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DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

DOMINICAN REPUBLIC

AGRICULTURAL HEALTH AND INNOVATION PROJECT

(DR-L1137)

LOAN PROPOSAL

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ABBREVIATIONS

ECLAC	Economic Commission for Latin America and the Caribbean
FAO	Food and Agriculture Organization of the United Nations
FAOSTAT	Food and Agriculture Organization Corporate Statistical Database
GAP	Good agricultural practices
GLP	Good livestock practices
GMP	Good manufacturing processes
IICA	Inter-American Institute for Cooperation on Agriculture
ILO	International Labour Organization
MSME	Micro, Small, and Medium-sized Enterprises
ND-GAIN	Notre Dame Global Adaptation Initiative
OECD	Organisation for Economic Co-operation and Development
QCBC	Quality- and Cost-based Selection
RIOPPAH	Regional International Organization for Plant Protection and Animal Health
UEPIP	Public Investment Project Execution Unit

PROJECT SUMMARY

DOMINICAN REPUBLIC
AGRICULTURAL HEALTH AND INNOVATION PROJECT
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<tr><th colspan="6">Financial Terms and Conditions</th></tr>
<tr><td colspan="3">Borrower:</td><td colspan="3">Flexible Financing Facility[a]</td></tr>
<tr><td colspan="3">Dominican Republic</td><td>Amortization period:</td><td colspan="2">25 years</td></tr>
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<tr><td rowspan="2">IDB (Ordinary Capital):</td><td rowspan="2">50,000,000</td><td rowspan="2">100</td><td>Credit fee:</td><td colspan="2">[c]</td></tr>
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<tr><td rowspan="2">Total:</td><td rowspan="2">50,000,000</td><td rowspan="2">100</td><td rowspan="2">Weighted average life (WAL):</td><td colspan="2" rowspan="2">15.24 years</td></tr>
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<tr><td colspan="3"></td><td>Approval currency:</td><td colspan="2">United States Dollars</td></tr>
<tr><th colspan="6">Project at a Glance</th></tr>
<tr><td colspan="6">Project objective/description: The general objective of the project is to improve the food security and competitiveness of the Dominican Republic's agricultural sector, increasing productivity, food safety, and access to markets. The specific objectives are to improve: (i) agrifood health and safety services; (ii) innovation and the transfer of phyto-zoosanitary technologies; and (iii) the agricultural statistical system.</td></tr>
<tr><td colspan="6">Special contractual conditions precedent to the first disbursement of the loan: (i) the appointment or hiring of key staff responsible for the project's execution within the Public Investment Project Execution Unit according to the terms of reference previously agreed upon with the Bank (paragraph 3.5); (ii) the approval and entry into force of the project Operating Regulations, under terms previously agreed upon with the Bank (paragraph 3.6).</td></tr>
<tr><td colspan="6">Special contractual conditions for execution: During project execution, the executing agency will commit to fulfilling, to the Bank's satisfaction, the conditions established in Annex B of the Environmental and Social Management Report (paragraph 3.7).</td></tr>
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[a] Under the terms of the Flexible Financing Facility (document FN-655-1), the borrower has the option of requesting changes to the amortization schedule as well as currency, interest rate, and commodity conversions. The Bank will take operational and risk management considerations into account when reviewing such requests.

[b] Under the flexible repayment options of the Flexible Financing Facility, changes to the grace period are permitted provided that they do not entail any extension of the original weighted average life of the loan or the last payment date as documented in the loan contract.

[c] The credit fee and the inspection and supervision fee will be established periodically by the Board of Executive Directors as part of its review of the Bank's lending charges, in accordance with relevant policies.

[d] SI (Social Inclusion and Equality); PI (Productivity and Innovation); and EI (Economic Integration).

[e] GD (Gender Equality and Diversity); CC (Climate Change and Environmental Sustainability); and IC (Institutional Capacity and Rule of Law).

I. DESCRIPTION AND RESULTS MONITORING

A. Background, problem addressed, and rationale

1.1 **Relevance of the agricultural sector and problem addressed.** The agricultural sector is very important to the Dominican Republic's economy. Primary production represents 5.6% of gross domestic product (GDP), a figure that rises to 10.4% when agroindustrial activity is included (Central Bank, 2018).[1] Over the last decade, the sector experienced sustained growth at an average rate of 5.5% and generated close to 19% of the country's exports, equivalent to approximately US$2 billion in 2018 (Central Bank, 2018), with tobacco, bananas, cocoa, and sugar being the principal crops exported mainly to the United States (U.S.) (45%), the European Union (EU) (34%), and Haiti (10%).[2,3] The agricultural sector also plays a fundamental role in the country's food security. First, regarding food availability, domestic production accounts for over 95% of consumption of basic products such as rice, chicken, the Musaceae family of crops (bananas and plaintains), and tubers (Ministry of Agriculture, 2017). Second, the agricultural sector generates 9.3% of the country's employment; therefore, it is a significant source of income and, therefore, access to food, especially for rural families. However, despite this positive trend in the agricultural sector's growth, there are still significant gaps in productivity and access to international markets that decrease the sector's competitiveness and affect the country's food security.

1.2 Phyto-zoosanitary problems are one of the main causes of negative impacts on productivity. In fact, it is estimated that they are responsible for between 10% and 40% of agricultural losses worldwide (Savary, Ficke, and Aubertot, 2012; Oerke, 2006; FAO, 2015), threatening food availability and access. In the Dominican Republic, the Ministry of Agriculture reported an average incidence of pests and diseases of 26% in the country's main crops in 2018,[4] which is partially reflected in its productivity gaps relative to other Central American countries (see Table 1).

Table 1. Yield gap per hectare of main agricultural products*

Product	Leading country	Gap with leading country
Cocoa	Guatemala	83%
Coffee	Costa Rica	82%
Rice	Honduras	38%
Bananas	Nicaragua	29%
Mangos	Guatemala	70%
Pineapple	Costa Rica	34%
Milk	Mexico	67%

* Authors' calculations using FAOSTAT data, average yields 2010-2017.

1.3 In recent years, the impacts of phytosanitary problems on productivity have been reflected in losses affecting various crops. For example, coffee rust decreased domestic production by 65% between 2011 and 2015 (ECLAC et al., 2018). Red-

[1] See references in optional link 2.

[2] Customs Bureau (2017).

[3] Agrifood imports increased by 37% between 2010 and 2018, representing US$2.6 billion in 2018 (13% of total imports).

[4] Avocados, rice, bananas, cocoa, coffee, mangos, pineapple, plantains, vegetables.

banded thrips can result in losses of up to 30% in organic banana production (Instituto Dominicano de Investigaciones Agropecuarias y Forestales [Dominican Institute for Agricultural and Forestry Research] (IDIAF), 2017). In 2015, the U.S. banned imports of fresh vegetables from the Dominican Republic due to the detection of the Mediterranean fruit fly; this resulted in US$38 million in losses in nine months and affected Dominican producers' incomes (Ministry of Agriculture, 2016).

1.4 According to the World Organisation for Animal Health (OIE), the country continues to be plagued by several animal diseases that impact livestock production and reduce food availability and access.[5] Significant zoonoses include brucellosis and tuberculosis, which lead to average annual losses of 30% and 12.5% in meat and milk production, respectively, or US$13 million at the national level (Ministry of Agriculture, 2019). In addition, the prevalence of classical swine fever is estimated to be 2% (Ministry of Agriculture, 2018); this disease is fatal to infected animals and its mere presence prevents the country from exporting pork.

1.5 The same health problems are also associated with food use because they affect food safety and, therefore, the public health of consumers. Pests and diseases, as well as the inadequate implementation of eradication measures (e.g. pesticides, antibiotics, etc.), can be harmful to human health and have socioeconomic consequences such as decreased labor productivity and/or increased medical expenses. The World Bank (Jaffee, S., 2019) estimated that foodborne diseases resulted in losses of US$7.4 billion in 2016 in Latin America and the Caribbean (LAC), and US$96.6 million in the Dominican Republic. The Dominican Republic's Ministry of Public Health and Social Assistance reported an average of 26,000 cases/year of foodborne diseases throughout the country in the past two years, of which 14% were due to biological and chemical contaminants in food.

1.6 Climate change aggravates this situation because it can increase the prevalence and spread of pests, diseases, and contaminants in plants, animals, and food. Therefore, countries must establish effective sanitary and phytosanitary measures (SPS) (FAO, 2018), as the many changes in climate conditions can impact the behavior, life cycle, or pathogenicity of pests, diseases, and contaminants, as well as increase the vulnerability of crops, animals, and foods to these risks.[6] The Dominican Republic is one of the most vulnerable countries to climate change in Latin America and the Caribbean, with an ND-GAIN index of 47.3 in 2017.

1.7 In addition to threatening food security through decreased agricultural production, increased losses, and safety issues, phytosanitary problems and zoonotic diseases also affect international trade and, therefore, lead to a considerable loss of revenue. In fact, given the World Trade Organization's SPS Agreement, countries must comply with increasingly strict health requirementsto mitigate the risk of the spread of pests, foodborne diseases, zoonotic diseases, and the presence of biological and chemical contaminants. Compliance with these standards is now a determining factor in countries' competitiveness in opening markets.

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[5] Contagious bovine pleuropneumonia, ovine rinderpest (*peste des petits ruminants*), classical swine fever, and African horse sickness, etc.

[6] Huot et al., 2017; Evans et al., 2014; Ghini et al., 2011; Van den Bossche and Coetzer, 2008.

1.8 In this context, Dominican agrifood exports have significant market access problems. In the last five years, the Dominican Republic has ranked thirteenth in Latin America and the Caribbean for agricultural product exports; however, in the same period, it had the fourth-highest number of notifications and containers rejected for health reasons by the United States and European Union (optional link 15). In terms of the value of exports, the Dominican Republic receives one notification per US$7.1 million in exports, while Costa Rica receives one per US$30 million, Honduras one per US$41.9 million, Ecuador one per US$53.5 million, and Chile one per US$182 million.

1.9 **Causes**. The main factors driving the country's agricultural health problems that, in turn, impact productivity and market access include: (i) limited public service capacity relating to agricultural health and food safety; (ii) limited capacity to develop and disseminate phytosanitary technologies; and (iii) lack of an agricultural information system to support policy design and implementation, especially for sanitary control and oversight. Although spending on agricultural public goods in the Dominican Republic increased from 2006 to 2016, it continues to be low relative to total support provided to the sector (Jesus de los Santos et al., 2018) and the international context, where it surpasses spending in Haiti, Guatemala, and Jamaica but is less than that of Uruguay and Chile.[7]

a. **Limited capacity of plant and animal health and safety services.** The Ministry of Agriculture has primary responsibility for the agricultural health policy through the Animal Health and Plant Health Departments. Its food safety mandate is shared with the Ministry of Public Health and Social Assistance through the Ministry of Agriculture's Agrifood Safety Departments and the Ministry of Public Health and Social Assistance's Bureau of Drugs, Food, and Sanitary Products. In recent years, the Plant Health, Animal Health, and Agrifood Safety Departments' services were strengthened; however, several diagnostic assessments and studies[8] show that the following weaknesses persist:

(i) **Limited framework for legal and institutional governance.** The legal framework needs be updated because its regulations do not incorporate the agreements of international agencies (World Trade Organization's SPS Agreement, OIE, International Plant Protection Convention) (Woller, 2019). The food safety regulatory framework is still only draft legislation. The country will also have to adapt quickly to upcoming regulatory changes in the United States (Food Safety Modernization Act) and the European Union (EU Control Regulation 2017/625), as their stricter health requirements will significantly impact trade with these countries. At the institutional level, sanitary management processes require coordination among the different

[7] In 2018, public spending represented 0.23% of agricultural GDP (Ministry of Agriculture, 2018).

[8] European Commission Technical Audit Reports; Inter-American Institute for Cooperation on Agriculture (IICA) Performance, Vision, and Strategy Index 2018; OIE's Provision of Veterinary Services Evaluation 2011; Final evaluation of loan 2551/OC-DR; and technical design studies for this operation.

stakeholders in the system[9] under a consensus-based SPS policy (Woller, 2019; IICA, 2018). However, due to the lack of a shared strategic and operational framework, the entities currently work in an uncoordinated manner, with limited interactions with the private sector. There is an international trend toward consolidating agricultural health services in sanitary and phytosanitary agencies with technical, administrative, and financial autonomy. This proposed operation seeks to consolidate the system and strengthen the coordination of agricultural health services.

(ii) **Insufficient agricultural health surveillance, control, and inspection.** Significant weaknesses persist, notably: (i) phytosanitary and epidemiological surveillance programs are not based on an updated risk-analysis methodology, and they lack reliable statistics on the prevalence of pests and diseases; therefore control and inspection efforts have limited impacts (Marconi, 2019; Barrón, 2019; Woller, 2019; DG-Sante, 2018; OIE, 2011); (ii) quarantine services lack some of the necessary infrastructure and tools to carry out diagnostic and control processes, especially related to imports of food and plant matter (Barrón, 2019); (iii) surveillance and inspection for chemical, physical, and biological contaminants in the different links of the value chain are deficient (Woller, 2019); (iv) although document control processes for the entry of agricultural inputs have improved, there is no quality testing and their marketing activity is not tracked, which increases the risk of contamination and emerging risks of anti-microbial resistance (Woller, 2019); (v) laboratories have limited diagnostic and quality control capacity due to a lack of analytical methods, obsolete equipment that does not meet market requirements, and infrastructure that fails to comply with basic biosecurity standards and limits the implementation of ISO-9001:2015 quality management systems and ISO-17025 accreditation of testing methods (Ozuna, 2019; IICA, 2018; OIE, 2011); and (vi) the Ministry of Agriculture lacks complete and updated records of agricultural operators (producers, input sellers, etc.) to support its different control, surveillance, and inspection functions (Woller, 2019; DG Sante, 2018). Furthermore, due to the lack of efficient management tools, it is evident that some administrative processes take too long (e.g. the registration of veterinary drugs takes 400 days), and only one third of agricultural health services have a cost-recovery mechanism (Taveras, 2019).

(iii) **Inadequate productive process and primary processing.** With respect to the application of good agricultural processes (GAP), good livestock practices (GLP), and good manufacturing processes (GMP) that aim to protect human health and the environment, the Ministry of Agriculture has certified only 83 agricultural production units (APUs) and 69 packers in recent years. Moreover, a survey (IDB, 2018) of 158 producers found that 23% use quality-certified seeds, 36% keep

[9] Ministry of Agriculture; Ministry of Public Health and Social Assistance; Ministry of Industry, Trade, and MSMEs; Ministry of Environment and Natural Resources; Instituto Dominicano para la Calidad [Dominican Institute for Quality] (INDOCAL); National Institute for Consumer Rights Protection (PROCONSUMIDOR); etc.

records of pesticide applications, 41% keep records of fertilizers, and 50% of producers receive technical assistance on the applications that they must carry out. In terms of safety practices, only 5% have labels listing all agricultural inputs. The Ministry of Agriculture (2018) estimates that just 16% of cattle is identified and vaccinated against brucellosis and tuberculosis, and that only 34% of backyard pigs are vaccinated against classical swine fever. Moreover, the vast majority of agricultural production lacks traceability systems to track the movement of products along value chains, and this hinders the identification of responsibilities and the implementation of corrective measures in cases of agricultural health emergencies (Barrón, 2019; Marconi, 2019; and Woller, 2019).

b. **Limited capacity to develop and disseminate new phytosanitary technologies.** The low productivity associated with agricultural health problems also arises as a result of the limited development and application of new technologies (e.g. genetic material, cultural practices, integrated pest management). In 2000, the Dominican Republic created the Sistema Nacional de Investigación Agropecuaria y Forestal [National System for Agricultural and Forestry Research] (SINIAF) incorporating the public and private institutions and organizations that conduct research or technology transfer activities in the agricultural and forestry sector, including IDIAF, the Consejo Nacional de Investigaciones Agrarias y Forestales [National Agricultural and Forestry Research Council] (CONIAF), and the Ministry of Agriculture's Departamento de Extensión y Capacitación [Department of Extension and Training] (DECA). However, public spending on innovation decreased from 0.3% of agricultural GDP in 2013 to 0.17% in 2018 (Taveras and De los Santos, 2019), which is quite low relative to other countries such as Costa Rica and Panama (1%), Brazil (2%), and South Korea (3%) (De los Santos, 2014; Mateo, 2019).

A consequence of this decreased investment in innovation is that the number of SINIAF agricultural researchers, 7% of whom have a doctorate, decreased from 199 to 188 between 2012 and 2019. In the case of IDIAF, 6% of technical staff have a doctorate, there is low generational succession capacity among them (25% of researchers are over 60 years old), and investments in equipment and laboratory maintenance are insufficient, compromising research capacity and the provision of services to producers (Mateo, 2019).

Lastly, the links between research and extension are very weak, and this limits the dissemination of new technologies. DECA reports having supported approximately 31% of all producers in the country through its 883 extension officers located in 8 regions and covering the 29 zones and 134 subzones in the country. However, the Dominican Republic's national agricultural extension policy is outdated with respect to the roles and functions of different actors, differentiated instruments according to type of producer, and monitoring and evaluation mechanisms. Furthermore, there is no strategy to update technicians' knowledge of matters related to phyto-zoosanitary protection, the use of information and communication technologies (ICTs), climate change, or gender approach (FUNICA, 2019).

c. **Lack of an agricultural information system**. The institutions in charge of agricultural statistics are the Ministry of Agriculture and the National Statistics Office (ONE); the latter governs the national statistical system and is responsible for national censuses. Although national legislation requires the National Agricultural Census (CNA) to be conducted every ten years, the most recent one was done in 1982, and the publication of its results was limited due to validity problems. The last published CNA dates from 1971. In 2015 the government implemented the National Agricultural Precensus, which recorded approximately 320,000 APUs; however, it was cancelled due to budgetary constraints. The Encuesta Agrícola Trimestral [Quarterly Agricultural Survey] also suspended its data collection in the 1990s (Saavedra, 2019).

The Ministry of Agriculture lacks information that is statistically reliable and representative in terms of the territorial distribution of agricultural activity, which especially complicates campaigns for the surveillance, control, and eradication of pests and diseases. This explains the fact that a 2015 diagnostic assessment[10] of agricultural statistical capacity resulted in a country score of 33/100, below the Latin American and Caribbean average (45/100), due to the lack of financial and human resources, as well as weaknesses in work methodologies.

1.10 **Gender.** The gender gap in the Dominican Republic's agricultural sector persists due to the high levels of poverty among women, unemployment, and unequal access to productive resources. In fact, a 2018 ONE study found that although approximately 25% of the women surveyed are landowners, they are not considered primary producers. This study also shows that rural women in the Dominican Republic work in disadvantaged conditions compared to men, and it is more difficult for them to access land, inputs, credit, and specialized technical training (ONE, 2018). In fact, with respect to access to extension services and technical assistance, it is estimated that only 16% of beneficiaries of such services are women farmers. This problem is even more serious, as just 13% of extension technicians/agents are women. The lack of statistics disaggregated by gender in the Dominican Republic is a limiting factor for measuring and monitoring the gender gap with respect to access to productive, technological, and technical assistance resources in rural areas, as well as for women's visibility and the recognition of their contributions to agriculture. Therefore, the agricultural census and statistics with a gender approach, including data disaggregated by gender, are fundamental tools for a detailed analysis leading to the design and implementation of policies specific to women in the agricultural sector, as suggested by FAO's World Programme for the Census of Agriculture (FAO, 2007) (gender annex).

1.11 **Previous actions.** The execution of the Agrifood Health and Safety Program (loan 2551/OC-DR) concluded in December 2018, and its objective was to help boost productivity in the agricultural sector and improve access for the country's agricultural product to domestic and international markets by strengthening the government's capacity to provide integrated animal and plant health and agrifood safety services. The project (US$10 million) made a significant contribution but,

[10] Latin American Faculty of Social Sciences, IDB, 2015.

considering the sector's needs, it had a limited scope that this operation is expected to scale up. Several outputs can be highlighted:

1.12 In agrifood safety, the Ministry of Agriculture developed GAP and GLP manuals with which 1,440 producers were trained, and it implemented the Programa Nacional de Monitoreo y Vigilancia de Residuos de Plaguicidas [National Monitoring and Surveillance Program for Pesticide Residues] pilot program for fruits and vegetables. In animal health, pilot programs were developed for the control and eradication of diseases (brucellosis, tuberculosis, and classical swine fever) and the traceability of animals; the Las Américas International Airport's quarantine station was improved; and new procedures for registering and auditing veterinary facilities were established. The Laboratorio Veterinario Central [Central Veterinary Laboratory] improved its capacities through ISO-17025 accreditation of a diagnostic method, the design of a quality management system based on ISO-9000 standards, and the application of fees for its services. In plant health, the Plant Health Department developed new management procedures for establishments selling pesticides, and it conducted 3,000 audits during the project's execution. The phytosanitary diagnostic capacity of the Plant Health Department's laboratory was also improved with the creation of two new virology and bacteriology sections.

1.13 According to the program's final evaluation, the Inter-American Institute for Cooperation on Agriculture (IICA) Performance, Vision, and Strategy Index showed a significant improvement between 2011 and 2018 in the overall safety performance indicator, which increased from 38% to 55%, although plant health decreased from 59% to 53%. Regarding animal health, the OIE's Provision of Veterinary Services indicator that was applied in 2011 was not updated in 2018. This prevented the measurement of changes in the provision of these services. However, the OIE indicators: (i) number of diseases from which the country remains free; and (ii) bovine spongiform encephalopathy risk categorization remained at the same levels from 2011 to 2018. Based on the lessons learned during the design and implementation of this program, the proposed operation will increase the scope, modernization, and updating of agricultural health services, and will complement them with investments in agricultural innovation and information.

1.14 **Interventions of other cooperating agencies.** The principal international cooperation agencies supporting agricultural health in the Dominican Republic are the Food and Agriculture Organization of the United Nations (FAO), IICA, the Regional International Organization for Plant Protection and Animal Health (RIOPPAH), the United States Department of Agriculture (USDA) and the U.S. Animal and Plant Health Inspection Service (APHIS), as well as the EU delegation. In 2018 FAO and RIOPPAH supported the development of a Dominican Republic-Haiti binational agreement and investment plan with the goal of strengthening crossborder agricultural health management; however, the competent authorities have still not signed the agreement. This operation will contribute to the Government of the Dominican Republic's implementation of part of the actions specified in the plan.[11] The USDA, APHIS, and the EU supported public and private entities in complying with their respective health regulations. The USDA also

[11] Synergies will be promoted with the Bank-financed Modernization of Agricultural Public Health Services program in Haiti (3260/GR-HA), which has similar objectives to this operation.

finances the PROGANA[12] project in support of the country's cattle value chain, which includes some activities related to animal health, GLP, and traceability. This project's actions will be coordinated with and will complement these initiatives.

1.15 **Evidence.** Several studies confirm that investments in agricultural health services improve productivity, reduce agricultural losses, lead to fewer rejections of exports, and increase agricultural incomes.[13] For example, IICA (2017) has found that increasing investments in SPS by 2.4% of the commercial value of agrifood exports (US$97 million per year) would generate trade benefits of US$306 million/year for the 15 Caribbean Forum (CARIFORUM) countries.

1.16 In terms of GAP and GLP, a survey conducted for the final evaluation of loan 2551/OC-DR shows that program beneficiaries who adopted more than half of the GAPs increased agricultural production (66%) and the value of sales (71%). Similarly, the increased adoption of GLPs is correlated with an increase of 76% in livestock production (Fahsbender and Salazar, 2019). With regard to public investment in agricultural innovation and technological transfers, recent evidence shows rates of return that range from 43% to 67% in research, as well as more than 100% in agricultural extension.[14] These interventions should be supported by investments in agricultural information, since access to relevant and current information improves policy decision-making, linkages with markets, and agricultural productivity.[15]

1.17 **Bank experience.** The project incorporates lessons learned from the Office of Evaluation and Oversight's Comparative Project Evaluation of Agriculture Health and Food Safety 2002-2014, from loan 2551/OC-DR, and from different Bank-financed projects supporting agricultural health, research, extension, and agricultural information services. The following are notable: Program to Strengthen Rural Public Goods (loan 2547/OC-ME); Program to Support Agricultural Public Management in Uruguay (loan 2182/OC-UR); Program in Support of Subsidies for Innovation in Agricultural Technology (loan 2443/OC-DR); Project to Improve the Agricultural Statistical Information System and the Agricultural Information Service for Rural Development in Peru (loan 3272/OC-PE); and Program to Strengthen the Agricultural Innovation System (loan 2412/OC-AR). The following table summarizes the lessons learned:

[12] Strengthening the Dominican Livestock Value Chain.

[13] Salazar et al. (2016), Kibira et al. (2015), Carlberg et al. (2012), Ibarrarán (2009).

[14] Jin and Huffman (2015), Alston et al. (2014), Huffman and Evenson (2006).

[15] Nakasone (2014), Camacho and Conover (2011).

Table 2. Lessons learned

Lesson learned	Reflection in the project design
Agricultural health	
Effective coordination of agricultural health services (animal, plant, and safety) is necessary to improve the efficiency of health services.	The incorporation of agricultural health services under one coordinating unit will be supported, along with common working strategies and tools.
The sustainability of agricultural health services requires cost-recovery measures.	An institutional reform of agricultural health services will be supported on the basis of: (i) coordination of services and promotion of risk-based management to optimize costs and improve efficiency; and (ii) design and implementation of a financial sustainability plan including updated fees for services.
The private sector's participation is essential to respond to market demands.	There will be an Advisory Committee comprised of different actors, including representatives from the private sector.
Innovation and extension	
The development of technologies with the objective of resolving agricultural health threats is fundamental to ensure the sustainability of services and increase productivity.	The operation includes the development of research areas to address agricultural health problems.
Innovation services must be supported by technical assistance and agricultural extension services so that producers effectively adopt new technologies.	Active coordination between innovation and extension services was considered. Extension services will be provided to groups and individuals.
Statistical system	
The gathering and dissemination of statistics must be based on a national agricultural information system.	The project will contribute to strengthening the Ministry of Agriculture to ensure the sustainability of information gathering, analysis, and dissemination actions.

1.18 **Strategic alignment**. The project is consistent with the Update to the Institutional Strategy 2010-2020 (document AB-3008), and it is aligned with the following development challenges: (i) productivity and innovation, as its objectives are to increase agricultural productivity and promote innovation; and (ii) economic integration, as it seeks to increase agricultural trade with other countries. It is also aligned with the following crosscutting themes: (i) climate change and environmental sustainability, as its actions target climate change adaptation and mitigation, and they promote the decreased use of contaminating agricultural inputs; (ii) gender equity and diversity, as its gender approach promotes the participation of women and young people; and (iii) institutional capacity and rule of law, as it will strengthen agricultural health, research, and information services. The project contributes to the indicators of the Corporate Results Framework 2016-2019 (document GN-2727-6) relating to beneficiaries' improved use and management of natural capital.

1.19 The operation is aligned with the IDB Group Country Strategy with the Dominican Republic 2017-2020 (document GN-2908), as it contributes to the expansion of productive opportunities and the adaptation of agricultural production to climate change. It is also included in the 2019 Operational Program Report (document GN-2948-2). It is consistent with the Agriculture and Natural Resources Management Sector Framework Document (document GN-2709-5), which proposes the provision of agricultural public goods as a mechanism for increasing

productivity; the Food Security Sector Framework Document (document GN-2825-3), as it contributes to greater food availability (productivity), access (incomes), and use (safety); and the Climate Change Sector Framework Document (document GN-2835-8), as it advances various climate change mitigation and adaptation activities. The operation is consistent with the Integration and Trade Sector Framework Document (document GN-2715-8), as it promotes actions to increase and facilitate trade flows. The project is aligned with the National Development Strategy 2030 (END 2030) and the Agricultural Sector Strategic Plan 2010-2020, which aim to increase the productivity, competitiveness, and environmental sustainability of agricultural production chains. The project is also aligned with the National Strategy for Adaptation to Climate Change in the Dominican Republic's Agricultural Sector 2014-2020 and the country's Nationally Determined Contribution,[16] which seek to decrease the agricultural sector's vulnerability to climate change, as well as with the National Food Security and Sovereignty Plan 2019-2022, which promotes food quality and safety. The project includes the value chains prioritized by the government.[17] The operation will contribute to reducing the prevalence of pests and diseases, and to disseminating technologies in crops that are promoted in other Bank-financed operations in the country (loans 4553/OC-DR and 3107/OC-DR).

1.20 It is estimated that 79.75% of the operation's resources are invested in climate change mitigation and adaptation activities, according to the joint methodology of the multilateral development banks for tracking climate change adaptation finance. These resources contribute to the IDB Group target of increasing financing for climate-related projects to 30% of total approvals by the end of 2020.

B. Objectives, components, and cost

1.21 The project's general objective is to improve the food security and competitiveness of the Dominican Republic's agricultural sector, increasing productivity, food safety, and access to markets. The specific objectives are to improve: (i) agrifood health and safety services; (ii) innovation and transfer of phyto-zoosanitary technologies; and (iii) the agricultural statistical system. To achieve these objectives, the project is structured in three components:

1.22 **Component I. Animal health, plant health, and agrifood safety services (US$19,000,000).** The objective of this component is to improve the performance of animal health, plant health, and agrifood safety services. The component will finance the following actions: (i) strengthening the regulatory and institutional framework for agricultural health management through the development of policies, updated draft legislation and regulations, support for the institutional reorganization of services, the development of risk-based management, a digital health platform, and the development of a financial sustainability strategy based on the effective and efficient application of fees for agricultural health services; (ii) development of traceability systems in priority animal and plant product value chains, including the traceability of agricultural inputs; (iii) implementation of surveillance, control, and eradication programs for animal diseases (including brucellosis and tuberculosis in cattle, and

[16] https://www4.unfccc.int/sites/submissions/INDC/Published%20Documents/Dominican%20Republic/1/INDC-DR%20August%202015%20(unofficial%20translation).pdf.

[17] Ministerial Resolution RES-MA-2018-78; National Competitiveness Council, 2019. Analysis of value chains for agricultural products in the Dominican Republic.

classical swine fever in pigs), and prioritized crop pests and diseases,[18] through preventative monitoring systems, vaccination campaigns, and the construction of a biological control laboratory to disseminate biological control methods; (iv) implementation of food safety surveillance programs through the management of food residues, contaminants and safety, and training and certifications in GAP, GLP, and GMP; (v) strengthening foreign agricultural trade control systems, especially through improved agricultural health certification processes, the improvement of the Las Américas International Airport's post-entry small-scale quarantine infrastructure, and the creation of canine units; and (vi) improved diagnostic capacities with the construction of three laboratories[19] and the refurbishing of 11 small field laboratories, ISO-17025 accreditation of the quality management system, and the implementation of good laboratory practices.

1.23 **Component II. Innovation and transfer of phyto-zoosanitary technologies (US$9,330,000).** This component seeks to increase the development and adoption of technologies that aim to solve agricultural health problems through the following outputs: (i) development of agreements with international research centers[20] to harness and adapt relevant technologies; (ii) development of lines of research on technologies that solve phyto-zoosanitary problems and increase the productivity of key crops (e.g. avocados, mangos, bananas, plantains, pineapple, coffee, cocoa, milk and meat, oriental and greenhouse vegetables), including small-scale works needed for research; (iii) implementation of a competitive fund for the development of digital agriculture (AgTech) in phytosanitary prevention and management techniques;[21] (iv) training for technicians to disseminate the newly developed technologies; (v) updated National Agricultural Technical Assistance Services Policy; (vi) provision of technical assistance with a gender approach for the adoption of agricultural technologies through test plots and group and individual activities; and (vii) creation and implementation of a virtual technical assistance platform for technicians and producers.

1.24 **Component III. Strengthening the agricultural records and statistical system (US$17,170,000).** The objective of this component will be to improve and update the agricultural statistical system, which supports decision-making on public policy and private investments in agriculture, through: (i) consolidation of the APU registry; (ii) conducting the National Agricultural Census and publishing its results; (iii) creation and strengthening of the Agricultural Statistics, Information, and Geomatics Division; and (iv) implementation of a system of complementary agricultural surveys. The census will have a crosscutting gender approach to increase women's visibility and expand their role and will incorporate themes relating to environmental conservation and climate change.

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[18] Thrips sp, Bemisia tabaco and Tuta absoluta in vegetables; Fusarium race 4 and Mycosphaerella fijiensis in Musaceae; Hemileia vastatrix in coffee; Hydrellia wirthii in rice; *Anastrepha sp* and *Antonomus eugenis* in fruits; *Moniliophthora roreri* in cocoa.

[19] Animal and Plant Diagnostic Laboratory and Biological Control Laboratory in La Vega; Agricultural Inputs Quality Control Laboratory in Santo Domingo.

[20] Particularly of the Consortium of International Agricultural Research Centers.

[21] The guidelines for the US$382,000 fund will be defined in the project Operating Regulations. Eligible entities will be research and academic centers, nongovernmental organizations, and the private sector. Projects that develop AgTech in phyto-zoosanitary areas for small and medium-sized farmers will be prioritized.

1.25 **Other costs (US$4,500,000).** These include the strengthening and functioning of a project execution unit, the development of manuals and tools for technical and fiduciary management, technical assistance, audits, monitoring and evaluation, and contingencies.

1.26 **Beneficiaries.** The operation will benefit all Dominican agricultural producers as it includes actions geared towards improving national agricultural health services and innovation, extension, and information services. In addition, component II will directly benefit the producers of prioritized crops (paragraph 1.22).

C. Key results indicators

1.27 The program's expected impacts are to improve food security and the agricultural sector's competitiveness. The anticipated outcomes are: (i) improved agrifood health and safety services; (ii) improved innovation and transfer of sanitary and phytosanitary technologies; and (iii) improved agricultural statistical system. The following impact indicators will be measured: (i) agricultural productivity (kg/ha); (ii) production losses (%); (iii) prevalence of human diseases transmitted through contaminated food (%); (iv) containers rejected due to contamination (#); and (v) agricultural exports (% of GDP).

1.28 **Gender and diversity approach.** The project includes a gender and diversity approach through the following actions: (i) making gender a crosscutting theme by establishing a focal point within the Ministry of Agriculture; (ii) provision of technical assistance with a gender approach; (iii) establishment of a target number of women beneficiaries; (iv) mandatory gender training for Ministry of Agriculture technicians; (v) agricultural information from the National Agricultural Census and agricultural statistical registry and system disaggregated by gender; and (vi) construction and modernization of laboratories that include adaptations for people with motor disabilities (optional link 9).

1.29 **Climate change.** The project includes climate change adaptation and mitigation actions (optional link 11) such as: (i) incorporation of practices and processes in the updates to the regulatory framework that contribute to climate change adaptation and mitigation; (ii) linking the agricultural health management system with climate risk early warning systems; (iii) design and construction of "green" infrastructure (energy efficiency, renewable energy, resilience to risks, management of waste and effluents); (iv) incorporation of the climate change focus in all areas of agricultural research and extension services (genetic material and resilient agricultural practices, etc.); and (v) gathering information on the perception of climate change impacts and agricultural producers' adoption of resilient practices.

1.30 **Digital agenda**. The project will finance a digital platform that will simplify and automate agricultural health and innovation processes (optional link 10). It will be implemented through: (i) mobile applications for providing virtual technical assistance to producers, records and traceability of operators, products, and inputs (including a blockchain pilot); (ii) web applications for internal processes, e-services, information, and open data for the public; (iii) integration with climate forecast platforms, foreign trade one-stop shop, RIOPPAH's Trazar-Agro, etc.; (iv) geographic information system and geoportal; (v) an operating model based on Cloud technologies, massive interconnection, real-time synchronization; and (vi) a competitive fund for the development of AgTech.

II. Financing Structure and Main Risks

A. Financing instruments

2.1 The project has been designed as a specific investment loan in the amount of US$50 million. Table 3 shows the costs by component and activity.

Table 3. Estimated project costs (US$)

Components	IDB	%
Component I. Animal health, plant health, and agrifood safety services	19,000,000	38.0
Component II. Innovation and transfer of phyto-zoosanitary technologies	9,330,000	18.7
• Innovation and research	5,931,500	
• Technology transfer	3,398,500	
Component III. Strengthening the agricultural records and statistical system	17,170,000	34.3
• Agricultural census	16,039,000	
• Continuous agricultural statistics	1,131,000	
Administration	3,665,000	7.3
Audits	285,000	0.5
Evaluation	450,000	0.9
Contingencies	100,000	0.2
Total	**50,000,000**	**100.0**

2.2 The program's disbursement period will be five years. Table 4 shows the disbursement schedule:

Table 4. Disbursement schedule (US$ millions)

Source	Year 1	Year 2	Year 3	Year 4	Year 5	Total
IDB	4.7	22.8	10.8	8.7	3.0	50
%	9.4	45.6	21.6	17.4	6.0	100

* The disbursement in year 2 is due to the census that will be conducted, which incurs significant costs in a short amount of time.

2.3 **Economic evaluation**. The program's ax ante cost-benefit analysis analyzed each of the components as well as the project as a whole. The costs included the loan investments, as well as additional recurring expenditures for the operation and maintenance of the agricultural health and safety systems. The quantified differential benefits were: (i) reduction of productive losses caused by pests and diseases in crops and animal breeding; (ii) decrease in rejected exports of vegetables, fruits, and food products; and (iii) benefits derived from the investment in research and the transfer of phyto-zoosanitary technologies. The results of the analysis, using efficiency prices, a technology adoption rate of 70%, a time horizon of 10 years, and a discount rate of 12%, confirm that the program is viable in economic terms, with a net present value of US$14.6 million and an internal rate of return of 19.8%.

B. Environmental and social risks

2.4 The project is classified as a category "B" operation in accordance with the Environment and Safeguards Compliance Policy (Operational Policy OP-703), as the construction of laboratories could pose negative socioenvironmental risks and impacts that are localized and temporary, such as: (i) contamination of soil and

water, due to the inadequate management of solid waste and effluents; (ii) proliferation of pests and the destruction of local flora and agricultural production, due to the inadequate operation of biological controls; (iii) occupational illnesses and accidents affecting workers, if good biosecurity practices are not implemented during the laboratories' operation; and (iv) problems relating to the long-term sustainability of the laboratories' operation.

2.5 To mitigate these risks: (i) adequate facilities and equipment will be included to manage laboratories' waste and to implement biosecurity measures; (ii) a specialized company will design the laboratories in compliance with applicable national and international standards; (iii) manuals and procedures will be developed for the laboratories' operation, including occupational health and safety plans, biosafety procedures and standards for workers, as well as good laboratory practices; (iv) workers will receive training on these manuals and procedures; (v) an Environmental, Social, Health, and Safety Management Division will be created within the Ministry of Agriculture to monitor and support compliance with all safeguard measures; (vi) the execution unit will recruit a socioenvironmental specialist; (vii) a financial sustainability strategy will be implemented (paragraph 2.11); and (viii) the program includes support for ISO-9001-2015 certification of the laboratories' quality systems.

2.6 Two significant public consultations were conducted, and the main topics of interest among those consulted were: (i) biosecurity and the security of laboratories; (ii) the sustainability of laboratory operations; and (iii) the laboratories' accreditation in quality systems. The responses to these concerns are included in the previous paragraph and in the consultation report, Annex 10 of the Environmental and Social Management Plan.

2.7 In accordance with the Disaster Risk Management Policy (Operational Policy OP-704), the operation is classified as "type 1 moderate" because of its execution in an area that is susceptible to extreme events (earthquakes, hurricanes, floods, etc.). The designs and construction will comply with national building codes (seismic and wind resistance).

2.8 The social and environmental evaluation and the Environmental and Social Management Plan were prepared and published on the IDB[22] and executing agency[23] websites and include the consultation report and the complaint and grievance management mechanism.

C. Fiduciary risks

2.9 The results of the institutional capacity assessment of the Ministry of Agriculture, as executing agency, show adequate financial management and procurement capacity, based on the Ministry of Agriculture's cumulative experience executing Bank loans.[24] However, the fiduciary risk is classified as "medium" due to the quantity and diversity of activities to be implemented, the recent creation of the Public Investment Project Execution Unit (UEPIP), and potential difficulties in finding staff with adequate

[22] https://www.iadb.org/en/project/DR-L1137.

[23] http://agricultura.gob.do/transparencia/index.php/publicaciones-t/category/1569-analisis-ambiental-y-social.

[24] Loans 1397/OC-DR, 2443/OC-DR, 3107/OC-DR.

technical and management skills. As mitigation measures, the executing agency should: (i) develop operating manuals that include flows for each fiduciary process; (ii) contract a financial specialist and procurement specialist with experience executing Bank-financed operations; and (iii) develop and operate a management system for procurement, contracting, and payment processes.

D. Other key issues and risks

2.10 The following risks were also identified. Public sector management and governance: changes in public policy priorities could affect the entry into effect of new guidelines and/or tools related to agricultural health. To mitigate this medium-level risk, dialogue will be promoted among the different public- and private-sector actors on the importance of agricultural health through means such as the Advisory Council (paragraph 3.4). Development: (i) sustainability problems in the event of insufficient human and/or budgetary resources to sustain project's investments and services; to mitigate this high-level risk, the efficiency of resource use will be improved through risk-based management, and a financial sustainability strategy will be developed and implemented; and (ii) agricultural health emergencies could affect the initially identified priorities, as well as those of Ministry staff; to mitigate this medium-level risk, agricultural health emergency management procedures will be developed. A risk mitigation matrix will also be developed, with its corresponding mitigation measures.

2.11 **Sustainability.** To ensure its long-term sustainability, the project will support the institutional reform of agricultural health services, including: (i) improved efficiency of resource use through risk-based management and the optimization of services; and (ii) the design and implementation of a financial sustainability strategy for all agricultural health services that includes cost recovery through an improved user-fee system (optional link 17). This project also plans to: (i) integrate research and the transfer of technology to ensure the productive sector's sustainable adoption of new technologies; and (ii) develop an Agricultural Statistics Unit within the Ministry of Agriculture, with the support of ONE, to create and maintain analytical capacities and their use in public policies.

III. Implementation and Management Plan

A. Summary of implementation arrangements

3.1 The borrower will be the Dominican Republic. The executing agency will be the Ministry of Agriculture through the UEPIP, which will have fiduciary responsibility for execution of the project's resources and the achievement of its objectives. The UEPIP will be responsible for project planning, technical management, environmental and social management, procurement and financial management, and monitoring.

3.2 The UEPIP will work in coordination with all the project's stakeholders, including: the Plant Health Department, Agrifood Safety Department, Animal Health Department, DECA, IDIAF, and ONE. Collaboration mechanisms will include the following: (i) creation of an Internal Monitoring Committee, established by the Minister of Agriculture with the participation of the aforementioned stakeholders, which will meet every six months to make strategic decisions and review the project's overall planning and execution; (ii) organization of planning and monitoring workshops with

the different entities on a quarterly basis and upon request; and (iii) recruitment of staff and technical assistance specifically dedicated to monitoring activities with stakeholders. These mechanisms will be reflected in the project Operating Regulations.

3.3 Pursuant to the national legal framework and the Policies for the Selection and Contracting of Consultants financed by the Inter-American Development Bank (document GN-2350-9), ONE will be selected directly to conduct the National Agricultural Census. Single-source selection is justified by the fact that ONE is the governing institution of the National Statistics System and has exceptionally valuable experience given its institutional mandate to conduct national-level censuses (paragraph 5.1.d of Annex III). A service provision contract in the amount of US$16 million will be prepared to define the activities' execution modalities pursuant to the terms of reference previously agreed upon with the Bank, including the payment terms based on the delivery of predefined outputs.

3.4 **Advisory Board.** An Advisory Board, chaired by the Ministry of Agriculture, will be created to disseminate information and obtainifeedback on project activities. The board will meet periodically and will include the participation of public and private entities involved in agricultural and agrifood health management. The Advisory Board's composition and operation will be established in the project's Operating Regulations.

3.5 **Establishment of the UEPIP.** The UEPIP will establish a project team with the following minimum key staff: (i) general coordinator; (ii) financial specialist; (iii) procurement specialist; and (iv) planning and monitoring specialist. **A special contractual condition precedent to the first disbursement of the loan will be the appointment or hiring of key staff within the UEPIP that is responsible for the project's execution, based on the terms of reference previously agreed upon with the Bank.** The project team will also be strengthened by the following positions: (i) coordinators and support technicians for each component; (ii) support officers in financial management and procurement; (iii) socioenvironmental and gender specialist; (iv) civil engineer; and (v) ICT specialist.

3.6 **Project Operating Regulations.** The project will be governed by project Operating Regulations that will define: (i) the responsibilities and functions of each project actor and the coordination mechanisms among them; (ii) regulations and procedures for activity programming and execution, administrative and financial management, procurement and contracting, audits, monitoring, and evaluation; (iii) execution modalities and environmental and social safeguard measures; and (iv) the rules for the competitive AgTech fund. **A special contractual condition precedent to the first disbursement of the loan will be the approval and entry into effect of the project Operating Regulations, under terms previously agreed upon with the Bank.**

3.7 A special contractual condition of execution will be that, during project execution, the executing agency will commit to fulfilling, to the Bank's satisfaction, the conditions established in Annex B of the Environmental and Social Management Report.

3.8 **Fiduciary management.** The fiduciary agreements and requirements for the program's execution are outlined in Annex III.

3.9 **Procurement.** Procurement items will be specified in the Bank-approved procurement plan, and it will be carried out under the Policies for the Procurement of Works and Goods financed by the Inter-American Development Bank (document GN-2349-9) and the Policies for the Selection and Contracting of Consultants financed by the Inter-American Development Bank (document GN-2350-9), and their subsequent updates. Given this operation's timeline for approval, the policies set forth in documents GN-2349-15 and GN-2350-15 will be in effect; therefore, the executing agency will be informed of this change, and its written acceptance will be requested. The Bank's supervision of the procurement of goods and the contracting of works and services with project resources will be undertaken pursuant to the terms of Annex III and the procurement plan.

3.10 **Financial management.** The program's financial management and supervision will be undertaken in accordance with the terms of the Financial Management Guidelines for IDB-financed Projects (document OP-273-6), or its updates in accordance with Annex III.

3.11 **Audits.** The standard requirements and deadlines established in the Bank's policies will be applied. An eligible private auditing firm will provide external auditing services pursuant to the Bank's policies.

B. Summary of arrangements for monitoring results

3.12 The project has a monitoring and evaluation plan. A quasi-experimental difference-in-differences methodology will be used to measure the project's impact on productivity and food security, with a focus on the effectiveness of the dissemination and adoption of GAP and GLP. To this end, a sample of approximately 1,300 producers (beneficiaries and control group) will be needed. This evaluation will be financed with US$350,000 of the loan proceeds.

3.13 **Monitoring.** The Ministry of Agriculture will submit to the Bank, no later than 60 days after the end of each six-month period of each year of execution, a monitoring report on the progress of activities. The reports will focus on the progress of outputs and outcomes, and the execution of the Environmental and Social Management Plan. The reports for the second half of the year will include the annual work plan for the following calendar year, with a disbursement forecast and an updated procurement plan.

3.14 **Evaluation.** The Ministry of Agriculture will submit a midterm evaluation report to the Bank no later than 90 days after the date on which 50% of loan proceeds have been committed or 50% or the execution period has elapsed, whichever occurs first; and the project completion report no later than 90 days after 90% of loan proceeds have been disbursed. The final evaluation report will include the results of the program's impact evaluation.

Development Effectiveness Matrix		
Summary		
I. Corporate and Country Priorities		
1. IDB Development Objectives		
Development Challenges & Cross-cutting Themes	-Productivity and Innovation -Economic Integration -Gender Equality and Diversity -Climate Change and Environmental Sustainability -Institutional Capacity and the Rule of Law	
Country Development Results Indicators	-Beneficiaries of improved management and sustainable use of natural capital (#)* -Women beneficiaries of economic empowerment initiatives (#)* -Farmers with improved access to agricultural services and investments (#)*	
2. Country Development Objectives		
Country Strategy Results Matrix	GN-2908	It's aligned by contributing to expand productive opportunities and to the adaptation of agriculture to climate change.
Country Program Results Matrix	GN-2948-2	The intervention is included in the 2019 Operational Program.
Relevance of this project to country development challenges (If not aligned to country strategy or country program)		
II. Development Outcomes - Evaluability		Evaluable
3. Evidence-based Assessment & Solution		7.4
3.1 Program Diagnosis		2.4
3.2 Proposed Interventions or Solutions		3.6
3.3 Results Matrix Quality		1.4
4. Ex ante Economic Analysis		9.0
4.1 Program has an ERR/NPV, or key outcomes identified for CEA		3.0
4.2 Identified and Quantified Benefits and Costs		3.0
4.3 Reasonable Assumptions		0.0
4.4 Sensitivity Analysis		2.0
4.5 Consistency with results matrix		1.0
5. Monitoring and Evaluation		8.7
5.1 Monitoring Mechanisms		2.5
5.2 Evaluation Plan		6.2
III. Risks & Mitigation Monitoring Matrix		
Overall risks rate = magnitude of risks*likelihood		Medium
Identified risks have been rated for magnitude and likelihood		Yes
Mitigation measures have been identified for major risks		Yes
Mitigation measures have indicators for tracking their implementation		Yes
Environmental & social risk classification		B
IV. IDB´s Role - Additionality		
The project relies on the use of country systems		
Fiduciary (VPC/FMP Criteria)	Yes	Financial Management: Budget, Treasury, Accounting and Reporting. Procurement: Price Comparison.
Non-Fiduciary		
The IDB's involvement promotes additional improvements of the intended beneficiaries and/or public sector entity in the following dimensions:		
Additional (to project preparation) technical assistance was provided to the public sector entity prior to approval to increase the likelihood of success of the project	Yes	DR-T1195

Note: (*) Indicates contribution to the corresponding CRF's Country Development Results Indicator.

The general objective of the project is to improve food security and competitiveness of the DR agricultural sector, increasing productivity, access to markets and food safety. The specific objectives are to improve: (i) agri-food health and safety services; (ii) innovation and transfer of zoo-phytosanitary technologies; and (iii) the system of agricultural statistics.

The diagnosis provided on the deficiencies of agricultural public services in general is adequate. Not all the impact indicators and results of the results matrix are SMART or have updated baselines.

The Ex ante Cost-Benefit Analysis captures the differential benefits related to: (i) the reduction of productive losses caused by pests and diseases of crops and livestock; (ii) the decrease in rejections of exports of vegetables, fruits and food products; and (iii) the benefits derived from investment in research and transfer of zoo-phytosanitary technologies. Costs included loan investments, as well as additional recurring costs for the operation and maintenance of health and safety systems. Not all assumptions used are well supported.

The program has a monitoring and evaluation plan. A quasi-experimental methodology of differences in differences will be used to measure the impact of the program on productivity and food security.

RESULTS MATRIX

General objective:	The general objective of the project is to improve the food security and competitiveness of the Dominican Republic's agricultural sector, increasing productivity, food safety, and access to markets. The specific objectives are to improve: (i) agrifood health and safety services; (ii) innovation and the transfer of phyto-zoosanitary technologies; and (iii) the agricultural statistical system.

EXPECTED IMPACT

Indicators	Unit of measure	Baseline	Baseline Year	Targets		Means of verification	Observations
				Value	Year		
Impact 1: Improve food security							
1: Agricultural productivity of main crops Avocados Bananas Cocoa Coffee Mangos Plantains	Kg/ha	9,000 21,000 500 218 6,120 10,700	2018	16,000 23,100 900 300 7,948 12,000	2028	IDIAF reports	IDIAF studies. National production averages of key crops. Source: IDIAF **Development Challenge Indicator Productivity**
2: Losses in livestock production due to disease Meat Milk	%	30 12.5	2018	24 10	2028	Impact assessment and Ministry of Agriculture reports	Represents the loss in beef production due to brucellosis or tuberculosis in sick animals. Baseline value: Average loss of 28 kg meat/animal per year and 228 liters of milk/cow per year in sick animals. Source: IDIAF, based on technical studies. **Development Challenge Indicator Productivity**
3: Prevalence of human diseases transmitted through food attributable to contaminants	%	14.0	2018	9.8	2028	Ministry of Public Health and Social Assistance's Bureau of Epidemiology (DIGEPI) reports	Baseline value: 2018 data, diseases attributable to contaminants (3,297 cases) relative to foodborne diseases (23,441 cases). Source: DIGEPI-Ministry of Public Health and Social Assistance
Impact 2: Improve the competitiveness of the agricultural sector							
4: Containers rejected by the European Union and United States due to chemical or biological contaminants	Number of containers	251	2018	176	2025	Ministry of Agriculture reports	Source: Ministry of Agriculture, based on data from the Rapid Alert System for Food and Feed (RASFF), European Union Notification System for Plant Health Interceptions (EUROPHYT), and the US-FDA.
5: Agricultural exports	% GDP	2.47	2017	2.96	2025		Source: Central Bank of the Dominican Republic **Development Challenge Indicator Economic Integration**

EXPECTED OUTCOMES

Expected Outcomes	Unit of measure	Baseline		Targets						Means of verification	Observations
		Value	Year	Year 1	Year 2	Year 3	Year 4	Year 5	Total		
Outcome 1: Improved agrifood health and safety services											
1.1. Prevalence of animal diseases											
Brucellosis	%	3.3	2014	3.3	3.3	3.3	2.3	1.5	1.5	Ministry of Agriculture reports	Estimated baseline, based on RIOPPAH study.
Tuberculosis	%	1.9	2014	1.9	1.9	1.9	1.7	1.5	1.5		
Classical swine fever	%	2	2014	2	2	2	1	0	0		Target: Eradication **Crosscutting theme: Institutional capacity**
1.2. Incidence of pests in crops	%	26	2019	26	26	26	23.4	20.1	20.1	Ministry of Agriculture reports	Simple average of the incidence of the 20 most relevant pests (Barón, 2019). Includes avocados, rice, bananas, cocoa, coffee, mangos, pineapple, plantains, oriental vegetables, and greenhouse vegetable crops. Source: Baron (2019) (optional link 4) **Crosscutting theme: Institutional capacity**
1.3. Number of agricultural health services with updated fees in effect	Services	99	2019	0	150	314	0	0	314	Ministry of Agriculture reports	Includes a total of 314 agricultural health services. Noncumulative target. **Crosscutting theme: Institutional capacity**
Outcome 2: Improved innovation and transfer of phyto-zoosanitary technologies											
2.1: Number of agricultural technologies approved and available to the public	Technologies	0	2019	0	0	5	10	33	33	IDIAF publications	Cumulative target.
2.2: Number of beneficiary producers adopting new technologies	Producers	0	2019	0	0	0	2,100	7,000	7,000	Impact Evaluation and Ministry of Agriculture reports	Producers benefiting from transfer and extension activities. Cumulative target. **CRF indicator: farmers given access to improved agricultural services and investments**

Expected Outcomes	Unit of measure	Baseline		Targets						Means of verification	Observations
		Value	Year	Year 1	Year 2	Year 3	Year 4	Year 5	Total		
2.3: Number of producers certified in GAP and GLP	Producers	83	2019	83	483	1,083	1,583	2,083	2,083	Ministry of Agriculture reports	Certification by Ministry of Agriculture. Cumulative target. **CRF indicator**
2.4. Beneficiaries with improved use and management of natural capital	Producers	83	2019	83	483	1,083	1,583	2,083	2,083		
Outcome 3: Improved agricultural statistical system											
3.1: Number of downloads and requests from the CNA	Number	0	2019	0	0	0	0	4,044	4,044	ONE report	Anonymized microdata downloads in one year. Target: CNA downloads in Colombia – May 2019. **Crosscutting theme: institutional capacity**

OUTPUTS

Outputs	Unit of measure	Baseline	Year 1 (2021)	Year 2 (2022)	Year 3 (2023)	Year 4 (2024)	Year 5 (2025)	Final target	Means of verification	Observations
Component I. Animal health, plant health, and agrifood safety services										
1: Policies and plans written and validated	Document	0	4	1	-	-	-	5	Draft policies validated and plans approved by Ministry of Agriculture and Ministry of Public Health and Social Assistance ministerial resolutions	Includes the National SPS Policy and three plans (year 1) and the Quality Policy (year 2). Validated implies that an agreement has been reached with public and private sectors.
2: Regulatory framework projects and agricultural health procedures updated and validated	Projects	0	7	8	9	4	-	28	Project reports with internal validation document from the Ministry of Agriculture	Includes updated draft legislation, and the development of regulations and procedures manuals on its application, on various agricultural health topics.
3: Organizational redesign and redesigned sanitary and phytosanitary service processes developed and implemented	Management model	0	-	-	-	1	-	1	Ministry of Agriculture and Ministry of Public Administration resolution	Includes support for the creation of an Agricultural Health and Safety Coordination Unit, including the financial sustainability plan.
Milestone: Financial sustainability mechanism for agricultural health services designed and implemented	Mechanism	0	-	1	-	-	-	1	Ministry of Agriculture resolution	Includes the detailed review of fees for agricultural health services and budget management procedures.
4: Risk-based management, risk assessment, and integrated agricultural health intelligence systems developed	System	0	-	2	*2*	*2*	*2*	8	System management documents and legal provisions for approval and implementation	Considers the system's design, its different components, and detailed procedures.
5: Comprehensive digital agricultural health platform developed and operating	Modules	0	-	-	-	-	16	16	Performance and compliance technical report approved by Ministry of Agriculture	Includes development and technical support for the rollout of common base application and different modules (optional link 10).
6: Traceability systems integrated and operating	System	0	-	1	3	2	-	6	Traceability system management reports	Includes cattle traceability and pilot tests for pigs, aquaculture, apiculture, poultry, vegetables, and avocados (optional link 6).
7: Sanitary and phytosanitary surveillance programs strengthened and approved	Programs	0	-	1	4	3	-	8	Program documents validated by Ministry of Agriculture Digital platform reports	The programs will be approved in the Ministry of Agriculture.

Outputs	Unit of measure	Baseline	Year 1 (2021)	Year 2 (2022)	Year 3 (2023)	Year 4 (2024)	Year 5 (2025)	Final target	Means of verification	Observations
8: Surveillance programs implemented	Programs	0	-	-	1	4	3	8	Program reports and results	Includes agricultural health surveillance programs for: (i) animals; (ii) agriculture and livestock antimicrobial resistance; (iii) vegetables; and (iv) food residues and contaminants.
9: Disease control and eradication programs implemented	Programs	0	-	-	1	-	2	3		Brucellosis and tuberculosis management and classical swine fever eradication programs.
10: Las Américas International Airport post-entry quarantine stations improved and equipped	Structure/station	0	-	1	1	-	-	2	Certificate of acceptance from Ministry of Agriculture	Includes structure for animals and post-entry station for vegetables, with biosecurity.
11: Canine unit operating		0	-	-	-	1	-	1	Ministry of Agriculture reports	Operating in Las Américas International Airport and Punta Cana airport for the nonintrusive control of accompanied cargo.
12: Laboratories built with accommodations for people with motor disabilities	Laboratory	0	-	1	1	1	-	3	Certificate of acceptance report from Ministry of Agriculture	Biological control laboratory, animal health laboratory, and plant health laboratory in La Vega, and quality laboratory (electronic link 6). **Diversity Flag**
13: Renovated or adapted laboratories including accommodations for people with motor disabilities	Laboratory	0	-	3	4	4	-	11		Smaller works in 11 small regional laboratories **Diversity Flag**
14: Equipped laboratories	Laboratory	0	-	6	6	7	-	19	Implementation report	Includes 19 laboratories: LAVECEN diagnostic lab, LAVECEN quality control lab, 8 plant health laboratories, and 9 regional animal health laboratories.
15: ISO 17025 accredited quality management system implemented in LAVECEN and Las Américas International Airport laboratories	Accredited methods	0	-	4	6	6	-	16	Accreditation certificate for testing methods	ISO17025 accreditation for the LAVECEN diagnostic department: 4 methods, quality control department: 6 methods, Las Américas International Airport: 6 methods.
16: Good laboratory practices implemented	Laboratories	0	-	6	8	6	-	20	Laboratory audit report showing fulfillment of good laboratory practices	Implementation of good practices in the different laboratories (biosecurity, health and safety, etc.).
17: Enhanced sanitary and phytosanitary certification	Software solution	0	-	-	1	-	-	1	Test report	Includes the agricultural health certification process for exporting agricultural products.

Outputs	Unit of measure	Baseline	Year 1 (2021)	Year 2 (2022)	Year 3 (2023)	Year 4 (2024)	Year 5 (2025)	Final target	Means of verification	Observations
18: Risk-based agricultural input registration and post-registration system approved and operating	Modules	0	-	1	3	3	1	8	Digital platform reports	Includes the design and implementation of risk-based registration and post-registration modules and procedures for agricultural inputs.
19: Traceability system for agricultural inputs implemented	Operators	0	-	-	-	50	100	150		Includes the design and implementation of risk-based traceability modules and procedures for agricultural inputs.
20: Training manuals on GAP, good manufacturing practices (GMP), and GLP developed	Manuals	0	3	3	3	3	-	12	Edited and printed manuals	Training manuals for extension workers: GAP/GLP, (cattle, poultry, pigs, apiculture, aquaculture, extensive farming, and greenhouse agriculture); GMP, hazard analysis and critical control points, standard operating procedures, rural territory property tax; GMP (agricultural inputs)
Component II: Innovation and transfer of phyto-zoosanitary technologies										
21: Crosscutting institutional strengthening measures implemented in IDIAF		0	-	2	1	1	-	4	Published policies	Includes: intellectual property, knowledge management, crosscutting gender strategy, and human resource management.
22: Agreements negotiated with centers worldwide to harness relevant technologies and knowledge	Agreements	0	-	2	2	2	1	7	Agreements signed with knowledge centers worldwide	Includes the formal negotiation of agreements with centers worldwide, royalty payments to purchase technologies, etc.
23: Competitive fund for the development of digital agriculture (AgTech) in phytosanitary prevention and control techniques	Projects	0	-	-	-	-	2	2	Final project reports	IDIAF and CONIAF will establish the agreement for the project competition.
24: Lines of research for development of phyto-zoosanitary technologies in priority crops are finalized	Areas	0	-	1	5	4	-	10	Final reports published online	This output will be developed by IDIAF. The 10 prioritized products are: bananas, plantains, coffee, cocoa, avocados, mangos, pineapple, milk and meat, oriental vegetables, and greenhouse vegetables (optional link 7).
25: National Agricultural Extension and Technical Assistance Policy, with a focus on gender and youth, updated and published	Policy	0	-	1	-	-	1	2	Policy approval resolution and publication on Ministry of Agriculture's website	**Gender flag**

Outputs	Unit of measure	Baseline	Year 1 (2021)	Year 2 (2022)	Year 3 (2023)	Year 4 (2024)	Year 5 (2025)	Final target	Means of verification	Observations
26: Producers receiving technical assistance with a gender approach to adopt new agricultural technologies, GAP, and GLP	Producers	0	-	10,000	10,000	10,000	10,000	10,000	Final reports and producer registry	Noncumulative target. This technical assistance will be provided to groups and individuals (optional link 8). A gender approach includes: (i) specific awareness campaigns for women and young people; (ii) technical assistance will be carried out in such a way that women can bring their children; and (iii) technicians will be trained in gender- and youth-related topics. GAP include a focus on integrated pest management (IPM). **Gender flag**
Milestone 1: Women producers receiving technical assistance with a gender approach to adopt new agricultural technologies	Women producers	0		3,000	3,000	3,000	3,000	3,000		
27: Test plots of land implemented for the provision of technical assistance	Plots	0	-	210	420	420	210	420	Land registry	Noncumulative target. The plots of land have been established and used for technical training of producers for three years. At least 30% of plots on women's farms. These plots will be used to validate technologies and to provide technical assistance in GAP, GLP, and IPM. **Gender flag**
Milestone 1: Model plots of land for the provision of technical assistance implemented on women's farms	Plots	0		63	126	126	63	126		
28: Virtual platform developed for the provision of technical assistance and the exchange of experiences, with a specific module for women producers	Blocks	0	-	-	2	-	-	2	Platform available to the public	Includes modules for technicians and producers, as well as a specific module for women producers. **Gender flag**
29: Innovation networks of technicians providing technical assistance and other actors from the productive chains, operating	Networks	0	-	2	6	6	6	6	Network meeting reports	Includes the 10 prioritized crops. Considers holding strategic meetings with relevant actors in the abovementioned crops.
30: Training activities to strengthen technicians providing technical assistance with a gender approach conducted	Activities	0	7	21	23	14	7	72	Annual training reports	Includes training technicians in GAP, GLP, IPM, phyto-zoosanitary technologies, and gender- and youth-related topics. **Gender flag**

Outputs	Unit of measure	Baseline	Year 1 (2021)	Year 2 (2022)	Year 3 (2023)	Year 4 (2024)	Year 5 (2025)	Final target	Means of verification	Observations
Component III. Strengthening the agricultural records and statistical system										
31: Directory of APUs consolidated	Consolidated APUs	0	45,000	19,000	-	-	-	64,000	APU directory available	Information will be disaggregated by gender.
32: CNA with a gender approach conducted, published, and submitted to the Ministry of Agriculture	Registered APUs	0	-	320,000	-	-	-	320,000	CNA	Includes all CNA steps (optional link 9). Gender approach: information will be collected that is disaggregated by gender. **Gender flag**
33: Agricultural Statistics, Information, and Geomatics Division created, equipped, and operating	Department	0	-	-	-	-	1	1	Agricultural Statistics, Information, and Geomatics Division operating within the Ministry of Agriculture	Includes support for the creation of the Division, in collaboration with ONE.
34: Continual, national-level agricultural statistics are collected, including a gender approach	Surveys	0	-	-	-	1	1	2	Results of rounds of surveys published as of year 3	Two surveys will be conducted based on the census's sample framework with a gender approach (see output 32). **Gender flag**

FIDUCIARY AGREEMENTS AND REQUIREMENTS

Country:	Dominican Republic
Project number:	DR-L1137
Name:	Agricultural Health and Innovation Project
Executing agency:	Ministry of Agriculture
Fiduciary team:	Romina Kirkagacli (Procurement); Christian Contín and Denise Salabie (Financial Management), FMP/CDR

I. EXECUTIVE SUMMARY

1.1 This project's executing agency will be the Ministry of Agriculture through the UEPIP, created by ministerial resolution RES-MA-2019-22.

1.2 The results of the institutional capacity assessment[1] identified a medium-level fiduciary risk.

1.3 With regard to the Dominican Republic's Public Finance Management Systems (SGFP); according to the SGFP evaluation[2] in August 2017 and the 2016 PEFA[3] report on the Dominican Republic (presented in October 2016), overall, the Dominican Republic's SGFP is partially aligned with international good practices. With regard to the public procurement system, the Bank supported the update of the diagnostic assessment of the Dominican Republic's public procurement system in 2016, using the OECD's Development Assistance Committee methodology. Improvements have been noted in: (i) the regulatory framework, to make it more inclusive; (ii) the institutional framework; (iii) management capacity; and (iv) information systems. In terms of the integrity and transparency pillar, the report identifies future strengthening opportunities.

1.4 The project's total cost is US$50 million, financed with an IDB investment loan.

II. FIDUCIARY CONTEXT OF THE EXECUTING AGENCY

2.1 The executing agency has extensive experience and knowledge of the Bank's fiduciary procedures as a result of its previous execution of loans 1397/OC-DR, 2443/OC-DR, 2551/OC-DR, and 3107/OC-DR. Although the UEPIP is a new executing unit, it is supported by the executing agency's fiduciary procedures and systems.

2.2 The project is based on the use of the national financial management systems, specifically the cash management, budget, accounting, and reporting subsystems.

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1 Using the methodology established by the Bank.

2 Evaluation of the internal control, budget, cash management, accounting, and reporting subsystems using the methodology established in the IDB's instructions for determining the level of development and use public financial management systems.

3 Public Expenditure and Financial Accountability.

2.3 With respect to the country procurement systems, in November 2016, the Bank's Board of Executive Directors approved, through document GN-2538-19, the partial use[4] of the Dominican Republic's procurement system[5] in subsequent Bank-financed operations. The approved subsystems may be used in Bank-financed operations after the implementation provisions established in the guide and technical reports on the acceptance of the partial use of the procurement system have been adopted.

III. Fiduciary Risk Evaluation and Mitigation Actions

3.1 The results of the institutional capacity assessment of the Ministry of Agriculture, as executing agency, indicate that the fiduciary risk is medium because of the quantity and diversity of the activities to be implemented, the recent creation of the UEPIP, and the potential difficulties in finding staff with adequate technical and management skills. The executing agency will implement the following mitigation measures: (i) develop operational manuals that include flows for each fiduciary process; (ii) hire a financial specialist and a procurement specialist with experience in executing Bank-financed operations; and (iii) develop and operate a system to manage procurement, contracting, and payment processes.

IV. Considerations for the Special Provisions of Contracts

4.1 In order to streamline the negotiation of the contract, the following are the agreements and requirements that must be considered in the special provisions:

a. **Exchange rate agreed upon with the executing agency for rendering accounts.** The exchange rate prevailing on the date Bank resources are converted to local currency will apply.

b. **Justification of expenditures.** Given the operation's moderate risk level, it was agreed that 80% of advances in funds will be justified for further disbursements.

c. **Audited financial reports.** Submission of: (i) the project's annual audited financial reports within 120 days after the close of the executing agency's fiscal year. The project's annual audited financial reports will be duly audited by an independent audit firm acceptable to the Bank. The last of these reports will be

[4] In accordance with the terms of the guide, the partial use of a country procurement system corresponds to the use of at least one of the subsystems for all goods and services contracts below the threshold established by the Bank for the application of international competitive bidding (ICB). Contracts for amounts above this threshold will be governed by the provisions established in the Bank's policies (documents GN-2349-9 and GN-2350-9).

[5] Specifically: (i) for all contracting of goods and nonconsulting services subject to the subsystem for smaller purchases, or shopping pursuant to the terms of the Dominican Republic's National System for Public Procurement and Contracting (SSNC-RD), the amounts of which are below the threshold established by the Bank for the application of the shopping method for complex goods and/or services (threshold: US$50,000); and (ii) for all contracting of works, subject to the use of the shopping subsystem pursuant to the terms of the SNCC-RD, the amount of which is below the threshold established by the Bank for the application of the shopping method for complex works (threshold: US$250,000).

submitted within 120 days after the date stipulated for the last disbursement of the loan.

V. AGREEMENTS AND REQUIREMENTS FOR PROCUREMENT EXECUTION

5.1 Procurement will be governed by the policies set forth in documents GN-2349-9 and GN-2350-9, and their subsequent updates.

a. **Procurement execution.** The Ministry of Agriculture's UEPIP will be responsible for the selection, procurement, contracting, monitoring, and receipt of the project's procurements.

b. **Procurement of works, goods, and nonconsulting services.** Goods, works, and nonconsulting services contracts arising under the project and subject to ICB will be executed using the standard bidding documents issued by the Bank. Bidding subject to national competitive bidding (NCB) will be executed using the project's bidding documents.

c. **Selection and contracting of consultants.** Consulting services contracts arising under the project will be executed using the standard request for proposals issued by or agreed upon with the Bank. At the discretion of the executor, individual consultants may be contracted through local or international advertising in order to establish a shortlist of qualified individuals.

d. **Direct contracting**. The single-source selection of ONE is planned to conduct the National Agricultural Census (CNA), at an estimated cost of US$16 million. The policy set forth in document GN-2350-9 permits the contracting of state entities from the borrowing member country in paragraph 1.11(c), which addresses the specific case of contracting research centers from the borrowing member country when these "are of a unique and exceptional nature and their participation is critical to project implementation." ONE is the governing institution of the National Statistics System under the Ministry of Economy, Planning, and Development (MEPYD), and it has legal standing as an institution. The nature of this activity, in addition to ONE's institutional mandate, allows their contracting to be considered (see supporting document). This direct contracting is justified under the second part of paragraph 3.10(d) –of document GN-2350-9, "when only one firm […] has experience of exceptional worth for the assignment." ONE's experience of exceptional value is supported by its institutional mandate to carry out censuses at the national level.

e. **Recurrent costs**. The following expenditures may be financed by the loan, subject to the consideration and approval of the project team leader on the basis of the project's objectives. These expenditures may include: (i) all operational costs required for the project's execution during its lifespan (supplies, logistical costs, and other similar costs provided they are directly associated with the project); (ii) the salaries of support staff for the execution unit's management of the project, who will be hired under the modalities provided for under national legislation. These costs will be identified in the relevant section of the procurement plan.

5.2 **Threshold amounts (US$ thousands).** The thresholds for ICB and the inclusion of international consultants on the shortlist will be made available to the executing

agency on the following Bank webpage: www.iadb.org/procurement. Below these thresholds, the selection method will be determined in the procurement plan approved by the Bank in accordance with the complexity and characteristics of the procurement.

Activity	Type of bidding	Estimated date	Estimated amount (US$)
Construction, renovation and/or adaptations to laboratories	ICB	Q4, year 2	3,712,979
National Agricultural Census	Direct contracting	Q2, year 1	16,039,000
Development of the Integrated Agricultural Health Platform	QCBS	Q2, year 1	1,582,441
Procurement of computer equipment	ICB	Q2, year 1	1,266,130
Procurement of 4x4 pick-up truck-type vehicles and motorcycles	ICB	Q2, year 1	2,095,500
Procurement of vaccines and ear tags for the identification of animals	ICB	Q2, year 1	1,866,000
Procurement of equipment for laboratories	ICB	Q2, year 1	589,587

5.3 **Main procurement items.** The main procurement items anticipated for this operation are outlined in the table above. To access the procurement plan for the first 18 months, see required link 4.

5.4 **Procurement supervision.** Procurement will be subject to ex ante or ex post supervision based on the level of fiduciary risk identified for each specific process. Ex post reviews will be carried out according to the annual supervision plan. Ex post review reports will include at least one physical inspection visit for the procurement processes subject to this review.

5.5 **Records and files.** The executing agency will be responsible for maintaining files and supporting documentation for the procurement processes, all documentation justifying payments made with project resources, and for making payments in accordance with the established procedures.

VI. FINANCIAL MANAGEMENT

6.1 **Programming and budget.** The annual budget is prepared by the Ministry of Finance, through the Budget Office, in coordination with the MEPYD and other government entities. The Ministry of Agriculture will ensure that the budgetary allocation for financing resources is available to carry out the project's planned activities, and it will request the necessary budgetary modifications (transfers) from the Bank when the amounts allocated in the components are insufficient to carry them out.

6.2 **Accounting and information systems.** Cash-basis accounting will be used for the project. To keep accounting records and generate financial reports, the UEPIP will use the UEPEX/SIGEF module, which is the official national system generally used by execution units receiving financial resources from international agencies. This module facilitates the online availability of project resources, budget control,

contracting control, as well as the automatic generation of disbursement requests, and their annexed forms, for submission to the Bank.

6.3 **Disbursements and cash flow.** The resources to be managed by the executing agency through advances of funds will: (i) be deposited in an account designated through the National Treasury, in both dollars and Dominican pesos; (ii) be recorded in the borrower's general account, the Single Treasury Account, in subaccounts recording all movements of incoming funds and payments relating to the Bank-financed operation; and (iii) be consistent with the financial planning previously agreed upon with the Bank. The Ministry of Agriculture's UEPIP will ensure that it has the required budgetary allocations and that these are consistent with the National Budget Act. Similarly, the UEPIP will be responsible for justifying the project's expenditures and their eligibility, as well as channeling no objection requests to the Bank. The project's resources will be used by the borrower and the executing agency exclusively for eligible expenses, and there should be an adequate financial management system and controls for its execution, in accordance with the procedures established in the loan contract and reflected in the program Operating Regulations and the financial plan that will be periodically agreed upon with the Bank. Subsequent advances may be disbursed once 80% of the cumulative balance pending justification has been submitted to and accepted by the Bank.

6.4 **Internal control and internal audit.** The Comptroller General of the Dominican Republic is the agency within the Executive Branch responsible for the design, effectiveness, updating, and monitoring of the National Internal Control System for the Public Sector, which includes the functioning of internal audit units within government institutions. In spite of the efforts made in recent years to issue basic internal control regulations (control environment and activities, risk management, communication, monitoring, and accountability of public entities), their application has been incomplete, which prevents the Comptroller General from carrying out its internal audit role for control processes and continuing to focus only on ex ante reviews. This situation can affect timelines for processing payments and records of the project's contracts and, consequently, execution timelines, so the UEPIP will maintain close communication with the internal audit units.

6.5 **External control and reporting.** The Office of the Auditor General is the highest external body for fiscal control of public resources and the State's administrative processes and assets. However, it has institutional limitations that make it ineligible to conduct the project's external audits; therefore, an independent audit firm acceptable to the Bank will assume this function. External audit reports and the terms of reference will comply with the requirements and guidelines established in the Financial Management Guidelines for IDB-financed Projects (document OP-273-6), the guide for financial reporting and external auditing of Bank-financed operations. The audit costs will be financed with project resources. During the loan disbursement period, and within 120 days following the end of each fiscal year, the consolidated annual audited financial statements will be submitted to the Bank.

6.6 **Financial supervision plan.** As the Ministry of Agriculture already has sufficient experience working with the Bank, the financial supervision, training, support, and monitoring will be similar to those of other operations, including: (i) inspection visits; (ii) ex post reviews; and (iii) contracted external auditors. It is recommended

that the identified fiduciary risks be monitored continuously by the responsible project team, especially during the first year of execution.

6.7 **Execution mechanism.** The operation's executing agency will be the Ministry of Agriculture through the UEPIP. The UEPIP will be responsible for procurement, contracting, and payments at the request of the Ministry of Agriculture. The UEPIP is responsible for the coordination, execution, and achievement of the operation's objectives.

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

PROPOSED RESOLUTION DE-__/19

Dominican Republic. Loan ____/OC-DR to the Dominican Republic
Agricultural Health and Innovation Project

The Board of Executive Directors

RESOLVES:

That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, to enter into such contract or contracts as may be necessary with the Dominican Republic, as Borrower, for the purpose of granting it a financing to cooperate in the execution of the Agricultural Health and Innovation Project. Such financing will be for the amount of up to US$50,000,000 from the resources of the Bank's Ordinary Capital, and will be subject to the Financial Terms and Conditions and the Special Contractual Conditions of the Project Summary of the Loan Proposal.

(Adopted on __ _____ 2019)

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