13	90
11. Hato Mayor	5	0	18	23
Total	407	17	81	505
%	80.6%	3.4%	16.0	100%

Source: Baseline Study Farm Survey 2016

When asked about the “type of production” as a general question in section A of the Farm Survey questionnaire, the respondent indicated that only 17 farms (3.4%) were beef producing farms (Table 6), but when asked more specific technical questions about beef farming activities in the surveyed farm (sections D and E), 65 (13.5%) farms were reported as “beef producing farms” (see: Table 23 – Number of specialized beef production farms); and, as mentioned, DIGEGA’s projection is 30%. Therefore, the combined data only reflects the informality of the sector and the low degree of specialization of dairy and beef producing farms. In fact, of 65 farms that are supposedly specialized in beef farming, 38 reported milk production by quality grade.

PMP indicators. The following eleven indicators in the Performance Monitoring Plan (PMP) are related to the livestock sector, eight of which are “as a result of USDA” assistance and therefore have a baseline value of zero, as well as indicator (43). Two indicators, (FFPr 13 and 14) require information on “Project beneficiaries”, which will be collected during Project implementation, when beneficiaries are identified. Baseline values will be registered when processing applications for co-financing. Periodic values of these indicators will be registered during approval, execution and follow-up of activities financed by the Project (see: Review and update of Performance Monitoring Plan (PMP) and section 6). Information on gender and other criteria will be included.

(1) “Number of hectares under improved techniques or technologies as a result of USDA assistance. (FFPr Indicator 1)”

(3) “Total number of individuals benefitting directly as a result of USDA Assistance (FFPr Indicator 17)”

(4) Number of individuals who have received short-term agricultural sector productivity or food security training as a result of USDA assistance (FFPr Indicator 16)

¹² DIGEGA’s projections are based on the Livestock Survey of 1998 and the 1981 Agricultural Census.

(5) “Number of jobs attributed to USDA assistance (FFPr indicator 15)”

(6) “Number of individuals who have applied new techniques or technologies as a result of USDA Assistance (FFPr indicator 2)”

(7) “Number of improved beef and dairy production demonstrations established or improved with USDA support”

(12) “Value of sales by Project beneficiaries (FFPr Indicator 13)”

(13) “Volume of Commodities (metric tons) sold by Project beneficiaries (FFPr Indicator 14)”

(43) “Number of new markets to which beef or dairy product is exported”

(44) “Number of agreements signed (Contracts, MOUs, etc.) between beef or dairy exporters and buyers in the US as a result of USDA assistance”

(47) “Number of individuals benefitting indirectly from USDA-funded agricultural productivity interventions (FFPr indicator 18)”

General evaluation (midterm and final) indicators for the livestock sector will be related to increases in productivity (lcd), milk quality and beef exports (**Section 7**) and the Project activities that may have been associated with their increase.

The PMP indicators will serve as guidelines for Project programming and implementation (**section 8**). For example, in order to comply with (4) above (FFPr Indicator 16), activities to provide training in “short-term agricultural sector productivity” should be designed and implemented by the Project.

The Project should also encourage the use of data from the surveys, especially the Baseline Farm Survey, to improve the analysis of the livestock sector, as suggested in **section 9**.

4. The dairy value chain

The literature on the dairy subsector is relatively abundant. More than 10 general studies prepared since 2006 have been reviewed, some as recent as 2015 and 2016 (see **References**), as well as many presentations by experts that contribute significantly to the sector’s general diagnosis and status in 2016. The various studies describe the general characteristics of the subsector based on the scarce data available, small surveys (usually at the regional level), and extensive individual field observations by stakeholders, technicians and experts; they coincide in identifying the general problems of the dairy value chain.

In 2006, IICA published a study (IICA, 2006) with data for the period 1994-2004. It identifies 23 – by now well-known – “major” problems from farm to consumer and offers many recommendations at each stage. These problems seem to remain in 2016. On 27 September 2007, the *Instituto Politécnico Loyola* held the *V Simposio Agronómico*, where 14 papers were presented on production and competitiveness of the Dominican dairy sector (Instituto Politécnico Loyola, 2007). Similar problems were identified.

In 2008, CONALECHE had observed, as one of the main problems, the “market power” of importers and industrialists who purchase inexpensive powder- milk abroad, reduce local farm-gate prices “arbitrarily” and affect farmers’ income (CONALECHE, 2008). It offers nine recommendations, still valid today. Some studies make recommendations on practices and techniques at the farm level, which are part of the general technical knowledge of the sector (Tejada, Frank, 2014).

In 2014, in the context of the project *“Modelo para incrementar el nivel de productividad y acceso a mercados de productores lecheros familiares en la República Dominicana”* (PROLEFAM) (Model to increase productivity and

market access for family-based milk producers in the Dominican Republic), sponsored by MA, FAO and CONALECHE, a baseline study was prepared based on a survey of 242 farms (Rodríguez-Minier, Hernán, 2014). This project and its results (Valerio, Daniel, 2016) are relevant to the Project because its objective (increase productivity) is similar to one of the SAFE/PROGANA Project's strategic objectives, although for a different group of beneficiaries: family farms. Its execution of technical assistance and training activities have shown successful results (see (Valerio, Daniel, 2016), PROLEFAM presentation).

In 2015, under IDIAF coordination, a diagnostic study was published on the main characteristics of the livestock sector in four zones (García Lagombra, Gregorio et. al., 2015) based on a sample of 140 farms, including data on dairy farm productivity.

In 2016, CONALECHE presented, at a CTC meeting, a comprehensive summary of the dairy chain situation, which identifies main problems and tendencies in farming, transport, MCC and processing. (Gómez, Arnaldo J., 2016)

In April 2016, CEPAL presented a summary of "The Dairy Value Chain in the Dominican Republic" (CEPAL, 2016). It identifies a series of "restrictions, systemic and by link of the value chain", similar to those identified in the 2006 IICA report cited above.

However, aggregate figures do not show results: data from 1994 to the present do not show significant increases in liters per cow per day or improvements in milk quality. This is confirmed by results from the Baseline Farm Survey (see **Table 7**). It is possible that improvements have been made but projects implemented lack information on results achieved, most projects are short-term and lack final evaluations, although some farm visits ("samples" of 1 observation) show some successful activities.

PMP indicators. The following PMP indicators apply to both dairy and beef value chains. Project records will record activities and results related to the "Seal of Quality" promotion when established. Promotional activities between buyers and sellers as well as private-public partnerships will also be recorded. These indicators will be registered as part of Project implementation.

(29) "Number of value chain actors participating in the Seal of Quality"

(30) "Number of products using the Seal of Quality in their marketing"

(31) "Number of people reached through the Seal of Quality public information campaign"

(46) "Number of value chain linkage meetings held between buyers/sellers in the dairy and beef sector"

(53) "Number of public-private partnerships formed as a result of USDA assistance (FFPr Indicator 8)"

Baseline values for these indicators are zero; obviously, it will be necessary to design and establish the "Seal of Quality" instrument in order to measure its application. JAD, a Project partner, has the capacity and position to assist in achieving targets for (53), FFPR indicator 8, and PMP indicator (46), above.

4.1 Dairy farming

Two fundamental indicators of dairy farm productivity in the context of Project objectives are: the number of liters per cow per day (l/c-d) or "lcd"; and, the quality of milk delivered to MCCs. The various studies coincide on the low productivity of dairy farms by reporting lcd indicators regarded as very "low":

- 2.75 to 3.41 lcd between 1994 and 2004. (IICA, 2006).
- 5.56 lcd average; highest: 7.0 in Puerto Plata; lowest: 5.0 in Monte Plata. (García Lagombra, Gregorio et. al., 2015)

- 3.02 lcd (60% of farmers take their product to MCCs and 20% to trucks). (CEPAL, 2016)
- 6.23 lcd in Duvergé, 2016. (Román M, José A., 2016)

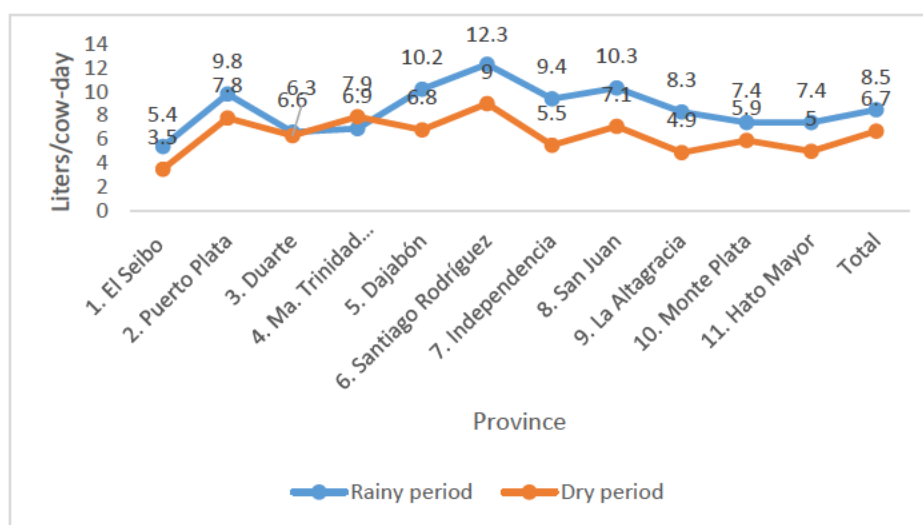


Figure 6. Farm Survey, dairy farm productivity: liters per cow per day

One of the reasons for these low figures is that they include a large number of small farms. It was expected that a sample that excludes farms of less than 1 Ha in size would show greater lcd values. The Baseline Farm Survey (Table 7) confirmed the low average values (7.5 lcd) but it also shows wide ranges, with many farms below 5.0 lcd and several provinces with averages above 9.0 lcd.

As points of reference, in the recent International Congress of Dairy Producers held in Bogota (September 2016), it was reported that the average lcd in the Netherlands is more than 20 lcd, while Colombia produces an average of 5.6 lcd. According to Maarten Vrolijk, Dairy sector specialist at the University of Wageningen, a key to success is their alliance of public, private and academic institutions in providing adequate and effective technical assistance to farmers. (Congress Presentation, 9 September 2016)

Farm Survey results are shown on Table 7. They are consistent with other studies and the prevailing view that farm productivity is “low”. **Average lcd for all farms in the sample was 7.5.** There is a significant difference between the rainy (8.5) and dry (6.7) periods for some provinces. Project target is set at 11.25 lcd in 2020 (PMP indicators in Annex 2), a 10% annual increase from baseline value. Several provinces and many farms already report higher values, which reflect the need to assist below average productivity farms that show potential for feasible development.

Table 7 – Number of milking cows, daily production in rainy and dry periods and farm productivity (lcd) by province

<i>Province</i>	<i>Number of milking cows</i>	<i>Average daily production Rainy period</i>	<i>Liters per cow per day Rainy period</i>	<i>Average daily production Dry period</i>	<i>Liters per cow per day Dry period</i>	<i>Standard deviation of combined lcd (rainy and dry)</i>
1. El Seibo	1,434	7,770	5.4	5,089	3.5	2.53
2. Puerto Plata	3,222	31,541	9.8	25,272	7.8	2.56
3. Duarte	1,127	7,419	6.6	7,104	6.3	1.55
4. María Trinidad Sánchez	1,861	12,774	6.9	14,633	7.9	3.0
5. Dajabón	1,215	12,410	10.2	8,207	6.8	2.45
6. Santiago Rodríguez	1,143	14,078	12.3	10,269	9.0	3.03
7. Independencia	200	1,884	9.4	1,108	5.5	1.71
8. San Juan	1,215	12,480	10.3	8,594	7.1	1.97
9. La Altagracia	1,020	8,496	8.3	4,983	4.9	2.02
10. Monte Plata	2,156	16,047	7.4	12,705	5.9	2.69
11. Hato Mayor	555	4,107	7.4	2,788	5.0	2.55
Total	15,148	129,006	8.5	100,752	6.7	2.58

Source: Baseline Study, Farm Survey 2016

Averages for Duarte and María Trinidad Sánchez provinces in the rainy and dry periods are similar (in fact, some farms in these provinces reported higher lcd in the dry period compared to the rainy period). The data was verified for possible errors, there were none. The particular results are due to normal climate conditions in the area. According to experts, for whom these results were expected, this is one of the most humid zones in the country, with acid soils and high water tables. Production models are different from other zones. According to one source, “given these conditions, under the rainy season, grazing becomes uncomfortable for the cows which leads to lower feeding and lower productivity.”

Table 8 shows farm productivity by farm size. There is no evident relation, as would be expected that larger farms are specialized in milk production. The largest farms in the sample show very low lcd (4.5). These farms, registered as dairy farms because they indeed produce milk, have other activities as their main business. There seem to be a difference between farm sizes below 3,500 tareas and the groups above 3,500 tareas, but no statistical significance has been obtained.

Table 8 – Farm survey, dairy farm productivity, liters per cow per day according to farm size				
Size in Tareas (hectares)	Number of farms	Number of milking cows	Daily milk produced (liters)	Liters per cow per day
20 – 950 (1.25-59.4)	364	6,847	50,927	7.4
951 – 3,500 (59.4-218.7)	117	6,262	44,342	7.1
3.501 – 6,000 (218.7- 375)	18	1,724	16,312	9.5
6.001 – 8,000 (375-500)	4	261	2,300	8.8
Larger than 8,000 (500)	2	50	225	4.5
Total	505	15,144	114,106	7.5

Source: Baseline Study, Farm Survey 2016

As mentioned, many reasons are given for these low productivity values based on general observations and studies. The IICA study (IICA, 2006) includes a matrix of problems and general recommendations, which are repeated in more recent reports (see: “*Matriz 1: Limitaciones en la Fase Primaria (Producción y Manejo del Ganado Bovino) de la Cadena de Leche y Productos Lácteos*”), from which obvious recommendations are derived. CEPAL’s study describes graphically the details of a dairy value chain and identifies the main general “restrictions” (CEPAL, 2016); (Gomez Nogueira, C., et al., 2016) to improve sector performance.

CONALECHE’s presentation summarized dairy farming problems as follows:

PROBLEMS IDENTIED AT FARM LEVEL	
QUALITY	PRODUCTION
• Inadequate milk handling at farm • Lack of best practices in milking • Lack of cooling systems • Indiscriminate use hydrogen peroxide by ○ Producers ○ Transports ○ Processors	• Low productivity per cow and per area • Inadequate management of pastures and forages • Underutilized low cost feeding alternatives • Lack of genetic improvement • Low herd reproductive indices

Source: Translated from (Gómez, Arnaldo J., 2016), Ppt. presentation, page #10.

The Project implementing unit will measure the lcd variable annually in those farms that benefit from “improved techniques and technologies” and other Project interventions oriented to increase productivity. It will also maintain a control group of non-beneficiaries (subsample) for midterm and final evaluations, as other programs and projects may be under execution.

The Farm Survey provides data to identify the relative influence of various factors responsible for short (farm practices, feed improvement?), medium (management?) and long-term (breed development?) improvements in productivity. A challenge for the Project is to find short-term interventions that result in productivity increases, as measured by the lcd indicator, during the Project implementation period (2016-2020). For example, experiments in feed diversification (illustrated below) should be monitored because of their potential contribution to scientific knowledge of the sector.



Figure 7. Diversifying feed sources, introduction of "nopal" in animal feed, in a local farm (MontePlata)

An average increase in productivity of 1.0 lcd will generate approximately 600,000 liters of milk per day, which would have a significant impact on the local market considering the following figures in liters per day (Ponce Ceballos, Pastor, 2016):

Current production (2015):	1,750,000 liters
Imports:	800,000
Total supply:	2,550,000
Local requirements:	2,700,000
Deficit:	150,000

Therefore, an increase in output of 600,000 liters per day would eliminate the deficit and reduce imports by more than 50%.

MILK QUALITY. With respect to “**quality of milk delivered to MCCs**”, another key indicator of farm productivity, a basic problem is that most farms do not have testing or grading facilities or equipment, or cooling tanks, so they have to rely on the MCC to determine quality when milk is delivered. Transportation from farm to MCC (time and temperature, among other factors) could be the main determinant of milk quality delivered to MCCs.

Three variables in the Farm Survey facilitate understanding of this issue. Respondents were asked:

- i. Do you know the quality of milk produced in your farm?
- ii. Indicate the milk grade produced: A, B, C, or D;
- iii. How many times milk from your farm has been rejected at the MCC (never, once, twice, more than twice)?

A large fraction (30%) of respondents did not know the quality of milk they produce, most of them had no testing equipment. 41% produced grades B and C milk, only 29%, grade A. No production of grade D was reported (Table 9). These figures, reported by farmers, come from the results given at the time of delivery at the MCC.

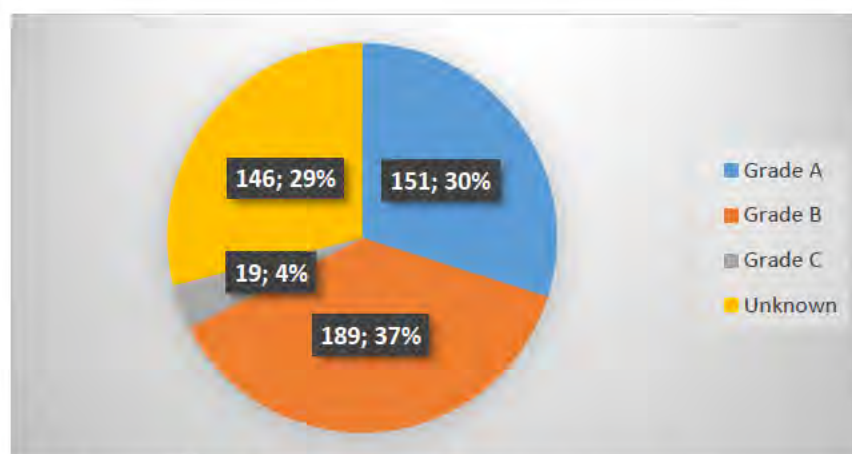


Figure 8. Quality of milk delivered to MCCs, according to farmers

Table 9 – Number of farms producing milk grades A, B and C by province					
Province	Grade A	Grade B	Grade C	Unknown	Total
Altagracia	11	25	2	20	58
Dajabón	23	11	0	33	67
Duarte	1	21	0	16	38
El Seibo	22	10	2	3	37
Hato Mayor	4	6	0	41	51
Independencia	12	11	1	7	31
María Trinidad Sánchez	5	6	0	0	11
Monte Plata	15	36	6	3	60
Puerto Plata	7	16	2	13	38
San Juan	51	26	5	9	91
Santiago Rodríguez	0	21	1	1	23
Total	151	189	19	146	505

Source: Baseline Study, Farm Survey 2016

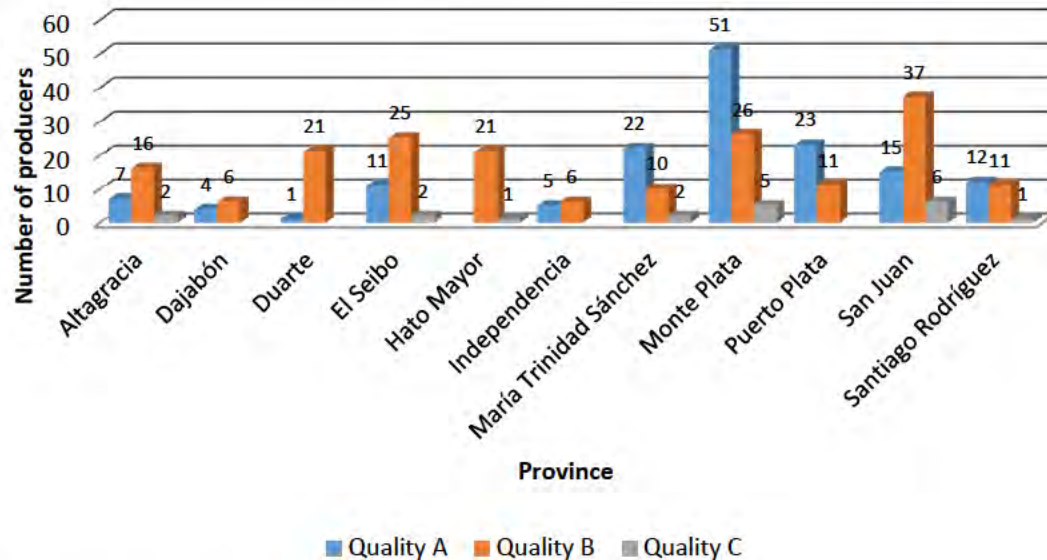


Figure 9. Number of producers according to grade of milk delivered

Moreover, 62% of dairy farmers declared that their milk has never been rejected at the MCC. Only 8% of farms had been rejected more than twice (Table 10). Clearly, the Project may implement activities to help farmers improve the percentage of milk A and reduce the rejections at the MCC, although it will be necessary to identify those factors that contribute more efficiently to achieve these results.

Midterm and final evaluation could register these results in order to determine progress in milk quality, which would not be necessarily a result of farm performance but of transport to and handling at MCC.

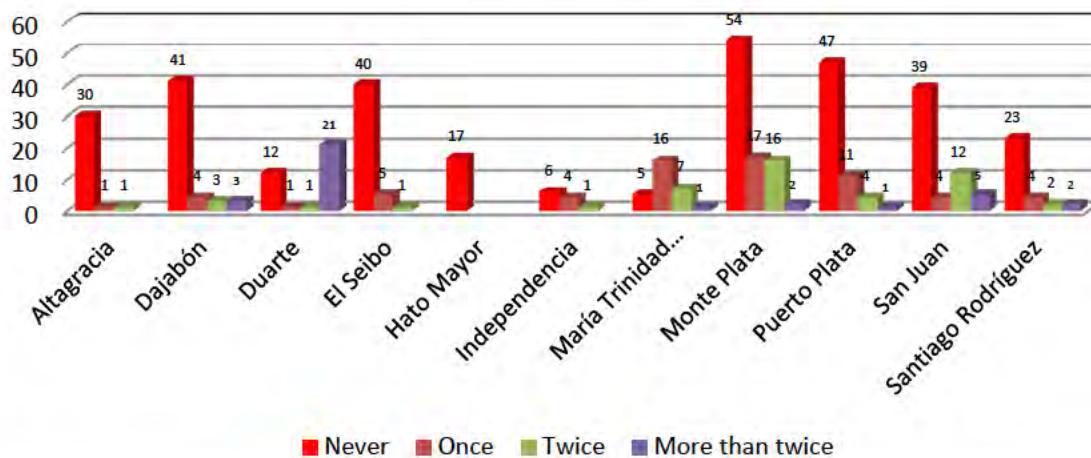


Figure 10. Number of farms that report rejections of milk taken to MCCs by frequency of rejection and province

Table 10 – Farm Sample, number of farms that report rejections of milk taken to MCCs by province according to frequency of rejection (471 dairy farms)				
<i>Province</i>	<i>Never</i>	<i>Once</i>	<i>Twice</i>	<i>More than twice</i>
El Seibo	40	5	1	0
Puerto Plata	48	11	4	1
Duarte	12	1	1	21
María Trinidad Sánchez	5	16	7	1
Dajabón	41	4	3	3
Santiago Rodríguez	23	4	2	2
Independencia	6	4	1	0
San Juan	39	4	12	5
Altagracia	30	1	1	0
Monte Plata	53	17	16	2
Hato Mayor	23	0	0	0
Total	320	67	48	35

Source: Baseline Study, Farm Survey 2016

PMP indicators related to dairy farming include:

(2) "Percentage increase in the average number of liters produced per cow per day"

This is the main indicator of dairy farm productivity. Baseline indicator is 7.5 lcd and Project target is 11.25 lcd. The target may be achieved through other interventions in the sector but it should be monitored with respect to the impact of Project activities on dairy farm productivity.

(15) "Volume of milk supplied by farmers to USDA supported milk collection centers"

It is essential that any Project support to MCC be conditioned on improvement of data gathering on quantity as well as quality of milk received at the MCC.

(23) "Number of dairy farmers supplying grade "A" milk to USDA supported milk collection centers"

(33) "Number of dairy farmers using improved milking and milk handling techniques as a result of USDA assistance"

(34) "Number of training sessions in milking and milk handling conducted for dairy farmers"

(35) "Number of milk producers trained in milking and milk handling"

Compliance with Indicators (34) and (35) will require Project activities implemented through extension agents and/or PO. Follow-up will be necessary to identify the impact of these activities on milk quality at the farm level, which may also require equipment support to those farms that do not have it.

Collecting and recording periodic information on 3 basic variables: lcd, grade A milk delivered, and rejections will be necessary for mid-term and final evaluations, and of course the factors that explain possible changes in these variables.

4.2 Milk collection centers (MCC)

Milk collection centers (MCC) are the main link between dairy farmers and different forms of artisanal and industrial milk processing. After milk is received from farmers, MCC are responsible for distributing it to end buyers or processors, collect revenue from sales and distribute them to farmers. MCC discount DR\$1 per liter for their service and plant maintenance. Some centers perform quality analysis such as acidity and the presence of antibiotics prior to reception.

More detailed analysis is carried out by industrial processors who will ultimately determine quality and price. Usually, MCCs receive milk from farmers without fully knowing its quality, so that the decision made by processors affects all producers in one MCC, where in most cases milk is not separated according to quality grade. Farmers who bring grade A milk to an MCC could get paid for grade B or C because the MCC mixes all grades in one tank. This is a major issue in the dairy value chain.

Table 11 – Number of MCC by source, national and Project selected provinces		
<i>Lists</i>	<i>National</i>	<i>Project area</i>
Newspaper articles	90	
CONALECHE May 2015	95	59
Integrated list REDDOM+CONALECHE 2013 y 2015	57	50
MCC from integrated list, not listed in CONALECHE May 2015 in the Project area		17
MCC that responded to the questionnaire		57
MCC surveyed, not found in CONALECHE May 2015 or in the integrated list.		26
MCC in the Project area (59+17+26)		102

Source: Calculated from CONALECHE 2015, 2013, REDDOM reports, CONALECHE May 2015 and list of MCC that responded to the questionnaire (Baseline Study MCC Survey 2016)

A relatively large sample of MCCs (57 of 102 identified), although not necessarily representative of all MCCs, was defined from an unknown sampling frame. The various sources reported different numbers for the total of MCCs, nationally and in the Project selected provinces. There is no official registry of MCCs and some close temporarily as supply decreases during the dry season.

REDDOM, during 2015, collected information on MCCs in the South (Engineering Agrofuturo, 2015), Northern (Sandy S. Peralta, 2015), and East (REDDOM, 2015) regions. These lists were integrated with data from multiple tables supplied by CONALECHE in 2013 and 2015 at the national level (Table 7.1, Annex 7). This exercise turned out 57 MCCs, 50 of which correspond to provinces covered by the Project (Table 7.2, Annex 7 and Table 11). When comparing the 57 MCCs surveyed, 28 coincide with the CANALECHE (May 2015) list and 3 in the integrated list, implying that there are 26 MCCs not registered in the available lists. Also, in the integrated list, 17 MCCs do not appear in CONALECHE's list of May 2015. Therefore, there may be as many as 102 MCCs in the Project area (see Table 11), 57 of which responded to the questionnaire presented in Annex 7.

These figures are approximations. It is possible that some data are redundant because listings are not treated as records or fields in databases. For example, in Table A.7.2 of Annex 7 some MCCs are registered as "Nameless" (*Sin nombre*), but each corresponds to an association with a number of producers, so that it is inferred as a MCC.

This “unorthodox” survey covered 57 MCCs, representing approximately 50% of the likely universe of centers in the 11 Project provinces. Fieldwork was conducted simultaneously with the execution of the Farm Survey of 505 farms whose geographic distribution was determined by the design of the farm sample. However, the location of the MCC survey resulted in 9 of the 11 Project provinces, as shown in Table 12. 70% MCC are located in the provinces of Santiago Rodríguez, Puerto Plata and Dajabón and 30% in the provinces of Duarte, El Seibo, Hato Mayor, Monte Plata, Maria Trinidad Sanchez and San Juan. Independencia and Altagracia provinces were not represented.

It is evident that improving MCC registration is needed. MoH and MA/DIGEPA should establish and maintain such register. The questionnaire in Annex 7 may be used for that purpose.

Legal status. The survey reflects the dominant presence of associations as owner-operators and to a lesser extend cooperatives and private MCC (Table 13). Organizations operating as cooperatives usually started as associations. The formation of cooperatives responds to a higher stage of organization, they must meet strict legal and economic requirements and expanded services to members. It is possible that many members of associations aspire to convert their organizations to cooperatives. A large part of respondents (57%) expressed the need for training or technical assistance in the field of cooperative operations. It must be observed that, in most cases, the PO that represents farmers are also the operator of the respective MCC.

Employment. The 57 MCC permanently occupy 168 men and 51 women; 28 men and 7 women are temporally employed.

Table 12 – Milk Collection Centers surveyed by province		
<i>Provincia</i>	<i>Number of MCCs</i>	<i>%</i>
Dajabón	12	21%
Duarte	1	2%
El Seibo	3	5%
Hato Mayor	1	2%
Monte Plata	3	5%
María Trinidad Sánchez	3	5%
Puerto Plata	12	21%
San Juan	6	11%
Santiago Rodríguez	16	28%
Total	57	100%

Source: Baseline Study MCC Survey 2016

Table 13 – MCCs legal status		
<i>Organization</i>	<i>Number of MCC</i>	<i>%</i>
Cooperative	6	11%
Asociation	45	82%
Private firm	6	4%

Source: Baseline Study MCC Survey 2016

Table 14 - Financing of MCCs surveyed					
Type of institution	Name of Institution	Number of loans	Investment loans DR\$	Working capital loans DR\$	Total lending DR\$
Private bank	Agroindustria los Ángeles, Banco de Reservas	4	3.335.000	2.835.000	6.170.000
Public bank	BAGRÍCOLA	3	11.850.000	10.500.000	22.350.000
Cooperative	COOFEGAN	4	3.350.000	0	3.350.000
CONALECHE	BAGRÍCOLA	23	52.348.529	11.620.000	63.968.529
Others	RICA, Banca Solidaria, FEDA, PARMALAT	12	35.360.000	15.350.000	50.710.000
Total		46	106.243.529	40.305.000	146.548.529

Source: Baseline Study MCC Survey 2016

Financing. Of the 57 MCCs, 46 have received loans from sources directly involved in the dairy chain, the most important source is the agreement CONALECHE-BAGRÍCOLA which provides 120-month term loans with an interest of 8% annually, followed by loans from milk processors such as Rica, Nestlé and Parmalat. Participation of private banks and cooperatives is modest with only 4 loans. Interest rate vary widely from 1% to 20%, sometimes for loans granted by the same entity. Table 14 presents the results of the survey by number of loans, amount and lender institution.

Investment needs. Investment requirements reported by MCC operators are highest with respect to training, cooling equipment, facilities (MCC infrastructure) and alternative energy (Table 15). The latter is consistent with electricity supply deficiencies and prices affecting all MCC.

Table 15 – MCC Investment requirements		
Items required	Centros de acopio	%
Technology	27	47%
Training	41	72%
Cooling equipment	36	63%
Facilities	38	67%
Water storage	23	40%
Alternative energy	35	61%
Milk transport	22	39%
Milk storage tanks	24	42%
Laboratories	24	42%
Improve lab equipment	11	19%
Water management equipment	21	37%
Electric plants (generators)	3	5%
Other	9	16%

Source: Baseline Study MCC Survey 2016

Milk quality control. One of the important procedures in MCC is measuring milk quality at the time of delivery by farmers. Of the 57 MCC only one has a laboratory, which performs 6 tests: antibiotics, acidity, somatic cells, fat, peroxide, and water content by Cryoscopy test. All 57 MCC perform acidity tests and 30 antibiotics tests.

These two tests are not sufficient to determine milk grade received by the MCC, therefore final grading is determined by processors independently of milk grade brought to the centers.



Figure 11 – Transport and delivery of milk to MCC



Figure 12 - Storage tank in one-tank MCC

If MCCs improve laboratory capacity and can store milk according to quality, it would significantly benefit producers who have struggled to get better quality of milk delivered to the MCC. There is no information of milk volume according to quality received at the MCC. In the question of “how many liters of grade A milk per month received”, only 9 MCC responded. Equipment deficiencies at MCCs prevent MCCs to perform a minimum level quality control; of 57 MCC, 41 replied that they had rejected milk from farmers because of quality issues.

MCC capacity. Storage capacity varies from 600 to 21,000 liters daily. As presented in Table 16, of 57 MCCs, 40 are considered small plants, 13 of which only have a single storage tank; 14 have 2 tanks; and 7, 3 tanks. The presence of several tanks does not mean that the MCC stores milk by quality type. Just 10 MCC responded that they classified according to quality in each tank.

In the majority of cases, the storage capacity is higher than the volume collected daily. 37 MCC held volumes at less than 60% capacity, while 16 centers, used more than 65% capacity. Only in 2 cases capacity utilization was 100%. This suggests that farmers associated with MCCs (37 operating with underutilized storage capacity) are milking less than expected or there are other factors that cause reductions in production. This aspect should be diagnosed in more detail in the specific areas.

Table 16 – Number of MCC by volume of milk received daily	
Range of volume of milk received daily (Liters)	Number of MCCs
10.000 – 25.000	8
5.000 – 10.000	9
2.000 – 5.000	24
500 – 2.000	16

Source: Baseline Study MCC Survey 2016

Infrastructure and Operation. The main deficiencies in MCC infrastructure are associated with equipment and facilities to ensure a safe and sanitary environment for handling milk. Washing is poor, 51 MCC lack washing system vapor tanks, containers and utensils, 49 MCCs have no pump or mechanical washing system, just 5 centers have this equipment, one-half of MCCs do not wash providers’ milk containers in the collection center, as a preventive measure when reused, they do not consider that washing in farm is less effective because it increases the bacterial load due to the time elapsed.

Although most MCC (48) believe that they are isolated from sources of pollution, the facilities of 49 of them do not have wastewater treatment; direct effluent from washing accumulates in traditional sewer systems; many

MCC are not connected to evacuation networks, which can be a local source of infection; 60% of MCC personnel do not have a health card; 60% of MCCs show deficiencies in the control of rodents and insects.



Figure 13. Condition of containers at MCC



Figure 14. Acidity and antibiotics tests in MCC

The main deficiencies in infrastructure that affect the performance and quality of milk relate to the lack of roofing protection in the area of discharge (53%), 51% of MCCs recognize the delay to reach the safe storage temperature (4°C) 2 hours after the last milk received, 84% of MCC do not have adequate laboratory; 51% do not have the space to install it. Between 19 and 33% have design flaws: they do not have space for cleaning materials, milk storage tanks are not in an isolated room and do not keep chemicals properly stored or do not have office space. In Table 7.3 of Annex 7 a summary of the main shortcomings is presented.

Milk transport. MCC are not responsible for transporting milk, farmers are responsible for delivery to MCCs. Processors collected it directly from storage tanks at the MCC. Of the 57 MCCs, 5 used tankers. 16 MCCs claim that trucks do not maintain the recommended 8°C temperature and 13 MCCs state that trucks operators do not have access to the tank to facilitate inspection. Weaknesses were also identified as deficiencies with toilets, 12 report that the truck is not washed after download and operators do not have health certificates.

MCC priorities. MCC were asked about the problems that most affect their operation. In the opinion of more than 60% of respondents 8 main factors affect their operation: i) the price of electricity, ii) the quality of the milk delivered by farmers, iii) the selling price of milk, which has suffered heavy downward variations in the last year, iv) the price of inputs, v) access to finance, vi) lack of training, vii) deficient facilities and viii) access road conditions.

Technical assistance (TA). Technical assistance coverage seems to be acceptable, 77% of MCC have been beneficiaries of public TA and 58% received assistance from the private sector (Table 17). TA services have focused on several groups according to the number of MCC beneficiaries: first group: quality issues (88%) and milk storage (40%), equipment operation (40%); second group: milk market (32%), non-conventional energy (30%) and 30% organization and management of cooperatives; and a third group, with percentages between 9% and 28% of MCCs have been trained on issues such as milk transportation, environmental aspects, operation of laboratories and areas of institutional organization and community organization (see Annex 7).

Table 17 - Technical Assistance (TA) received by MCCs		
Type of technical assistance	Number of MCCs	%
Received Public TA	44	77%
Did not received Public TA	5	9%
Received private TA	33	58%
Did not received private TA	3	5%

Source: Baseline Study MCC Survey 2016

According to survey responses, it is advisable to verify the contents and impact of technical assistance oriented to milk quality. It seems inconsistent that 52 MCC request technical assistance in milk quality, while 50 have

received it and personnel of 46 MCC had already been trained on this topic. Other requests for assistance are consistent with the underserved topics such as organizational issues, management, marketing and cooperatives requested by more than 58% of the MCC.

Not all milk produced is delivered to MCC, some of it is sold directly to artisan cheese processors, up to 30% is transported by truck from farm to processors in some areas, mainly to cheese factories. In these cases, farms may have “cooling units” as shown in Table 18.

Table 18 – Number of cooling units and capacity in liters by province		
Province	Number of cooling units	Capacity (liters)
El Seibo	2	12.464
María Trinidad Sánchez	12	25.509
Puerto Plata	28	64.105
San Juan	7	13.069
Santiago Rodríguez	17	59.832
Total	66	174.979
Source: MCC Survey 2016		

PMP Indicators. The following PMP indicators are related to MCCs:

(32) “Percentage increase in volume of grade “A” milk sold to processors by USDA supported milk collection centers”

(36) “Number of milk collection centers with USDA support using improved equipment to collect and chill milk”

(37) “Number of grants provided to dairy producer groups/processors to establish or improve milk collection centers”

(38) “Value of grants provided to dairy producer groups/processors to establish or improve milk collection centers”

(55) “Number of dairy producer association members trained in milk collection center establishment/management”

Information on these indicators will be collected during Project implementation. This information should be recorded when approving each “*cofinanciamiento*” and should be part of the MCC records.

As shown in this section, MCCs are strategic elements in the dairy value chain, especially because modest investments (additional tanks, lab equipment and training in one package) could have an immediate impact of the quality-price structure, essential for dairy value chain efficiency and farmer’s welfare.

4.3 Dairy processors

As with every instance in the dairy and beef value chains, there is a wide range of milk processors sizes, technologies and quality characteristics. For the large processors (Rica, Nestlé, Parmalat and others), that transform raw milk into consumer products, like liquid milk sold at local supermarkets, and even powder milk (imported and domestic), the main issues are related to trade regulation, in particular, subsidies of imported

dairy products in the countries of origin and tariffs, which are complex and constantly changing, in the framework of various trade agreements, as the following USDA news, published on August 2016, show:

“FAS/Brazil facilitated over US\$ 3 million dollars so far in 2016 in U.S. exports of milk powder to Brazil in response to a domestic shortfall. Dairy imports rose by 70 percent in the January-July 2016 period due to a production shortfall in Brazil. As a result of the shortage of milk powder in the market, Brazil is searching for other supplies and has imported from the United States despite an import tariff of 33 percent.” (USDA/FAS/ESR, August 2016)

These developments would have an impact on commercial decisions by this group, which has its own market strategies as actors in the international dairy market. The main questions for this group are related to the feasibility of expanding the local processors’ share of the domestic market, namely: can they compete with subsidized imports? Is national production of milk sufficient (in quantity and quality) to meet processors’ potential demand? National brands have a massive presence in the domestic market but, according to (Ponce Ceballos, Pastor, 2016), *“La importación de leche fluida se incrementó 30 veces del 2012 al 2015 y sigue subiendo”* (Imports of liquid milk increased 30 times between 2012 and 2015 and keep increasing).

To the extent that Project objectives (FFPr SO2) call for *“Expanded trade of agricultural products, domestic, regional and international”*, NCBA CLUSA, its CTC and its partner JAD, the MA and other agencies in charge of international trade policy should follow up recommended policy adjustments to promote an increasing and competitive share of the local dairy market within the framework of current trade agreements. (See *“Recommendations for developing a National Livestock Improvement Program”* (Ponce Ceballos, Pastor, 2015) and section 5.5).

Small processors. At the other end of the spectrum, some one-room artisan cheese manufacturers process low quality milk under questionable sanitary conditions. This group, which includes medium size establishments, consume 60%¹³ of national milk production (Ponce Ceballos, Pastor, 2016), mostly lower grade milk. However, even these low-price producers feel affected by “cheap cheese imports”. They also act as shock absorber when there is an excess of lower quality milk in the market. There are social as well as economic issues in the possible transformation of this market; they generate jobs and keep low quality milk suppliers viable.

According to (Ponce Ceballos, Pastor, 2016), *“El problema no es solo el alto costo de los quesos nacionales que no pueden competir con los importados, sino la baja eficiencia, calidad y rendimiento de los procesadores pequeños y medianos.”* (“The problem is not only the high cost of domestic cheese, which cannot compete with imported products, but the low efficiency, quality and performance of small and medium processors”).

With respect to the Project Baseline Study, a survey was conducted among small cheese manufacturers (*“queserías”*), yogurt and sweets processors. It is estimated that there are 520 small processors nationally, mainly artisan cheese manufacturers (Thinkbig, 2015). Parallel to the Farm Survey, 26 small processors were surveyed (see questionnaire and results tables in Annex 9).

***Piden apoyo producción quesos
(Cheese Production Support is requested)***

Diario Libre
Santo Domingo, viernes 2 de septiembre de 2016

The president of Asociación Dominicana de Hacendados y Agricultores (ADHA) asked the government to purchase a fraction of local cheese production in order to avoid bankruptcy of many cheese producers.... He mentioned that the majority of small cheese producers are going through very difficult times due to the large amounts of cheese entering the country from countries where producers are highly subsidized.

¹³ Another source (Thinkbig, 2015) estimates this consumption at 50%; CONALECHE’s estimate cited in (Ponce Ceballos, Pastor, 2015) is 54%.

There is no official registry of these establishments, most of them function informally. Of 26 visited, only one had a sanitary permit, which is required by law; 20 establishments produced 18,171 lbs. of dairy products, mainly cheese, and processed 72,500 liters of milk daily. This group generated 111 permanent and 24 part-time jobs and women's participation was over 50%.

Only 9 of 26 establishment owners belong to a PO and 2 to a cooperative, 15 are independent. One half of the respondents have received financing for their operations, 7 from public sources (BAGRÍCOLA, CONALECHE, FEDA) and 4 from private commercial banks (Annex 9, Table 9.8). All respondents cited as main concerns: costs of electricity and competition (domestic and international prices). (Annex 9)

Sanitary conditions. Most processors interviewed do not have odor extraction equipment or adequate washing equipment, do not manage liquid or solid waste properly, do not control the presence of insects in their facilities, one-half of personnel in operations do not have health cards. (Annex 9, Table 9.4)



Figure 15. Handling of plastic milk delivery containers



Figure 16. No stainless-steel tables

Investment requirements. Table 19 presents investment requirements expressed by survey respondents. 40%-65% processors stated that their requirements are related to installed capacity expansion (facilities and equipment, cooling systems and transportation for access to MCC and product distribution).

Table 19 – Processors' Investment needs according to type of investment		
<i>Tipo of investment</i>	<i>Number of processors</i>	<i>%</i>
Facilities	17	65%
Cooling equipment	12	46%
Milk transport	11	42%
Milk storage tanks	11	42%
Alternative energy	10	38%
Pasteurization	10	38%
Training	9	35%
Tecnology	7	27%
Forms	7	27%
Inocuity	6	23%
Lab equipment improvement	6	23%
Water storage	4	15%
Water handling equipment	4	15%
Other	4	15%
Lab	3	12%

Source: Small Dairy Processor Survey 2016

Another group (23% to 38%) intends to invest in technology-based equipment, sanitary controls, laboratory equipment and alternative energy solutions. The energy problem is constantly mentioned as a major constraint. Some processors with high processing capacity (entre 1.500 y 12.000 liters daily) show a clear tendency to invest in facilities and most items on Table 9.2 (Annex 9), while smaller processors (200 - 800 liters) require training, water handling and sanitary equipment, as well as facilities. Despite the problems, they seem optimistic about their sector's growth.

Techniques in cheese manufacturing. 19 cheese factories responded to the survey. Their responses indicate the precarious state of manufacturing practices, only 5 apply technical procedures or practices normal in the industry. Between 70 and 90% of plants lack grease collection equipment, do not store input milk in a cold environment, do not have quality control procedures, hydraulic press, pasteurizer or other standard equipment or accepted practices of cheese manufacturing. 68% do not have stainless-steel tables or other recommended equipment. The final product is not vacuum-packed. (See survey results tables in Annex 9)

Milk delivery. Although most plants surveyed do not meet sanitary standards, they are quite dynamic. They receive on average 28,000 liters of milk daily directly from 390 farms and 6 MCCs at an average price of RD\$18. 80% of cheese factories take in "warm milk", only one of 19 receives cold milk. 38% perform quality control tests. Contamination risk is high due to lack of adequate equipment and handling practices (Table 20).

Table 20 - Supply and conditions of reception of milk by processors	
Item	Quantity
Direct suppliers (farms)	390
MCCs suppliers	6
Liquid milk received previous day (lt)	31,603
Average daily milk received (lt)	28,461
Average Price paid (DR\$/lt)	18
Milk received cold (number of processors)	1
Milk received warm (number of processors)	22
Analysis of milk received (number of processors)	10

Source: Small Dairy Processor Survey 2016

Products. Although a wide variety of cheese is produced, it is concentrated on those types that demand less technology: fresh cheeses (Table 21): 10 plants produce "white cheese" and "frying cheese" (popular varieties for local consumption). Production is reduced when processes require more sophisticated technology and equipment.

Table 21 - Producers and sales by type of cheese				
Fresh cheese	Volume of Production Lbs.	Number of processors	Sales RD\$	Number of processors
"Blanco"	3,965	10	9,267,060	10
"De hoja"	973	8	79,809	6
"De freir"	7,444	12	636,480	10
Cream	850	2	45,950	3
Double cream	0	1	288,000	1
Mozarella	26,251	5	218	2
Requesón	250	1	0	0
Mature cheese				
Cheddar	20,180	5	2,523,000	4
Danish	5,000	1	525,000	1
Tipo "holandés"	40	1	500,000	1
Gouda	230	2	1,260,000	1

Source: Small Dairy Processor Survey 2016

Management. More than 60% of processors in the survey require basic improvements in their management processes. They do not have proper accounting, there are no occupational health plans. More than one-half of processors lack quality control and sanitary records, there are no operating manuals and have not considered related training programs.

Processors' priorities. Four main problems were identified by small cheese processors: milk quality; milk and other inputs prices; cheese selling prices; and lack of equipment. They affect more than 70% of respondents. (see **Annex 9**, Table 9.6). It must be recognized that processors' demand for low quality milk makes supply of low grade milk viable, a main issue in farm-to-MCC handling. It would be necessary to establish minimum accepted quality standards, but enforcement would be a problem as illustrated by the continuing use of peroxide for transportation of milk collected by trucks at the farm gate, which is against regulations.

Technical assistance. 50% of small processors have received TA from public institutions and 30% from private providers. Between 30 and 50% of respondents have received TA in the most basic aspects: cheese manufacturing, sanitary practices and BMP. However, their impact is not evident. It will be necessary to inquire about the contents and quality of TA in relation to the beneficiaries' economic and social realities (costs and lack of equipment, especially) and why its impact is so modest. TA demand includes areas which have been covered previously, 8 processors expressed that they need assistance in cheese manufacturing. **Table 9.7, Annex 9** presents a list of TA areas and requirements as expressed by processors in the survey.

PMP indicators. The following PMP indicators apply to dairy processors. None have received training in SPS standards.

(25) *"Number of dairy processing facilities audited for compliance with SPS standards"*

(26) *"Number of dairy processor staff trained in SPS measures"*

Project activities could be oriented at enabling beneficiaries of training in SPS standards to become competitive and improve their share in the local market. As indicated by (Ponce Ceballos, Pastor, 2016), *"The problem is not only the high cost of domestic cheese, which cannot compete with imported products, but the low efficiency, quality and performance of small and medium processors"*.

Recommended key indicators for mid and final evaluation should include the number of establishments that obtained sanitary permits, the rate of growth of sales by domestic cheese, yogurt and sweets establishments.

5. The beef value chain

Literature and information on the beef value chain is limited, most literature on livestock in the Dominican Republic is concentrated on the dairy subsector. When survey respondents were asked about the farm's "type of production", only 17 respondents (3.4%) indicated "beef"; 81 (16%) responded: "double purpose" (beef and dairy). Most farmers, (407 or 80.6%), perceive their own farms as dairy farms.

However, when technical details were requested, 65 respondents (12.9%) described cattle beef producing operations taking place in their farms, although they could be also "double purpose" farms, 38 of 65 "beef farms" also produce milk and report its quality. According to this criterion (technical aspects of production), 430 farms (85%) were reported to produce milk. Some have marginal operations as beef cattle farms. This may account for the widely held view that most farms are "double purpose" farms, but it mainly reflects the informality of the

sector (only 2.6% of all farms maintain cattle registries) and – in this context – the ambiguity of the definitions, especially with respect to beef production.

Livestock cattle raised for beef is estimated at 26% or 572,000 heads in 2016 (Morrobel, José A., 2016). This figure doubles the last estimate available of 276,354 heads in 1998 (SEA, 1999). DIGEGA's projections estimate 30% or 477,159 heads in 2016, nationally. According to the Farm Survey, there is an average of 147.2 heads per farm (Table 22), which means that in the 11 Project provinces there are 383,383 heads of cattle raised for beef.

The most frequently discussed general issues in the beef value chain are related to the possibilities and requirements for exporting to the U.S. market, its impact and the efficiency of beef cattle farming as measured by the age and weight at which cattle is taken to the slaughterhouse. However, most farms do not keep registries, as mentioned, only 13 of 65 beef producing farms do so.

The beef value chain also shows an extreme duality in its structure, with a few modern, vertically integrated post-farm operations, likely to qualify for exports in the short-run, and many small processors that produce low cost, low quality, low price consumer products (various types of sausages and other cooked products).

Since the Project main objective and priority in this value chain is to achieve equivalence with U.S. standards to qualify for exports to U.S., the baseline should report the status of preparation, capacity and readiness of export candidates. Other topics are complementary: farm productivity and the impact of exports on the domestic market and viable improvements in the small processor market. These aspects are elaborated in the following subsections.

PMP indicators. The following indicators are related to the beef value chain;

(29) "Number of value chain actors participating in the Seal of Quality"

(30) "Number of products using the Seal of Quality in their marketing"

(31) "Number of people reached through the Seal of Quality public information campaign"

These indicators require the establishment of the "Seal of Quality". The Project will coordinate with the authorities to enable this mechanism in order to comply with the respective indicators.

(46) "Number of value chain linkage meetings held between buyers/sellers in the dairy and beef sector"

NCBA CLUSA and its partner JAD will have the capacity to promote these meetings as the equivalence mechanism becomes a reality.

(49) "Number of assessments completed of GoDR beef food safety regulations and systems"

Section 4.2 is a preliminary assessment of food safety regulations in the small beef processor sector. The Project should register these activities.

(53) "Number of public-private partnerships formed as a result of USDA assistance (FFPr Indicator 8)"

These activities will be registered during Project implementation. Mid-term and final evaluations will measure progress in equivalence achievement and specialized systems such as traceability and farm cattle registers.

Table 22 – Number of heads of beef producing cattle in Project provinces in Farm Survey

<i>Province</i>	<i>Number of Heads of beef cattle</i>
Altagracia	2,305
Dajabón	0
Duarte	1,366
El Seibo	1,593
Hato Mayor	0
Independencia	132
María Trinidad Sánchez	1,756
Monte Plata	800
Puerto Plata	394
San Juan	203
Santiago Rodríguez	1,018
Total	9,56
Average per farm⁷	147.2

Source: Baseline Farm Survey 2016

5.1 Beef cattle farming

As mentioned, according to the Farm Survey, only 65 (12.9%) of 505 farms declared to specialize in beef production by responding to the related technical questions, although in Table 23 some non-beef farms may produce beef occasionally or on a marginal basis.¹⁴ More than half (38) of beef farms also produced milk, delivered it to MCC and reported its quality.

Table 23 – Number of specialized beef production farms*			
Province	Beef farms	Non-beef farms	Total
Altagracia	12	26	38
Dajabón	-	51	51
Duarte	3	35	38
El Seibo	4	58	62
Hato Mayor	-	17	17
Independencia	2	9	11
María Trinidad Sánchez	4	33	37
Monte Plata	12	81	93
Puerto Plata	11	55	66
San Juan	10	51	61
Santiago Rodríguez	10	21	31
Total	65	440	505
Source: Baseline Farm Survey 2016			

Cattle breeding is often discussed – more so in dairy farms – in terms of the need to adapt cattle breeds to local conditions. Table 24 shows that most beef farms use “mestiza” as the main or only breed of cattle for beef production. Only in one Project-selected province (Duarte), Brahma is used. The work by TAMU and CBI on livestock technology should contribute to this assessment.

With respect to the main problems identified by beef farmers, more than 50% of farmers report the quantity and quality of pastures as two of the five main problems (Table 25), closely follow by prices of balanced feeds, water sources and the price of medicine.

¹⁴ According to some local experts, many cattle farmers do not run their farms technically or as a business enterprise but as a combination wealth or asset holding, hobby and status symbol.

*Only 9 of the 11 provinces showed beef production.

Table 24 – Number of heads of beef cattle by province according to race type					
Province	Number of beef farms	Race of cattle			Total
		Brahman	Mestiza	Don't know	
Attagracia	11	-	2,305	-	2,305
Duarte	3	551	800	15	1,366
El Seibo	3	-	1,593	-	1,593
Independencia	2	-	132	-	132
María Trinidad Sánchez	4	-	1,756	-	1,756
Monte Plata	12	-	677	123	800
Puerto Plata	11	-	356	38	394
San Juan	9	-	203	-	203
Santiago Rodríguez	10	-	1,018	-	1,018
Hato Mayor	0	-	-	-	-
Dajabón	0	-	-	-	-
Total	65	551	8,840	176	9,567

Source: Baseline Farm Survey 2016

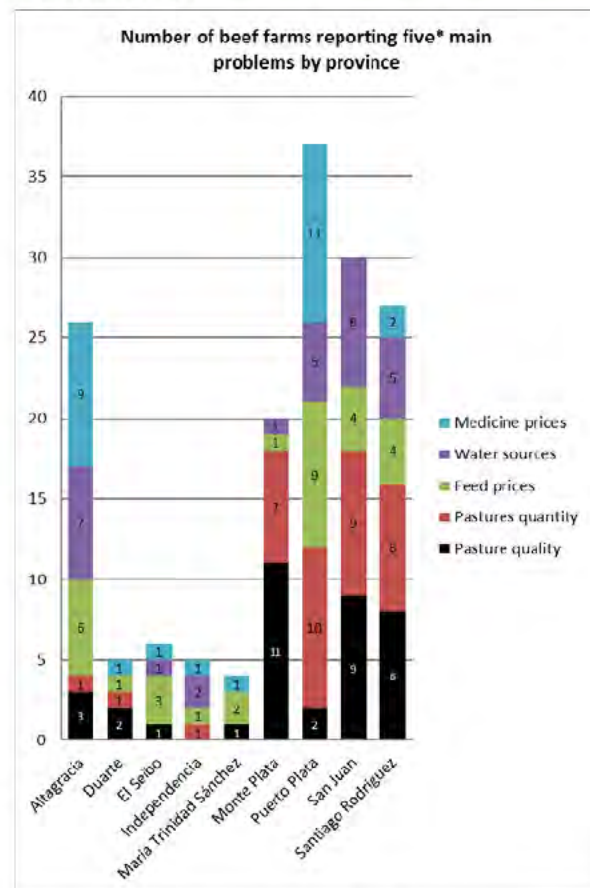


Figure 17. Number of beef farms reporting five main problems by province

Table 25 – Number of beef farms reporting five* main problems by province					
<i>Provincia</i>	<i>Pasture quality</i>	<i>Pasture quantity</i>	<i>Feed prices</i>	<i>Water sources</i>	<i>Medicine prices</i>
Altagracia	3	1	6	7	9
Duarte	2	1	1	-	1
El Seibo	1	-	3	1	1
Independencia	-	1	1	2	1
María Trinidad Sánchez	1	-	2	-	1
Monte Plata	11	7	1	1	-
Puerto Plata	2	10	9	5	11
San Juan	9	9	4	8	-
Santiago Rodríguez	8	8	4	5	2
Total	37	37	31	29	26

* 5 main problems reported by farms in each province

Source: Baseline Farm Survey 2016

Beef producing farms sell their stock to intermediaries, slaughterhouses (small and industrial or Types A and B, section 4.2), meatpacking establishments and other farmers (Table 26).

Table 26 – Number of farms by destiny of final sales						
<i>Province</i>	<i>Slaughterhouse</i>	<i>Industrial slaughterhouse</i>	<i>Meat packing</i>	<i>Intermediary</i>	<i>Another farmer</i>	<i>Butcher</i>
Altagracia	1	-	-	9	-	-
Duarte	2	-	-	-	-	-
El Seibo	2	2	-	1	-	-
Independencia	-	-	-	1	1	-
María Trinidad Sánchez	2	1	-	1	1	-
Monte Plata	6	1	1	6	1	1
Puerto Plata	1	1	-	5	5	-
San Juan	1	1	-	8	-	-
Santiago Rodríguez	1	-	-	7	2	1
Total	16	6	1	38	10	2

Source: Baseline Study Farm Survey 2016

Technical assistance is a main issue with respect to beef farms. One-half of beef farms surveyed reported having received TA (Table 27). Table A.10. 5 details the number of farms reported to have received TA in 20 different topics. However, close to one-half of beef farms expressed their need to receive technical assistance in the same topics. An in-depth evaluation should be made with respect to the effectiveness of TA provided.

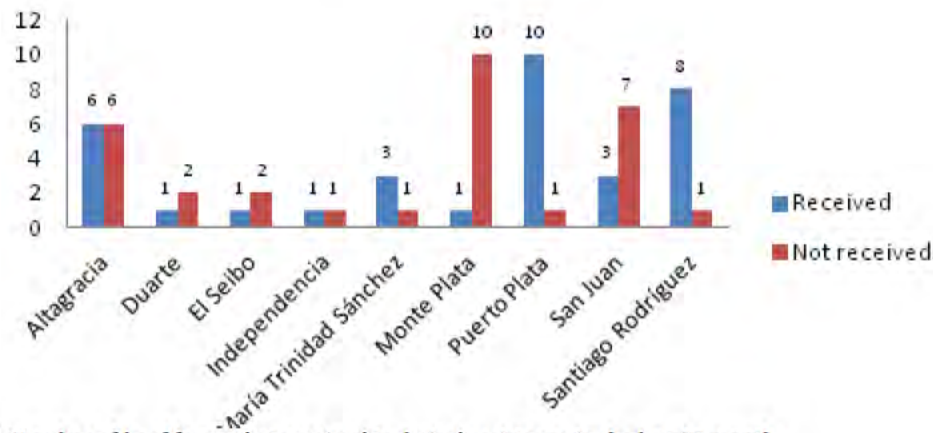


Figure 18. Number of beef farms that received technical assistance in the last 12 months

Province	Received	Not received	NA	Total
Altagracia	6	5	-	11
Duarte	1	2	-	3
El Seibo	1	2	1	4
Independencia	1	1	-	2
María Trinidad Sánchez	3	1	-	4
Monte Plata	1	10	1	12
Puerto Plata	9	1	-	10
San Juan	3	7	-	10
Santiago Rodríguez	7	1	1	9
Total	32	30	3	65

Source: Baseline Farm Survey 2016

Province	Disease Mgmt.	Pasture Mgmt.	Pasture conserv.	Beef quality	Feed mgmt.	Herd mgmt.	Farm-forest mgmt.	Plague control	Farm Mgmt.	Climate change
Altagracia	6	8	5	9	7	6	5	8	7	3
Duarte	1	2	1	1	1	1	1	1	2	1
El Seibo	2	2	1	1	2	2	-	1	2	1
Independencia	-	1	2	-	2	2	-	-	1	-
María Trinidad Sánchez	-	1	1	1	1	-	1	1	1	-
Monte Plata	6	5	7	4	4	4	3	6	3	1
Puerto Plata	9	8	5	9	7	9	7	7	8	7
San Juan	1	4	3	1	5	1	3	-	5	4
Santiago Rodríguez	2	3	3	3	2	1	2	-	-	1
Total	27	34	28	29	31	26	22	24	29	18

Source: Baseline Farm Survey 2016

5.2 Slaughterhouses - processors

Information on slaughterhouses in the beef chain is limited compared to post-farm linkages in the dairy value chain. According to (Morrobel, José A., 2016), there are 162 slaughterhouses nationally, where an average of 700 units are processed daily. However, this average covers a wide range, from small municipal facilities that process as few as one unit per day to modern large processors with more than 800 units per day. Only 7 beef processors supply 85% of the domestic market, according to this source.

Field visits and interviews were useful to determine the structure of post-farm activities in the beef markets and prepare a questionnaire for a survey of slaughterhouses (Annex 8), which may be classified in three general categories:

Type A: Modern beef processors, vertically integrated, which could become exporters in the short-run, when equivalence standards are in place; they require minor adjustments. There are between 5 and 10 establishments identified in this category;

Type B: Private traditional slaughterhouses that provide services to beef distributors, require substantial adjustments and investments, and are unlikely to be eligible for export in the short run; and,

Type C: Municipal slaughterhouses that require substantial improvements to meet minimum sanitary and environmental requirements.

A survey was prepared with a list of facilities and procedures that a modern slaughterhouse (Type A) should have, as shown below and in Annex 8. The 2 modern facilities in the sample, the same facilities that the government's working group has identified to be most likely eligible for exporting in the short-run when equivalence is established, have identical results (from survey questionnaire):

Indicate if facilities comply with:	Yes	No
1. Operations personnel has health certificate	✓	
2. The discharge area is covered	✓	
3. It has permanent source of water	✓	
4. Reservoir has enough water for washing installation	✓	
5. The installation has pending to evacuate the wash water	✓	
6. The floors are covered with cement	✓	
7. The construction allows sequencing of activities and avoid cross-contamination	✓	
8. The room is protected from the entry of insects and rodents	✓	
9. No pets	✓	
10. Rest facilities	✓	
11. Quarantine facility.	✓	
12. Crematorium		✓
13. Drink pens in good condition	✓	
14. Corral isolation.	✓	
15. Necropsy area.		✓
16. Adequate flooring in pens		✓
17. Feeders corrals in good condition	na	
18. Pollution-free location	✓	
19. The location annoys the community		✓
20. Odor extraction	✓	
21. Blood separation system and solid waste (grids)	✓	
22. It has office space	✓	
23. It has allocated space for cleaning materials	✓	

24. It weight measurement system of animals	✓	
25. Mechanical machine for washing facilities	✓	
26. Hand washing facilities	✓	
27. Has boiler steam washing facilities	✓	
28. Has treatment system sewage water	✓	
29. Staff have the right equipment (helmet, boots, uniform)	✓	
30. Has power plant	✓	

Indicate if operation of facilities meets the following standards:

	SI	No
1. The facility has quality certificate	✓	
2. Receiving Protocol cattle	✓	
3. Ante mortem inspection	✓	
4. Separation of clinically suspect animals	✓	
5. Good hygiene in animal reception	✓	
6. Classification of animals by category and sex.	✓	
7. Weighing in reception.		✓
8. Weighing before slaughter.	✓	
9. Weigh registry	✓	
10. Has a suitable place for animals' rest	✓	
11. It has a shower system	✓	
12. The shower system has sufficient capacity for peak demand	✓	
13. It has a control system drainage during transfers	✓	
14. It has desensitization system		✓
15. Conditions of desensitization (accumulation or/and animal's death)		✓
16. Air processing	✓	
17. Utensils are in good condition	✓	
18. Features for hygienic blood collection process	✓	
19. It has containers for blood collection	✓	
20. System for blood storage	✓	
21. Blanching (replacement of water for blanching)	✓	
22. Conditions of depilation (cuts and bruises)	✓	
23. Full depilate	✓	
24. Management hygienic evisceration (remains of viscera, blood clots)	✓	
25. Veterinary inspection post mortem	✓	
26. Sampling program	✓	
27. Identification of carcasses with respect to their viscera	✓	
28. Use of labels to identify carcasses	✓	
29. Retention of suspicious viscera	✓	
30. Control and separation of forfeitures	✓	
31. Weatherization of boning room	✓	
32. Collection of boneless meat	✓	
33. Inspect refrigerators' hygiene periodically	✓	
34. Meets humidity conditions for storage of carcasses	✓	
35. Meets separation distances of storage channels	✓	
36. Keep graphic temperature records	✓	
37. Takes parts' temperature	✓	
38. Storage of products according to their state of processing	✓	
39. Perform preventive maintenance of refrigerators	✓	
40. It has refrigeration antechambers	✓	
41. Maintain records per animal slaughtered	✓	
42. Identify the membership of viscera, head, thymus gland	✓	
43. Identify blood per animal for health inspection	✓	
44. Inspectors examine the state of the white viscera	✓	
45. Health authorities conduct daily inspections	✓	
46. Health authorities conduct weekly inspections	✓	



Figure 19 -Slaughterhouse Alonso



Figure 20 - Deboning process

These lists were applied also to Types B and C; the results are shown on Table 29. Clearly, there is a wide difference between types. These scores may be used as baseline for evaluation.

Table 29 – Compliance scores of slaughterhouses by type			
Type of slaughterhouse	Number of slaughterhouses	Facilities Compliance	Operational procedures Compliance
A Type: can export in the short-run	2	27/30	43/46
B Type: Require substantial investments	1	24/30	33/46
C Type: municipal slaughterhouses	9	9/30	3/46

Source: Baseline Study Survey of Slaughterhouses 2016

The main constraints currently are related to the government's capacity to appoint and train permanent inspectors in each facility as required by equivalence standards. Also, laboratory capacity needs to be improved. There are two consultant reports on microbiology tests and methods related to LAVACEN requirements and beef export possibilities to the U.S. (Cook, Jr., L. Victor, 2015) and MoH inspection personnel required by equivalence standards (McDermott, Steven, 2015). They provide detailed recommendations on specific activities that must be implemented. There is a MA-MOH working group and a CTC monitoring subcommittee working on these issues in the context of the equivalence objective, which is fairly advanced.

The current state of procedures development for achieving equivalence as well as the capacity of at least 5 candidates for exports and the status of LAVACEN may be taken as baseline indicators for Project monitoring and evaluation.



Figure 21. Plant wastewater treatment at the Alonso slaughterhouse



Figure 22. Grupo Alonso packing room

5.3 Small beef processors – meatpacking establishments

Cooked meat (beef and pork), in the form of sausages, salamis and other popular delicatessen, is consumed by more than 90% of the Dominican population. Production is supposed to follow (FAO Database, s. f.) norms and regulated by *Comisión Nacional de Normas del Ministerio de Industria y Comercio* (Cominor) (National Standards Commission of the Ministry of Industry and Commerce). This entity, established in 2012, approved the norm to regulate labelling of meatpacking products (Esteban Delgado, s. f.). Regulation 329 is comprehensive in establishing the regulatory framework applicable to this sector, however, no official registry exists of meatpacking plants. Some sources, estimate the existence of more than 100 establishments (Esteban Delgado, s. f.) in the country, others estimate the total at 46, but only 20 are said to be registered (Evaristo Rubens, 2012).

Most production seems to take place outside current standards. 15 interviews were programmed for this assessment but only 5 responded. Many processors do not allow visits or provide information, even though some of the work takes place in the open and it literally spills on the streets. Hygienic conditions are evidently inadequate and processors are cautious to provide information.

In the sample of 5 plants visited, 3 function without association to any organization; 2 belong to the “*Asociación de Productores de Embutidos*” (Sausage Producers Association). They employ a total of 37 women and 152 men on a full-time basis.

Financing comes primarily from commercial banks, but no details were provided. Clearly, as in the case of small cheese processors, sanitary conditions are a major issue and it does not seem to be in their investment plans, which are directed mostly to technology and equipment (**Table 30**).

Table 30 – Small beef processors, type of investments planned by plant						
<i>Investment type</i>	<i>Plant 1</i>	<i>Plant 2</i>	<i>Plant 3</i>	<i>Plant 4</i>	<i>Plant 5</i>	<i>Total</i>
Technology	1	-	1	1	1	4
Training	1	-	1	-	-	2
Equipment	1	1	1	1	1	5
Facilities	-	-	1	1	1	3
Water storage	-	-	-	-	-	-
Transport of inputs	1	1	-	-	1	3
New technology	1	-	1	1	1	4
Alternative energy	1	-	1	-	1	3
Innocuity	1	-	1	1	-	3

Source: Baseline Study Small beef processors survey 2016

Four plants purchase from 83 suppliers 93.000 Kg of beef and pork products per month to produce mainly salami, ham and ham spread. No information on sales was available. Table 31 presents the only information obtained, some of which was promised but has not been received.

Table 31 – Input supply and production by plant						
<i>Items</i>	<i>Plant 1</i>	<i>Plant 2</i>	<i>Plant 3</i>	<i>Plant 4</i>	<i>Plant 5</i>	<i>Total</i>
Number of direct suppliers		25	32	16	10	83
Beef received (Kg)		15.000	40.000	18.000	20.000	93.000
Price per Kg of beef purchased	NA	NA	NA	NA	NA	
<i>Production of:</i>						
Salami		4.000	15.000	9.000		24.000
Ham		1.000	7.000	2.500		10.500
Sausage		200	5.000	1.000		6.200
Ham spread		100	15.000	1.000		16.100
Sausage (Longaniza fina)		300	4.000	2.500	1.000	7.800
Sausage (Chorizo)		50		500		550
Sausage (Salchichón)						
Preformed beef paddies						
Smoked sausage				1.500		1.500

Source: Baseline Study small beef processors survey 2016

Plant operation technological deficiencies are summarized in Table 32. The most common are: the absence of hot water supply for washing facilities and utensils; lack of proper timing for post-grinding and temperatures above 7°C; 3 plants do not have protocols for environmental management; plants do not apply HACCP or control of critical points, even though they are part of Regulation 329; there are no training plans.

Table 32 – Main deficiencies in plant operation						
Equipment or process	Plant #					Total
	1	2	3	4	5	
The room is protected from the entry of insects and rodents			1			1
Instrument sterilization system	1					1
Exhaust fan in high emission processes	1		1			2
Mechanical system for washing facilities	1		1			2
Boiler steam washing facilities	1		1	1	1	4
Processing room isolated from storage of raw material			1			1
Separation of each stage processes				1		1
Solid waste treatment (removal of tendons, fascia, excess fat)			1	1		2
Chopped mixed post giving a maturation time		1	1	1		3
Chopping system manual		1				1
Chopping system mechanical	1					1
Zone temperature control below 7° C	1	1	1	1		4
Periodic maintenance of mincer	1					1
Sausage without vacuum system	1	1			1	3
Sausage vacuum system	1				1	2
Heating control stuffer	1				1	2
Wash guts system					1	1
System for handmade smoked procedure		1				1
Smoker uses a machine with temperature control	1					1
Ripening chamber has temperature control and light	1					1
Drying system with renewal of air and light control	1		1			2
Drying products separation is more than 7 cm	1					1
Inspection of water chemical quality every 6 months ago (Regulation 329)	1					1
Bacteriological water inspection every 30 days (Regulation 329)	1					1

Source: Baseline Study Small beef processors survey 2016

The more urgent problems, according to respondents, are the supply and price of energy followed by road conditions (although they operate in urban settings) and the price of equipment replacement parts (Table 33). Only one processor reported not having received technical assistance, the rest have received public and private assistance.

Table 33 – Small beef processors, main problems reported						
Equipment or process	Plant					Total
	1	2	3	4	5	
Cleaning			1			1
Equipment operation			1			1
Financing	1				1	2
Input prices		1	1	1		3
Selling prices	1					1
Road conditions		1	1	1		3
Energy supply		1	1	1	1	4
Electricity prices	1		1	1	1	4
Marketing	1					1
Lack of equipment parts	1	1			1	3

Source: Baseline Study small beef processors survey 2016

Areas most frequently covered are traceability and best manufacturing practices (BMP). Traceability is also the most frequently demanded along with environmental and sanitary standards and establishment and operation of cooperatives. Table 34 shows TA requirements.

Table 34 – Small beef processors, demand for technical assistance reported						
Equipment or process	Plant					Total
	1	2	3	4	5	
Equipment operation	1	1				2
Sausage manufacturing	1	1	1			3
Marketing			1	1		2
Business planning	1					1
Sanitary practices	1	1	1			3
Management	1					1
Packing		1				1
Cooperative organization	1	1	1		1	3
Environmental aspects	1					1
Production transport				1		1
Storage	1	1				2
Traceability	1	1	1	1	1	5
Non-conventional energy	1	1				2

Source: Baseline Study small beef processors survey 2016

Improvement of sanitary conditions and compliance with regulations are clear priorities. This sector is not expected to participate in exports but the domestic market (including the tourist sector) also requires quality and safe products. It must be recognized also that compliance with sanitary and quality standards may imply increasing costs, but it is a tendency that should be promoted.

PMP Indicators. The following PMP indicators are associated with all beef processors. It must be noted that most indicators are related to USDA SPS (sanitary performance standards) more likely to be applied to candidates for exporting in the short to medium run.

(24) “Number of beef processors demonstrating upgraded SPS control systems as a result of USDA assistance”

(27) “Number of beef processing facilities audited for compliance with SPS standards”

(28) “Number of beef processor staff trained in SPS standards and systems”

(29) “Number of value chain actors participating in the Seal of Quality”

(39) “Number of grants provided to beef processors to improve beef processing infrastructure related to SPS control”

(40) “Value of Grants provided to beef processors to improve beef processing infrastructure related to SPS control”

6. Public and private support services

Current performance of the livestock subsector is a result of the characteristics and operation of productive units as well as the availability and quality of support services – public and private. The Project will assist farm operations and other components of the value chains mainly through these services. Producer associations, extension agents, input and credit suppliers, and public policies and their enforcement are key factors to improve sector performance, therefore, it is important that the baseline register the state of these services at the beginning of Project implementation.

6.1 Extension services

The livestock extension system is one of the main vehicles to implement “improved techniques and technologies” and other Project activities along the value chains. The MA through its livestock department – DIGEGA – has established a special extension unit – MEGALECHE – to assist dairy farmers. BAGRÍCOLA has a team of credit extension agents in the provinces. Cooperatives like FONDAGRO have their own credit extension agents. Some PO have extension agents to assist their members; there are individual private extension agents providing technical assistance to livestock farmers.

Two **focus groups** for extension agents were organized (5 July 2006) as part of the baseline study, with participation of 49 extension agents, in order to understand their work in the sector, their capacities and requirements.

Credit Extension. According to a survey taken during the focus group meeting for BAGRÍCOLA credit extension agents (**Annex 3**), almost all agents have technical backgrounds in agriculture (agronomic engineers, mainly), none in financial areas. Moreover, 9 of 25 have not received training while on the job and none has received training in credit extension or financial aspects, despite the fact that 13 of 25 agents have more than 5 years on the job; 7, between 1 and 5 years; and, only 5 have been on the job less than one year.

Most credit extension agents (24 out of 25) identified training requirements in credit, finance, project formulation and evaluation and related topics. Many agents mentioned as requirements “farm or real estate valuation”, which reflects the fact that most of their duties only require analysis of property values related to mortgages or collateral required by banks, and loan collection.

Most agents have spent several years in the same area, which normally covers one province and gives them a good knowledge of their clients and their business. In most cases they can “obtain results” (have their client’s loans approved) in less than 3 months. Little interaction is reported with other institutions, except the MA and POs which serve as intermediaries or coordinators of members’ loans processing.

It appears that there is little coordination between credit extension and technical extension services. According to one participant in the focus group,

“No relation exists, neither do I know whether they [Megaleche extension agents] are working in our work zone, I would like to meet him [the Megaleche extension agent] and establish some type of relation and collaboration”

Most participants agreed with this observation. In general, credit agents are familiar with production issues in their zones, not so much with credit aspects. However, much of their functions are related to loan collection. This is reflected in their demand for specific training (**Annex 3**). For purposes of baseline information, credit extension is at an elementary level, concentrated in verifying property values and collecting payments, therefore, it is necessary to upgrade extension services to the level of financial advisory (not only to farmers but to POs and processors), especially in an environment expected to demand investments in new techniques and technologies.

Since the Results Frameworks (Annex 1) call for “Increased use of financial services” and “Improved farm management (operational and financial)”, the Project, in coordination with BAGRÍCOLA, but open to credit cooperatives and other private credit suppliers, should design a training program in credit extension concentrated on financial aspects to be evaluated at the mid-term evaluation. It is expected that this would improve access to formal credit sources, which would be required by the implementation of “improved techniques and technologies” and other Project activities. The PMP includes the following indicator:

(11) "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"

(42) "Number of training sessions in accessing financial services for post-harvest technologies provided to firms."

NCBA CLUSA will provide semi-annual data on credit extension with the cooperation of BAGRÍCOLA, which collaborate in the focus group. (See also Section 5.2 on credit).

MEGALECHE is a DIGEGA (Department of MA) program operated for the last 15 years to provide extension services for dairy farmers. Its extension agents are either veterinary doctors or agronomic engineers, some with training in animal sciences and related topics. There are 36 field technicians working at the national level.

All of the MEGALECHE focus group members (24) have received training in dairy-related areas during the last four years and all of them expressed the requirements of additional training in various areas related to their work (animal health, nutrition, milk quality, reproductive aspects, etc.). All participants have been in the program for more than 3 years, some up to 20 years. Each technician serves 50 farms on average per month but it ranges from 15 to more than 100 visits, according to the focus group participants (**Annex 4**).

The program has three components: (i) Producer training (workshops, courses, conferences); (ii) Mass media diffusion (radio and TV programs, brochures, flyers, etc.); and, (iii) Direct visits to producers (direct interaction with producers, mainly when specific problems are reported). MEGALECHE's services are free of charge.

Extension agents coordinate their work with several institutions: producer associations and federations, producer cooperatives, CONALECHE, milk distributors, input suppliers and dairy processors. According to focus group participants, technicians are continuously trained according to producer requirements. MEGALECHE has received international training from various foreign experts (Israel, Argentina, Cuba and other countries).

MEGALECHE has a structured plan of operations. Technicians develop a plan according to the region's perceived requirements and work on this plan, which is evaluated quarterly. Coordinators meet and supervise their work. Technicians frequently communicate with specialized support units at the MA and other institutions. Activities include "National Field Days" conducted annually with approximately 1,400 participants. According to focus group participants, they provide certification for producers to obtain credit: *"without this certification the loan is not approved."* These certifications are related to the CONADES-BAGRÍCOLA program; BAGRÍCOLA extension agents report little interaction with MEGALECHE extension agents.

No performance reports are available. Implementation of new "techniques and technologies" will require additional training of extension agents. The private sector extension system needs strengthening through POs.

PMP indicators include:

(14) "Number of individuals who have applied improved farm management practices (i.e. governance, administration, or financial management) as a result of USDA assistance (FFPr Indicator 3)"

(16) "Number of business plans produced for beef and dairy production with USDA assistance"

(17) "Number of extension agents trained in improved agriculture techniques and technologies";

(18) "Number of private enterprises, producer organizations, water user 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)"

(56) "[Increase in the] Number of private sector dairy and beef extension agents supporting farmers in partnership with government extension services".

6.2 Credit

Livestock subsector financing comes mainly from *Banco Agrícola de la República Dominicana (BAGRÍCOLA)*, a public sector bank, and CONALECHE, a public sector program with participation of private sector organizations in partnership with BAGRÍCOLA. Other lenders such as private commercial banks and cooperatives have a minor share of financing in the subsector.

Lending to milk producers is facilitated by payment arrangements through processors from the proceeds of milk purchases and PO intermediation (“bridge credit”); i.e., processors deduct the payments from amounts due to farmers for the purchase of milk taken to MCCs and make loan payments on behalf of farmers to the banks. Some PO take loans from banks for on-lending to members.

According to a sample of 140 farms in four provinces (García Lagombra, Gregorio et. al., 2015), 67% of farmers do not apply for credit; of those who obtain credit, 72% are BAGRÍCOLA clients; other sources are: commercial banks (7%), MEGALECHE (5%) and others (cooperatives, RICA and Nestlé, mainly) (16%).

Table 35 – BAGRÍCOLA, loans outstanding on 30 April 2016 in selected provinces

<i>Branch</i>	<i>Number of loans</i>	<i>Value of loans RD\$</i>	<i>Average loan value US\$*</i>
El Seibo	366	153,474,296	9,176
Higüey	564	503,729,750	19,543
Hato Mayor	237	125,785,816	11,614
Monte Plata	335	175,298,387	11,450
Neiba (Baoruco)	161	48,290,970	6,563
San Juan Maguana	240	105,778,508	9,644
Nagua (MTSánchez)	73	36,724,722	11,008
San Fco. de Macorís (Duarte)	28	22,175,092	17,330
Stgo. Rodríguez	892	378,703,517	9,290
Puerto Plata	818	288,506,167	7,718
Dajabón	305	103,039,069	7,392
Total	4,019	1,941,506,294	10,571

Source: BAGRÍCOLA. * Exchange rate: RD\$45.7=1US\$.

At the end of the first trimester of 2016, BAGRÍCOLA had the equivalent of US\$42.5 million in 4,019 loans outstanding in the Project selected provinces (Table 35). The average balance was \$10,571. BAGRÍCOLA extension agents reported ranges from US\$6,000 to US\$250,000 (Credit Extension Focus Group, 2016).

According to the credit extension focus group participants, new applicants are eligible for loans up to RD\$300,000 (US\$6,500) with real assets as collateral. Clients with a satisfactory credit history (“A class”) could apply for loans up to RD\$800,000 (US\$17,500) and real estate collateral.

A variety of activities are eligible for this type of credit: cattle purchases; farm improvements, including construction and repairs of farm infrastructure, in-farm housing, milk marketing costs, and cheese manufacturing, among others, although loans are registered as shown in Table 36.

During the last 14 years, CONALECHE made 2,611 loans in the 11 selected provinces with a total of RD\$1,844 million (US\$40.3 million), an average of US\$10,500 per loan. Interest rates vary but are lower than commercial rates.

Table 36 – Number of loans according to use reported by BAGRÍCOLA	
Loan use	Number of loans
Development	457
Beef	193
Milk	1,019
Beef & milk	2,350
Total	4,019
Source: BAGRÍCOLA.	

According to the Farm Survey, 59% of respondents claimed to have received credit in the last three years (Table 37). The share of private banks is only 13%, 72% of farmers in the sample went to CONALECHE and BAGRÍCOLA for financial services.

“Improving of techniques and technology”, and other Project objectives, will most likely result in an increase in credit demand.

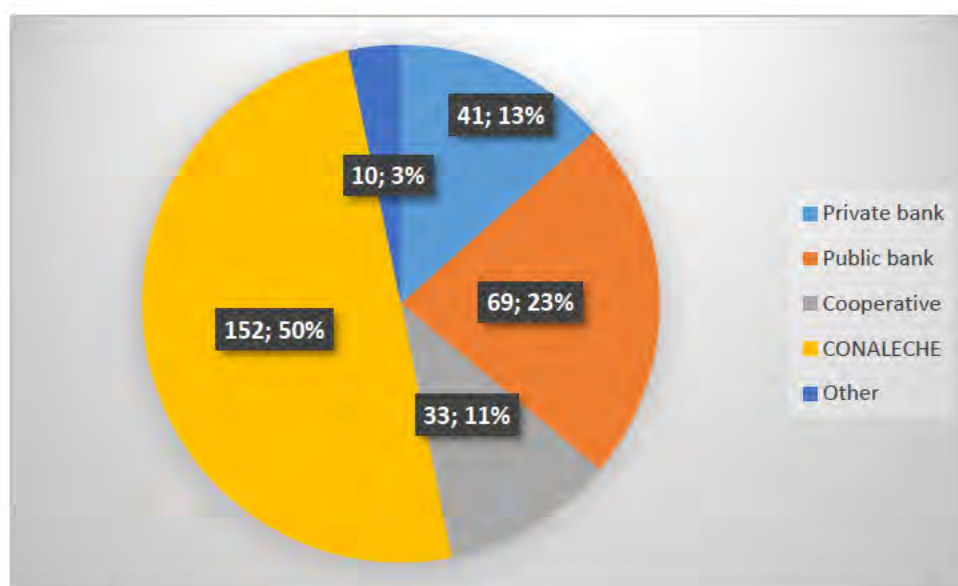


Figure 23. Credit sources for dairy and beef producers

Table 37 – Number of farms by province according to credit received in the last 3 years by source

Province	Private Bank	Public Bank	Cooperative	CONALECHE (BAGRÍCOLA)	Other	Total
1. El Seibo	2	5	0	24	0	31
2. Puerto Plata	3	17	2	24	0	46
3. Duarte	0	0	0	1	0	1
4. María Trinidad Sánchez	4	1	0	1	0	6
5. Dajabón	5	10	7	18	6	46
6. Santiago Rodríguez	3	11	6	7	1	28
7. Independencia	1	2	3	10	0	16
8. San Juan	10	4	12	29	3	58
9. La Altagracia	4	1	0	10	0	15
10. Monte Plata	7	15	3	22	0	47
11. Hato Mayor	2	3	0	6	0	11
Total	41	69	33	152	10	305

Source: Baseline Study, Farm Survey 2016

PMP Indicators include:

- (8) *“Value of Loans provided as a result of USDA Assistance (FFPr Indicator 6);*
- (9). *“Number of Loans Disbursed as a result of USDA Assistance (FFPr Indicator 5)”;*
- (10). *“Number of individuals receiving financial services as a result of USDA Assistance (FFPr Indicator 4)”.*
- (41) *“Number of firms who are accessing credit through formal financial products as a result of USDA assistance”*
- (54) *“Value of new public and private sector investment leveraged as a result of USDA assistance (FFPr Indicator 9)”*

Baseline values of these indicators are zero, but they may be referred, for comparison, to current BAGRÍCOLA and CONALECHE, credit extension and other activities financed by the Project that require beneficiaries' contribution in terms of complementary bank financing.

6.3 Producer Organizations (PO)

Producer Organizations (PO) are a fundamental element in the structure of the livestock sector, they are also strategic partners in Project implementation. Almost all Project activities will involve a PO, beneficiaries will be required to be members of PO. Grants will be made mainly through POs. In order for POs to fulfill its role in Project implementation activities, they will have to meet criteria established by the Project; and, in order to meet these criteria, many of them will require assistance to strengthen their capabilities. Project success will be determined to some extent by the performance of POs and the Project's contribution to their strengthening (see Results Frameworks, Annex 1).

Table 38 – Number of associations and members by province and federation in the Project Area			
Federation	Provincea	Number of Associations	Number of members
FEDEGANO	Dajabón	13	993
	Santiago Rodríguez	13	1103
FEDEGANORTE	María Trinidad Sánchez	1	73
	Puerto Plata	13	565
	San Juan	1	56
FEDEGARE	El Seibo	6	n.d.
	Hato Mayor	7	n.d.
	La Altagracia	6	n.d.
	Monte Plata	5	n.d.
FEDEGASUR	Independencia	4	150
	San Juan	5	450
FEGACIBAO	Duarte	4	753
	La Altagracia	1	42
	María Trinidad Sánchez	1	n.d.
	Santiago Rodríguez	3	65
Total		83	4,250

Source: REDDOM 2016 and Mr. Victor Matos, president, FEDEGASUR (via telephone)

In the 11 target provinces, there are 5 federations organized according to region:

- Federación de ganaderos del Cibao Central FEDACIBAO
- Federación de ganaderos de la Costa Norte FEDEGANORTE
- Federación de ganaderos de la Línea Noroeste FEDEGANO
- Federación de ganaderos de la Región Este FEDAGARE
- Federación de ganaderos de la Región Sur FEGASUR

Table 39 – Number of cattle farms producer associations by province			
Project Area provinces		Other provinces	
Province	Number of Associations	Province	Number of Associations
Dajabón	13	Azua	6
Duarte	4	Españat	3
El Seibo	6	La Vega	2
Hato Mayor	7	La Vega	1
Independencia	4	Monseñor Novel	4
La Altagracia	7	Montecristi	12
María Trinidad Sánchez	2	Peravia	1
Monte Plata	5	Samaná	1
Puerto Plata	13	San Cristobal	2
San Juan	6	San Pedro de Macorís	2
Santiago Rodríguez	16	Sanchez Ramirez	2
		Santo Domingo	1
		Valverde	2
Total	83	Total	39

According to these federations, they represent more than 250 cattle farming associations. The MA, according to (Thinkbig, 2015, p. Pág 27), reports only 43 registered associations. There is no information on the number of associations not affiliated with a federation. The organization “Rural Economic Development Dominicana (REDDOM)” conducted an inventory of POs, that lists 123 associations of which 83 operate in the Project area (**Table 39, Table 39**).

A **focus group** was organized on 21 July 2016 with officers from federations and associations in the 11 target provinces, a questionnaire was completed by each participant on their PO’s institutional capacity and operations; main problems were also reported (**Annex 6**). The objective of this exercise was to assess POs’ present capacity and requirements to assist in the implementation of Project activities and contribute to Project results. The group was comprised of representatives of 2 federations and 19 POs (16 associations and 3 cooperatives).



Figure 24. Producer organizations focus group (5 July 2016)

The referred study identified 58 associations (of a total of 83) in the Project area with 4,250 members (**Table 38**). It is estimated that 30% of cattle farm operators (approx. 20,000) in the Project area are members of a PO associated with a federation. Most producers are located in Dajabón, Santiago Rodríguez, Duarte y Puerto Plata provinces. FEDEGANO (2,096 members) and FEDECIBAO (1,060 members) have the highest number of members (REDDOM, 2015).

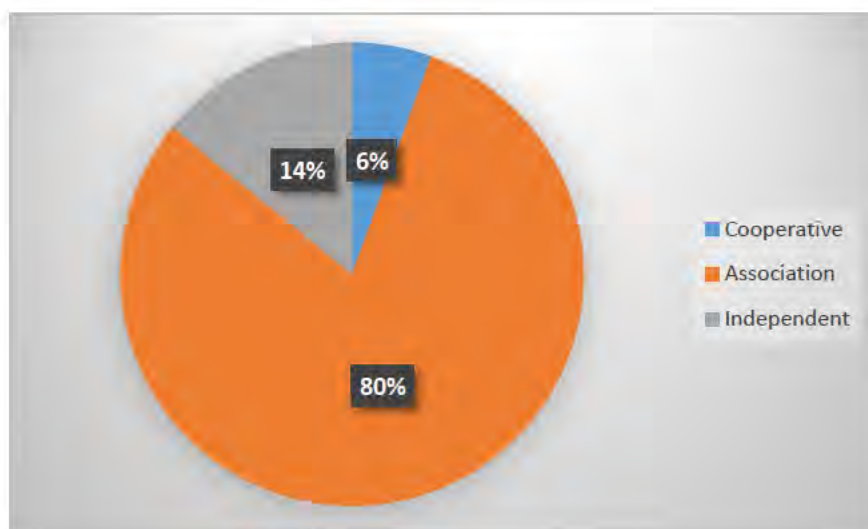


Figure 25. Farmer membership by PO Type

<i>Province</i>	<i>Cooperative</i>	<i>Association</i>	<i>Independent</i>	<i>Total</i>
1. El Seibo	1	44	13	58
2. Puerto Plata	0	64	3	67
3. Duarte	12	13	13	38
4. María Trinidad Sánchez	0	35	2	37
5. Dajabón	1	49	1	51
6. Santiago Rodríguez	1	28	2	31
7. Independencia	2	9	0	11
8. San Juan	2	41	18	61
9. La Altagracia	0	29	9	38
10. Monte Plata	8	75	7	90
11. Hato Mayor	1	18	4	23
Total	28	405	71	505

Source: Baseline Study, Farm Survey 2016

According to the Farm Survey, more than 80% of farmers in the sample belong to an association, 5.5% to a cooperative; 14% are independent (Table 40).

Federations provide various services to their associations. Table 41 summarizes the focus group results on services provided by the two largest federations. FEDEGANO has conducted 8 training events in the last 6 months. Membership has increased in the last six months (3 associations) with no desertions.

Table 41 – Services provided by two main Federations		
Services	FEDEGANO	FEGACIBAO
1. Marketing and distribution	X	
2. Input purchasing		
3. Technical assistance	X	X
4. Social services		X
5. Finding markets	X	
6. Feed transport		X
7. Input transport		
8. Milk collection	X	X
9. Credit assistance to members	X	X
10. Milk cooling services		X
11. Feed and input storage		X
12. Training	X	X
13. Credit (loans to members)		
14. In-kind loans		X

Source: OTSCORP, PO Focal Group (21 July 2016), Questionnaire

Federations have physical assets and an organizational structure that allows them to provide services to their association members. They meet once per month with association representatives, maintain adequate communication, associations in general comply with established dues to operate their respective federations, according to focus group participants.

Association Services. Association provide a diversity of services to their members (Table 42). The main services are the operation of MCCs and technical assistance, followed by marketing and assistance to access credit sources, milk cooling services and training.

Table 42 – Services provided by associations to their members	
Services	Number of PO providing each service (total: 21 POs)
1. Marketing and distribution	11
2. Input purchasing	10
3. Technical assistance	14
4. Social services	6
5. Marketing	10
6. Feed transport	2
7. Input transport	2
8. Milk collection (MCC)	15
9. Credit assistance to members	11
10. Milk cooling services	11
11. Feed and input storage	7
12. Training	11
13. Credit (loans to members)	2
14. In-kind loans	3

Source: Questionnaires filled by PO representatives at the focus group (5 July 2016).

Associations technical, financial and management capacity. Two groups are clearly distinguished with respect this institutional capacity. One group – 10 to 14 associations – present adequate operational capacity, offices and physical infrastructure, functioning organizational structure, adequate communications and accounting procedures. A second group – 5 to 7 associations – require strengthening, lack physical infrastructure for

operations, organizational procedures, accounting systems and Internet. They have a high rate of overdue membership payments. This group requires further individual diagnosis in order to determine viable activities necessary to meet eligibility criteria for Project support.

The most active associations sell agricultural inputs to their members. The 6 largest POs sold more than DR\$2.5 million (US\$54,700) per month; 15 POs that operate MCCs took in 1.869.800 liters of milk in June 2016, 12 associations represented in the focus group hosted 63 training events, 14 POs provided technical assistance in the month of June 2016 (137 farm visits) 9 associations have agreements with financial institutions on behalf of their members, 11 POs have agreements with government institutions for technology transfer activities, 12 have executed training events in the last year. Association members have a positive perception of their organizations.

Because of their institutional and financial capacity, these associations, as well as their federations could be important assets as vehicles for Project implementation. For example, they could co-finance and assist in the implementation of improvements to MCCs taking into account that associations – even those that need strengthening - usually own and operate MCCs; larger association could assist those with less capacity in aspects of capacity improvement and operation of MCCs; federations or larger associations could assist – through their current or improved extension systems – in the implementation of techniques and technologies developed by the Project.

Problems reported. 50% of focus group participants indicated that most problems are external to their organizations: access road conditions, high cost of inputs, access to credit, cost and supply of electricity and providers of technical assistance. Seven associations report lack of cooling equipment as a major problem. (**Annex 6**). In addition to survey questions, collective opinion identified structural problems such as:

“Milk quality is paid collectively; this affects individual producers who better manage their production.”

This statement coincides with the requirement – expressed frequently – that cooling, storage and separation of milk grades must be improved at the MCCs. It must also be recognized the various initiatives to adopt technologies to improve productivity at the farm level. For example, *Asociación de Ganaderos de Monte Plata AGAMPTA*, a highly diversified PO with respect to services provided to its members, has a plan to:

“Improve productive systems with adequate genetics and higher quality forage in order to decrease use of concentrated feed and improve competitiveness.”

This initiative is recommended by other PO – with less capacity – to improve pastures, forages and feed supplements. However, as shown in **Annex 6**, POs as a group require much strengthening to perform their function as provider of support services to value chains. This group is very diverse, some of the associations are not financially sustainable as service providers, they are more social than economic organizations. Others, like AGAMTA have the capacity of a large viable private firm, with productive infrastructure and operations that can benefit its members. The Project should rely in the short run on this type of PO to support implementation of its activities while assisting those with potential to become viable organizations.

PMP indicators. The following indicators have been established by NCBA CLUSA:

(18) Number of private enterprises, PO, water user 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).

(19) Number of grants provided to businesses (POs, dairy processors, and meat processors) to establish or improve an extension system.

(20) “Value grants provided to businesses (POs, dairy processors, and meat processors) to establish or improve an extension system”

(21) “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”

(37) “Number of grants provided to dairy producer groups/processors to establish or improve milk collection centers”

(38) “Value of grants provided to dairy producer groups/processors to establish or improve milk collection centers”

(56) “Number of dairy producer association members trained in milk collection center establishment/management”

There are no direct output indicators of PO institutional strengthening; however, Results FFPr 1.4.4 and FFPr 2.4.4 in the Results Frameworks (**Annex 1**), calls for “improved capacity of key groups in the production and trade sectors”. Therefore, the Project will develop a strategy to support POs as they are key to Project implementation.

The **midterm and final evaluations** will update the information on PO with respect to their capacity and performance. Final evaluation should include an assessment of the PO contribution to livestock development.

6.4 Input suppliers

Conceptually, private input suppliers are expected to facilitate implementation of “improved techniques and technologies” by beneficiary farms and other establishments in order to increase productivity in the livestock sector – a Project’s strategic objective (SO1). As mentioned in the previous section, associations supply some inputs to their members but they purchase them from commercial input suppliers locally.

As part of the Baseline Study, five large input suppliers were interviewed via e-mail and followed-up by phone. Together, they operate 203 agencies nationally and supply all the range of farm needs, from seeds and fertilizers to farm equipment and supplies to MCCs. All of them provide supply inputs and credit to PO and individuals. Payment grace periods vary from 30 to 60 days, thereafter, they usually charge 2% monthly.

Input suppliers do not report any import problems. All of them have promotional activities through field agents, sales representatives, farm visits and promotional events with farmer associations and other groups of current and potential clients. Their marketing strategies depend on the results of these activities, which provide them with realistic demand estimates. They also receive massive amounts of promotional literature from input manufacturers and suppliers abroad, which is the primary source of new products. They expressed their interest in learning about “improved techniques and technologies” promoted by the Project in the livestock sector. They find it useful to deal with associations which are considered extensions of their distribution networks and contribute to timely payments from individual clients.

Private Input suppliers will not be a constraint to Project activities. In fact, it seems that farmers, PO as well as input suppliers will benefit from increasing the dimension of trading through producers’ associations; this may be part of PO strengthening promoted by the Project. Therefore, no direct support from the Project is deemed necessary to private suppliers besides information on new technologies.

6.5 Policy, implementation and compliance

Trade, fiscal, credit and regulatory policies are main factors in the livestock sector performance. In fact, Project strategic objectives are either related to policy or complementary to policy, in particular, equivalence standards, milk price policy and sanitary measures in the domestic dairy and beef markets. Also, policies may be in place but implementation and compliance need improvement, as shown in previous sections. These aspects are well-known among local experts and authorities, for example: (Ponce Ceballos, Pastor, 2015), (Ponce Ceballos, Pastor, 2016), (Gómez, Arnaldo J., 2016) and others previously cited.

Establishing equivalence standards is one of the main objectives of the beef value chain. Work in this area is well-advanced; MoH and MA have a working group; NCBA CLUSA has been involved, a CTC committee has been monitoring it. However, challenges remain, especially with respect to central government budget allocation to implement the required inspection system, including laboratories. Evaluations and recommendations by (Cook, Jr., L. Victor, 2015) and (McDermott, Steven, 2015) need implementation.

Approval of equivalence standards will be a major Project accomplishment (see SO2 in Results Framework). However, it is assumed that once equivalence standards are approved, the pre-qualified producers will be exporting. This may not be a valid assumption if Dominican beef products are not competitive,¹⁵ given high local costs and inefficiencies in beef farming and processing. Also the impact on the domestic beef market has to be considered. These aspects need monitoring by authorities and the Project.

As discussed in previous sections, the current milk price-quality structure is not conducive to an efficient market, it is a disincentive for farmers to produce grade A milk. Transportation of low quality milk and use of peroxide need to be addressed. The Project may contribute to resolution of these issues. Solutions as simple as providing MCCs with a second or third tank to separate grades, together with improving testing equipment at centers, could make substantial marginal contributions.

Enforcing current regulations should have an impact on the efficiency and performance of the dairy and beef sectors. According to (Ponce Ceballos, Pastor, 2016), *“El problema no es solo, los altos niveles de importación, sino la falta de aplicación de las regulaciones y de supervisión de estas en todos los segmentos.”* (“The problem is not only high levels of imports but the lack of application of regulations and supervision in very segment [of the value chain]”) and recommends:

“to comply with the laws, regulations and norms that are written and approved.”

As shown in previous sections, sanitary issues are most important in the small dairy and beef processors markets. Regulations are in place but not enforced, for example: Regulation 329 in beef processing and regulations on the use of peroxide.

PMP indicators. The following indicators are related to policy and policy implementation.

(22) *“Value of private sector investment/resources supporting agriculture research/extension that is consistent with government priorities as a result of USDA assistance”*

(45) *“Number of international trade missions conducted with host country ag exporters and foreign buyers”*

(49) *“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)”*

¹⁵ According to MA/DIGEGA beef prices are competitive, local costs are estimated at nearly 50% of international prices.

(49) “Number of assessments completed of GoDR beef food safety regulations and systems”

(50) “Number of training sessions in trade policy analysis and advocacy provided for individuals”

(51) “Number of individuals trained in trade policy analysis and advocacy”

(52) “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”

(53) “Number of public-private partnerships formed as a result of USDA assistance (FFPr Indicator 8)”

(57) “Number of events supported by USDA aimed at promoting private-public partnerships for improving beef and dairy development at the farm, processor and exporter”

7. Updated Performance Monitoring Plan (PMP) and Progress Management Table (PMT)

Performance Monitoring Plan (PMP). The PMP shown in **Annex 2** was modified from the original M&E Plan (NCBA CLUSA, 2015), which had more than 120 indicators. The revised PMP has 57 indicators (NCBA CLUSA, 12 August 2016), not including disaggregation (by gender, new/continuing, etc.). Some indicators were eliminated because they were duplicate or there were no sources of information (for example: most farms do not maintain registries to collect information on age and weigh of cattle taken to slaughterhouses and other variables); others were added because they were related to specific results in the Results Frameworks (**Annex 1**) and others were consolidated into groups of activities.

A separate document was prepared that compares the original list of PMP and PMT indicators (Attachment E of the Award document (USDA, 2015)) with the revised version.

The objective of the updated PMP was to define at least one indicator for each result in the Results Frameworks, which are the basis upon which the Project should be monitored and evaluated, according to USDA M&E guidelines.

PMP indicators are a combination of output and outcome indicators. They should be distinguished in the context of compliance with the Results Frameworks. For example,

(34) “Number of training sessions in milking and milk handling conducted for dairy farmers”

is an output indicator, but:

(33) “Number of dairy farmers using improved milking and milk handling techniques as a result of USDA assistance”

is an outcome indicator. (34) is recorded when such activities are co-financed; (33) is the result of periodic follow-up visits to farmers that received training in “milking and milk handling”.

This distinction is important in the light of Farm Survey results where a large percentage of respondents claimed to have received technical assistance in milk quality, but a similar percentage would like to receive the same assistance. This may be interpreted as a problem of quality, coverage or sufficiency of the TA received or a request for a more advanced level of training in the same topic. Project evaluation will help explain this issue.

The proposed PMP includes the recommended indicators and the “strategy for collecting performance data” as required by USDA M&E policy (USDA/FAS, 2013), which includes:

- Data Sources;

- Method/Approach of Data Collection or Calculation;
- When and who collects the data;
- Why and who analyzes, uses and reports the data.

Detailed definitions of the standard FFPr indicators (mandatory) are given in (USDA/FAS, 2014). Strategic Objectives (SO1 and SO2) indicators should reflect the achievement of the highest level results in the Results Frameworks (Figures 1 and 2). FFPr Standard Indicators 13-18 are defined as SO1 and SO2 indicators. In the revised PMP, FFPr indicators 15-18 have been assigned to SO1; indicators 13 and 14 have been assigned to SO2.

Data on these and other indicators qualified as “as a result of USDA assistance” and “Project beneficiaries” will be collected, first, at the activity level, when a grant is approved and; and second, when it has been executed (closing). Thereafter, periodic visits (semi-annual, annual) would provide additional data points, which could feed into the M&E system for use in measuring performance (in terms of results, outputs and outcomes in the Results Frameworks) and the mid-term and final evaluations.

For example, when a grant application is approved, the estimated number of jobs to be created as a result of this grant should be recorded into the SAFE Project system and would be verified at closing, when its implementation is completed. Periodic visits to the grant recipient will verify these figures. This information would be aggregated for all grants so that it will be constantly updated as “performance monitoring” with respect to job creation.

It is essential, therefore, that grant applications and closing documents require the relevant information to facilitate data collection.

In the attached PMP table, Standard FFPr indicators numbers (USDA/FAS, 2014) are highlighted. The PMP table follows the Results Frameworks (Figures 1 and 2). Each result, from the Results Frameworks, has at least one indicator. Revised indicators follow the list of annual and Project targets (PMT schedule) prepared by NCBA CLUSA DR (12 August 2016).

At the activity level, all indicators are output indicators. At the results levels, indicators may be outcome or output (intermediate results). Although at the higher levels they should be outcome indicators, SO1 and SO2 indicators 15-18 are output indicators. In this case, the respective “custom indicators” are more appropriate indicators of Strategic Objective 1 achievement than the corresponding SO1 indicators.

“Private sector” includes cooperatives and PO (producer associations and federations) as well as commercial firms; many PO are input suppliers, operate milk collection centers and supply extension services, among other services to their members.

Categories of milk quality supplied by farmers to milk collection centers referred as A, B, C, D, are equivalent to 1, 2, 3, 4 used at some collection centers.

In some cases, indicators may be used to compare Project performance against regional or national results. For example, liters of milk per cow per day (for rainy and dry seasons) for Project supported farms compared to regional or national averages. This difference is a more accurate indicator of project impact.

Implementation of this PMP requires definition of a number of operational procedures and guidelines; for example, definition of “*improved techniques and technologies*” in beef and milk production and post-harvest, among many others. These definitions will be part of the Project’s operation manuals.

The **Progress Management Table (PMT)** establishes the baseline values, annual targets during Project implementation and Project target or end target for PMP indicators. The table in **Annex 2** is ordered according

to the Results Frameworks and PMP, the numbers in the first column correspond to those indicators selected by NCBA CLUSA DR for the updated PMP and PMT (12 August 2016).

Most indicators have a baseline value of zero when their definition states: “as a result of USDA support”. Other indicators that refer to “Project beneficiaries” also have a baseline value of zero. Practically all PMT indicators have a zero baseline value. Only a few indicators have a positive baseline value, which comes from the various surveys conducted for the Project Baseline Study (**sections 2-5**). For example, one of the main indicators of productivity in dairy farming is the “percentage increase in liters per cow per day” (as a result of USDA support), in order to calculate this value, a baseline value must be estimated; this value is 7.5 l/c-d in 2016 (from the Farm Survey); then, it is possible to verify annual targets of 10% and Project target of 50% in 2020.

Baseline values of indicators “(12) *Value of sales by Project beneficiaries (FFPr Indicator 13)*” and “(13) *Volume of Commodities (metric tons) sold by Project beneficiaries (FFPr Indicator 14)*” will be collected once “Project Beneficiaries” are known. It was not possible to obtain a reliable value of these indicators in the Farm Survey due to the lack of registries at the farm level.

Most initial and periodic values of PMP indicators will be obtained during Project implementation. As mentioned, it is recommended that the Project Operations Manual require that each application for a “*cofinanciamiento*” or activity financed with Project resources include the expected value of the relevant PMP indicator, which will be verified at the closing of the respective activity and at periodic (semi-annual) follow-up inspections.

8. Mid-term and final evaluations

According to M&E policy,

*“The purpose of the **interim [midterm] evaluation** is to critically and objectively review and take stock of the project’s implementing experience and the implementing environment, assess whether targeted beneficiaries are receiving services as expected, assess whether the project is on track in meeting its stated goals and objectives, review the project-level results frameworks and assumptions, document initial lessons learned, and discuss necessary modifications or mid-course corrections that may be necessary to effectively and efficiently meet the stated goals and objectives.” (USDA/FAS, 2013, p.11)*

*“Each project is required to undergo a comprehensive, independent **final evaluation**. The purpose of the final evaluation is to assess whether the project has achieved the expected results as outlined in the results framework. The final evaluation should assess areas of project design, implementation, management, lessons learned and replicability. It should seek to provide lessons learned and recommendations for USDA, program participants and other key stakeholders for future food assistance and capacity building programs. The evaluation will likely use mixed methods approaches as outlined in the agreed upon evaluation plan.” (USDA/FAS, 2013, p.14)*

The bases for these evaluations will be the PMP indicators and the follow-up surveys to the baseline study:

- PMP indicators are output and outcome indicators, they will be registered in the M&E System at approval and closing of each grant or matching grant.¹⁶ Grant applications should request pertinent information to evaluate each according to PMP and evaluation indicators. Thereafter (6 months), status of each grant’s results will be recorded into the system, this information will be gathered from M&E staff visits

¹⁶ See Project overview (Chapter II). All activities which imply monetary expenses or costs to the Project, included those which are financed on a grant basis should be registered in the M&E system. For example: translation services for equivalence documentation, public information campaigns, events to promote public-private cooperation, etc. An operations manual is being prepared.

to grant beneficiaries to verify that they are operating and achieving the expected results defined in the grant award.

- Follow-up baseline surveys will be conducted for the mid-term evaluation, 2.5 years after beginning of Project implementation, and at Project closing

For each “*cofinanciamiento*” or grant, it is recommended that the following seven-step procedure be applied. As mentioned, this procedure will be executed at grant application evaluation and approval, at closing (once grant implementation has been finalized) and thereafter at a six month and a year inspection in order to verify that the grant is generating the expected results and impact. At each step, expected vs. achieved results will be compared and differences explained.

1. *Diagnosis.* Each grant (“*cofinanciamiento*”) application should state the problems that are intended to be resolved with grant resources.
2. *Planning.* The grant’s objectives should be clearly established in terms of expected outputs and outcomes referred to Project results according to PMP indicators. A brief ex ante evaluation should be included demonstrating the proposed grant’s viability (technical, economic, financial, social (gender), institutional).
3. *Financing.* Applications should demonstrate compliance with Project guidelines and criteria for grant approval. The approved schedule of costs including required beneficiary contributions should be compared with final costs and any differences explained or justified.
4. *Implementation and outputs.* Applications should describe grant implementation procedures. At closing of each grant, implementation procedures and grant outputs will be verified.
5. *Operation and outcomes.* Outputs defined in step 2 for each grant are supposed to generate outcomes. For example, new techniques and technologies in dairy production supplied by the Project (outputs) are “operated” or applied by beneficiaries (farmers) to produce outcomes: increased quantities of milk per cow per day (a PMP indicator). Expected and actual outcomes will be compared and differences explained.
6. *Impact.* Impact indicators refer to final objectives, SO1 and SO2. The impact of a grant may not be observable in the short run, as in the above example. However, if the grant is generating expected outcomes, probability of achieving its impact may be assigned and later confirmed as part of the PMP system.
7. *Ex post evaluation.* Each grant should have an ex post evaluation at the time of closing. This will be a summary of the above steps. This procedure should facilitate the identification of “lessons learned”.

Aggregation. The above steps will be applied to each grant. The midterm and final evaluation will contain the aggregate for all grants implemented from which lessons learned may be derived and recommendations will be made with respect to any required changes (at mid-term). In addition, PMP indicators, with emphasis on results data (from the Results Framework), will be available to complete this part of the midterm and final evaluation. Questions such as: Were annual targets achieved? What are the prospects (at midterm) to achieve final targets? What adjustments are required to achieve final targets?

Follow-up baseline. These results will be complemented with the follow-up baseline study and survey. The purpose of this exercise is to identify changes in the subsectors as a result of Project implementation and other interventions. Some of the questions raised at this stage may require an analysis of the relative contribution of the Project with respect to other programs and projects implemented in the same period. An effort must be

made to measure Project “attribution” (changes attributed to the Project) by including a control group which can be obtained from the baseline sample and final follow-up and will facilitate the application of a “difference in differences” (DiD) statistical method.

This econometric method is widely used in Impact Evaluation Studies, when there is sufficient information (sample of more than 500 farms) on “before and after” implementation as well as “beneficiaries and non-beneficiaries” (Project beneficiaries and control group). It estimates through a regression procedure the “net” effect of the Project, taking into account that some factors not related to the project were influential in both beneficiaries and non-beneficiaries’ behavior. For example, supply of Grade A milk by dairy farmers to milk collection centers (a key variable in the PMP), could have been influenced by price reforms applicable to both beneficiaries and non-beneficiaries, but the Project supplied “improved techniques and technologies” to beneficiaries only. The DiD method separates the Project contribution (attribution) from the general factors applicable to both groups.

Project implementation should be able to determine the group of beneficiaries in the farm sample, since not all in the sample will be beneficiaries, a sample of non-beneficiaries in the farm sample would be selected as the control group in the baseline as well as the second and third baseline updates.

9. The baseline and identification of Project activities

As indicated, the third specific objective of the Baseline Study is to assist y the identification of specific activities for Project implementation. It must be noted that these are not new activities, they are defined in the context of the Results Frameworks and PMP indicators, which are the specific guidelines to the identification of eligible activities to be implemented by the Project. The Baseline Study helps in the identification of specific activities and priorities within these instruments.

If the Project plans to comply with indicators of the Results Frameworks, it needs to implement activities which generate such results, these activities are expressed through the PMP indicators. Thus the PMP indicators constitute the main guideline for Project planning.

For example, the following PMP indicators,

(37) “Number of grants provided to dairy producer groups/processors to establish or improve milk collection centers”

(38) “Value of grants provided to dairy producer groups/processors to establish or improve milk collection centers”

refer to activities that contribute to a result expressed by FFPr 1.2.2 “Improved Infrastructure in Beef and Dairy Value Chains” in the Results Frameworks. However, “establish or improve milk collection centers” is a “general activity” that needs to be further specified. According to the Baseline Study, MCCs are strategic elements in the dairy value chain, especially because modest investments in MCCs (co-financing additional tanks to separate milk grades, lab equipment and training, in one package) could have an immediate impact of the quality-price structure, essential for dairy value chain efficiency and farmer’s welfare. This is not an additional activity, it is within the context of the Results Frameworks, but it is a recommended specification o specific identification of an activity that will contribute to the referred result. It will also require complementary measures or activities in regulatory enforcement of the “price-quality structure”, which are eligible – although implicit – in the Results Frameworks and PMP indicators.

Similarly, the Baseline Study has identified and recommended:

- A challenge for the Project is to find short-term interventions that would result in productivity increases, as measured by the liters per cow per day (lcd) indicator, during the Project implementation period (2016-2020). Farm practices (herd management, pasture management, feed improvement) could be activities that improve productivity in the short run.
- The Project may implement activities to help farmers improve the percentage of milk grade A delivered to MCCs and reduce rejections, although it will be necessary to identify those factors that contribute more efficiently to achieve these results. This is closely related to MCC improvement as mentioned above.
- Improving or establishing MCC registration is needed. MoH and MA/DIGEGA should establish and maintain such registry. The questionnaire in Annex 7 may be used for that purpose.
- To the extent that Project objectives (FFPr SO2) call for *“Expanded trade of agricultural products, domestic, regional and international”*, NCBA CLUSA, its CTC and its partner JAD, the MA and other agencies in charge of international trade policy should follow up recommended policy adjustments to promote an increasing and competitive share of the local dairy market within the framework of current trade agreements. (See *“Recommendations for developing a National Livestock Improvement Program”* (Ponce Ceballos, Pastor, 2015) and section 5.5).
- Technical Assistance is an important Project component. TA activities design should follow an in-depth evaluation with respect to the effectiveness of TA provided and the necessary adjustments, as indicated in the previous sections.
- Credit extension is at an elementary level, concentrated in verifying property values and collecting payments, therefore, it is necessary to upgrade extension services to the level of financial advisory (not only to farmers but to POs and processors), especially in an environment expected to demand investments in new techniques and technologies. The Project, in coordination with BAGRICOLA, but open to credit cooperatives and other private credit suppliers, should design a training program in credit extension concentrated on financial aspects.
- Private sector extension systems need strengthening through POs (associations and federations), including sustainable financing, which relates them to implementation of new techniques and technologies to be developed by TAMU and CBI assistance. There are no direct output indicators of PO institutional strengthening; however, results FFPr 1.4.4 and FFPr 2.4.4 in the Results Frameworks, call for *“improved capacity of key groups in the production and trade sectors”*. Therefore, the Project should develop an integrated strategy to support POs, as they are key to Project implementation.
- Adequate coordination should be established to complement related projects and programs. For example, the development of animal registries in livestock farms should be coordinated with the traceability project under implementation, as they will be relevant for the equivalence objective pursued.

10. Contribution to further subsector analysis

As indicated in previous sections, there is abundant literature on livestock and in particular the dairy subsector in the Dominican Republic and numerous recommendations to improve the sector’s performance. However, most studies are general studies that require in-depth analysis to determine factors responsible for observed deficiencies. For example, what factors are responsible for the seemingly low values of liters per cow per day

(lcd), a key indicator of productivity in dairy farming, and what are their relative contribution to improve productivity?

The Farm Survey provides a useful source for analysis through validation of working hypotheses. The lcd variable should be correlated with feed systems, cattle breeds, herd management characteristics and others in order to determine which factors at the short, medium and long term affect it.

Preliminary exploration of the Farm Survey data indicates that one single grass variety (San Ramón), is negatively correlated with dairy farm productivity (see attached figure). According to NCBA CLUSA DR expert, this is partially correct, *“this type of grass is not one of the best varieties for dairy productivity, however, there it is also a question of pasture management, any poorly maintained variety is likely to give similar results”*; therefore, this line of research should be pursued, as feeding seems to be a main factor in dairy farm productivity, which may have short to medium-run effects.

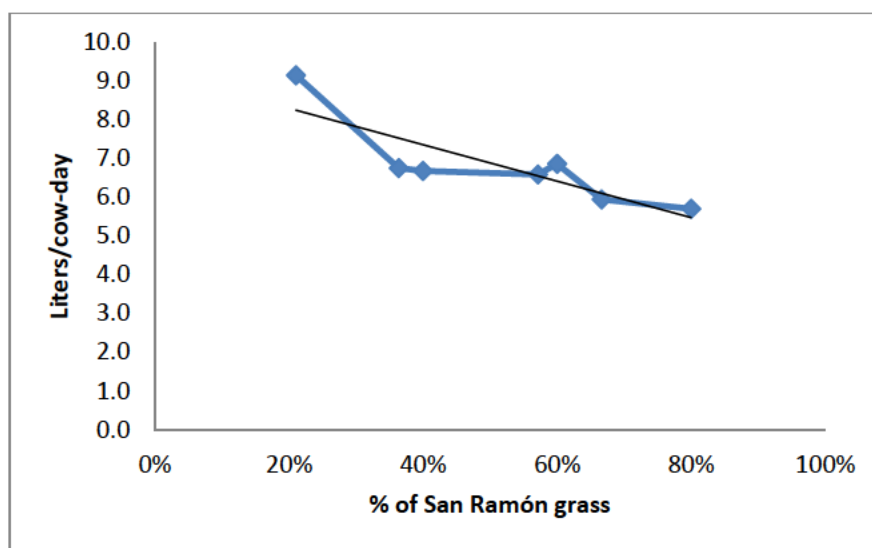


Figure 26. Correlation between l/c-d and % San Ramón grass in farms

There are interesting experiences in feeding systems, [REDACTED], that should be documented and evaluated. Under the PRORURAL project, there are also successful experiences in feeding systems that could provide valuable lessons for Project implementation.

62% of dairy farmers declared that their milk has never been rejected at the MCC. Only 8% of farmers' milk had been rejected more than twice. (Table 10). Clearly, the Project may implement activities to help farmers improve the percentage of grade A milk and reduce the rejections at the MCC, although it will be necessary to identify those factors that contribute more efficiently to achieve these results, beginning with adequate measuring at the farm and MCC.

11. Conclusions, recommendations and limitations

Conclusions. The baseline study's objective is to describe relevant characteristics of the livestock sector, its dairy and beef subsectors, in the context the "Safe Agriculture/Food Export Program (SAFE) – Dominican Republic" Project, which establishes two strategic objectives as detailed in the Results Framework. This description includes local expert opinions on probable causes of problems commonly identified in these subsectors. The available literature was reviewed and various instruments to collect primary information were used, namely, a Farm

Survey of more than 500 farms and surveys of milk collection centers (MCC), beef and small dairy processors. Focus groups and extensive interviews with farmers and farm visits completed information sources.

The study has four specific objectives: (i) to determine Project baseline values and sources for PMP indicators, which include FFPr mandatory indicators; (ii) to set a point of reference (baseline) for mid-term and final evaluations; (iii) to assist in the identification of activities to be supported by the Project; (iv) to contribute to the livestock subsector on-going diagnosis and provide a basis for further analysis.

The report's central elements are the description of the two "value chains" (dairy and beef) and the state of support services to the livestock sector, namely: extension services, credit, producer organizations, input suppliers and public policy. Sections 3, 4 and 5 describe the current state and characteristics of these value chains and support services.

Essentially, the dairy sector is characterized by its low productivity, as measure by liters per cow per day (lcd) and milk quality delivered at MCCs, poor sanitary conditions and financial viability of small cheese processors and lack of competitiveness with respect to imports. While in the beef value chain the main aspect is the on-going process to achieve U.S. equivalence, between 5 and 10 beef processing firms have the capacity to export. At the farm level, the productive structure is characterized by its informality, very few farms keep basic records or animal registries. All segments of the value chains are characterized by a dual structure, with a few large, modern and efficient establishments and many small, traditional, informal, family enterprises. Each one of the support services requires strengthening, in particular the technical assistance – extension systems. And all of these require the political will to support the relevant instances involved in regulatory activities and the necessary allocation of public resources.

Recommendations. This Baseline Study covers a wide range of areas that require attention to improve dairy and beef value chain performance and, given the limited amount of resources at Project disposal, it is important to focus on strategic activities within the Results Frameworks. Specific recommendations have been made throughout the assessment of the referred value chains and support services.

With respect to the four specific objectives of the Baseline Study, sections 6 to 9, summarize baseline findings and derive recommendations:

- i. Project activities have been defined in general¹⁷ in the Results Frameworks and implicitly in the PMP indicators; specific activities should be formulated and designed so that they contribute to the corresponding results. For this reason, PMP and PMT are organized according to planned results as stated in the Results Framework, which is the conceptual basis of the Project and, therefore, the basis for M&E. (section 6)
- ii. The Baseline Study provides the initial point of reference for the mid-term and final evaluations. These evaluations require updates of key variables collected in the Farm Survey and other surveys as well as the data collected for PMP indicators. Therefore, it is important that the implementing unit maintain continuously an adequate information system to facilitate said evaluations. (section 7)

¹⁷ For example, PMP indicator #16: "Number of beef or dairy farmers that have produced a business plan as a result of USDA assistance" indicates that the Project will implement training activities that will contribute to result FFPr 1.3.1 "Improved Knowledge Regarding Farm Management". However, these activities must be formulated and designed in specific terms as grants, matched grants or "*co-financiamientos*", i.e., specific activities that would train farmers to "produce business plans" or hire services to produce such plans.

- iii. The Baseline Study, in various areas, has identified specific activities and priorities for Project implementation. These are not new or additional activities but specifications of the general activities implicit in the PMP indicators and the PMT. These recommendations are summarized in section 8.
- iv. The Farm Survey generated a data base of 505 observations and 70 variables. Although its main purpose was the description of the livestock sector current state for future comparisons, it presents an opportunity for in-depth analysis of sector behavior, as suggested in section 9.

Limitations of the Baseline Study. The amount of time and resources assigned to the Baseline Study was far too short. Information sources were limited. Much time had to be allocated to the conciliation of different sources on the same subject (MCC, small processors of beef and dairy products), despite the kind cooperation of officials in all institutions consulted.

ONE's Precenso needed verification and updating after much time and efforts (institutional and individual) were spent on obtaining the required data base. This affected the timing for data collection, processing and analysis. In any case the Farm Survey and other surveys achieved their purpose and are rich sources of information for current and future analysis

There is no information and there was no survey of intermediaries in the beef cattle market. This is relevant for analysis of the beef value chain. Farmers do not have cattle registries or scales to measure age and weigh of cattle and there is an advantage in favor intermediaries. This is important for market efficiency and its implications on the equivalence work and future operation of exports.

In-depth analysis is needed on the effectiveness of technical assistance. In all instances of the value chains it was reported that technical assistance had been received in numerous topics and that it was required in the same topics. Further analysis is required to determine results, especially given the Project's focus on techniques and technologies to improve productivity and expand trade.

References

- CEPAL. (2016). *Lácteos, Primera Mesa de Diálogo*. PPT Presentation, Santo Domingo.
- CONALECHE. (2008). *La Lechería: pieza clave de la competitividad y de la soberanía alimentaria dominicana* (Presentación) (p. 17).
- Cook, Jr., L. Victor. (2015). *Evaluación y Recomendaciones para pruebas microbiológicas Equivalentes al FSIS* (p. 11). Santo Domingo.
- Esteban Delgado. (s. f.). Aprueban norma para embutidos. Recuperado 3 de septiembre de 2016, a partir de <http://www.elcaribe.com.do/2012/07/27/aprueban-norma-para-embutidos>
- Evaristo Rubens. (2012, julio 31). En el país hay 46 embutidoras pero solo 20 están registradas. Recuperado 3 de septiembre de 2016, a partir de <http://hoy.com.do/en-el-pais-hay-46-embutidoras-pero-solo-20-estan-registradas/>
- FAO Database. (s. f.). Policy - Decreto No. 528-01 que aprueba el Reglamento General para Control de Riesgos en Alimentos y Bebidas en la República Dominicana | Global database on the Implementation of Nutrition Action (GINA). Recuperado 3 de septiembre de 2016, a partir de <https://extranet.who.int/nutrition/gina/es/node/17807>
- García Lagombra, Gregorio et. al. (2015). *Diagnóstico estático de la ganadería de doble propósito en cuatro zonas de la República Dominicana* (p. 44). IDIAF.
- Gómez, Arnaldo J. (2016). *Situación de Lácteos en República Dominicana*. Presentado en CONALECHE-CTC, JAD.
- Gomez Nogueira, C., et al. (2016). *Fortalecimiento de la cadena de valor de lácteos en la República Dominicana* (p. 8). CEPAL.
- IICA. (2006). *Estudio de la Cadena Agroalimentaria de Leche de Vaca en la República Dominicana*. Santo Domingo.
- Instituto Politécnico Loyola. (2007). *Lecherías, Producción y Competitividad* (p. 195). Santo Domingo, DR: Fundación Loyola.
- McDermott, Steven. (2015). *Informe sobre el Personal de Inspección del Ministerio de Salud, República Dominicana* (p. 12). Santo Domingo.
- Ministerio de Agricultura. (2015). *Estadísticas del Sector Agropecuario de República Dominicana, 2002-2014*. Santo Domingo.
- Morrobél, José A. (2016). *Economía lechera dominicana* (p. 18). Santo Domingo.
- NCBA CLUSA. (2015). *SAFE DR Program Monitoring & Evaluation Plan*.
- ONE. (2016). *VIII Censo Nacional Agropecuario 2015. Precenso Nacional Agropecuario 2015. Informe de Resultados* (p. 196). Santo Domingo: ONE.
- Ponce Ceballos, Pastor. (2015). *Algunas consideraciones sobre políticas, estrategias y acciones técnicas para Preparar y Presentar al Gobierno Nacional un Programa de Mejora del Sector Ganadero Dominicano*.
- Ponce Ceballos, Pastor. (2016). *La lechería en RD en el 2016: Mitos, Realidades y Soluciones*. Presentado en JAD, Santo Domingo.
- REDDOM. (2015). *Tablas de Asociaciones de ganaderos por federación en República Dominicana*.

- Rodríguez-Minier, Hernán. (2014). *Informe de de línea base fincas lecheras* (p. 46). Santo Domingo: PROLEFAM-FAO-CONALECHE.
- Román M, José A. (2016). *Programa de mejoramiento del ganado de leche (MEGALECHE). Resultados de la Primera Encuesta: Nivel Tecnológica Duvergé*.
- SEA. (1999). *Registro Nacional de Productores Agropecuarios*. Santo Domingo.
- Tejada, Frank. (2014). *Política Agrícola*. Santo Domingo, DR.
- Thinkbig. (2015). *Diagnóstico de 4 cadenas de valor con presencia de PYMES en RD, Cadena de productos lácteos* (p. 62).
- USDA. (2015). Cooperative Agreement between the USA and NCBA for the provision of agricultural commodities through the Food for Progress Act (USDA Award FCC-517-2015-008-00).
- USDA/FAS. (2013). *Monitoring and Evaluation Policy*.
- USDA/FAS. (2014). *Food for Progress and McGovern-Dole Indicators and Definitions*.
- Valerio, Daniel. (2016, Abril de). *Modelo para incrementar el nivel de productividad y acceso a mercados de productores lecheros familiares en la República Dominicana*. Santo Domingo.

Annex 1: Results Frameworks

Figure 1
Food for Progress
Results Framework #1

Source: NCBA CLUSA—Dominican Republic
 Agreement #FCC-517-2015/008-00

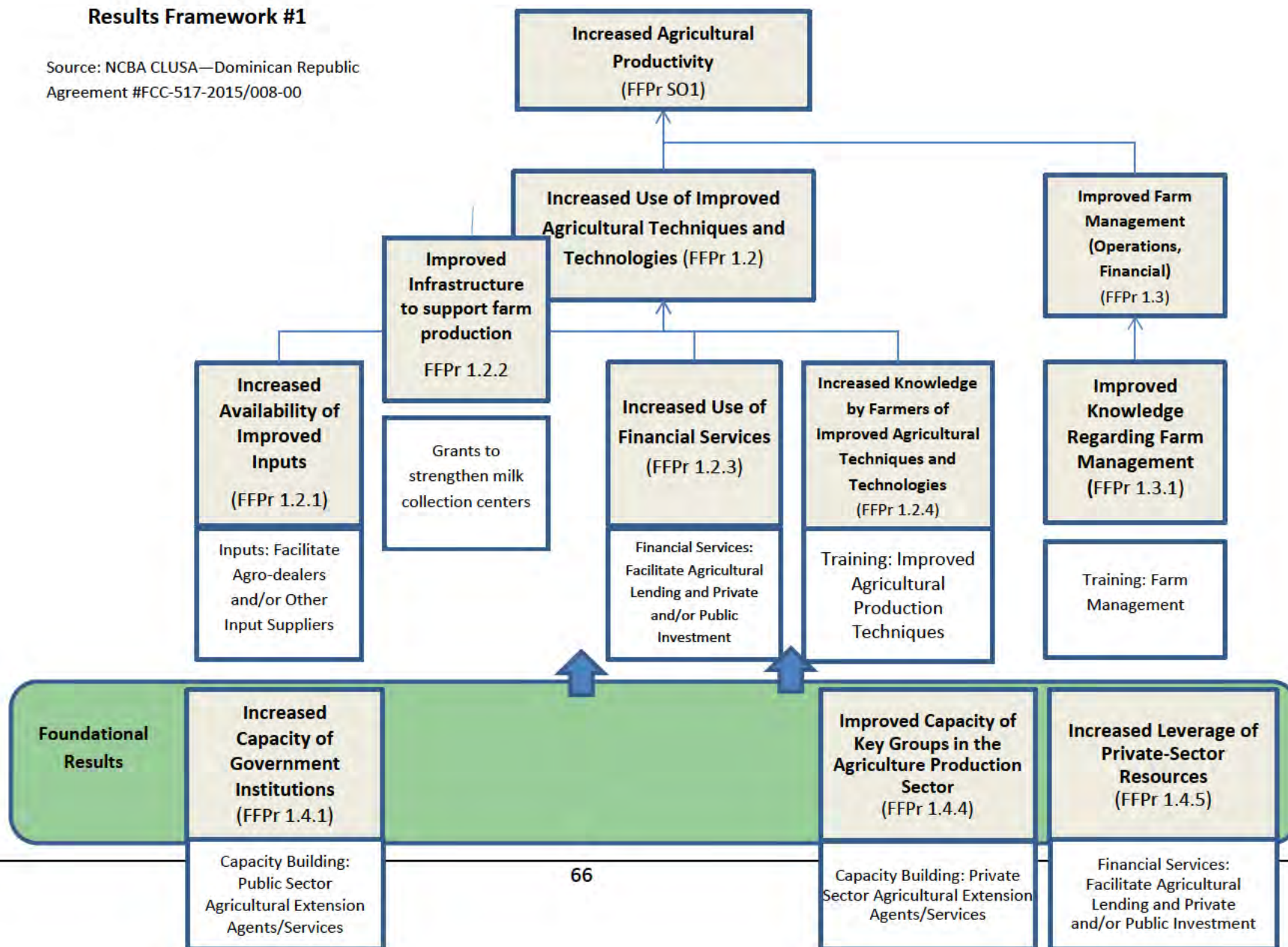
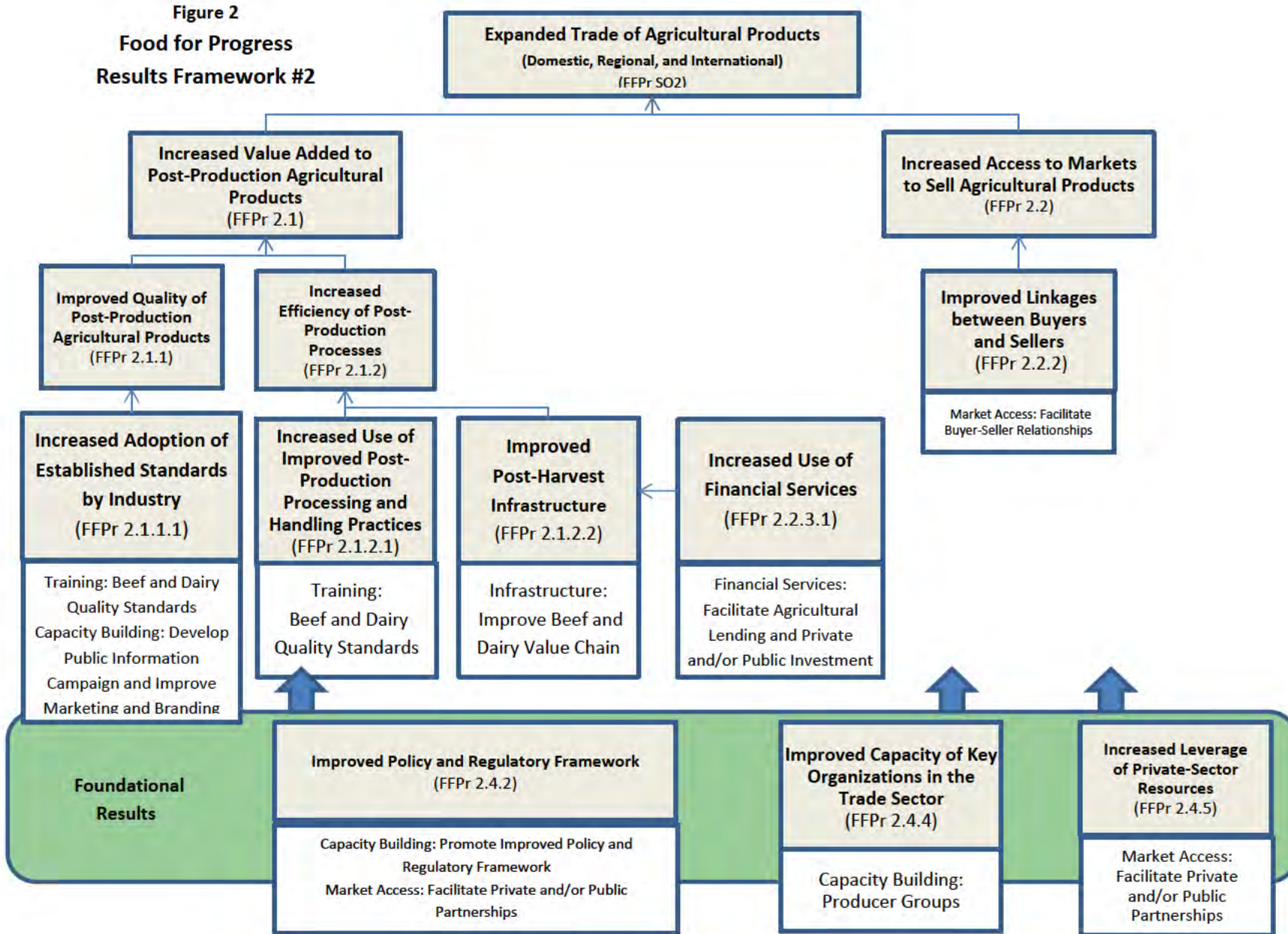


Figure 2
Food for Progress
Results Framework #2



Annex 2: Performance Monitoring Plan (PMP) and Progress Management Table (PMT)

Performance Monitoring Plan (PMP)

PERFORMANCE MONITORING PLAN (PMP)								
Performance Indicator	Indicator Definition, Unit of Measurement, disaggregation criteria	Data Source	Method/ Approach of Data Collection or Calculation	Data Collection		Analysis, Use and Reporting		
				When	Who	Why	Who	
FFPr SO1: Increased Agricultural Productivity								
5	Number of jobs attributed to USDA assistance FFPr indicator 15 SO1, SO2	This Standard FFPr outcome indicator measures the number of jobs attributed to USDA assistance. Unit: number of permanent jobs Disaggregation: gender	Report into Project documents. M&E system	Estimated at activity approval, grant closing and periodic visits to grant recipient	At grant approval and execution. Project visits	Project M&E staff	Tracks improved livelihood, as it measures the creation of sustainable employment and related income.	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
2	Percentage increase in the number of liters produced per cow per day as a result of USDA support.	This custom outcome indicator measures the overall increase in productivity of the milk sector supported by SAFE Unit: liters per day per cow Disaggregation: none	Report into Project documents. M&E system	Estimated at activity approval, grant closing and periodic visits to grant recipient	At grant approval and execution. Project visits	Data collectors – collect Project M&E staff verify	Tracks SO level outcome	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
15	Volume of milk supplied by farmers to USDA supported milk collection centers (liters)	This custom outcome indicator measures the overall increase in productivity of the milk sector supported by SAFE Unit: liters Disaggregation: none	Report into Project documents. M&E system	Estimated at activity approval, grant closing and periodic visits to grant recipient	At grant approval and execution. Project visits	Data collectors – collect Project M&E staff verify	Tracks SO level outcome	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)

3	Total number of individuals benefitting directly as a result of USDA Assistance (FFPr Indicator 17) (Male)	This custom outcome indicator measures the overall increase in productivity of the milk sector supported by SAFE Unit: liters per day per cow Disaggregation: gender, new/continuing	Training records, grant administration records, and reports into Project documents	Estimated at activity approval, grant closing and periodic visits to grant recipient	At grant approval and execution Project visits	Data collectors – collect Project M&E staff verify	Tracks SO achievement, defined as output in FFPr Indicators	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
FFPr 1.2. Increased Use of Improved Agricultural Techniques and Technologies								
6	Number of individuals who have applied new techniques or technologies as a result of USDA Assistance (FFPr indicator 2)	This FTF outcome indicator measures the total number of farmers, ranchers and other primary sector producers, (livestock products) that applied new technologies anywhere within the food and fiber system as a result of USDA assistance. This includes innovations in efficiency, value-addition, on-farm post-harvest management, sustainable land management, and forest and water management. Unit: number of individuals Disaggregated by: gender, new/cont., breed genetics, animal feed, animal health	Direct observations, records of trainings, and report into Project documents	Survey of all targeted individuals	Semi-Annual	Data collectors – collect Project M&E staff verify	Tracks technological change and its adoption by different actors in the agricultural supply chain as change will be critical to increasing agricultural productivity which is the Intermediate Result under which this indicator falls.	Project M&E staff (analysis and presentation) and Management (analysis, use, and reporting to USDA)
18	Number of private enterprises, producers' 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)	This USDA Standard outcome indicator measures the total number of private enterprises (processors, exporters, input dealer, storage and transport companies) producer associations, cooperatives, water users associations, fishing associations, women's groups, trade and business associations and community-based organizations (CBOs), that applied new techniques aimed at organization functions such as member services, processing, management (financial, planning, human	Direct observations and records of trainings, and report into Project documents	Survey	Semi- Annual	Data collectors – collect Project M&E staff verify	Tracks private sector and civil society behavior change that is essential to increase agricultural sector productivity	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)

		resources), marketing, accounting, procurement, technical innovations, quality control, information technology, etc., as a result of USDA assistance in this reporting year Unit: number of organizations Disaggregated by: type of organization, new/cont.						
33	Number of dairy farmers using improved milking and milk handling techniques as a result of USDA assistance	This custom outcome indicator measures the overall increase in productivity of the milk sector supported by SAFE Unit: farmers Disaggregation: none	Report into Project documents. M&E system	Estimated at activity approval, grant closing and periodic visits to grant recipient	At grant approval and execution. Project visits	Data collectors – collect Project M&E staff verify	Tracks SO level outcome	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
FFPr 1.2.1. Increased Availability of Improved Inputs								
	Inputs market operated by private suppliers is adequate according to assessment in Baseline Study							
	FFPr 1.2.2 Improved Infrastructure in Beef and Dairy Value Chains							
1	Number of hectares under improved techniques or technologies as a result of USDA assistance. (FFPr Indicator 1)	This FFPr standard outcome indicator measures the number of hectares on which improved techniques or technologies were implemented. (See FFPr definitions). Unit: hectares Disaggregation: new/cont	Direct observations, and report into project documents. M&E system	Estimated at activity approval, grant closing and periodic visits to grant recipient.	Semi-Annual	Data collectors – collect. Project M&E staff verify	Tracks SO1 level Outcome.	Project M&E staff (analysis and presentation) and Management (analysis, use, and reporting to USDA)
36	Number of milk collection centers with USDA support using improved equipment to collect and chill milk	This custom outcome indicator tracks the number of milk collection centers with USDA support using improved equipment to collect and chill milk Unit: number of collection centers Disaggregated by: none	Direct observation and milk collection center reports into Project documents	Survey of milk collection centers	Semi- Annual	Data collectors – collect Project M&E staff verify	Tracks outcome data for improvement of post-production infrastructure	Project M&E staff (analysis and presentation) and management (analysis, use, and

								reporting to USDA)
Grants to Producer Organizations (PO) to strengthen milk collection centers								
37	Number of grants provided to dairy producer groups/processors to improve or establish milk collection centers	This custom output indicator tracks the number of grants available to dairy producer groups/processors to establish milk collection centers as a result of Project intervention Unit: number of grants Disaggregated by: none	Grant administration records, and report into Project documents	Survey of targeted dairy producer groups/processors	Annual	Data collectors – collect Project M&E staff verify	Tracks the output number of the activity	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
38	Value of grants to milk collection centers funded by SAFE.	This custom output indicator tracks the number of slaughter houses improved with USDA support Unit: number of slaughter houses Disaggregated by: none	Report into Project documents. M&E system	Estimated at activity approval, grant closing and periodic visits to grant	At grant approval and execution	Project M&E staff	Tracks improved livelihood, as it measures the creation of sustainable employment and related income.	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
FFPr 1.2.3 Increased Use of Financial Services								
8	Value of Loans provided as a result of USDA Assistance (FFPr Indicator 6)	This FFPr output indicator tracks the total value of financial support provided to producers, processors, exporters, collection centers and others as a result of Project intervention Unit: U.S. dollar (USD) Disaggregated by: gender of loan recipient	Grant administration records, data from Financial Institutions (FIs) and report into Project documents	Survey of all targeted individuals, Project records	Semi- Annual	Data collectors – collect Project M&E staff verify	Tracks the total amount of additional financing utilized by beneficiaries as a result of USDA assistance	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
9	Number of Loans Disbursed as a result of USDA Assistance (FFPr Indicator 5)	This Standard FFPr output indicator adds the number of loans made as a result of USDA assistance. This indicator counts	Grant administration records, data from Financial	Survey, Project records	Semi- Annual	Data collectors – collect Project	Tracks the number of loans disbursed as they are indicative of improved access to business	Project M&E staff (analysis and presentation)

		loans disbursed to the recipient, not loans in process, but not yet available to the recipient. Unit: number Disaggregated by: none	Institutions (FIs) and report into Project documents			M&E staff verify	development and financial services	and management (analysis, use, and reporting to USDA)
10	Number of individuals receiving financial services as a result of USDA Assistance (FFPr Indicator 4)	This Standard FFPr output indicator measures the total number of farmers, producers, processors, exporters, collection centers and others using services from financial enterprises as a result of USDA assistance. Unit: number of individuals Disaggregated by: gender	Grant administration records, and report into Project documents	Survey of all targeted individuals, and Project records	Semi- Annual	Data collectors – collect Project M&E staff verify	Tracks how many beneficiaries have improved financing options, which leads to expanded markets and trade, which in turn help expand agricultural productivity.	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
Financial Services: Facilitate Agricultural Lending and Private and/or Public Investment								
41	Number of firms who are accessing credit through formal financial products as a result of USDA assistance	This illustrative outcome indicator measures the number of firms in the targeted region who are accessing loans through formal financial products as a result of USDA assistance Unit: number of firms Disaggregated by: none	Documentation from financial institutions and report into Project documents	Survey	Semi- Annual	Data collectors – collect Project M&E staff verify	Tracks the outcome data for increased access to use of financial services for agricultural firms which contributes to expanded trade of agricultural products	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
FFPr 1.2.4 Increased Knowledge by Farmers of improved Agricultural Techniques and Technologies								
4	Number of individuals who have received short-term agricultural sector productivity or food security training as a result of USDA assistance FFPr Indicator 16	This Standard FFPr output indicator measures the number of individuals to whom significant knowledge or skills have been imparted through interactions that are intentional, structured, and purposed for imparting knowledge or skills should be counted as training, through formal or informal means. Unit: number of individuals	Training records, grant administration records, and reports into Project documents	Estimated at activity approval, grant closing and periodic visits to sponsoring organization	At grant approval and execution Project visits	Data collectors – collect. Project M&E staff verify	Tracks SO achievement, defined as output in FFPr Indicators	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)

		Disaggregation: gender, new/cont., farmers, people in firms, government, civil society						
47	Number of individuals benefiting indirectly from USDA-funded interventions. FFPr Indicator 18 SO1, SO2	This Standard FFPr output indicator measures the number of individuals directly participating in USDA-funded interventions. See Standard Indicator Definition. Unit: number of individuals Disaggregation: gender and new/continuing	Training records, grant administration records, and reports into Project documents	Estimated at grant approval and execution.	At grant approval and execution Project visits	Data collectors – collect Project M&E staff verify	Tracks SO achievement, defined as output in FFPr Indicators	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
Training: Improved Agricultural Production Techniques								
34	Number of training sessions in milking and milk handling conducted for dairy farmers	This custom output indicator measures the number of training sessions in milking and milk handling conducted for dairy farmers with USDA assistance Unit: number of individuals Disaggregated by: none	Training records	Project records	Semi- Annual	Training staff provide info to Project M&E staff	Tracks the amount of time spent building capacity of dairy farmers in improved post- production practices	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
35	Number of milk producers trained in milking and milk handling	This custom output indicator tracks how many dairy farmers have been trained in milking and milk handling SPS practices with USDA assistance Unit: number of individuals Disaggregated by: gender	Training records	Project records	Semi- Annual	Training staff provide info to Project M&E staff	Tracks the number of dairy farmers with enhanced capacity to implement improved post- production practices	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)

7	Number of improved dairy and beef production demonstrations established with USDA support.	This custom output indicator tracks the number of improved dairy production demonstrations established with USDA support Unit: number of demonstrations Disaggregated by: none	Direct observations, report into Project documents	Project records	At grant approval and execution Project visits	Data collectors- collect Project M&E staff verify	Tracks efforts to demonstrate improved production practices by farmers	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
FFPr 1.3 Improved Farm Management (Operations, Financial)								
14	Number of individuals who have applied improved farm management practices (i.e. governance, administration, or financial management) as a result of USDA assistance (FFPr Indicator 3)	This Standard FFPr outcome indicator measures the total number of beneficiaries who are applying the knowledge or skills received in USDA supported training. Beneficiaries include primary sector producers, extension specialists, processors, milk collection centers, exporters and others. Improved practices include on-farm agriculture-related management practices related to governance, administration, and finance. Unit: number of individuals Disaggregated by: gender, people in firms, people in government.	Direct observations and records of trainings, and report into Project documents	Survey of all targeted individuals	At grant approval and execution.Semi-Annual	Data collectors – collect Project M&E staff verify	Behavior change by different actors in agriculture results in increased agricultural productivity	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
FFPr 1.3.1 Improved Knowledge Regarding Farm Management								
11	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	This custom outcome indicator measures the overall increase in productivity of the milk sector supported by SAFE Unit: farmers Disaggregation: gender	Report into Project documents. M&E system	Estimated at activity approval, grant closing and periodic visits to grant recipient	At grant approval and execution. Project visits	Data collectors – collect Project M&E staff verify	Tracks SO level outcome	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
Training: Farm Management								

16	Number of beef or dairy farmers that have produced a business plan as a result of USDA assistance	This custom output indicator tracks the number of beef farmers that have produced a business plan as a result of USDA assistance. Unit: number of individuals Disaggregated by: gender,	Direct observations and records of trainings, and report into Project documents	Survey of all targeted individuals	Semi- Annual	Data collectors – collect Project M&E staff verify	Tracks enhanced human capacity for economic based decision making through farm management practices which are key to transformational development	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
FFPr 1.4.1 Increased Capacity of Government Institutions								
No hay un indicador específico de este resultado. Algunas instituciones públicas estarán implementando acciones de fortalecimiento complementarias al con el Proyecto, como el MA, MoH, y LAVECEN.								
FFPr 1.4.4 Improved Capacity of Key Groups in the Agriculture Production Sector (Coops and Small Shareholder Farmers)								
56	Number of private sector dairy and beef extension agents supporting farmers in partnership with government extension services	This custom output indicator measures the number of government extension agents trained in improved dairy and beef techniques and technologies Unit: number of individuals Disaggregated by: gender	Training records, and report into Project documents	Project records	Semi- annual	Training staff provide information to Project M&E staff	Tracks output information for increased capacity of government institutions	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
Capacity Building: Private Sector Agricultural Extension Agents/Services								
17	Number of extension agents trained in improved agriculture techniques and technologies	This custom output indicator measures the number of private sector technical extension agents who receive training in improved dairy or beef production techniques and technologies with USDA assistance Unit: number of individuals Disaggregated by: gender, subsector (dairy, beef)	Training records, and report into Project documents	Project training records	Semi- Annual	Training staff provide info to Project M&E staff	Tracks output information for increased capacity of private sector institutions in targeted sectors	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
19	Number of grants provided to businesses (POs, dairy processors, and meat	This custom output indicator tracks the number of grants provided to businesses to establish	Grant administration records, and	Survey of targeted businesses	Annual	Data collectors – collect	Tracks the output number of the activity	Project M&E staff (analysis and

	processors) to establish or improve their extension services.	an extension system as a result of Project intervention Unit: number of grants Disaggregated by: none	report into Project documents			Project M&E staff verify		presentation) and management (analysis, use, and reporting to USDA)
20	Value of grants provided to businesses (POs, dairy processors, and meat processors) to establish or improve their extension services.	This custom output indicator tracks the amount of grants provided to businesses to establish an extension system as a result of Project intervention Unit: number of grants Disaggregated by: none	Grant administration records, and report into Project documents	Survey of targeted businesses	Annual	Data collectors – collect Project M&E staff verify	Tracks the output number of the activity	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
FFPr 1.4.5 Increased Leverage of Private-Sector Resources								
21	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	This illustrative outcome indicator tracks the number of private sector institutions, which can include processors, milk collection centers, exporters, POs and others, providing monetary or in-kind resources in support of agriculture productivity as a result of USDA assistance Unit: Number of firms Disaggregated by: none	Direct observation, report into Project document	Survey	Semi- Annual	Data collectors – collect Project M&E staff verify	Tracks private sector investment into agriculture productivity, an important indicator of sustainability of agricultural productivity initiatives	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
22	Value of private sector investment/resources supporting agriculture research/extension that is consistent with government priorities as a result of USDA assistance	This illustrative outcome indicator tracks the value of private sector investment/resources supporting agriculture research/extension as a result of USDA assistance Unit: Value of investment Disaggregated by: none	Direct observation, report into Project document	Survey	Semi- Annual	Data collectors – collect Project M&E staff verify	Tracks private sector investment into agriculture productivity, an important indicator of sustainability of agricultural productivity initiatives	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)

FFPr SO2: Expanded Trade of Agricultural Products (Domestic, Regional, and International)								
43	Number of new markets buying beef and dairy products as a result of USDA assistance.	This custom indicator measures expansion of trade in beef and dairy products as a result of the Project Disaggregated by: none	Ministry of Agriculture, Customs Sector organizations	Identification of new markets	Semi annual	M&E staff	Tracks the expansion of trade: SO1	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
44	Number of agreements signed (Contracts, MOUs, etc.) between beef or dairy exporters and buyers in the US as a result of USDA assistance	This custom outcome indicator measures the formation of relationships between the target beneficiaries and buyers in the United States as a result of USDA assistance Unit: number of contracts Disaggregated by: dairy, beef.	Exporter documentation, report into Project documents	Project records	Semi- Annual	Data collectors – collect Project M&E staff verify	Tracks linkages that will provide sustainability to Project interventions	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
FFPr 2.1 Increased Value Added to Post-Production Agricultural Products								
FFPr 2.1.1 Improved quality of Post-Production Agricultural Products								
23	Number of dairy farmers supplying grade "A" milk to USDA supported milk collection centers	This custom outcome indicator measures the number of dairy farmers supplying grade "A" milk to USDA supported milk collection centers Unit: number of individuals Disaggregated by: gender	Milk collection center records and reports into Project documents	Survey of dairy farmers	Semi- Annual	Data collectors – collect Project M&E staff verify	Tracks ability of dairy farmers to meet safety and quality standards which contributes to expanded trade of agricultural products	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
32	Percentage increase in volume of grade "A" milk sold to processors by USDA supported milk collection centers.	This custom outcome indicator measures the percentage increase in the volume of grade "A" milk sold to processors by USDA supported milk collection centers	Milk collection center reports into Project documents	Survey of milk collection centers	Semi- Annual	Data collectors – collect Project	Tracks value add to products as a result of Project interventions	Data collectors – collect

		Unit: percentage (liters) Disaggregated by: none				M&E staff verify		Project M&E staff verify
FFPr 2.1.1.1 Increased Adoption of Established Standards by Industry								
24	Number of beef processors demonstrating upgraded SPS control systems as a result of USDA assistance.	This custom outcome indicator measures the number of beef processors demonstrating upgraded SPS control systems as a result of USDA assistance Unit: number of organizations Disaggregated by: none	Direct observation, auditor reports, and report into Project documents	Survey of targeted beef processors, Project records	Semi- Annual	Data collectors – collect Project M&E staff verify	Tracks ability of beef value chain members to meet safety and quality standards which contributes to expanded trade of agricultural products	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
FFPr: 2.1.2 Increased Efficiency of Post-Production Processes								
29	Number of value chain actors participating in the Seal of Quality	This custom output indicator tracks the number of actors using the Seal of Quality in their activities or business Unit: Number of products Disaggregated by: none	Report into Project documentation	Survey, Project records	Annual	Data collectors – collect Project M&E staff verify	Tracks behavior change in targeted beneficiaries	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
30	Number of products using the Seal of Quality in their marketing	This custom outcome indicator tracks the number of Products using the Seal of Quality in their marketing Unit: Number of products Disaggregated by: none	Report into Project documentation	Survey, Project records	Annual	Data collectors – collect Project M&E staff verify	Tracks behavior change in targeted beneficiaries	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
31	Number of people reached through the Seal of Quality public information campaign	This custom output indicator tracks the number of people using the Seal of Quality.	Report into Project documentation	Survey, Project records	Annual	Data collectors – collect Project	Tracks behavior change in targeted beneficiaries	Project M&E staff (analysis and presentation)

		Unit: Number of persons Disaggregated by: none				M&E staff verify		and management (analysis, use, and reporting to USDA)
FFPr 2.1.2.1: Increased use of improved post-production processing and handling practices								
55	Number of dairy producer association members trained in milk collection center establishment / management	This custom output indicator measures number of dairy producer association members trained in milk collection center establishment/management Unit: number of individuals Disaggregated by: none	Training records, and report into Project documents	Project records	Semi- annual	Training staff provide information to Project M&E staff	Tracks output information for increased capacity of dairy producer associations	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
FFPr 2.1.2.2 Improved Post-Harvest Infrastructure								
39	Number of grants provided to beef processors to improve beef processing infrastructure related to SPS control	This custom output indicator tracks the number of grants provided to beef processors to improve facilities related to SPS control. Unit: number of grants Disaggregated by: gender	Grant administration records, and report into Project documents	Survey of targeted businesses	Annual	Data collectors – collect Project M&E staff verify	Tracks the output number of the activity	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
40	Value of Grants provided to beef processors to improve beef processing infrastructure related to SPS control	This custom output indicator tracks the value of grants provided to beef processors to improve facilities related to SPS control. Unit: number of grants Disaggregated by: gender	Grant administration records, and report into Project documents	Survey of targeted businesses	Annual	Data collectors – collect Project M&E staff verify	Tracks the output number of the activity	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)

FFPr 2.2 Increased access to markets to sell agricultural products								
12	Value of sales by Project beneficiaries (FFPr indicator 13)	This Standard FFPr outcome indicator measures the value of sales by Project beneficiaries. Unit: US Dollar Disaggregation: commodity type	Partner records	Project records	Annual	Data collectors – collect Project M&E staff verify	Tracks SO level outcome	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
13	Volume of commodities (metric tons) sold by Project beneficiaries (FFPr indicator 14)	This Standard FFPr outcome indicator measure the volume of commodities (metric tons) sold by Project beneficiaries Unit: metric tons Disaggregation: commodity type	Partner records	Project records	Annual	Data collectors – collect Project M&E staff verify	Tracks SO level outcome	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
FFPr 2.2.2 Improved linkages between buyers and sellers								
45	Number of international trade missions conducted with host country ag exporters and foreign buyers	This illustrative output indicator tracks the number of international trade missions conducted with Dominican agriculture exporters and foreign buyers Unit: number of trade missions Disaggregated by: none	Direct observation, report into Project documents	Project records	Semi-Annual	Data collectors – collect Project M&E staff verify	Tracks linkages that will provide sustainability to Project interventions	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
46	Number of value chain linkage meetings held between buyers/sellers in the dairy and beef sector	This illustrative output indicator tracks the number of meetings promoted between buyers and sellers of beef and dairy products of the DR	Direct observation, report into Project documents	Project records	Semi-Annual	Data collectors – collect Project	Tracks linkages that will provide sustainability to Project interventions	Project M&E staff (analysis and presentation) and management

		Unit: number of trade missions Disaggregated by: none				M&E staff verify		(analysis, use, and reporting to USDA)
FFPr 2.2.3.1 Increased Use of Financial Services								
42	Number of training sessions in accessing financial services for post-harvest technologies provided to firms	This custom output indicator measures the number of training sessions accessing financial services for post- harvest technologies provided to firms with USDA assistance Unit: number of trainings Disaggregated by: none	Training records	Project records	Semi- Annual	Training staff provide info to Project M&E staff	Tracks the amount of time spent building capacity of targeted firms to access financial services	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
FFPr 2.4.2 Improved Policy and Regulatory Framework								
25	Number of dairy processing facilities audited for compliance with SPS standards	This custom output indicator tracks number of dairy facilities audited for compliance with SPS standards. Unit: processing facilities Disaggregated by: none	Project records MoH records	Project records MoH information	Semi- Annual	Project staff provide info to Project M&E staff	Tracks compliance wit sanitary regulations	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
27	Number of beef processing facilities audited for compliance with SPS standards	This custom output indicator tracks number of dairy facilities audited for compliance with SPS standards. Unit: processing facilities Disaggregated by: none	Training records	Project records	Semi- Annual	Training staff provide info to Project M&E staff	Tracks compliance wit sanitary regulations	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)

48	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)	This FTF outcome indicator tracks the number of policies, regulations, and/or administrative procedures in each of the following stages of development as a result of USDA assistance Unit: number of policies/regulations/administrative procedures Disaggregated by: Stage	Observation/an analysis of host government, reports into Project records	Project records	Annual	Data collectors – collect Project M&E staff verify	The indicator measures the number of policies/regulations/administrative procedures in the various stages of progress towards an enhanced enabling environment for agriculture	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
49	Number of assessments completed of GoDR beef food safety regulations and systems	This custom output indicator tracks the number of assessments completed of the Government of the Dominican Republic's beef food safety and regulations system Unit: number of assessments Disaggregated by: none	Assessment documentation, report into Project documents	Project records	Annual	Data collectors – collect Project M&E staff verify	Tracks the output indicator to determine equivalency with U.S. beef food safety and regulation systems	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
50	Number of training sessions in trade policy analysis and advocacy provided for individuals	This custom output indicator measures the number of training sessions held in trade policy analysis related to the livestock sector. Unit: number of individuals Disaggregated by: none	Training records	Project records	Semi- Annual	Training staff provide info to Project M&E staff	Tracks the amount of time spent building capacity of targeted firms to access financial services	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
51	Number of individuals trained in trade policy analysis and advocacy	This custom output indicator measures the number of individuals that received training in trade policy analysis related to the livestock sector. Unit: number of individuals Disaggregated by: gender	Training records	Project records	Semi- Annual	Training staff provide info to Project M&E staff	Tracks the amount of time spent building capacity of targeted firms to access financial services	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)

48	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)	This FTF outcome indicator tracks the number of policies, regulations, and/or administrative procedures in each of the following stages of development as a result of USDA assistance Unit: number of policies/regulations/administrative procedures Disaggregated by: Stage	Observation/an analysis of host government, reports into Project records	Project records	Annual	Data collectors – collect Project M&E staff verify	The indicator measures the number of policies/regulations/administrative procedures in the various stages of progress towards an enhanced enabling environment for agriculture	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
Capacity Building: Promote Improved Policy and Regulatory Framework								
26	Number of dairy processor staff trained in SPS measures	This custom output indicator tracks the number of training sessions in SPS standards conducted for dairy processor staff as a result of USDA assistance Unit: number of trainings Disaggregated by: none	Training records and report into Project documents	Project records	Semi- Annual	Data collectors – collect Project M&E staff verify	Tracks the amount of time spent building capacity of dairy processor staff which contributes to expanded trade of agricultural products	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
28	Number of beef processor staff trained in SPS standards and systems	This custom output indicator tracks the number of beef processor staff trained in SPS standards and systems as a result of USDA assistance Unit: number of individuals Disaggregated by: gender	Training records and report into Project documents	Project training records	Semi- Annual	Data collectors – collect Project M&E staff verify	Tracks the number of beef processor staff with enhanced capacity to implement SPS standards which contributes to expanded trade of agricultural products	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
FFPR 2.4.4 Improved Capacity of Key Organizations in the Trade Sector (Processing Organizations and Trade Associations)								
52	Number of beef Regulatory Policy and Regulatory Framework meetings for public debate and/or consultation with stakeholders on the proposed new or revised	This custom output indicator tracks the number Beef Policy and Regulatory Framework meetings for public debate and/or consultation with stakeholders on the proposed new or revised policy/regulation/administrative procedure held with USDA support	Project records, and reports into Project documents	Project records	Semi- Annual	Data collectors – collect Project M&E staff verify	Tracks the amount of time spent to develop/refine a the GoDR beef policy and regulatory framework	Project M&E staff (analysis and presentation) and management (analysis, use, and

	policy/regulation/administrative procedure	Unit: number of meetings Disaggregated by: none						reporting to USDA)
FFPr 2.4.5 Increased Leverage of Private Sector Resources								
53	Number of public-private partnerships formed as a result of USDA assistance (FFPr Indicator 8)	This standard outcome indicator tracks the number of public-private partnerships in agriculture formed. See Standard Indicator Definition. Unit: number of partnerships Disaggregated by: type of partnership	Report into Project documentation	Survey, Project records	Annual	Data collectors – collect Project M&E staff verify	Tracks important sustainability outcome indicates increased investment in the agriculture	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
54	Value of new public and private sector investment leveraged as a result of USDA assistance (FFPr Indicator 9)	Investment is defined as any use of public and private sector resources intended to increase future production output or income, to improve the sustainable use of agricultural-related natural resources (soil, water, etc.) to improve water or land management, or anywhere along the food, feed and fiber system and natural resources management. Unit: U.S. Dollars (USD) Disaggregated by: type if investment	Direct observation, report into Project documentation	Survey	Semi- Annual	Data collectors – collect Project M&E staff verify	Tracks public and private sector investment into agriculture productivity an important indicator of sustainability of agricultural productivity initiatives	Project M&E staff (analysis and presentation) and management (analysis, use, and reporting to USDA)
Market Access: Facilitate Private and/or Public Partnerships								
57	Number of events supported by SAFE aimed at promoting private-public partnerships for improving beef and dairy development at the farm, processor and exporter levels	This custom output indicator tracks the number of private sector beef and dairy activities that encourage public-private partnerships and sharing of information. Unit: number of events Disaggregated by: none	Report into Project documentation	Project records	continuous	M&E staff	Tracks implementation of partnership between public and private sector	Project M&E staff (analysis and presentation) and management (analysis, use, and

							reporting to USDA)
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Progress Management Table (PMT)

PROGRESS MANAGEMENT TABLE (PMT)							
No. *	Performance Indicator	Baseline 2016	Annual targets				Project target
			2017	2018	2019	2020	
FFPr SO1: Increased Agricultural Productivity							
5	Number of jobs attributed to USDA assistance (FFPr indicator 15) (male)	0	27	40	50	28	145
	Number of jobs attributed to USDA assistance (FFPr indicator 15) (female)	0	5	10	17	12	44
2	Percentage increase in the average number of liters produced per cow per day	0 (7.5 l/c-d)	10%	20%	30%	50%	50% (11.25 l/c-d)
15	Volume of milk supplied by farmers to USDA supported milk collection centers (liters)	0	5 million	15 million	25 million	35 million	80 million
3	Total number of individuals benefitting directly as a result of USDA Assistance (FFPr Indicator 17) (Male)	0	1,733	2,310	2,888	3,464	10,395
	Total number of individuals benefitting directly as a result of USDA Assistance (FFPr Indicator 17) (Female)	0	743	990	1,238	1,040	4,011
	Total number of individuals benefitting directly as a result of USDA Assistance (FFPr Indicator 17) (new)	0	866	1,155	1,444	732	5,197
	Total number of individuals benefitting directly as a result of USDA Assistance (FFPr Indicator 17) (continuing)	0		1,155	2,079	3,234	6,468
FFPr 1.2. Increased Use of Improved Agricultural Techniques and Technologies							
6	Number of individuals who have applied new techniques or technologies as a result of USDA Assistance (FFPr indicator 2) (male)	0	596	795	994	1193	3,578
	Number of individuals who have applied new techniques or technologies as a result of USDA Assistance (FFPr indicator 2) (female)	0	1,391	1,855	2,319	2,783	8,348
	Number of individuals who have applied new techniques or technologies as a result of USDA Assistance (FFPr indicator 2) (new)	0	1,988	2,650	3,313	3,975	11,926
	Number of individuals who have applied new techniques or technologies as a result of USDA Assistance (FFPr indicator 2) (continuing)	0	0	1590	2120	2650	6,360

	Number of individuals who have applied new techniques or technologies as a result of USDA Assistance (FFPr indicator 2) (other breed genetics)	0	450	600	750	900	2,700
	Number of individuals who have applied new techniques or technologies as a result of USDA Assistance (FFPr indicator 2) (other-animal feed)	0	1800	2400	3000	3600	10,800
	Number of individuals who have applied new techniques or technologies as a result of USDA Assistance (FFPr indicator 2) (other-animal health)	0	1800	2400	3000	3600	10,800
18	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)	0	6	8	11	13	38
	Number of private enterprises, producer 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) (New)	0	3	5	6	7	21
	Number of private enterprises, producer 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) (Continuing)	0	9	12	15	18	54
33	Number of dairy farmers using improved milking and milk handling techniques as a result of USDA assistance	0	1000	1500	2000	2500	7,000
1.2.1 Increased availability of improved inputs							
Inputs market operated by private suppliers is adequate according to assessment in Baseline Study							
FFPr 1.2.2 Improved Infrastructure to support on farm production and Beef and Dairy Value Chains							
1	Number of hectares under improved techniques or technologies as a result of USDA assistance. (FFPr Indicator 1) (new)	0	1,100	500	500	500	2,600
	Number of hectares under improved techniques or technologies as a result of USDA assistance. (FFPr Indicator 1), disaggregated by (Continuing)	0	0	1100	1600	2100	4800
36	Number of milk collection centers with USDA support using improved equipment to collect and chill milk	0	5	10	15	20	50
Grants to Producer Organizations (PO) to strengthen milk collection centers							

37	Number of grants provided to dairy producer groups/processors to establish or improve milk collection centers	0	8	10	10	5	33
38	Value of grants provided to dairy producer groups/processors to establish or improve milk collection centers	0	64,000	80,000	80,000	40,000	264,000
FFPr 1.2.3 Increased Use of Financial Services							
8	Value of Loans provided as a result of USDA Assistance (FFPr Indicator 6) (male)	0	465,938	621,250	776,563	931,875	2,795,626
	Value of Loans provided as a result of USDA Assistance (FFPr Indicator 6) (female)	0	279,563	372,750	465,938	559,124	1,677,375
	Value of Loans provided as a result of USDA Assistance (FFPr Indicator 6) (joint)	0	186,375	248,500	310,625	372,750	1,118,250
9	Number of Loans Disbursed as a result of USDA Assistance (FFPr Indicator 5)	0	600	1512	1848	2183	6,143
10	Number of individuals receiving financial services as a result of USDA Assistance (FFPr Indicator 4)	0	1167	1685	2087	1196	6,135
Financial Services: Facilitate Agricultural Lending and Private and/or Public Investment							
41	Number of firms who are accessing credit through formal financial products as a result of USDA assistance	0	10	10	10	10	40
FFPr 1.2.4 Increased Knowledge by Farmers of improved Agricultural Techniques and Technologies							
4	Number of individuals who have received short-term agricultural sector productivity or food security training as a result of USDA assistance (FFPr Indicator 16) (female)	0	563	750	938	1124	3,375
	Number of individuals who have received short-term agricultural sector productivity or food security training as a result of USDA assistance (FFPr Indicator 16) (male)	0	1688	2250	2813	3374	10,125
	Number of individuals who have received short-term agricultural sector productivity or food security training as a result of USDA assistance (FFPr Indicator 16) (new)	0	2336	3115	3894	4672	14,017
	Number of individuals who have received short-term agricultural sector productivity or food security training as a result of USDA assistance (FFPr Indicator 16) (continuing)	0	0	2400	3000	3600	9,000

	Number of individuals who have received short-term agricultural sector productivity or food security training as a result of USDA assistance (FFPr Indicator 16) (farmers)	0	2000	3000	4000	4500	13,500
	Number of individuals who have received short-term agricultural sector productivity or food security training as a result of USDA assistance (FFPr Indicator 16) (people in firms)	0	50	70	85	45	250
	Number of individuals who have received short-term agricultural sector productivity or food security training as a result of USDA assistance (FFPr Indicator 16) (government)	0	50	50	50	50	200
	Number of individuals who have received short-term agricultural sector productivity or food security training as a result of USDA assistance (FFPr Indicator 16) (civil society)	0	10	10	10	10	40
47	Number of individuals benefitting indirectly from USDA-funded agricultural productivity interventions (FFPr indicator 18)	0	9900	13200	16500	19800	59,400
Training: Improved Agricultural Production Techniques							
34	Number of training sessions in milking and milk handling conducted for dairy farmers	0	104	104	128	64	400
35	Number of milk producers trained in milking and milk handling	0	2600	2600	3200	1600	10,000
7	Number of improved beef and dairy production demonstrations established or improved with USDA support.	0	50	50	50	25	175
FFPr 1.3 Improved Farm Management (Operations, Financial)							
14	Number of individuals who have applied improved farm management practices (i.e. governance, administration, or financial management) as a result of USDA assistance (FFPr Indicator 3) (male)	0	462	615	770	920	2,767
	Number of individuals who have applied improved farm management practices (i.e. governance, administration, or financial management) as a result of USDA assistance (FFPr Indicator 3) (female)	0	185	246	308	369	1,108

	Number of individuals who have applied improved farm management practices (i.e. governance, administration, or financial management) as a result of USDA assistance (FFPr Indicator 3) (farmers)	0	615	820	1,025	1,230	3,690
	Number of individuals who have applied improved farm management practices (i.e. governance, administration, or financial management) as a result of USDA assistance (FFPr Indicator 3) (people in firms)	0	123	164	205	246	738
	Number of individuals who have applied improved farm management practices (i.e. governance, administration, or financial management) as a result of USDA assistance (FFPr Indicator 3) (people in government)	0	35	40	50	50	175
FFPr 1.3.1 Improved Knowledge Regarding Farm Management							
11	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	0	0	0	0	3690	3,690
Training: Farm Management							
16	Number of business plans produced for beef and dairy production with USDA assistance	0	1,800	2,350	2,350	1,000	7,500
FFPr 1.4.1 Increased capacity of Government institutions							
There is no specific indicator for this result. Some public sector institutions will be implementing institutional strengthening activities related to the Project (MA, MoH, y LAVECEN, Megaleche).							
FFPr 1.4.4 Improved Capacity of Key Groups in the Agriculture Production Sector (Coops and Small Shareholder Farmers)							
56	Number of private sector dairy and beef extension agents supporting farmers in partnership with government extension services	0	18	26	32	16	92
Capacity Building: Private Sector Agricultural Extension Agents/Services							
17	Number of extension agents trained in improved agriculture techniques and technologies	0	60	80	80	60	280
19	Number of grants provided to businesses (POs, dairy processors, and meat processors) to establish or improve an extension system	0	2	4	4	5	15
20	Value grants provided to businesses (POs, dairy processors, and meat processors) to establish or improve an extension system	0	30,000	150,000	60,000	0	240,000
FFPr 1.4.5 Increased Leverage of Private-Sector Resources							

21	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	0	10	20	30	0	60
22	Value of private sector investment/resources supporting agriculture research/extension that is consistent with government priorities as a result of USDA assistance	0	0	0	0	712,320	712,320
FFPr SO2: Expanded Trade of Agricultural Products (Domestic, Regional, and International)							
43	Number of new markets to which beef or dairy product is exported	0	0	0	1	1	1
44	Number of agreements signed (Contracts, MOUs, etc.) between beef or dairy exporters and buyers in the US as a result of USDA assistance	0	0	2	4	8	8
FFPr 2.1 Increased Value Added to Post-Production Agricultural Products							
FFPr 2.1.1 Improved quality of Post-Production Agricultural Products							
23	Number of dairy farmers supplying grade "A" milk to USDA supported milk collection centers	0	275	275	275	275	1,100
32	Percentage increase in volume of grade "A" milk sold to processors by USDA supported milk collection centers	0				50%	1
FFPr 2.1.1.1 Increased Adoption of Established Standards by Industry							
24	Number of beef processors demonstrating upgraded SPS control systems as a result of USDA assistance.	0		2	2	1	5
FFPr 2.1.2 Increased efficiency of post-production processes							
29	Number of value chain actors participating in the Seal of Quality	0	30	60	90	120	300
30	Number of products using the Seal of Quality in their marketing	0	0	5	10	10	25
31	Number of people reached through the Seal of Quality public information campaign	0	200,000	200,000	200,000	200,000	800,000
FFPr 2.1.2.1 Increased use of post-production processing and handling practices							
55	Number of dairy producer association members trained in milk collection center establishment/management	0	80	80	80	80	320
FFPr 2.1.2.2 Improved Post-Harvest Infrastructure							

39	Number of grants provided to beef processors to improve beef processing infrastructure related to SPS control	0		2	2	1	5
40	Value of Grants provided to beef processors to improve beef processing infrastructure related to SPS control	0		20,000	20,000	10,000	50,000
FFPr 2.2 Increased access to markets to sell agricultural products							
12	Value of sales by Project beneficiaries (FFPr Indicator 13) (DR\$ Millions)		\$82.1	123.1	246.3	328.4	779.9
13	Volume of Commodities (metric tons) sold by Project beneficiaries (FFPr Indicator 14)		70,700	106,050	212,100	282,800	671,650
FFPr 2.2.2 Improved linkages between buyers and sellers							
45	Number of international trade missions conducted with host country ag exporters and foreign buyers	0	1	1	1	1	4
46	Number of value chain linkage meetings held between buyers/sellers in the dairy and beef sector	0	3	3	3	1	10
FFPr 2.2.3.1 Increased Use of Financial Services							
42	Number of training sessions in accessing financial services for post-harvest technologies provided to firms	0	2	2	2	2	8
FFPr 2.4.2 Improved Policy and Regulatory Framework							
25	Number of dairy processing facilities audited for compliance with SPS standards	0	5	10	10	5	30
27	Number of beef processing facilities audited for compliance with SPS standards	0	2	3	4	5	14
48	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)	0	1	1	2	2	6
49	Number of assessments completed of GoDR beef food safety regulations and systems	0	1	0	0	0	1
50	Number of training sessions in trade policy analysis and advocacy provided for individuals	0	2	2	2	2	8
51	Number of individuals trained in trade policy analysis and advocacy	0	50	50	50	50	200
Capacity Building: Promote Improved Policy and Regulatory Framework							
26	Number of dairy processor staff trained in SPS measures	0	48	80	80	80	288
28	Number of beef processor staff trained in SPS standards and systems	0	6	9	12	15	42

FFPR 2.4.4 Improved Capacity of Key Organizations in the Trade Sector (Processing Organizations and Trade Associations)							
52	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	0	25	25	25	12	87
FFPr 2.4.5 Increased Leverage of Private Sector Resources							
53	Number of public-private partnerships formed as a result of USDA assistance (FFPr Indicator 8)	0	5	5	5	5	20
54	Value of new public and private sector investment leveraged as a result of USDA assistance (FFPr Indicator 9)	0	250,000	250,000	250,000	250,000	1,000,000
Market Access: Facilitate Private and/or Public Partnerships							
57	Number of events supported by USDA aimed at promoting private-public partnerships for improving beef and dairy development at the farm, processor and exporter.	0	2	2	2	2	8
*	Numbers are from the list prepared by NCBA CLUSA – DR setting annual and Project targets (24 August 2016)						

Annex 3: Summary Results of BAGRICOLA Extension Agents Focus Group

AGENTE	PROFESIÓN	CURSOS RECIBIDOS en los últimos 4 años	Nivel inglés	Formación Requerida	Tiempo operando (en años)	Cantidad productores que asiste al mes	Productores nuevos en el último año	Tiempo en la misma zona	Tiempo requerido para obtener resultados	Cómo se obtienen mejores resultados	Interacción con Instituciones	Asistencia a fincas de carne
BA-01	Ing. Agrónomo	Productor Invernadero, Protección y Cuidado Medio Ambiente	Lee	Supervisión de Crédito, Evaluación de Proyectos, Análisis Finan, Factibilidad Financiera	8	60	20	4 año 3 meses	2 meses	Individual	No	No
BA-02	Doctor en Derecho	Ninguno	Lee-escribe-habla	Tasación de fincas	26	120	15	4 años	1 mes	Individual	Si	5
BA-03	Ing. Agrónomo	Ninguno	Lee, escribe	Tasación de fincas	22	120	25	1 año 8 meses	1 mes	Individual	DIGEGA	50
BA-04	Ing. Agrónomo	Agricultura Sostenible	Lee	Planes de Trabajo, Tasación de Fincas, Supervisión de Crédito	No/espec	60	10	4 meses	No/espec	Grupal	Ministerio Agricultura	Si/No espec cantidad
BA-05	Ing. Agrónomo	2 cursos, No/espec cuáles	Lee	Administración de Fincas, Tasación de Fincas, Análisis Financiero	No/espec	No/espec	20	2 años	3 meses	Grupal	IAD/MEA	No
BA-06	Técnico Agrónomo	Ninguno	No	Administ de Fincas, Análisis Financiero	No/espec	45	No/espec	8 años 4 meses	No/espec	Individual	No	Si/No espec cantidad
BA-07	Ing. Agroforestal	Computadora	No	Tasación de Fincas, Tasación de Ganados	24	190	35	3 años 8 meses	1 mes	Grupal	IAD	3
BA-08	Lic. en Contabilidad	Reparac de Comput, Técnico Aduanas	No	Tasación de Ganados, Evaluación de Proyectos	No/espec	80	1	3 años	8 meses	Individual	No	5

AGENTE	PROFESIÓN	CURSOS RECIBIDOS en los últimos 4 años	Nivel inglés	Formación Requerida	Tiempo operando (en años)	Cantidad productores que asiste al mes	Productores nuevos en el último año	Tiempo en la misma zona	Tiempo requerido para obtener resultados	Cómo se obtienen mejores resultados	Interacción con Instituciones	Asistencia a fincas de carne
BA-09	Técnico Agrónomo. Esp en Manejo de Banano	Monit de Sigatoka Negra, Agente de Desarrollo, Manejo GPS, Georeferenciación	Lee, escribe	Planes de Trabajo, Tasación de Fincas, Análisis de Costos	3	50	20	2 años 4 meses	3 meses	Individual	No	5
BA-10	Bachiller Agrícola	Ninguno	No	Diag de Fincas, Administ de Fincas, Elaboración Planes de Negocios, Tasación de Fincas, Metodología Comunicación	1	80	8	1 año 6 meses	12 meses	Individual	No	20
BA-11	Ingeniero Agrónomo. Esp en Mosca Blanca	Tasación de Bienes Raíces	Lee	Análisis de Costos	16	50	5	3 años	1 mes	Indiv/Grup	No	5
BA-12	Ing. Agropecuario	Manejo Post Cosecha, Manejo Integrado de Plagas	Habla	No/espec	6	267	30	1 año 1 mes	1 mes	Individual	IAD	No
BA-13	Técnico Agrícola	Ninguno	Lee	Tasación de Fincas, Form de Proyectos, Análisis de Costos	2	80	10	7 meses	1 mes	Individual	No	Si/No espec cantidad
BA-14	Ing. Agrónomo	Ninguno	Lee-escrib-habl	Tasación de Fincas, de Ganados, Evaluación de Proyectos	1 año 6 meses	51	19	3 meses	2 meses	Individual	No	No
BA-15	Ing. Agrónomo. Esp. en Fito-mejoramiento	Ninguno	Escribe	Tasación de fincas, de ganados, Evaluac de Proyectos	9	45	15	8 años	4 meses	Individual	No	No

AGENTE	PROFESIÓN	CURSOS RECIBIDOS en los últimos 4 años	Nivel inglés	Formación Requerida	Tiempo operando (en años)	Cantidad productores que asiste al mes	Productores nuevos en el último año	Tiempo en la misma zona	Tiempo requerido para obtener resultados	Cómo se obtienen mejores resultados	Interacción con Instituciones	Asistencia a fincas de carne
BA-16	Ing. Agrónomo	Manejo de Equipo Topográfico	No	Supervis de Crédito, Eval de Proyec, Anal Finan, Fact Finan	25	30	80	4 años 7 meses	4 meses	Individual	Agricultura	20
BA-17	Ing. Agrónomo	Ninguno	Lee-escrib-habl	Adm de Fincas, Tasación de Fincas, Sup de Crédito, Anál Financ, Factib Financ	3	70	28	3 años	3 meses	Individual	No	50
BA-18	Ing. Agrónomo. Esp en Suelos	Tasación de Fincas, Tasación de Bienes Raíces, Manejo de GPS	Lee-escrib-habl	Diag de Fin, Adm de Fin, Tas de Fin, Tas de Gan, Sup de Créd, For de Pro, Eval de Proy, Ana de Cos, Anál Financ, Fact Fin, Met Com	8	25	20	5 años	10 meses	Individual	No	20
BA-19	Ing. Agrónomo	Educación mención Matemáticas	Lee	Elab Planes de Nego, Análisis de Costos, Metod Comunicac	25	50	10	8 años	12 meses	Individual	No	10
BA-20	Ing. Agrónomo	Agente de Desarrollo	Lee	Elab Planes de Invers, Tasac de Fincas, Tas de Ganados	4 meses	60	No/espec	No/espec	6 meses	Individual	Banco Agrícola	Si/No espec cantidad
BA-21	Médico Veterinario. Esp en Formulación de Rac Aliment en Animales Monogástricos	Competitividad Agroalimentaria, Ganado de Carne, Integración Centro de Agricultura	Lee	Diag de Fincas, Adm de Fincas, Elab Planes Invers y Negoc, Tasac de Fincas, Tasac de Ganad, Superv de Crédito	30	3	No/espec	20 años	2 meses	Grupal	Ganadería	No

AGENTE	PROFESIÓN	CURSOS RECIBIDOS en los últimos 4 años	Nivel inglés	Formación Requerida	Tiempo operando (en años)	Cantidad productores que asiste al mes	Productores nuevos en el último año	Tiempo en la misma zona	Tiempo requerido para obtener resultados	Cómo se obtienen mejores resultados	Interacción con Instituciones	Asistencia a fincas de carne
BA-22	Ing. Agrónomo	Ninguno	Lee-escrib-habla	Elab. Planes de Inversión	11	190	50	4 años 7 meses	12 meses	Individual	Banco Agrícola	60
BA-23	Técnico Agrónomo	Agente de Desarrollo	No	Tasación de fincas, de ganados, Evaluac de Proyectos	6 meses	60	No aplica	6 meses	2 meses	Individual	Conaleche Agricultura	10
BA-24	Ing. Agrónomo	Tasacion de Bienes Raíces	No	Análisis de Costos	22	50	10	3 años	1 mes	Individual	No	5
BA-25	Médico Veterinario	Porcicultura	No	Diag de Fincas, Adm de Fincas, Elab Planes Invers y Negoc, Tasac de Fincas, Tasación de Ganad, Análisis de Costos, Análisis Finan, Factib Financ	19	No/espec	No/espec	No/espec	No/espec	Grupal	FEDA	No/espec

Source: Focus Group for BA extension agents, 5 July 2016.

Annex 4: Summary Results of MEGALECHE Extension Agents Focus Group

AGENTE	PROFESIÓN	CURSOS RECIBIDOS en los últimos 4 años	Nivel Inglés	Formación Requerida	Tiempo operando (en años)	Cantidad productores que asiste al mes	Productores nuevos en el último año	Tiempo en la misma zona	Tiempo requerido para obtener resultados	Cómo se obtienen mejores resultados	Interacción con Instituciones	Asistencia a fincas de carne
DG-01	Ing. Agrónomo. Esp en Producción Animal	Relaciones Humanas, Calidad de Leche, Metodología de Extensión	Lee-escrib-habla	Inseminación a tiempo fijo, Transplante de Embriones, Nutrición, Computos	7	19	8	7 años	No/espec	Grupal	Educación, Néstle	48
DG-02	Ing. Agrónomo. Esp en Conservación de Pastos y Follajes	Calidad de Leche, Fomento Pasturas, Uso de Medicamentos Reproducción	No	Reproducción, Manejo de Pastos, Buenas Pract Ganad, Sist Silvopastoril, Producción de Carne, Administración de Fincas	23	20 Directos 37/45 Indirectos	13	23 años 6 meses	5 meses	Indiv/Grup	Pasteurizadora Rica, Conaleche, Coopersan, Asociación de Ganaderos	2
DG-03	Zootecnista. Esp en Nutrición	Manejo de Pastos, Calidad de Leche, Nutrición, Inseminación Artificial	No	Sanid Animal, Transplante de Embriones, Producción de Carne	14	23	6	4 años 3 meses	6 meses	Grupal	DIGEGA	No
DG-04	Veterinario	Cooperativismo, Administración de Fincas, Buena Práctica Ganadera, Bienestar Animal	No	Transplante de Embriones, Sistema Silvopastoriles, Producción de Carne, Cómputos, GPS	13	30	4	13 años 6 meses	No/espec	Grupal	Casas Comerciales	15
DG-05	Ing. Zootecnista	Extensionismo, Sistema Silvopastoril, Calidad de Leche	No	Adm de Fincas, Tasación de Fincas, Análisis Financiero	3	21 Directos 50 Indirectas	1	3 años	48 meses	Grupal	Agampta	No
DG-06	Lic. en Producción Animal	Extensionismo, Sistema Silvopastoril, Calidad de Leche	No	Sanidad Animal, Reproducción, Inseminac Convencional, Inseminación a tiempo fijo, Transplante de Embriones, Buenas Practicas Ganaderas, Producción de Carne	3	20	25	2 años 5 meses	10 meses	Indiv/Grup	Casas Comerciales	10
DG-07	Médico Veterinario	Extensionismo, Sist Silvopastoril, Buena Práct Ganad, Calidad de Leche	Lee	Nutrición, Programas de Computos	4	60	7	4 años 1 mes	No/espec	Grupal	Si/No especifica cuáles	No
DG-08	Médico Veterinario. Esp en Extensión	Nutrición, Patología, Ganadería y Leche	No	Reproducción, Sistema Silvopastoriles	15	15	5	7 años 6 meses	12 meses	Individual	Redom, Néstle	50

AGENTE	PROFESIÓN	CURSOS RECIBIDOS en los últimos 4 años	Nivel Inglés	Formación Requerida	Tiempo operando (en años)	Cantidad productores que asiste al mes	Productores nuevos en el último año	Tiempo en la misma zona	Tiempo requerido para obtener resultados	Cómo se obtienen mejores resultados	Interacción con Instituciones	Asistencia a fincas de carne
DG-09	Médico Veterinario. Esp en Extensión	Fomento de Pastos, Calidad de Leche, Administración de Fincas, Manejo de Vaca Lechera	No	Transplante de Embriones	14	15/20	5	14 años	6 meses	Grupal	Si/No especifica cuáles	3
DG-10	Ingeniero Agrónomo. Esp en Extensionistas Pecuario	Sistema Silvopastoril, Boisin en Pastoreo, Eval/Super Cadena Láctea, Bancos Proteínas	No	Sanidad Animal, Reproducción, Inseminac Convencional, Inseminac a tiempo fijo, Transplante de Embriones, Nutrición, Producción de Carne, Cómputos	25	50	2	25 años	24 meses	Individual	Conaleche, Empresas Privadas	No
DG-11	Médico Veterinario	Administración de Fincas, Fomento de Pastos, Buena Práct Agric, Higiene y Calidad	No	Reproducción, Nutrición, Cómputos	15	27	4	20 años	1 mes	Grupal	Banco Agrícola	Si/No espec cantidad
DG-12	Médico Veterinario	Desarrollo y Promoción de Prod Veterinarios, Calidad de Leche	No	Reproducción, Inseminación a tiempo fijo, Transplante de Embriones	3	50	29	7 meses	3 meses	Individual	Conaleche	10
DG-13	Ing. En Producción Animal	Sistema Silvopastoril, Calidad de Leche, Sanidad e Inocuidad Alimentaria, Nutrición	No	Inseminación Convec y a tiempo fijo, Transplante de Embriones	8 años/11 meses	20	10	8 años/11 meses	60 meses	Individual	No	Si/No espec cantidad
DG-14	Ing. Agrónomo	Calidad de Leche, Sistema Silvopastoril, Buena Práctica de Ordeño, Nutrición Animal	No	Reproducción, Inseminac Convencional, Inseminación a tiempo fijo, Transplante de Embriones, Nutrición, Cómputos	2 años	60	6	2 años	3 meses	Grupal	Agricultura	5
DG-15	Ing. Zootecnista	Inocuidad de los productos lácteos, Manejo de Pastos, Nutrición, Buena Práctica Ganadera	Lee	Nutrición	6	65	300	6 años 8 meses	No/espec	Indiv/Grup	No/espec cuáles	4
DG-16	Médico Veterinario	Calidad de Leche, Pastos y Forrajes, Metodología de Extensión, Conservación de Follajes	No	Transplante de Embriones, Programas de Cómputos	10	20	4	26 años	40 meses	Grupal	Procesadora, Conaleche, Bagricola	No

AGENTE	PROFESIÓN	CURSOS RECIBIDOS en los últimos 4 años	Nivel Inglés	Formación Requerida	Tiempo operando (en años)	Cantidad productores que asiste al mes	Productores nuevos en el último año	Tiempo en la misma zona	Tiempo requerido para obtener resultados	Cómo se obtienen mejores resultados	Interacción con Instituciones	Asistencia a fincas de carne
DG-17	Médico Veterinario	Ninguno	No	Inseminación Convencional, Nutrición, Programas de Cómputos	18	50	20	18 años	36 meses	Individual	Pasteurizadora Rica	No
DG-18	Médico Veterinario. Maestría en Nutrición Animal	Calidad e Higiene de Leche, Sistema Silvopastoril, Medio Ambiente y Agropecuaria, Transabilidad	No	Reproducción, Inseminación Convencional, Transplante de Embriones, Manejo de Pastos, Establecimiento de Pastos, Conservación de Forrajes, Sistema Silvopastoril, Calidad de Leche	15	50	10	1 año 4 meses	3 meses	Individual	Pasteurizadora Rica, Asociación de Ganaderos	No
DG-19	Médico Veterinario. Esp en Reproducción	Ninguno	Lee	Reproduc, Inseminación Convencional, Transplante de Embriones, Manejo de Pastos, Establecimiento de Pastos, Conservación de Forrajes, Sistema Silvopastoril, Calidad de Leche, Cómputos	8	50	4	8 años	6-8 meses	Grupal	Conaleche Bagricola	10
DG-20	Ing. En Producción Animal	Actualización de Ganadería Sustentable, Inspección de Alimentos, Gestión de Agronegocios	No	Reproducción, Transplante de Embriones, Nutrición	3	160	6	3 años	12 meses	Grupal	Si/No especifica cuáles	No
DG-21	Médico Veterinario	Producción para la pequeña Ganad , Bloques Multinutricionales, Sistemas Silvopastoriles, Bienestar Animal	No	Reproducción, Inseminación Convencional, Inseminación a tiempo fijo, Transplante de Embriones, Producción de Carne	5	20	5	3 años	10 meses	No/espec	Casas Comerciales, Conaleche, IDIAF, Federaciones	No
DG-22	Ing. Agrónomo. Maestría en Nutrición Animal	Producción de Leche Intensiva, Lic. En Admin de Empresas, Especialidad Finanzas Corporativas	Lee-escr- habla	Sanid Animal, Reproducción, Inseminación Convencional, Inseminación a tiempo fijo, Transplante de Embriones, Sistema Silvopastoril, Producción de Carne, Cómputos	31	60	20	15	4 meses	Grupal	Conaleche, Banco Agrícola, IAD, INDRHI	No
DG-23	Ingeniero, pero no especifica en que área	Nutrición, Pasturas, Calidad de Leche, Extensión	No	Transplante de Embriones, Conservación de Forrajes, Programas de Cómputos	20	60	5	15 años	36 meses	Individual	Procesadoras, Vendedores de Insumos, Otras estatales y privadas	20

AGENTE	PROFESIÓN	CURSOS RECIBIDOS en los últimos 4 años	Nivel Inglés	Formación Requerida	Tiempo operando (en años)	Cantidad productores que asiste al mes	Productores nuevos en el último año	Tiempo en la misma zona	Tiempo requerido para obtener resultados	Cómo se obtienen mejores resultados	Interacción con Instituciones	Asistencia a fincas de carne
DG-24	Ing. Agrónomo. Espec en Riego y Mecaniz Agrícola	Cria de Terneras, Inseminac Artificial, Manejo de Pasturas, Manejo de Ganado Lechero	Lee	Producción de Carne, Programas de Cómputos	20	50	6	2 meses	1 mes	Grupal	Si/No especifica cuáles	50

Source: Focus Group with MEGALECHE extension agents. 5 June 2016

Annex 5: Farm Survey Questionnaire

	FORMULARIO UNIDADES PRODUCTIVAS DE CARNE Y LECHE República Dominicana	VERSIÓN: 01 FECHA: 24-06-2016 IMPORTANTE: los datos que PROGANA solicita en este formulario son estrictamente confidenciales con fines estadísticos
POR FAVOR LEA LAS INSTRUCCIONES RESPECTIVAS DE LA CARTILLA ANTES DE DILIGENCIAR EL FORMULARIO O BOLETA		

A. IDENTIFICACIÓN DE LA UNIDAD PRODUCTIVA

1. Nombre del propietario _____	
2. Cédula _____	3. Sexo M ☐ F ☐
4. Nombre del predio: _____ NS/NR ☐ No Aplica ☐	
5. Superficie en pastos mejorados (tarefas) _____	6. Superficie en pastos naturales (tarefas) _____
7. Superficie total (tarefas) _____	
8. Señale el tipo de producción: Leche ☐ Carne ☐ Doble propósito ☐	
9. Provincia _____	10. Municipio _____
11. Subregión _____	
12. Sección _____	13. Barrio o paraje _____
14. Señale la tenencia de la tierra:	
Propia con título ☐ Propia sin título ☐ Arrendada ☐ Posesión ☐ Sucesión ☐	
15. Número promedio de trabajadores empleados en el mes (la mano de obra familiar no remunerada o sin pago no se incluye)	
15.1 Mujeres a término fijo _____	15.3 Hombres a término fijo _____
15.2 Mujeres temporales _____	15.4 Hombres temporales _____
15.5 Total mujeres (sume renglones 15.1 y 15.2) _____	15.6 Total hombres (sume renglones 16.1 y 16.2) _____

B. ASOCIATIVIDAD DE LA UNIDAD PRODUCTIVA

1. La Unidad Productiva pertenece a una organización de productores? (RU)	
Si ☐ Pase a la pregunta B2	No ☐ Pase a la sección C Financiamiento
2. Escriba el nombre de la organización de productores _____	
3. Señale el tipo de organización (RU) Cooperativa ☐ Asociación ☐ Independiente ☐ NS/NR ☐	

C. FINANCIAMIENTO

1. La Unidad Productiva recibió en los últimos tres años financiación? (RU)																																											
Si ☐ Pase a la pregunta C2	No ☐ Pase a la sección D																																										
2. Señale la naturaleza jurídica de la entidad financiera, el valor de la inversión, el capital de trabajo, el plazo e intereses (RM)																																											
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>Valor de la inversión (pesos)</th> <th>Valor del capital de trabajo (pesos)</th> <th>Plazo (meses)</th> <th>Interés mensual %</th> <th colspan="2">Señale el estado de la financiación</th> </tr> </thead> <tbody> <tr> <td>Banco privado ☐</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>Pagada ☐</td> <td>Pendiente ☐</td> </tr> <tr> <td>Banco público ☐</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>Pagada ☐</td> <td>Pendiente ☐</td> </tr> <tr> <td>Cooperativa ☐</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>Pagada ☐</td> <td>Pendiente ☐</td> </tr> <tr> <td>Conaleche (Bagricola) ☐</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>Pagada ☐</td> <td>Pendiente ☐</td> </tr> <tr> <td>Otra entidad ☐</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>Pagada ☐</td> <td>Pendiente ☐</td> </tr> </tbody> </table>		Valor de la inversión (pesos)	Valor del capital de trabajo (pesos)	Plazo (meses)	Interés mensual %	Señale el estado de la financiación		Banco privado ☐	_____	_____	_____	_____	Pagada ☐	Pendiente ☐	Banco público ☐	_____	_____	_____	_____	Pagada ☐	Pendiente ☐	Cooperativa ☐	_____	_____	_____	_____	Pagada ☐	Pendiente ☐	Conaleche (Bagricola) ☐	_____	_____	_____	_____	Pagada ☐	Pendiente ☐	Otra entidad ☐	_____	_____	_____	_____	Pagada ☐	Pendiente ☐
	Valor de la inversión (pesos)	Valor del capital de trabajo (pesos)	Plazo (meses)	Interés mensual %	Señale el estado de la financiación																																						
Banco privado ☐	_____	_____	_____	_____	Pagada ☐	Pendiente ☐																																					
Banco público ☐	_____	_____	_____	_____	Pagada ☐	Pendiente ☐																																					
Cooperativa ☐	_____	_____	_____	_____	Pagada ☐	Pendiente ☐																																					
Conaleche (Bagricola) ☐	_____	_____	_____	_____	Pagada ☐	Pendiente ☐																																					
Otra entidad ☐	_____	_____	_____	_____	Pagada ☐	Pendiente ☐																																					

D. PRODUCCIÓN DE CARNE

1. La unidad productiva realiza explotación de carne? (RU)

Si ☐

Pase a la pregunta D2

No ☐

Pase a la sección E Producción de leche

2. Escriba el número de animales para carne según la raza (RM)

	Número	Raza 1	Número	Raza 2	Número	Raza 3
2.1 Total cabezas de ganado						
2.2 Total vacas adultas						
2.3 Total vacas paridas						
2.4 Total novillas 2 - 3 años						
2.5 Total novillas 1 - 2 años						
2.6 Total novillos 2 - 3 años						
2.7 Total novillos 1 - 2 años						
2.8 Total becerras 0 - 12 meses						
2.9 Total becerros 0 - 12 meses						

3. La unidad productiva lleva registros de cada animal o hato? (RU)

Si ☐No ☐

4. Escriba el total de las ventas de ganado en pie en el último año? (RM)

	Ventas en kilos	Precio de venta por kilo (\$/kg)	Valor de las ventas totales (pesos)
4.1 Crías macho carne (becerros)			
4.2 Crías hembra carne (becerros)			
4.3 Crías macho carne (novillos)			
4.4 Crías hembras carne (novillas)			
4.5 Adultos cebados machos			
4.6 Adultos cebados hembras			
4.7 Vacas de descarte			
4.8 Otros espécimen			
4.9 Total			

5. Señale el (los) canal(es) de venta del ganado en el último año y describa los kilogramos vendidos (RM)

	Ventas en kilos		Ventas en kilos
5.1 Matadero ☐		5.5 Otro ganadero ☐	
5.2 Matadero industrial ☐		5.6 Carnicero ☐	
5.3 Procesadora embutidora ☐		5.7 Otro canal ☐	
5.4 Intermediario ☐			

6. Señale los cinco principales problemas que afectan la producción de carne (RM)

- | | | | |
|---|--------------------------|--|--------------------------|
| 6.1 Calidad del ganado (raza) | ☐ | 6.13 Altos precios de los agroquímicos | ☐ |
| 6.2 Enfermedades del ganado | ☐ | 6.14 Bajo precio del kilo en pie | ☐ |
| 6.3 Calidad de los pastos | ☐ | 6.15 Altos precios de la energía eléctrica | ☐ |
| 6.4 Cantidad de pastos | ☐ | 6.16 Falta de transporte | ☐ |
| 6.5 Producción de pastos | ☐ | 6.17 Estado de las carreteras | ☐ |
| 6.6 Baja fertilidad de los suelos | ☐ | 6.18 Vías de acceso a las fincas | ☐ |
| 6.7 Conservación de forrales | ☐ | 6.19 Falta de energía eléctrica | ☐ |
| 6.8 Escasez de fuentes de agua | ☐ | 6.20 Falta de compradores | ☐ |
| 6.9 Inundaciones | ☐ | 6.21 Falta de crédito | ☐ |
| 6.10 Altos precio de los medicamentos | ☐ | 6.22 Intermediarios | ☐ |
| 6.11 Altos precios de los alimentos balanceados | ☐ | 6.23 Otro | ☐ |
| 6.12 Altos precios de los fertilizantes | ☐ | 6.23.1 ¿Cuál? | <input type="text"/> |

7. De los anteriores problemas, cuál considera es el más urgente por atender?

8. ¿Ha recibido asistencia técnica en el último año para mejorar la producción de carne? (RU)

Si ☐ Pase a la pregunta D9 No ☐ Pase a la pregunta D10

9. Señale los temas en los que recibió asistencia técnica en el último año para la producción de carne (RM)

- 9.1 Manejo de enfermedades ☐
- 9.2 Manejo de pastos ☐
- 9.3 Conservación de pastos ☐
- 9.4 Calidad de carne ☐
- 9.5 Alimentación de ganado ☐
- 9.6 Mejoramiento del ganado ☐
- 9.7 Sistemas silvopastoriles ☐
- 9.8 Control de plagas ☐
- 9.9 Certificación de mataderos ☐
- 9.10 Administración de fincas para carne ☐
- 9.11 Otro ☐
- 9.11.1 ¿Cuál?

10. Señale los temas en los cuales le gustaría recibir capacitación para mejorar la producción de carne (RM)

- 10.1 Manejo de enfermedades ☐
- 10.2 Manejo de pastos ☐
- 10.3 Conservación de pastos ☐
- 10.4 Calidad de carne ☐
- 10.5 Alimentación de ganado ☐
- 10.6 Mejoramiento del ganado ☐
- 10.7 Sistemas silvopastoriles ☐
- 10.8 Control de plagas ☐
- 10.9 Administración de fincas para carne ☐
- 10.10 Cambio climático ☐
- 10.11 Otro ☐
- 10.11.1 ¿Cuál?

11. ¿Cuántas cabezas de ganado de producción de carne perdió en el último año?

12. ¿Cuáles fueron los costos promedio anuales por producción de carne en el último año? (pesos)

E. PRODUCCIÓN DE LECHE

1. La unidad productiva realiza producción de leche? (RM)

Si ☐ Pase a la pregunta E2 No ☐ Pase a la sección F

2. Escriba el número de animales para producción de leche (RM)

	Número	Raza 1	Número	Raza 2	Número	Raza 3
2.1 Total cabezas de ganado						
2.2 Total vacas adultas						
2.3 Total vacas paridas						
2.4 Novillas 2 - 3 años						
2.5 Novillas 1 - 2 años						
2.6 Novillos 2 - 3 años						
2.7 Novillos 1 - 2 años						
2.8 Becerras 0 - 12 meses						
2.9 Becerras 0 - 12 meses						

3. Escriba el promedio de litros de leche producidos por vaca (RM)

	Nombre de la raza	Total de vacas en ordeño	Promedio de litros diarios (L/día)	Promedio de litros en época de lluvias (L/día)	Promedio de litros en época seca (L/día)
3.1 Raza 1					
3.2 Raza 2					
3.3 Raza 3					

4. Conoce la calidad de la leche que produce? (RU)

Si ☐ Pase a la pregunta E5No ☐ Pase a la pregunta E6

5. Señale la calidad de la leche producida (RM)

5.1 Calidad A ☐ 5.3 Calidad C ☐

5.2 Calidad B ☐ 5.4 Calidad D ☐

6. ¿Cuál fue el precio máximo recibido por litro de leche en el último año? (pesos/L)

7. ¿Cuál fue el precio mínimo recibido por litro de leche en el último año? (pesos/L)

8. ¿Cuáles fueron los **ingresos** promedio mensuales por venta de leche en el último año? (pesos)9. ¿Cuáles fueron los **costos** promedio mensuales por producción de leche en el último año? (pesos)10. ¿Cuáles fueron los **costos** promedio por **litro de leche** en el último año (costo/litro)

11. Señale la(s) entidad(es) que le compra(n) la leche (RM)

		Ventas en L/día	Precio del L/día (pesos)
11.1 Centro de acopio	☐		
11.2 Fábrica de quesos	☐		
11.3 Fábrica de yogurt	☐		
11.4 Planta procesadora	☐		
11.5 Bidonero	☐		
11.6 Fábrica de dulces	☐		

12. Señale las veces en que le han rechazado la leche en el centro de acopio en el último año (RU)

12.1 Una vez ☐

12.3 Más de dos veces ☐

12.2 Dos veces ☐

12.4 Nunca ☐

13. La finca fue visitada por técnicos de saneamiento del DIGEGA en el último año? (RU)

Si ☐

No ☐

Pase a la pregunta E16

14. Señale los problemas sanitarios en el último año (RM)

14.1 Tuberculosis ☐ Pase a la pregunta E12

14.2 Brucelosis ☐ Pase a la pregunta E12

14.3 Otro ☐ Pase a la pregunta E12

14.3.1 ¿Cuál? ☐ Pase a la pregunta E12

14.4 Ninguno ☐ Pase a la pregunta E13

15. ¿Qué medidas tomó para solucionar los problemas sanitarios?

15.1 Visita del veterinario ☐

15.2 Medicación formulada por el veterinario ☐

15.3 Medicación sin formulación veterinaria ☐

15.4 Medicación por experiencia ☐

15.5 No aplicó medicamentos ☐

15.6 Otra medida ☐

15.6.1 ¿Cuál medida?

16. Señale los cinco principales problemas que afectan la producción y la calidad de la leche (RM)

16.1 Calidad del ganado (raza) ☐

16.2 Enfermedades del ganado ☐

16.3 Calidad de los pastos ☐

16.4 Cantidad de pastos ☐

16.5 Producción de pastos ☐

16.6 Baja fertilidad de los suelos ☐

16.7 Conservación de forrales ☐

16.8 Limpieza de locales ☐

16.9 Escasez de fuentes de agua ☐

16.10 Inundaciones ☐

16.11 Altos precio de los medicamentos ☐

16.12 Altos precios de los alimentos balanceados ☐

16.13 Altos precios de los fertilizantes ☐

16.14 Altos precios de los agroquímicos ☐

16.15 Bajo precio de la leche ☐

16.16 Altos precios de la energía eléctrica ☐

16.17 Altos precios del transporte ☐

16.18 Falta de transporte ☐

16.19 Estado de las carreteras ☐

16.20 Vías de acceso a las fincas ☐

16.21 Falta de energía eléctrica ☐

16.22 Falta de compradores ☐

16.23 Otro ☐

16.23.1 ¿Cuál?

17. De los anteriores problemas, cuál considera es el más urgente por atender?

18 ¿Cuántas cabezas de ganado de producción de leche perdió en el último año?

F. INVERSIONES

1. Para los próximos dos años señale en qué planea invertir (RM)

1.1 Equipos

1.1.1 Ordeño mecánico ☐1.1.2 Picadora de forraje ☐1.1.3 Otro ☐1.1.3.1 ¿Cuál?

1.2 Construcciones

1.2.1 Mejoramiento sala de ordeño ☐1.2.2 Mejoramiento de corrales ☐1.2.3 Mejoramiento de cercas ☐1.2.4 Otro ☐1.2.4.1 ¿Cuál?

1.3 Pastos

1.3.1 Pastos de piso ☐1.3.2 Pastos de corte ☐1.3.3 Otro ☐1.3.3.1 ¿Cuál?

1.4 Ganado

1.4.1 Compra de novillas ☐1.4.2 Compra de toros ☐1.4.3 Otro ☐1.4.4 ¿Cuál?

1.5 Energía

1.5.1 Instalación red eléctrica ☐1.5.2 Instalación paneles solares ☐1.5.3 Otro ☐1.5.3.1 ¿Cuál?

1.6 Agua

1.6.1 Mejoramiento sala de ordeño ☐1.6.2 Mejoramiento de corrales ☐1.6.3 Mejoramiento de cercas ☐1.6.4 Conducción de agua ☐1.6.5 Otro ☐1.6.5.1 ¿Cuál?

1.7 Genética

1.7.1 Sistema de inseminación artificial ☐1.7.2 Implantación de embriones ☐1.8 No planea invertir ☐**G. ASPECTOS TÉCNICOS**

1. En el último año recibió asistencia técnica? (RU)

Si ☐ Pase a la pregunta G2No ☐ Pase a la pregunta G4

2. Seleccione la naturaleza jurídica de la entidad de la cual recibió asistencia técnica (RM)

2.1 Pública ☐ Nombre de la entidad 2.2 Privada ☐ Nombre de la entidad 2.3 Internacional ☐ Nombre de la entidad

3. Señale los temas en los que recibió asistencia técnica en el último año para la producción de leche (RM)

3.1 Manejo de enfermedades ☐ 3.12 Ordeño higiénico ☐3.2 Manejo de pastos ☐ 3.13 Control sanitario vacas ☐3.3 Conservación de suelos ☐ 3.14 Control de plagas ☐3.4 Calidad de leche ☐ 3.15 Agroforestería (SAF) ☐3.5 Alimentación de ganado ☐ 3.16 Manejo de agua ☐3.6 Programa de cruzamiento ☐ 3.17 Riego ☐3.7 Implantación de embriones ☐ 3.18 Secuestro de carbón ☐3.8 Inseminación artificial ☐ 3.19 Administración ☐3.9 Reproducción ☐ 3.20 Administración de fincas para carne ☐3.10 Sistemas silvopastoriles ☐ 3.21 Otro ☐3.11 Sanidad en ordeño ☐ 3.21.1 ¿Cuál?

4. Señale los temas en los cuales le gustaría recibir capacitación para mejorar la producción de leche (RM)

4.1 Manejo y prevención de enfermedades del ganado ☐ 4.7 Implementación de sistemas silvopastoriles ☐4.2 Manejo de forrajes ☐ 4.8 Administración de fincas ganaderas ☐4.3 Establecimiento de forrajes ☐ 10.9 Mejoramiento de la calidad de la carne ☐4.4 Manejo reproductivo del ganado ☐ 10.10 Otro ☐4.5 Alimentación de ganado ☐ 22 10.10.1 ¿Cuál? 4.6 Mejoramiento de la calidad de la leche ☐

H. INFRAESTRUCTURA Y FUNCIONAMIENTO

1. Señale el tipo de instalaciones con que cuenta la unidad productiva

1.1 Instalaciones de ordeño con techo (RU) ☐ Si ☐ No

1.2 Instalaciones de ordeño con agua (RU) ☐ Si ☐ No

2. Señale el tipo de fuente de agua de la Unidad Productiva (RM)

2.1 Fuente dentro de la finca ☐

2.5 Laguna dentro de la finca ☐

2.9 Pozo profundo ☐

2.2 Fuente externa a la finca ☐

2.6 Laguna externa a la finca ☐

2.10 Manantial ☐

2.3 Arroyo dentro de la finca ☐

2.7 Acueducto público ☐

2.11 Otro ☐

2.4 Arroyo externo a la finca ☐

2.8 Acueducto comunitario ☐

2.11.1 ¿Cuál? _____

3. Escriba los tipos de pasto con que cuenta la Unidad Productiva (RM)

	Nombre	Tareas
3.1 Tipo 1	_____	_____
3.2 Tipo 2	_____	_____
3.3 Tipo 3	_____	_____
3.4 Tipo 4	_____	_____
3.5 Tipo 5	_____	_____
3.6 Tipo 6	_____	_____

4. Señale el tipo de tecnología disponible en la unidad productiva (RM)

4.1 Plan de Negocios en el último año ☐ Si ☐ No

4.9 Control de malezas ☐ Si ☐ No

4.2 Producción propia de pastos ☐ Si ☐ No

4.10 Sistemas silvopastoriles ☐ Si ☐ No

4.3 Rotación de potreros ☐ Si ☐ No

4.11 Sistemas agroforestales ☐ Si ☐ No

4.4 Manejo de cercas eléctricas ☐ Si ☐ No

4.12 Generación de energía no convencionales ☐ Si ☐ No

4.5 Ensilaje para épocas secas ☐ Si ☐ No

4.13 Banco forraje ☐ Si ☐ No

4.6 Riego ☐ Si ☐ No

4.14 Ordeño mecánico ☐ Si ☐ No

4.7 Programas de fertilización ☐ Si ☐ No

4.15 Lavado a presión de la sala de ordeño ☐ Si ☐ No

4.8 Programas de control de plagas ☐ Si ☐ No

4.16 Otro ☐ Si ☐ No

4.16.1 ¿Cuál? _____

5. La instalación de ordeño tiene piso de cemento? (RU) ☐ Si ☐ No

6. Posterior al ordeño se lava las instalaciones y los recipientes? (RU) ☐ Si ☐ No

7. Las instalación de ordeño tiene sistema de drenaje? (RU) ☐ Si ☐ No

8. Señale el tipo de recipiente que usa para la leche ordeñada? (RU)

8.1 Plástico ☐ 8.2 Metal ☐

9. ¿Cuánto tiempo se tarda la leche en llegar al centro de acopio? _____

10. Escriba el tipo de transporte que usa al centro de acopio (RM)

10.1 Semovientes ☐

10.3 Vehículo (camión, camioneta, etc) ☐

10.5 Otro ☐

10.2 Motocicleta ☐

10.4 Camión cisterna ☐

10.5.1 ¿Cuál? _____

11 Señale el estado en el que se encuentra el vehículo (RM)	Bueno	☐	Regular	☐	Malo	☐
12 Señale el estado de la carretera al centro de acopio (RM)	Bueno	☐	Regular	☐	Malo	☐

OBSERVACIONES (Registre las aclaraciones que considere necesarias a la información suministrada)

Novedad:					
Ciudad y fecha de diligenciamiento		Persona a quien dirigirse para consultas		Persona que recibe el formulario	
Ciudad		Nombre: _____		Nombre: _____	
Fecha de diligenciamiento		Cargo: _____			
		Celular: _____			
		Correo electrónico: _____		Firma y cédula	

Annex 6: Producer Organizations Focus Group, questionnaire results

Table A.6.1 – Present capacity reported by Producer Organizations				
<i>Activity or operation</i>	<i>Yes</i>	<i>%</i>	<i>No</i>	<i>%</i>
Convenios con instituciones del gobierno	8	40%	11	55%
Tiene convenios con instituciones internacionales	5	25%	10	50%
Tiene convenios con instituciones financieras	9	45%	9	45%
Tiene manual de funciones	6	30%	8	40%
Cuenta con internet	10	50%	7	35%
Lleva registros contables	11	55%	7	35%
Tiene asesor contable	11	55%	7	35%
Estado de la cartera cuotas socios al día	8	40%	7	35%
Tiene un mecanismo de resolución de conflictos entre los socios	10	50%	6	30%
Cuenta con computador	13	65%	5	25%
Tiene convenios con proveedores de insumos	14	70%	5	25%
Tiene un sistema de rendición de cuentas a los socios	13	65%	5	25%
Menos del 50% de los socios están al día	1	5%	5	25%
Cuenta con sala de reuniones	13	65%	4	20%
Cuenta con secretaria	14	70%	4	20%
Cuenta con oficinas	13	65%	3	15%
Tiene un mecanismo para negar solicitudes y explicar las razones	12	60%	3	15%
Tiene reglamento de socios	12	60%	2	10%
Más del 50% de los socios están al día	13	65%	1	5%

Source: Baseline Study Producer Organizations Focus Group 2016

Table A.6.2 – Producer Organizations that buy and sell inputs				
<i>Province</i>	<i>Selling products to third parties</i>	<i>Amount RD\$</i>	<i>Purchase of inputs</i>	<i>Amount RD\$</i>
Dajabón	3	4,000,000	4	1,000,000
El Seibo			1	15,000
Hato Mayor	1			
Independencia	1		1	
Maria Trinidad Sanchez				
Monte Plata	2	500,000	1	
Puerto Plata			1	
San Juan	1	6,600,000	1	600,000
San Juan de la Maguana			1	500,000
Santiago Rodríguez	2	300,000	2	25,000
Total	10	11,400,000	12	2,140,000

Source: Baseline Study Producer Organizations Focus Group 2016

Table A.6.3 – Services provided by Producer Organizations								
Province	Technical assistance	Farms visited last month	Field days last month	Training sessions last month	Collects milk	Liters received last month	Milk cooling service	Liters of milk cooled in the last month
Dajabón	4	48	2	4	3	470,000	2	600,000
El Seibo	1				1	84,000	1	84,000
Hato Mayor								
Independencia	1	30		1		217,800	1	217,800
Maria Trinidad Sanchez	1		1	1				
Monte Plata	2	12	1	1	2	48,000	1	48,000
Puerto Plata	1	20		1				
San Juan		20		1	1	330,000	1	330,000
San Juan de la Maguana	2	1	1	1	1	180,000	1	180,000
Santiago Rodríguez	2	6		4	4	540,000	2	540,000
Total	14	137	5	14	12	1,869,800	9	1,999,800

Source: Baseline Study Producer Organizations Focus Group 2016

Table A.6.4 – Problems reported by Producer Organizations											
Problems reported	Province										
	Dajabón	El Seibo	Hato Mayor	Independencia	Maria Trinidad Sanchez	Monte Plata	Puerto Plata	San Juan	San Juan de la Maguana	Santiago Rodríguez	Total
Lack of commitment from partners	4	1	1							4	10
Defection of partners			1							2	3
Failure membership fees			1						2		3
Delinquencies in payment of loans by partners	4										4
Difficulty in making decisions	1				1		1				3
Lack of leadership of managers			1		1						2
Lack of physical plant	2	1	1			1			2	2	9
Deterioration of the physical plant	1							1	1	2	5
Lack of office equipment	3	1	1		1	1			1	2	10
High input prices	2		1	1	2		1		1	2	10
Lack of cooling equipment		1	1	1	1			1		2	7
Administrative deficiencies											
Difficulties in accessing credit	3	1		1		1		1	1		8
Known difficulties in accessing technical assistance	2	1								2	5
Lack of market for products from partners	1				1						2
Road conditions			1		1	2				2	6
Access roads to farms	1	1	1	1	1	2		1	1	2	11
Power breakdowns	1	1		1	1	2			1	2	9
Lack of buyers	1		1		1						3

Source: Baseline Study Producer Organizations Focus Group 2016

Annex 7: Milk Collection Centers (MCC) survey and results summary tables

Nombre del encargado:		Nombre		Apellidos		Fecha:		
Cédula		Sexo		Teléfono				
Nombre del centro de acopio					Capacidad en Litros/día			
Localización								
Altitud		Latitud		Longitud				
Provincia		Municipio		Región				
Sección		Barrio o Paraje		Plancha No				
Estatus jurídico del centro de acopio								
¿Pertenece a una organización de productores?		SI	NO	Nombre de la organización				
		☐	☐					
Tipo de organización	Cooperativa	☐	Asociación	☐	Privada	☐		
Número de trabajadores permanentes	Mujeres		Hombres					
Número de trabajadores temporales	Mujeres		Hombres					
FINANCIAMIENTO								
Entidad financiera	Banco privado		SI	No	Monto Inversión	Monto capital de trabajo		
			☐	☐				
	Banco público		☐	☐				
	Cooperativa		☐	☐				
	CONALECHE (Bagrícola)		☐	☐				
Otro			☐	☐				
Especifique otro								
Monto del préstamo	\$	Plazo meses		Interés	%	¿ Tiene deudas pendientes?	SI ☐	NO ☐
Monto del préstamo	\$	Plazo meses		Interés	%	¿ Tiene deudas pendientes?	SI ☐	NO ☐
Monto del préstamo	\$	Plazo meses		Interés	%	¿ Tiene deudas pendientes?	SI ☐	NO ☐

¿Para los dos próximos años en qué proyecta invertir?	Tecnología	☐
	Capacitación	☐
	Equipos de enfriamiento	☐
	Construcciones	☐
	Almacenamiento de agua	☐
	Energía alternativa	☐
	Transporte de leche	☐
	Tanques de almacenamiento de leche	☐
	Laboratorio	☐
	Mejoramiento de equipos de laboratorio	☐
Equipos para manejo de agua	☐	
Planta eléctrica	☐	
Otro	☐	
Especifique otro		

PROVEEDORES Y RECEPCIÓN DE LECHE						
¿Cuenta con laboratorio?	SI	NO		¿Aunque no tenga laboratorio hace análisis a la leche recibida?	SI	NO
Análisis que hace al recibir la leche						
	Antibióticos	SI	No	Antibióticos	SI	No
	Acidez	☐	☐	Acidez	☐	☐
	Células somáticas	☐	☐	Células somáticas	☐	☐
	Grasas	☐	☐	Grasas	☐	☐
	Proteínas	☐	☐	Prueba de agua	☐	☐
	Peróxido	☐	☐	Densidad	☐	☐
	Otro	☐	☐			
Especifique otro						

				Si no hace análisis de calidad relacione el precio al que paga el litro	
¿Cuántos proveedores suplen el plantel?					
Recepción de leche líquida del día anterior (Lt)		Si hace análisis de calidad relacione los precios a pagar según calidad y la cantidad de litros comprados al mes:			
Recepción promedio de leche/día (Litros)			\$/li		Litros /mes
¿Cuántos proveedores pre enfrían la leche?		Calidad A			
Número de tanques enfriamiento		Calidad B			
Capacidad total de enfriamiento. Litros		Calidad C			
		Calidad D			
¿Ha rechazado leche por mala calidad?	SI ☐	NO ☐	Diariamente	☐	Alguna Veces ☐
Ventas de leche	Número de compradores de leche				
	Precio de compra				
	Precio de ventas mes anterior				

MCC survey results summary tables

Table 7.1 - List of collection centers installed in the Dominican Republic in May 2015

NO.	Centros de Acopio	Localidad	Empresa
1	Centro de Acopio Hato Nuevo	Km 22, Santo Domingo	Hacienda los Ángeles
2	Centro de Acopio Madre Vieja	Provincia San Cristóbal	Hacienda los Ángeles
3	Centro de Acopio ADEPROA	Guerra -Municipio de Guerra, S.D.	Hacienda los Ángeles
4	Centro de Acopio Piedra Blanco	Bonao, Monseñor Nouel	Hacienda los Ángeles
5	Centro de Acopio Hato Mayor	Provincia Hato Mayor	Hacienda los Ángeles
6	Centro de Acopio Sabana de la Mar	Provincia Hato Mayor	Hacienda los Ángeles
7	Centro de Acopio Asociación de productores de Miches	Provincia El Seibo	Hacienda los Ángeles
8	Centro de Acopio El Cuy	Provincia El Seibo	Hacienda los Ángeles
9	Centro de Acopio Arroyo Grande	Provincia El Seibo	Hacienda los Ángeles
	Centro de Acopio Las Cuchillas	Provincia El Seibo	Hacienda los Ángeles
11	Centro de Acopio El Valle	Provincia El Seibo	Hacienda los Ángeles
12	Centro de Acopio Cruce del Abanico-Bonao	Bonao, Monseñor Nouel	Hacienda los Ángeles
13	Centro de Acopio Víctor Víctor	Bonao, Monseñor Nouel	Hacienda los Ángeles
14	Centro de Acopio Cotuí	Cotuí, Provincia Sánchez Ramírez	Hacienda los Ángeles
15	Centro de Acopio de Hato San Pedro	Don Juan, Monte Plata	Hacienda los Ángeles
16	Centro de Acopio Sabana Grande de Boya	Provincia Monte Plata	Naturelle
17	Centro de Acopio Juan Sánchez	Provincia Monte Plata	Naturelle
18	Centro de Acopio Bayaguana	Provincia Monte Plata	Naturelle
19	Centro de Acopio Guerra	Provincia Monte Plata	Naturelle
20	Centro de Acopio Maimón	Maimón -Monseñor Nouel	Naturelle
21	Centro de Acopio asociación de Productores de Pedro Brand	Pedro Brand, Santo Domingo	Naturelle
22	Centro de Acopio APROCALESIS	San Jose de las Matas, Santiago	Sigma
	Centro de Acopio Asociación de Productores del Rubio	El Rubio, San Jose de las Matas,	Sigma
24	Centro de Acopio Loma de los Palos	San Jose de las Matas, Santiago	Sigma
25	Centro de Acopio Guajaca	San Jose de las Matas, Santiago	Sigma
26	Centro de Acopio Inoa	San Jose de las Matas, Santiago	Sigma
27	Centro de Acopio AGALASI	Villa Gonzalez, Santiago	Sigma
28	Centro de Acopio de Villa Isabela	Puerto Plata	Sigma
29	Centro de Acopio Del Abanico	Puerto Plata	Sigma
30	Centro de Acopio El Estrecho	Puerto Plata	Sigma
31	Centro de Acopio de Vuelta Larga	Puerto Plata	Sigma
32	Centro de Acopio Maimon	Puerto Plata	Sigma
33	Centro de Acopio Del Toro	Puerto Plata	Sigma
34	Centro de Acopio Guzman	Puerto Plata	Sigma
35	Centro de Acopio ASOGAGUA	Guananico, Puerto Plata	Sigma
36	Centro de Acopio Aminilla	Aminilla, Provincia Dajabón	Parmalat
37	Centro de Acopio Dario Carrasco	La Aviacion, Dajabon	Parmalat
38	Centro de Acopio Margarita	La Aviacion, Dajabon	Parmalat
39	Centro de Acopio El Progreso	Canachapeton, Valverde	Parmalat
40	Centro de Acopio Laguna Salada	Valverde	Nestlé
41	Centro de Acopio Agua de Luis	Monte Cristi	Parmalat
42	Centro de Acopio El Cayal	Monte Cristi	Parmalat
43	Centro de Acopio El Copey	Monte Cristi	Parmalat
44	Centro de Acopio San José	San Jose, Santiago Rodríguez	Parmalat
45	Centro de Acopio Pata de Vaca	San Jose, Santiago Rodríguez	Parmalat
46	Centro de Acopio Los Conucos	Santiago Rodríguez	Parmalat
47	Centro de Acopio Zamba	Santiago Rodríguez	Parmalat
48	Centro de Acopio La Breña	Santiago Rodríguez	Parmalat
49	Centro de Acopio Vanesa	Santiago Rodríguez	Parmalat

Table 7.1 - List of collection centers Installed in the Dominican Republic in May 2015

NO.	Centros de Acopio	Localidad	Empresa
50	Centro de Acopio Palo Verde	Santiago Rodríguez	Parmalat
51	Centro de Acopio Martín García	Santiago Rodríguez	Parmalat
52	Centro de Acopio Florentino López	Santiago Rodríguez	Parmalat
53	Centro de Acopio Pastor	Santiago Rodríguez	Parmalat
54	Centro de Acopio El Maizal	Santiago Rodríguez	Parmalat
55	Centro de Acopio Sabana Larga	Santiago Rodríguez	Parmalat
56	Centro de Acopio Santiago de la Cruz	Santiago Rodríguez	Parmalat
57	Centro de Acopio Cordero	Santiago Rodríguez	Parmalat
58	Centro de Acopio AGAMPTA	Monte Plata	Rica
59	Centro de Acopio Don Juan	Monte Plata	Rica
60	Centro de Acopio Las Yayas - Padre las Casas	Azua	Rica
61	Centro de Acopio Azua	Azua	Rica
62	Centro de Acopio San Juan	San Juan de la Maguana	Rica
63	Centro de Acopio Pedro Corto	San Juan de la Maguana	Rica
64	Centro de Acopio Las Mata de Farfán	San Juan de la Maguana	Rica
65	Centro de Acopio Neiba	Neiba	Rica
66	Centro de Acopio Barahona	Barahona	Rica
67	Centro de Acopio Duverge	Duverge	Rica
68	Centro de Acopio Enriquillo	Barahona	Rica
69	Centro de Acopio Jarabacoa	Jarabacoa - La Vega	Rica
70	Centro de Acopio Fantino - La Vega	La Vega	Rica
71	Centro de Acopio de Cabrera	Nagua	Nestlé
72	Centro de Acopio El Catey- Sánchez	Samaná	Nestlé
73	Centro de Acopio COOPENOR	San Francisco de Macorís	Nestlé
74	Centro de Acopio Arenoso	Provincia Duarte	Nestlé
75	Centro de Acopio AGASA	Santiago de los Caballeros	Nestlé
76	Centro de Acopio Atillo Palma	Montecristi	Nestlé
77	Centro de Acopio Hato del Medio	Montecristi	Nestlé
78	Centro de Acopio Guayubin	Montecristi	Nestlé
79	Centro de Acopio Cana Chapetón	Montecristi	Nestlé
80	Centro de Acopio de las Matas de Santa Cruz	Monte Cristi	Nestlé
81	Centro de Acopio Santa María	Monte Cristi	Nestlé
82	Asociación de Productores de Boruco	Santiago Rodríguez	Nestlé
83	Centro de Acopio Villa los Almácigos	Santiago Rodríguez	Nestlé
84	Centro de Acopio Puerto del Mulo	Santiago Rodríguez	Nestlé
85	Centro de Acopio El Guanál	Santiago Rodríguez	Nestlé
86	Centro de Acopio Los Caimonies	Santiago Rodríguez	Nestlé
87	Centro de Acopio Boca de los Ríos	Santiago Rodríguez	Nestlé
88	Centro de Acopio Asociación de Ganaderos de Dajabón	Santiago Rodríguez	Nestlé
89	Centro de Acopio de Partido	Partido- Dajabón	Nestlé
90	Centro de Acopio Loma de Cabrera	Dajabón	Nestlé
91	Centro de Acopio La Gorra	Dajabón	Nestlé
92	Centro de Acopio Manuel Bueno	Dajabón	Nestlé
93	Centro de Acopio El Pino	Dajabón	Nestlé
94	Centro de Acopio El Cajuil	Dajabón	Nestlé
95	Asociación de Productores de Santiago Rodríguez	Dajabón	Nestlé

Fuente: CONALECHE 2015

Table 7.2 - Integrated list of the collection centers from CONALECHE information (2013-2015) and three reports from REDDOM

No	Centro de Acopio	Provincia	Asociaciones que	Productores
1	Asociación de ganadero La Altagracia	Puerto Plata	Asociación de	72
2	Asociación de ganaderos de Hato Mayor	Hato Mayor	Asociación de	76
3	Asociación de ganaderos de Sabana de la	Hato Mayor	Asociación de	45
4	Asociación de ganaderos del Valle	Hato Mayor	Asociación de	91
5	Asociación de leche del Este	El Seibo	Asociación de	61
6	Asociación de productores de leche Arroyo	El Seibo	Asociación de	11
7	Asociación de productores de leche de la	La Altagracia	Asociación de	SD
8	BARRANCA	San Juan de la Maguana	GANADEROS	28
9	CENTRO DE ACOPIO DE GANADEROS DE	Puerto Plata	ASOCIACION DE	33
10	Centro de acopio El Cuy	El Seibo	SD	SD
11	CENTRO DE ACOPIO EL TORO	Puerto Plata	ASOCIACIÓN DE	33
12	CENTRO DE ACOPIO LACTEO GUANANICO	Puerto Plata	ASOCIACIÓN DE	65
13	Centro de acopio Las Cuchillas	El Seibo	Asociación de	37
14	CENTRO DE ACOPIO LECHERO DEL CRUCE	Puerto Plata	ASOCIACION DE	17
15	CENTRO DE ACOPIO LECHERO EL	Puerto Plata	ASOCIACIÓN DE	110
16	CENTRO DE ACOPIO LECHERO EL HIGO	Puerto Plata	ASOCIACION DE	27
17	CENTRO DE ACOPIO LECHERO	Puerto Plata	ASOCIACIÓN DE	142
18	CENTRO DE ACOPIO LECHERO VUELTA	Puerto Plata	ASOCIACIÓN DE	55
19	CENTRO DE ACOPIO MAIMÓN	Puerto Plata	ASOCIACIÓN DE	32
20	DUVERGE	Independencia	GANADEROS DE	103
21	LAS MATAS DE FARFAN	San Juan de la Maguana	GANADEROS DE LAS	190
22	Los Corazones	El Seibo	Asociación de	49
23	NEIBA	Independencia	GANADEROS DE LA	5
24	PEDRO CORTO	San Juan de la Maguana	GANADEROS DE PEDRO	76
25	SAN JUAN	San Juan de la Maguana	GANADEROS DE SAN	11
26	Unión de ganaderos de Sabana Grande de	Puerto Plata	Unión de ganaderos de	50
27	Asociación de productores de leche de la	La Altagracia	Asociación de	118
28	Asociación de productores de leche de la	La Altagracia	Asociación de	23
29	Los Corazones 1	El Seibo	Los Corazones	26
30	DUVERGE 1	Independencia	GANADEROS DE JIMANI	3
31	Asociación de ganaderos de Hato Mayor 1	Hato Mayor	Cooperativa de	76
32	Asociación de ganaderos de Hato Mayor 2	Hato Mayor	Asociación de	43
33	Sin nombre	Puerto Plata	el estrecho	2
34	Sin nombre		MONTELLANO	1
35	Sin nombre		ARROYO ANCHO	5
36	Sin nombre	Duarte	ASOCIACION DE	139
37	Sin nombre	María Trinidad Sánchez	CABRERA	11
38	Sin nombre	Santiago Rodríguez	Cooperativa Florentino	99
39	Sin nombre		Asociación de	38
40	Sin nombre		Asociación de pequeños	33
41	Sin nombre		Asociación de	21
42	Sin nombre	Dajabón	Asociación de	17
43	Sin nombre		Cooperativa de	135
44	Sin nombre		Asociación de	90
45	Sin nombre		Asociación de	127
46	Sin nombre		Asociación de	94
47	Sin nombre		Asociación de	107
48	Sin nombre		Asociación de	144
49	Sin nombre		Asociación de	72
50	Sin nombre		Asociación de	36
	Total			2879

Fuente: OTSCORP a partir de CONALECHE 2015, 2013 e informes consultorías de REDDOM

Table 7.3 - Operating and infrastructure deficiencies in collection centers surveyed		
Infraestructura y equipo	Cantidad de CA	%
NO Tiene caldera para el lavado a vapor de instalaciones, bidones y utensilios	51	89%
NO Tiene sistema de tratamiento de aguas vertidas	49	86%
El centro de acopio NO está cercano a una fuente de contaminación	48	84%
NO Lavadora mecánica para el lavado de instalaciones y bidones	47	82%
NO Tiene tanques de almacenamiento de leche según calidad	43	75%
NO Cuenta con laboratorio	42	74%
El laboratorio de calidad NO está certificado por una autoridad competente	38	67%
El personal que labora NO tiene certificado de salud	34	60%
El salón NO está protegido de la entrada de insectos y roedores	34	60%
La zona de descargue NO está techada	30	53%
El sistema NO alcanza la temperatura de 4°C a las dos horas de la última entrega de leche	29	51%
NO se realiza el lavado y desinfección de bidones del proveedor en el centro de acopio	29	51%
NO Tiene espacio para laboratorio	29	51%
NO Tiene bodega de almacenamiento de químicos	24	42%
NO Tiene espacio para oficinas	20	35%
NO Tiene espacio asignado para materiales de limpieza	19	33%
Los tanques de refrigeración NO están en un salón aislado	12	21%
NO Cuenta con agua permanente	11	19%
NO Cuenta con depósito de agua suficiente para el lavado de los equipos	11	19%
La instalación NO tiene pendientes para evacuar el agua de lavado	5	9%
NO Tiene planta eléctrica	3	5%
Los pisos NO están revestidos de cemento	1	2%

Fuente: Encuesta PROGANA CA 2016

Table 7.4 - Some features of transport of milk		
	Cantidad de CA	%
SI Utiliza camiones cisterna	5	9%
NO Utiliza camiones cisterna	47	82%
Si el camión es cisterna la temperatura de transporte SI es hasta 8°C	3	5%
Si el camión es cisterna la temperatura de transporte NO es hasta 8°C	16	28%
El camión cisterna SI tiene los accesos al tanque que faciliten la inspección y el aseo	5	9%
El camión cisterna NO tiene los accesos al tanque que faciliten la inspección y el aseo	13	23%
Después del descargue la cisterna SI es lavada	7	12%
Después del descargue la cisterna NO es lavada	12	21%
El personal que opera el camión SI tiene certificado de salud	6	11%
El personal que opera el camión NO tiene certificado de salud	14	25%
El personal de camioneros SI ha recibido capacitación para el manejo de leche	8	14%
El personal de camioneros NO ha recibido capacitación para el manejo de leche	12	21%

Fuente: Encuesta PROGANA CA 2016

Table 7.5 - Factors affecting the operation of the collection centers		
Factores	Cantidad de CA	%
Precio de la energía eléctrica	49	86%
Calidad de la leche	44	77%
Precio de venta de la leche	39	68%
Precio de los insumos	33	58%
Financiamiento	28	49%
Falta de capacitación técnica	28	49%
Falta de instalaciones	28	49%
Estado de caminos vecinales	28	49%
Funcionamiento de equipos	21	37%
Falta de capacitación administrativa	20	35%
Falta de capacidad de almacenamiento	20	35%
Falta de equipos	20	35%
Falta de suministro eléctrico	18	32%
Escasez de insumos	16	28%
Cantidad de leche acopiada	15	26%
Falta de repuestos para equipos	14	25%
Limpieza	10	18%
Falta de almacenamiento de leche por calidades	1	2%
Contaminación	1	2%

Fuente: Encuesta PROGANA CA 2016

Table 7.6 - Collection centers that have received technical assistance by topic		
Temas de asistencia técnica	Cantidad de CA	%
Calidad de la leche	50	88%
Operación de equipos	23	40%
Almacenamiento de leche	23	40%
Mercado de leche	18	32%
Energía no convencional	17	30%
Cooperativismo	17	30%
Transporte de leche	16	28%
Aspectos ambientales	9	16%
Nuevas tecnologías	9	16%
Administración	6	11%
Operación del laboratorio	6	11%
Planificación empresarial	5	9%
Organización comunitaria	5	9%

Fuente: Encuesta PROGANA CA 2016

Table 7.7 - Requirements for technical assistance from collection centers by topic		
Tema de asistencia técnica	Cantidad de CA	%
Calidad de la leche	52	91%
Administración	40	70%
Energía no convencional	36	63%
Operación del laboratorio	34	60%
Planificación empresarial	34	60%
Mercado de leche	33	58%
Cooperativismo	33	58%
Nuevas tecnologías	32	56%
Almacenamiento de leche	31	54%
Aspectos ambientales	30	53%
Transporte de leche	28	49%
Operación de equipos	27	47%
Organización comunitaria	19	33%

Fuente: Encuesta PROGANA CA 2016

Annex 8: Slaughterhouse – processor survey questionnaire

Nombre del encargado:		<i>Nombre</i>		<i>Apellidos</i>		Fecha:		
Cédula		Sexo		Teléfono				
Nombre del matadero			Capacidad en kg y/o # de reses					
Permiso de funcionamiento (número y fecha)								
¿Solo presta servicio de matadero?		SI ☐	NO ☐	Si presta otros servicios además de matadero por favor descríbalos:				
Localización								
Municipio		Provincia		Región				
Estatus jurídico del matadero								
¿Pertenece a una organización de productores?		SI ☐	NO ☐					
Tipo de organización	Cooperativa	☐	Nombre de la organización					
	Asociación	☐						
	Privada	☐						
	Municipal	☐						
Número de trabajadores permanentes		Mujeres		Hombres				
Número de trabajadores temporales		Mujeres		Hombres				
FINANCIAMIENTO								
Entidad financiera	Banco privado	SI ☐	No ☐	Monto Inversión	Monto capital de trabajo			
	Banco público	☐	☐					
	Cooperativa	☐	☐					
	Otro	☐	☐					
Especifique otro								
Monto del préstamo	\$	Plazo meses		Interés	%	¿Tiene deudas pendientes?	SI ☐	NO ☐
Monto del préstamo	\$	Plazo meses		Interés	%	¿Tiene deudas pendientes?	SI ☐	NO ☐
Monto del préstamo	\$	Plazo meses		Interés	%	¿Tiene deudas pendientes?	SI ☐	NO ☐

¿Cuántos proveedores suplen el plantel?		Ventas de carne promedio al día \$/día	
Recepción de ganado en unidades/día		Ventas de subproductos Kg/día	
Recepción de ganado en peso (KG/día)		Ventas de subproductos \$/día	
Ingreso por servicio \$/día			

INFRAESTRUCTURA Y FUNCIONAMIENTO

Señale si las instalaciones cumplen con lo siguiente:

SI

No

El personal que labora tiene certificado de salud		
La zona de descargue está techada		
Cuenta con agua permanente		
Cuenta con depósito de agua suficiente para el lavado de la instalación		
La instalación tiene pendientes para evacuar el agua de lavado		
Los pisos están revestidos de cemento		
La construcción permite secuencia de actividades y evita contaminación cruzada		
El salón está protegido de la entrada de insectos y roedores		
Ausencia de animales domésticos		
Corrales de reposo.		
Corral de cuarentena.		
Crematorio		
Bebedores en los corrales en buenas condiciones		
Corral de aislamiento.		
Área de necropsia.		
Pediluvios en los corrales		
Comederos de corrales en buenas condiciones		
Ubicación aislada de contaminación		
La ubicación molesta a la comunidad		
Extractor de olores		
Sistema de separación de sangre y residuos sólidos (rejillas)		
Tiene espacio para oficinas		
Tiene espacio asignado para materiales de limpieza		
Tiene un sistema de medición del peso de los animales		
Lavadora mecánica para el lavado de instalaciones		
Lavado manual de las instalaciones		
Tiene caldera para el lavado a vapor de instalaciones		
Tiene sistema de tratamiento de aguas vertidas		
El personal tiene el equipo adecuado (casco, botas, uniforme)		
Tiene planta eléctrica		

SACRIFICIO

Tiempo de reposo del ganado en minutos		Minutos
Tiempo en minutos de inicio del desangrado después de la insensibilización		Minutos
Tiempo de desangre en minutos		Minutos
Temperatura del agua de escaldado en grados centígrados.		Grados C°
Temperatura de almacenamiento de las canales en grados centígrados		Grados C°
Voltaje de la insensibilización		Voltios
Tiempo de almacenamiento de las canales en horas		Horas

Señale si las instalaciones cumplen con lo siguiente:

SI

No

La instalación cuenta con certificado de calidad		
--	--	--

Protocolo de recepción de animales		
La inspección ante mortem		
Separación de animales clínicamente sospechosos		
Buenas condiciones de higiene en la recepción de animales		
Clasificación de los animales según categoría y sexo.		
Pesaje en la recepción.		
Pesaje antes del sacrificio.		
Registro de pesajes.		
Tiene un lugar adecuado para el reposo de los animales		
Cuenta con sistema de duchado.		
El equipo de duchado tiene la suficiente capacidad para la máxima demanda		
Cuenta con un sistema de control de escurrido durante los traslados		
Tiene sistema de insensibilización		
Condiciones de insensibilización (acumulación y o muerte de animales)		
Sacrificio aéreo		
Los utensilios para el desangrado se encuentran en buenas condiciones		
Se cuenta con un proceso higiénico para la recogida de la sangre.		
Cuenta con recipientes para la recogida de sangre.		
Tiene sistema de conservación de la sangre		
Condiciones de escaldado (renovación del agua de escaldado)		
Condiciones del depilado (heridas y magulladuras)		
Depilado completo		
Manejo higiénico de evisceración (restos de vísceras, coágulos)		
Inspección veterinaria post mortem		
Programa de muestreo		
Identificación de las canales con respecto a sus vísceras		
Utilización de sellos para identificar el dictamen de las canales		
Retención de vísceras sospechosas		
Control y separación de decomisos		
Climatización de la sala de deshuese		
Recolección de la carne deshuesada		
Realiza higiene de las neveras periódicamente		
Cumple con condiciones de humedad para el almacenamiento de las canales		
Cumple con las distancias de separación de las canales en el almacenamiento		
Lleva registros gráficos de la temperatura		
Toma de la temperatura de las piezas		
Almacenamiento de los productos según su estado de elaboración		
Realiza mantenimiento preventivo de las neveras		
Tiene antecámaras de refrigeración		
Se llevan a cabo registros por animal sacrificado		
Identifica la pertenencia de vísceras, cabeza, glándula de timo y sangre por animal, para fines de inspección de salud		
Los inspectores examinan el estado de las vísceras "blancas"		
Las autoridades de salud realizan inspecciones diarias		
Las autoridades de salud realizan inspecciones semanales		
Las autoridades de salud nunca realizan inspecciones		
ASPECTOS ADMINISTRATIVOS		

	Si	No
Lleva registros de compras de ganado y ventas de carne	☐	☐
Lleva registros contables de compras, ventas y gastos	☐	☐
Tiene secretaria	☐	☐
Tiene asesor contable	☐	☐
Tiene registros ordenados de conciliaciones bancarias	☐	☐
Tiene registro de calidad de la carne y su control sanitario	☐	☐
Tiene programa de salud ocupacional	☐	☐
Tiene programa de gestión o calidad ambiental	☐	☐
Tiene un programa de capacitación	☐	☐
Tiene un programa de limpieza y desinfección	☐	☐
Tiene un programa de control de plagas	☐	☐
Tiene manual de funciones	☐	☐

PROBLEMAS Y OBSTÁCULOS QUE AFECTAN EL FUNCIONAMIENTO

Según su opinión cuales son los principales problemas que afectan el funcionamiento del matadero	Falta de instalaciones	☐	Contaminación	☐
	Limpieza	☐	Falta de equipos	☐
	Funcionamiento de equipos	☐	Precio de venta de la carne	☐
	Financiamiento	☐	Estado de carreteras	☐
	Falta de capacitación	☐	Falta de suministro red eléctrica	☐
	administrativa	☐	Precio de la energía eléctrica	☐
	Falta de capacitación técnica	☐	Falta de repuestos para equipos	☐
	Otro	☐		☐

Especifique (Otro/s)

Cuál es el problema más urgente para atender en el matadero

ASPECTOS TÉCNICOS

¿Ha recibido asistencia técnica?	SI ☐	NO ☐	Pública ☐	Privada ☐	☐
Temas en los que ha recibido asistencia técnica	Administración	☐	Organización comunitaria	☐	
	Operación de equipos	☐	Cooperativismo	☐	
	Calidad de la carne	☐	Aspectos ambientales	☐	
	Aspectos sanitarios	☐	Transporte de carne	☐	
	Mercado de carne	☐	Almacenamiento de carne	☐	
	Mercado de subproductos	☐	Nuevas tecnologías	☐	
	Planificación empresarial	☐	Energía no convencional	☐	
	Construcción	☐	Otro	☐	
Especifique (Otro/s)					

Temas en los que le gustaría recibir capacitación	Administración	☐	Organización comunitaria	☐
	Operación de equipos	☐	Cooperativismo	☐
	Calidad de la carne	☐	Aspectos ambientales	☐
	Aspectos sanitarios	☐	Transporte de carne	☐
	Mercado de carne	☐	Almacenamiento de carne	☐
	Mercado de subproductos	☐	Nuevas tecnologías	☐
	Planificación empresarial	☐	Energía no convencional	☐
	Construcción	☐	Otro	☐
	Especifique (Otro/s)			
Entrevistador				

Annex 9: Small Dairy Processors, Survey questionnaire and results

Nombre del encargado:				Nombre		Apellidos		Fecha:	
Cédula			Sexo	M ☐	F ☐	Teléfono			
Nombre del establecimiento									
Capacidad en kg			Capacidad en Lb			Capacidad en Litros			
Registro sanitario	No						Fecha		
Localización									
Altitud			Latitud			Longitud			
Provincia			Municipio			Región			
Sección			Barrio o Paraje			Plancha No			
Estatus jurídico de la empresa									
¿Pertenece a una organización de productores?			SI ☐	NO ☐	Nombre de la organización				
Tipo de organización	Cooperativa		☐						
	Asociación		☐						
	Privada		☐						
	Municipal		☐						
Número de trabajadores permanentes			Mujeres			Hombres			
Número de trabajadores temporales			Mujeres			Hombres			
FINANCIAMIENTO									
Entidad financiera			SI	No	Monto inversión		Monto capital de trabajo		
	Banco privado		☐	☐					
	Banco público		☐	☐					
	Cooperativa		☐	☐					
	CONALECHE (Bagrícola)		☐	☐					
	Otro		☐	☐					
Especifique otro									
Monto del préstamo	\$	Plazo <i>meses</i>		Interés	%	¿Tiene deudas pendientes?	SI ☐	NO ☐	
Monto del préstamo	\$	Plazo <i>meses</i>		Interés	%	¿Tiene deudas pendientes?	SI ☐	NO ☐	
Monto del préstamo	\$	Plazo <i>meses</i>		Interés	%	¿Tiene deudas pendientes?	SI ☐	NO ☐	

¿Para los dos próximos años en qué proyecta invertir?	Tecnología	☐	Transporte de leche	☐																																								
	Capacitación	☐	Tanques de almacenamiento de leche	☐																																								
	Equipos de enfriamiento	☐	Laboratorio	☐																																								
	Construcciones	☐	Mejoramiento de equipos de laboratorio	☐																																								
	Almacenamiento de agua	☐	Equipos para manejo de agua	☐																																								
	Energía alternativa	☐	Pasteurización	☐																																								
	Inocuidad	☐	Moldes automáticos	☐																																								
	Otro	☐		☐																																								
Especifique otro																																												
<table border="1"> <thead> <tr> <th colspan="2">Proveedores y recepción de leche</th> <th colspan="2">Líneas de producción</th> </tr> </thead> <tbody> <tr> <td>Cuantos proveedores directos suplen la empresa</td> <td> </td> <td>Leche líquida</td> <td> </td> </tr> <tr> <td>Cuantos centros de acopio suplen la empresa</td> <td> </td> <td>Leche en polvo</td> <td> </td> </tr> <tr> <td>Recepción de leche líquida del día anterior(litros)</td> <td> </td> <td>Otras leches</td> <td> </td> </tr> <tr> <td>Recepción promedio de leche litros/día</td> <td> </td> <td>Queso</td> <td> </td> </tr> <tr> <td>Precio pagado por litro de leche</td> <td> </td> <td>Yogurt</td> <td> </td> </tr> <tr> <td>Recibe leche fría</td> <td> </td> <td>Mantequilla</td> <td> </td> </tr> <tr> <td>Recibe leche caliente</td> <td> </td> <td>Dulces</td> <td> </td> </tr> <tr> <td>Hace análisis a la leche recibida</td> <td> </td> <td>Helado</td> <td> </td> </tr> <tr> <td>Utiliza leche en polvo, volumen estimado/mes</td> <td> </td> <td></td> <td></td> </tr> </tbody> </table>					Proveedores y recepción de leche		Líneas de producción		Cuantos proveedores directos suplen la empresa		Leche líquida		Cuantos centros de acopio suplen la empresa		Leche en polvo		Recepción de leche líquida del día anterior(litros)		Otras leches		Recepción promedio de leche litros/día		Queso		Precio pagado por litro de leche		Yogurt		Recibe leche fría		Mantequilla		Recibe leche caliente		Dulces		Hace análisis a la leche recibida		Helado		Utiliza leche en polvo, volumen estimado/mes			
Proveedores y recepción de leche		Líneas de producción																																										
Cuantos proveedores directos suplen la empresa		Leche líquida																																										
Cuantos centros de acopio suplen la empresa		Leche en polvo																																										
Recepción de leche líquida del día anterior(litros)		Otras leches																																										
Recepción promedio de leche litros/día		Queso																																										
Precio pagado por litro de leche		Yogurt																																										
Recibe leche fría		Mantequilla																																										
Recibe leche caliente		Dulces																																										
Hace análisis a la leche recibida		Helado																																										
Utiliza leche en polvo, volumen estimado/mes																																												
Productos elaborados y ventas mensuales																																												

Producto	Unidad	Volumen	Ventas /mes	Producto	Unidad	Volumen	Ventas /mes
Leches				Requesón	qq Lb		
En polvo	ton			Otro	qq Lb		
Fluida	litros			Otro	qq Lb		
Esterilizada	litros			Madurados			
Pasteurizada	litros			Cheddar	qq Lb		
Condensada	litros			Danes	qq Lb		
Evaporada	litros			Tipo holandes	qq Lb		
Otra	litros			Gouda	qq Lb		
Otra	litros			Edam	qq Lb		
Quesos frescos				Genoa	qq Lb		
Blanco	qq Lb			Otro	qq Lb		
De hoja	qq Lb			Mantequilla	Lb		
De freir	qq Lb			Yogurt	Lt		
Crema	qq Lb			Dulce	qq Lb		
Double	qq Lb			Helado	qq Lb		
crema				Crema de leche	Lt		
Mozarella	qq Lb			Otro	qq Lb		
Otro	qq Lb						

EQUIPAMIENTO

	SI	No		SI	No
Recibe la leche en tanques de metal			Moldes metálicos		
Recibe la leche en tanques de plástico			Prensa de tornillo		
Tanques de almacenamiento en frío			Prensa hidráulica		
Mesas de azero inoxidable			Prensa artesanal		
Tanque mezclador			Pasteurizador de placa		
Tinas de coagulación			Caldera		
Tinas queseras			Caldera artesanal (masalavada)		
Marmita			Tanques para agua		
Tanque almacenador producto terminado			Tanque para salmuera		
Descremadora			Tanques para suero		
Lira			Equipo multiproceso de yogurt		
Moldes			Incubadora refrigeradora de yogur		
Prensa hidráulica			Mantequera		
Balanza			Cámara de maduración		
Selladora al vacío			Planta potabilizadora		
Autoclave			Cuarto frío		
Moldes plásticos			Planta eléctrica		
Moldes de hierro colado			Laboratorio de control de calidad		
			Otro		

INFRAESTRUCTURA Y FUNCIONAMIENTO

Señale si las instalaciones cumplen con lo siguiente:

	Si	No
El personal que labora tiene certificado de salud	☐	☐
La zona de descargue está techada	☐	☐
Cuenta con agua permanente	☐	☐
Cuenta con depósito de agua suficiente para el lavado de la instalación	☐	☐
La instalación tiene pendientes para evacuar el agua de lavado	☐	☐
Los pisos están revestidos de cemento	☐	☐
La construcción permite secuencia de actividades y evita contaminación cruzada	☐	☐
El salón está protegido de la entrada de insectos y roedores	☐	☐
Ausencia de animales domésticos	☐	☐
Ubicación aislada de contaminación	☐	☐
La ubicación molesta a la comunidad	☐	☐
Extractor de olores	☐	☐
Tiene espacio para oficinas	☐	☐
Tiene espacio asignado para materiales de limpieza	☐	☐
Lavadora mecánica para el lavado de instalaciones	☐	☐
Tiene caldera para el lavado a vapor de instalaciones	☐	☐
Tiene sistema de tratamiento de aguas vertidas	☐	☐
Tratamiento de residuos sólidos	☐	☐

ASPECTOS ADMINISTRATIVOS

	Si	No
Lleva registros de compras de leche	☐	☐
Lleva registros contables de compras, ventas y gastos	☐	☐
Tiene secretaria	☐	☐
Tiene asesor contable autorizado por CPA	☐	☐
Tiene registros ordenados de conciliaciones bancarias	☐	☐
Tiene registro de calidad del producto y su control sanitario	☐	☐
Tiene programa de salud ocupacional	☐	☐
Tiene programa de gestión o calidad ambiental	☐	☐
Tiene un programa de capacitación	☐	☐
Tiene un programa de limpieza y desinfección	☐	☐
Tiene un programa de control de plagas	☐	☐
Tiene manual de funciones	☐	☐

ASPECTOS PRIORITARIOS

Según su opinión cuales son los principales problemas que afectan el funcionamiento de la planta procesadora	Falta de instalaciones	☐	Contaminación	☐
	Limpieza	☐	Falta de equipos	☐
	Funcionamiento de equipos	☐	Precio mercado nacional	☐
	Financiamiento	☐	Precio mercado internacional	☐
	Falta de capacitación administrativa	☐	Estado de carreteras	☐
	Precio de la leche	☐	Falta de suministro red eléctrica	☐
	Falta de capacitación técnica	☐	Precio de la energía eléctrica	☐
	Calidad de la leche	☐	Precio de los empaques	☐
	Precio de los insumos	☐	Comercialización	☐
	Otro	☐	Falta de repuestos para equipos	☐
	Especifique (Otro/s)			
Cuál es el problema más urgente para atender en la planta procesadora				
ASPECTOS TÉCNICOS				
¿Ha recibido asistencia técnica?	SI ☐	NO ☐	Pública ☐	Privada ☐
Temas en los que ha recibido asistencia técnica	Administración	☐	Organización comunitaria	☐
	Operación de equipos	☐	Cooperativismo	☐
	Elaboración de quesos	☐	Aspectos ambientales	☐
	Elaboración de yogurt	☐	Transporte de la producción	☐
	Elaboración de dulces	☐	Almacenamiento de quesos	☐
	Publicidad	☐	Almacenamiento de yogurt	☐
	Planificación empresarial	☐	Trazabilidad	☐
	Construcción	☐	Nuevas tecnologías	☐
	Aspectos sanitarios	☐	Energía no convencional	☐
	Mercadeo	☐	Buenas prácticas de manufactura	☐
	Certificación ISO	☐	Otro	☐
	Contabilidad	☐		☐
	Especifique (Otro)			
	Temas en los que le gustaría recibir capacitación	Administración	☐	Organización comunitaria
Operación de equipos		☐	Cooperativismo	☐
Elaboración de quesos		☐	Aspectos ambientales	☐
Elaboración de yogurt		☐	Transporte de la producción	☐
Elaboración de dulces		☐	Almacenamiento de quesos	☐
Publicidad		☐	Almacenamiento de yogurt	☐
Planificación empresarial		☐	Trazabilidad	☐
Construcción		☐	Nuevas tecnologías	☐
Aspectos sanitarios		☐	Energía no convencional	☐
Mercadeo		☐	Aspectos contables	☐
Aspectos administrativos		☐	Otro	☐
Especifique (Otro)				
Entrevistador				

Small Dairy Processors Survey, summary tables

Table A.9.1 – Survey of small processors, number of establishments by province	
<i>Provincia</i>	<i>Number of establishments</i>
Dajabón	6
El Seibo	1
Hato Mayor	3
Independencia	1
Monte Plata	4
Puerto Plata	2
San Juan	2
Santiago Rodríguez	3
Sin Datos	4
Total	26
Source: Small Dairy Processors Survey 2016	

Table A.9.2 – Investment requirements according processing capacity															
<i>Tipo de inversión</i>	<i>Capacity in Liters</i>														
	200	400	500	600	800	1000	1200	1300	1400	1500	2000	3000	12000	40000	Total
Construcciones	2	1	1	1	1		1	2	1	2	2	1	1		16
Transporte de leche					1			1		2	2	1	1	1	9
Capacitación	1			1		1		1		1	1	1	1		8
Equipos de enfriamiento	1						1	1		2	1	1	1		8
Pasteurización	1			1		2					2	1	1		8
Tecnología	1			1		1				1	1	1		1	7
Energía alternativa				1		1		1		1	1	1		1	7
Tanques de almacenamiento de leche			1					1		1	1	1	1		6
Moldes automáticos			1					1	1		1	1			5
Mejoramiento de equipos de laboratorio				1						1	1		1	1	5
Inocuidad	1					1				1	1	1			5
Almacenamiento de agua	1									1		1	1		4
Equipos para manejo de agua	1									1	1		1		4
Laboratorio										1	1				2
Total	9	1	3	6	2	6	2	8	2	15	16	11	9	4	

Source; Baseline Study, Small Dairy Processors Survey 2016

Table A.9.3 - Availability of equipment processors		
Equipment	Processors	%
NO cuentan con una mantequera	17	89%
NO cuenta con tanques de almacenamiento en frío	16	84%
NO cuenta con una incubadora refrigeradora de yogurt	16	84%
NO cuentan con un laboratorio de control de calidad	16	84%
NO cuenta con marmita	14	74%
NO cuenta con prensa hidráulica	14	74%
NO cuenta con pasteurizador de placa	14	74%
NO cuenta con un equipo multiproceso de yogurt	14	74%
NO cuentan con una planta potabilizadora	14	74%
NO cuentan con tinas queseras	13	68%
NO cuentan con una cámara de maduración	13	68%
NO cuentan con mesas de acero inoxidable	12	63%
NO cuenta con descremadora	12	63%
NO cuenta con autoclave	12	63%
NO cuenta con una caldera	12	63%
NO cuentan con un tanque mezclador	11	58%
NO cuenta con prensa hidráulica	11	58%
NO cuentan con un cuarto frío	11	58%
NO cuentan con una planta eléctrica	11	58%
Recibe leche en tanques de plástico	10	52%
NO cuentan con tinas de coagulación	10	53%
NO cuentan con un tanque almacenador producto terminado	10	53%
NO cuenta con selladora al vacío	10	53%
NO cuenta con prensa artesanal	10	53%
NO cuenta con tanque para salmuera	8	42%
NO recibe leche en tanques de metal	6	32%
NO cuenta con lira	6	32%
NO cuenta con balanza	4	21%
NO cuentan con moldes metálicos	4	21%
NO cuenta con moldes	3	16%
NO cuentan con tanques para suero	3	16%
NO cuentan con tanques para agua	1	5%

Source; Baseline Study, Small Dairy Processors Survey 2016

Table A.9.4 - Sanitary conditions cheese factories				
Operation	Si		NO	
	Producers	%	Producers	%
La ubicación molesta a la comunidad	4	15%	20	77%
Tiene extractor de olores	5	19%	18	69%
Lavadora mecánica para el lavado de instalaciones	4	15%	17	65%
Tiene sistema de tratamiento de aguas vertidas	4	15%	17	65%
Tiene caldera para el lavado a vapor de instalaciones	6	23%	16	62%
Tiene tratamiento de residuos sólidos	4	15%	16	62%
El salón está protegido de la entrada de insectos y roedores	11	42%	13	50%
El personal que labora tiene certificado de salud	11	42%	12	46%
La construcción permite secuencia de actividades y evita contaminación cruzada.	14	54%	9	35%
Ausencia de animales domésticos	14	54%	9	35%
La ubicación está aislada de contaminación	16	62%	7	27%
Tiene espacio para oficinas	16	62%	7	27%
La zona de descargue está techada	19	73%	6	23%
Tiene espacio asignado para materiales de limpieza	17	65%	6	23%
La instalación tiene pendientes para evacuar el agua de lavado	21	81%	3	12%
Cuenta con agua permanente	22	85%	2	8%
Cuenta con depósito de agua suficiente para el lavado de la instalación	23	88%	1	4%
Los pisos están revestidos de cemento	22	85%	1	4%

Source; Baseline Study, Small Dairy Processors Survey 2016

Table A.9.5 - Administrative conditions cheese factories				
Operation	Si		NO	
	Producers	%	Producers	%
Tiene secretaria	6	23%	16	62%
Tiene registros ordenados de conciliaciones bancarias	7	27%	16	62%
Tiene programa de salud ocupacional	8	31%	16	62%
Tiene programa de gestión o calidad ambiental	9	35%	16	62%
Tiene registros de calidad del producto y su control sanitario	11	42%	14	54%
Tiene asesor contable autorizado por CPA	11	42%	13	50%
Tiene un programa de capacitación	11	42%	13	50%
Tiene manual de funciones	11	42%	13	50%
Tiene un programa de control de plagas	18	69%	7	27%
Lleva registros contables de compras de compras, ventas y gastos	20	77%	6	23%
Tiene un programa de limpieza y desinfección	19	73%	6	23%
Lleva registros de compras de leche	23	88%	3	12%

Source; Baseline Study, Small Dairy Processors Survey 2016

Table A.9.6 – Number of Producers' according to priorities expressed in the survey

<i>Priorities</i>	<i>Number of Producers</i>	<i>%</i>
Calidad de la leche	19	73%
Precio de los insumos	19	73%
Precio mercado nacional	19	73%
Falta de equipos	18	69%
Falta de instalaciones	16	62%
Financiamiento	15	58%
Precio de la leche	15	58%
Precio de la energía eléctrica	15	58%
Falta de capacitación técnica	14	54%
Falta de capacitación administrativa	12	46%
Estado de carreteras	11	42%
Funcionamiento de equipos	9	35%
Falta de suministro red eléctrica	8	31%
Precio mercado internacional	7	27%
Comercialización	7	27%
Precio de los empaques	6	23%
Falta de repuestos para equipos	5	19%
Otro	3	12%
Limpieza	1	4%
Contaminación	1	4%

Source; Baseline Study, Small Dairy Processors Survey 2016

Table A.9.7 - Provided technical assistance and requested

<i>Technical assistance received</i>	<i>Number of Producers</i>	<i>%</i>	<i>Areas in which they would like to receive technical assistance</i>	<i>Number of Producers</i>	<i>%</i>
Aspectos sanitarios	13	50%	Elaboración de quesos	18	69%
Elaboración de quesos	12	46%	Nuevas tecnologías	17	65%
Elaboración de yogurt	10	38%	Aspectos administrativos	14	54%
Almacenamiento de quesos	10	38%	Aspectos sanitarios	13	50%
Buenas prácticas de manufactura	10	38%	Mercadeo	13	50%
Operación de equipos	9	35%	Operación de equipos	12	46%
Mercadeo	8	31%	Administración	11	42%
Trazabilidad	8	31%	Planificación empresarial	11	42%
Construcción	7	27%	Almacenamiento de quesos	8	31%
Contabilidad	7	27%	Elaboración de yogurt	7	27%
Cooperativismo	6	23%	Construcción	7	27%
Aspectos ambientales	6	23%	Cooperativismo	7	27%
Transporte de la producción	6	23%	Energía no convencional	7	27%
Nuevas tecnologías	6	23%	Elaboración de dulces	6	23%
Publicidad	5	19%	Aspectos ambientales	6	23%
Certificación ISO	5	19%	Transporte de la producción	6	23%
Administración	4	15%	Trazabilidad	6	23%
Elaboración de dulces	4	15%	Aspectos contables	6	23%
Planificación empresarial	4	15%	Publicidad	5	19%
Almacenamiento de yogurt	4	15%	Almacenamiento de yogurt	5	19%
Energía no convencional	4	15%	Organización comunitaria	3	12%

Source; Baseline Study, Small Dairy Processors Survey 2016

Table A.9.8 – Financing of small milk processors

<i>Source of financing</i>	<i>Type of institution</i>	<i>Number of loans</i>	<i>Investment DR\$</i>	<i>Working capital DR \$</i>	<i>Total DR\$</i>
ADEMI, Progreso, BANRESERVAS	Banco privado	4	1,200,000	300,000	1,500,000
BAGRÍCOLA	Banco público	3	3,462,000	835,000	4,297,000
Local cooperative	Cooperativa	2	150,000	100,000	250,000
BAGRÍCOLA	CONALECHE	2	1,250,000	800,000	2,050,000
FEDA, Banca Solidaria	Public program	2	22,000,000	5,000,000	27,000,000
Total		13	28,062,000	7,035,000	35,097,000
Source: Small Dairy Processors Survey 2016					

Annex 10: Farm Survey Results, summary tables

Table A.10. 1 – Total employment by province according to gender of employee in farm survey			
<i>Provincia</i>	<i>Men</i>	<i>Women</i>	<i>Total</i>
1. El Seibo	260	12	272
2. Puerto Plata	448	3	451
3. Duarte	120	1	121
4. María Trinidad Sánchez	229	7	236
5. Dajabón	241	0	241
6. Santiago Rodríguez	164	5	169
7. Independencia	59	0	59
8. San Juan	366	2	368
9. La Altagracia	161	6	167
10. Monte Plata	446	17	463
11. Hato Mayor	97	2	99
Total	2,591	55	2,646

Source: Baseline Study Farm Survey 2016

Table A.10. 2 – Number of farms by province according to gender of owner/operator			
<i>Province</i>	<i>Men</i>	<i>Women</i>	<i>Total</i>
1. El Seibo	57	1	58
2. Puerto Plata	65	2	67
3. Duarte	34	4	38
4. María Trinidad Sánchez	36	1	37
5. Dajabón	50	1	51
6. Santiago Rodríguez	29	2	31
7. Independencia	11	0	11
8. San Juan	59	2	61
9. La Altagracia	34	4	38
10. Monte Plata	85	5	90
11. Hato Mayor	21	2	23
Total	481	24	505

Source: Baseline Study Farm Survey 2016

Table A.10. 3 – Unidades productivas dedicadas a carne			
Provincia	UP de Carne	UP no dedicadas a carne	Total general
Altagracia	12	26	38
Dajabón		51	51
Duarte	3	35	38
El Seibo	4	58	62
Hato Mayor		17	17
Independencia	2	9	11
María Trinidad Sánchez	4	33	37
Monte Plata	12	81	93
Puerto Plata	11	55	66
San Juan	10	51	61
Santiago Rodríguez	10	21	31
Total	65	437	505
Source: Baseline Farm Survey 2016			

Table A.10. 4 – Farm Survey, Number of livestock farms by type of production		
<i>Purpose</i>	<i>Number of farms</i>	<i>%</i>
Dairy	407	80.6%
Beef	17	3.4%
Double purpose	81	16.0%
Total	505	100.0%
Source: Baseline Farm Survey 2016		

Table A.10. 5 – Farms that have received technical assistance in the last 12 months by province according to subject

Provincia	Asist manejo enfermedades	Asist manejo pastos	Asist conservación suelos	Asist calidad leche	Asist alimentación ganado	Asist cruzamiento	Asist embriones	Asist inseminación	Asist reproducción	Asist silvopastoriles	Asist sanidad ordeño	Asist ordeño higiénico	Asist control sanitario vacas	Asist control plagas	Asist Agroforestería	Asist manejo agua	Asist riego	Asist secuestro carbón	Asist administración	Asist admón fincas carne
Altagracia	19	22	3	23	16	2		9	22	8	10	13	12	5	1	3			1	
Dajabón	16	38	12	44	31	14	1	23	32	11	19	28	13	9	1	8	5		6	1
Duarte	20	22	5	29	16	11	2	9	5		3	5	4	2		3	1		1	
El Seibo	13	18	11	24	21	4	3	8	7	6	19	19	18	13	1	8	3		7	
Hato Mayor	15	17	12	17	17	8	2	1	13	14	12	14	13	15	3	5	1	4	6	
Independencia	4	8	4	9	9				2	5	4	6	1				1			
María Trinidad Sánchez	13	6	2	23	8	2	6	19	12	2	5	7	8	4	1				6	2
Monte Plata	53	74	43	74	66	36	8	23	54	43	53	67	47	37	9	15	2		4	3
Puerto Plata	10	37	3	55	31	3	6	14	12	11	41	49	12	3	2	2	5		3	5
San Juan	19	25	2	50	29	4	2	22	36	20	27	36	8	9		5	4			
Santiago Rodríguez	18	13	1	26	16	2		4	8	12	14	23	13	2	2	3	2		4	
Total	200	280	98	374	260	86	30	132	203	132	207	267	149	99	20	52	24	4	38	11

Table A.10. 6 – Problema más urgente por atender en fincas de producción de carne

Provincia	Tema	Número de fincas
Altagracia	Acceso a credito	2
	alto precio balanceados	1
	Alto precio fertilizantes	1
	Baja fertilidad de los suelos	1
	Escasez fuentes de agua	1
	Estado de las carreteras	4
	Falta de credito	1
	Malezas	1
Duarte	Enfermedades, raza, calidad pasto	1
	precio de los agroquimicos	1
	NA	1
El Seibo	Calidad del Ganado	2
	Vías de acceso a la finca	1
	NA	1
Independencia	Acceso a finca	1
	Escasez fuentes de agua	1
María Trinidad Sánchez	Carretera y energia	1
	Carreteras, energia electrica y mejorar la mano de obra	1
	Falta de credito	1
	Inundaciones	1
Monte Plata	calidad y cantidad de pastos	1
	fomento pastos y desarrollo de potreros	1
	Mejora de pastos	1
	Mejoramiento de la raza y produccion de pastos	1
	pastos	3
	pastos,raza y precio de carne	1

Table A.10. 6 – Problema más urgente por atender en fincas de producción de carne		
	Produccion de pastos	2
	Raza y mejoramiento de pasto	1
	NA	1
Puerto Plata	altos precios de alimentos	1
	cantidad de pasto	1
	escasez de fuentes de agua	1
	estado de carretera	1
	Estado de vías de acceso	2
	Falta de agua	1
	Produccion de pastos	4
San Juan	cantidad de pasto	3
	Escasez de agua	1
	Falta de agua	3
	Falta de política publica, falta de lluvia	1
	NA	2
Santiago Rodríguez	caminos carreteros	1
	Escasez de agua	4
	Producción de pastos	3
	NA	2
Total general		68

Table A.10. 7 – Número de fincas que lavan las instalaciones y recipientes después del ordeño por provincia				
	<i>Si</i>	<i>No</i>	<i>NS/NR</i>	<i>Total</i>
El Seibo	54	3	1	58
Puerto Plata	59	4	4	67
Duarte	31	3	4	38
María Trinidad Sánchez	33	1	3	37
Dajabón	46	3	2	51
Santiago Rodríguez	29	1	1	31
Independencia	9	2	0	11
San Juan	48	12	1	61
Altagracia	31	0	7	38
Monte Plata	75	13	2	90
Hato Mayor	18	3	2	23
Total	433	45	27	505

Source: Baseline Study, Farm Survey 2016

Table A.10. 8 – Tipo de recipiente utilizado para la leche ordeñada según provincia por número de fincas.

	<i>Plástico</i>	<i>Metal</i>	<i>Plástico y metal</i>	<i>NS/NR/NA</i>	<i>Total</i>
El Seibo	8	43	1	6	58
Puerto Plata	19	40	3	5	67
Duarte	3	32	0	3	38
María Trinidad Sánchez	11	10	12	4	37
Dajabón	1	47	0	3	51
Santiago Rodríguez	4	27	0	0	31
Independencia	0	11	0	0	11
San Juan	16	41	1	3	61
Altagracia	9	17	6	6	38
Monte Plata	5	70	4	11	90
Hato Mayor	2	19	0	2	23
Total	78	357	27	43	505

Source: Baseline Study, Farm Survey 2016

Table A.10. 9 – Temas en los cuales les gustaría recibir asistencia técnica para mejorar la producción de leche, según provincia																						
	Otros temas en los que les gustaría recibir asistencia técnica																					
	Alimentación de ganado	Mejoramiento de la calidad de la leche	Manejo reproductivo del ganado	Manejo de forrajes	Administración de fincas ganaderas	Manejo y prevención de enfermedades del ganado	Establecimiento de forrajes	Implementación de sistemas silvopastoriles	Mejoramiento de la calidad de la carne	Inseminación artificial	Banco de proteínas	Buenas practicas ganaderas	Crianza de terneras	Energía alternativa	Enfermedades de la vaca	Implementación de embriones	Manejo de pastos	Más capacitación de la conducción del agua	Mejoramiento de la cantidad de leche	Paneles solares	Riego	Vías de administración de medicamentos
El Seibo	41	44	39	35	35	41	24	27	4	1	0	0	0	0	0	1	0	1	1	0	0	0
Puerto Plata	54	57	54	39	60	41	36	28	13	4	0	0	1	0	0	0	0	0	0	0	2	0
Duarte	33	33	29	31	12	35	28	3	4	0	0	0	0	0	0	0	0	0	0	0	0	1
María Trinidad Sánchez	25	22	24	14	27	18	16	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Dajabón	30	39	27	28	35	19	22	18	3	0	1	0	0	0	0	0	0	0	0	0	0	0
Santiago Rodríguez	19	23	24	21	11	20	18	15	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Independencia	11	6	8	8	5	2	8	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Juan	39	37	34	37	36	22	25	20	9	0	0	0	0	1	0	0	0	1	0	1	0	0
Altagracia	21	24	30	26	25	18	15	18	9	0	0	1	0	0	0	0	0	0	0	0	0	0
Monte Plata	68	57	57	64	33	53	47	35	7	0	0	0	0	0	1	0	1	0	0	0	0	0
Hato Mayor	23	22	23	22	17	23	23	20	9	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	364	364	349	325	296	292	262	195	59	5	1	1	2	1	1	1	1	2	1	1	2	1

Table A.10. 10 – Tipos de pastos utilizados según provincia por número de fincas

	San ramón	Merker	Hierba de guinea común	Sinaí	Estrella Africana	Pangola	Caña de Azúcar	Hierba de guinea mejorada (Tanzania, Mombasa, Zuri, Massai, Anuana, Aries)	Pajones	Hierba mera = Pajon haitiano = merita	Transvala	Humidicola común	Gramma	Sinaí mejorada (Xaraes, Mulato II, Plata, Toledo, MG-5)	Bermuda (costera y cruzal)	King grass	Camerum (morada)	Bermúdez	Maíz	Maralfalta	Saladilla	Super merker	Tilonia	Pérez	Jaragua	CT-169 (Cubana)	Forrajes de corte	Leucaena	Moreira	Pinon cubano	Bancos de proteínas	Moringa
El Seibo	42	13	29	25	5	19	2	11	0	0	0	0	11	7	1	1	0	3	0	1	1	0	1	0	0	0	2	0	0	0	0	0
Puerto Plata	18	23	19	13	39	36	8	13	0	2	9	0	0	0	6	4	2	0	1	2	0	0	2	2	0	0	0	2	0	0	0	0
Duarte	2	5	7	2	14	10	1	1	0	0	1	9	3	0	1	0	0	6	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Maria Trinidad Sánchez	5	10	2	21	1	4	1	2	0	0	0	16	0	1	4	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
Dajabón	32	41	4	17	2	0	23	3	1	23	20	0	0	0	0	1	0	0	0	0	2	1	3	0	0	0	0	0	0	0	0	0
Santiago Rodríguez	14	23	3	4	2	0	18	10	0	10	15	0	0	2	3	2	4	0	1	1	0	2	0	0	0	1	0	0	0	1	0	1
Independencia	3	3	0	2	1	1	1	2	0	6	0	1	0	0	0	0	1	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0
San Juan	8	22	19	3	15	1	6	13	51	1	1	0	0	0	0	8	4	1	7	1	0	0	0	0	3	0	0	0	0	1	0	0
Altagracia	28	8	24	9	14	16	6	10	1	10	0	4	0	4	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Monte Plata	66	28	14	21	22	7	19	6	4	1	0	6	7	3	1	0	0	0	0	2	2	1	2	0	0	1	0	0	2	0	1	0
Hato Mayor	15	3	15	3	3	2	0	5	5	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	233	179	136	120	118	96	85	76	62	53	46	36	21	19	18	16	11	10	9	9	9	8	5	4	3	2	2	2	2	2	1	1

Table A.10. 11 – Tiempo que gasta la leche en llegar al centro de acopio según provincia por número de fincas									
	<= 15 minutos	16 - 30	31 - 60	61 - 90	91 - 120	121 - 240	>241	NS/NR/NA	Total
El Seibo	10	16	14	7	2	7	1	1	58
Puerto Plata	0	5	26	16	1	11	0	8	67
Duarte	2	4	15	12	2	0	0	3	38
María Trinidad Sánchez	0	2	18	7	0	4	0	6	37
Dajabón	22	18	9	0	0	0	0	2	51
Santiago Rodríguez	11	11	8	0	0	1	0	0	31
Independencia	3	6	1	1	0	0	0	0	11
San Juan	11	14	23	4	0	0	0	9	61
Altagracia	3	4	12	3	0	10	1	5	38
Monte Plata	5	27	45	4	1	2	0	6	90
Hato Mayor	2	3	7	7	0	4	0	0	23
Total	69	110	178	61	6	39	2	40	505
Source: Baseline Study, Farm Survey 2016									