

TC Document

I. Basic Information for TC

▪ Country/Region:	Guyana
▪ TC Name:	Technical and economic analysis for the preparation of loan GY-L1060
▪ TC Number:	GY-T1126
▪ Team Leader/Members:	Co-Team Leaders: Juan de Dios Mattos (CSD/RND) and Sybille Nueninghoff (CSD /CBL). Team members: Onil Banerjee (CSD/RND); Jamie Cotta (CSD/RND); Derise Williams (CCB/CGY); Paula Louis–Grant (FMP/CGY); Emilie Chapuis (FMP/CGY); Rachel Atkinson (VPS/ESG); Escarlata Baza (LEG/SGO); Maja Schling (SPD/SDV); and Lisa Restrepo (CSD/RND)
▪ Indicate if: Operational Support, Client Support, or Research & Dissemination	Operational Support
▪ Number and name of Operation Supported by the TC:	GY-L1060, Sustainable Agriculture Development Program
▪ Date of TC Abstract authorization:	March 2016
▪ Beneficiary:	Co-operative Republic of Guyana
▪ Executing Agency and contact name	Inter-American Development Bank
▪ Donors providing funding:	Food Security Fund (FOD)
▪ IDB Funding Requested:	US\$200,000
▪ Disbursement period (which includes Execution period):	18 months
▪ Required start date:	May 31, 2016
▪ Types of consultants (firm or individual):	Individual consultants and firms
▪ Prepared by Unit:	CSD/RND
▪ Unit of Disbursement Responsibility:	CSD/RND
▪ TC Included in Country Strategy (y/n):	Yes
▪ TC included in CPD (y/n):	No
▪ GCI-9 Sector Priority:	Yes

II. Description of the Associated Loan

2.1 The Government of Guyana (GoG) requested IDB funding for a loan operation for the agricultural sector. The “Sustainable Agriculture Development Program” (GY-L1060) will focus its activities in Region 9 and Region 10.¹ The main objective of the program is to increase the productivity of the agricultural sector while maintaining a sustainable and climate resilient use of natural resources in Guyana. Impacts will be achieved through a combination of institutional strengthening, research, extension and support to farmers for technology adoption. It is expected that higher productivity will also reduce pressure on forest and fragile ecosystems; and at the same time, increase incomes for small and medium-sized farmers. More than 3,500 farmers, including Amerindian communities, which represent more than 89% of the population of Region 9, will benefit from the program.

2.2 The preliminary design of the loan is based on three components:

¹ See IDBDocs# [40287960](#)

- a) **Component 1: Generating information for evidence – based policy making and natural resource management.** This component will include the review and design of an appropriate Agricultural Information System (AIS), including the preparation and implementation of an Agricultural Census; a Light Detection And Ranging (LIDAR) survey of the North Rupununi (Region 9) and Region 10; strengthening of the Monitoring and Evaluation capabilities of the Ministry of Agriculture (MoA); identification of buffer zones for sensitive wetlands (with potential to designate a RAMSAR² site) in Region 9; and identification of water catchment sites for improved natural resource management and climate change adaptation in Region 9.
- b) **Component 2: Strengthening of the agricultural innovation and extension system.** The program will finance the establishment of agriculture centers, to contribute to local and regional development, including technology transfer, demonstration and training. Two centers have been identified by the MoA: (i) Lethem/Manari (Region 9); and (ii) Ebini (Region 10). In both sites, the program will finance infrastructure (new and upgrades to existing buildings), equipment and technical assistance. Land will be provided by the MoA. Research/demonstration programs, identified through a prioritization exercise, will be implemented in collaboration with national and international centers. These programs will identify specific beneficiary groups, technology packages and monitoring and evaluation mechanisms. Research activities will focus on reducing vulnerability to climate change through multiplication and conservation of genetic material, including drought resistant varieties and protection of traditional knowledge as local adaptation strategy.
- c) **Component 3: Support for compliance with sanitary and phytosanitary standards.** Access to markets and infrastructure will increase the value and sales volume of meat and dairy products. To this end, the program will finance: (i) the review and update of standards and codes related to products destined for export markets, as well as local markets, both current and potential; (ii) the implementation of pilot facilities for meat and dairy processing to evaluate the feasibility and unit costs of complying with standards; and (iii) training and technical assistance for the Guyana Livestock Development Agency (GLDA) and producers associations.

2.3 The program will be financed as an investment loan, for an amount of US\$15 million. It is expected that the implementation period will be six years. The Program has been prioritized by the GoG and supports the Country Strategy (GN-2690). The loan proposal will be submitted to the Board by December 2016.

III. Objectives and Justification of the TC

3.1 The objective of this TC is to support the Co-operative Republic of Guyana (GoG) in the preparation of loan “Sustainable Agricultural Development Program” GY-L1060. The TC will help the GoG in the preparation of feasibility and technical studies required to approve the investment. To achieve this objective, the TC will finance technical studies and field work to collect data.³

² Ramsar was negotiated through the 1960s by countries and non-governmental organizations concerned about the increasing loss and degradation of wetland habitat for migratory waterbirds. It was adopted in the Iranian city of Ramsar in 1971 and came into force in 1975.

³ See IDBDocs# [40210186](#)

- 3.2 Guyana experienced high rates of economic growth between 2009 and 2013 (4.5% annual average), but decelerated in 2014 and 2015, largely due to the fall in the price of commodities (Modeste, 2016). Agriculture represents more than 18% of total output, and 20% of employment (70% in rural areas), and is the main source of foreign exchange earnings, representing 40% of total exports (ECLAC, 2015). Fifty percent of total agriculture production is consumed domestically, mostly produced and consumed by subsistence farmers (FAOSTAT, 2016).
- 3.3 Guyana has more than 400,000 hectares of arable land, out of which approximately 161,874 hectares are irrigated, hosting major crops, including sugarcane and rice (FAO, 2012). Although Guyana harvested a record amount of rice in 2014/15 with a national average yield of 4.99 MT/Ha, even in the export-oriented farms, agricultural productivity is generally low (FAS/USDA, 2016). Sugar and rice yields are lower than Guyana's closest competitors (33.9% rice; and 78.5% for sugar; FAOSTAT, 2016).
- 3.4 Small farmers produce most of the fruits and vegetables grown in Guyana; they produce 80% of grains, 60% of coconuts, and 40% of coconut oil (FAO, 2012). In the absence of research and extension services, current agricultural practices have not changed much throughout the years (Ramrattan, 2015). Small farm productivity is low, compared with other countries with similar farm production systems. Yields of corn, beans, and small scale rice are 40% lower than the average in the Caribbean and 60% lower compared with Guyana's South American neighbors. Livestock production is focused on poultry, with similarly low productivity (FAO, 2012). In the aggregate, as a result of the farming structure and low levels of agricultural services, the sector's Total Factor Productivity (TFP) increased at an annual rate of 1.3% from 1981 to 2012, below the average in LAC (Nin-Pratt, et al., 2015).
- 3.5 Productivity is also affected by changes in weather patterns. The drought of 2014–2015 was one of the longest and most severe of the last two decades (OCC-MP, 2016 and Hickey and Weis, 2012). Water availability is one of the main constraints to agriculture and livestock development in the hinterlands. The coast requires draining, while the hinterlands require irrigation in the dry season and improved water management during the flooding season. Climate change is increasing the need to facilitate adaptation and mitigation measures, both for large and small farmers. Climate and agricultural models forecast significant drops in productivity for rice and tubers in Guyana because of temperature rise (IFPRI, 2009). The intermediate savannahs (Region 10) and the hinterlands savannahs (Region 9) have been traditionally the areas of livestock production. However, since 1980, livestock production has declined markedly. One of the reasons is access to markets and the other, lack of genetic material. Region 9 is also home to the largest Amerindian community in Guyana. Amerindian communities practice subsistence agriculture and traditional livestock rearing. Region 9 has the most vulnerable Neighborhood Democratic Councils (NDC), as measured by a poverty index (GSB, 2012, based on 2002 population census).
- 3.6 One of the reasons for the underperformance of Guyana's agricultural sector is the lack of public services, especially research, innovation and extension services (Trigo, et. al., 2013). The MoA does not have a formal, operational, extension service, although the National Agricultural Research and Extension Institute

(NAREI) and the GLDA share the responsibility. Crop – specific research and innovation services have evolved for the sugar and rice industries, given the predominance of large farms engaging in these activities. However, access to technologies and training for small and medium sized farmers do not exist (SOFA, 2015). At the same time, government authorities and private investors lack enough data upon which to base agricultural policies, strategies and investments decisions. The last agricultural census dates to 1952 and the last household income survey was implemented in 1992/1993. The MoA collects price information through its Monitoring and Evaluation Unit, but there is no data on production or production costs at the farm level. Although Sanitary and Phytosanitary (SPS) protocols were prepared and approved, only 20 products are accepted by the United States Department of Agriculture (USDA). Another big market, Brazil, has not yet accepted meat and dairy exports from Guyana because domestic production does not comply with Brazilian standards.

- 3.7 The preparation of loan GY-L060 requires a review of research and innovation activities currently being implemented in Guyana. Also, transfer of research and innovation results to farming will be analyzed to evaluate the feasibility of increasing their scope or tailor their dissemination to small farmers. Because part of the investment will be focused on livestock, the SPS activities of the MoA and other agencies will be analyzed. Market access greatly depends on the supervision and monitoring of certain diseases and protocols. Technologies used by small farmers will be analyzed to propose alternatives, to increase productivity, and at the same time, reduce their carbon footprint and pressure on forest. A comprehensive economic analysis will be needed, including analysis of expected productivity and income changes in the target population. To facilitate the implementation process, an institutional and financial analysis of the MoA and its respective units will be carried out, which will be complemented with the preparation of manuals, guidelines, plans and other implementation tools.
- 3.8 This TC will contribute to the GCI9 targets and the CRF (GN-2727-6) in: (i) social inclusion and equality; and (ii) productivity and innovation. This TC will also contribute to two cross cutting themes, as described in the Update of the Institutional Strategy (2016–2019): (i) climate change and environmental sustainability; and (ii) gender equality and diversity. This TC is aligned with the Country Strategy (GN-2690) through the priority area “Natural resources management” and cross-cutting issues related to indigenous population in Guyana. This TC is also aligned with the Food Security Strategic Framework Document (OP-2017), contributing to two sources of food security: (i) access; and (ii) availability; and the Agriculture and Natural Resources Sector Framework Document (OP-2001).
- 3.9 The processing and approval of this TC will be done separately from the loan GY-L1060, since studies and feasibility analyses required to process the loan proposal by the Bank and to obtain the necessary clearances from the GoG must begin as soon as possible. The current calendar agreed with VPC and the GoG, which takes into account that the loan will be partially funded with FSO resources.

IV. Description of activities/components and budget

4.1 Component 1: Technical and feasibility studies

- a) An analysis of the agricultural research and innovation system of Region 9 and Region 10 in Guyana. This study will provide details of the institutional arrangements and relative strength of Guyana's research and innovation in the agricultural sector. The study will focus on improving the capacity of NAREI and GLDA through infrastructure and equipment (research centers) and human resources. A proposal for strengthening research, innovation and extension will be prepared with the MoA. These studies will help the MoA in the preparation of activities for the implementation of the two research centers.
- b) A review of the SPS capability of Guyana, with a focus on agricultural products. The study will help the GoG in the identification of activities to increase market access. This study will focus in providing technical assistance and identify technology solutions for a range of agricultural products. The study will also contribute to the design of training and technical assistance for farmers and processors. Pilot facilities to implement SPS standards will be analyzed and preliminary designs will be agreed with the MoA and producers associations.
- c) An evaluation of needs related to repairs, updating, and installation of new infrastructure for improving agricultural production will be carried out as part of the activities under this TC. This evaluation will include an analysis of buildings and other rural infrastructure required for the implementation of the agricultural centers. The study will review preliminary designs prepared by the MoA; hydrology and proposals for water catchment infrastructure, and other public investment. This evaluation will use existing data in terms of topography and soil/geology. This evaluation will help identify potential problems that may arise during Project implementation, such as those associated with land/property to be developed; and unit costs.
- d) An analysis and design for the economic impact evaluation study. Based, partially on the datasets collected through the productivity analysis study, an economic analysis, for the whole Project and its specific components will be prepared. This economic analysis will use expected changes in productivity and market access to evaluate the Net Present Value of the investment. At the same time, baseline values, for a selected number of indicators will be calculated.
- e) Review and design of an Agricultural Information System for Guyana. This study will support current efforts by the MoA and FAO to design and prepare a platform for the collection and analysis of agricultural data. This includes the preparation of preliminary studies for an Agricultural Census; data needs for policy making; and training for census implementation.
- f) Productivity analysis and data collection at the farm level. This study will complement studies available in Guyana, National Bureau of Statistics (NBS) and MoA datasets. Detailed datasets to evaluate productivity, socioeconomic variables, carbon sequestration and use of natural resources will be prepared. The data will be collected based on a random sample of the target population in Regions 9 and 10. The analysis will provide insights on yields, use of natural resources, available assets and expected marginal changes resulting from the implementation of new technologies in agriculture.

4.2 Component 2: Fiduciary and environmental safeguards analysis

- a) A review of the financial and fiduciary strengths and weaknesses of the MoA. This study will use the SECI (Evaluation of the Institutional and Fiduciary Capabilities) methodology developed by the Bank to assess the relative strengths and weaknesses of implementing agencies. This review will result in recommendations for the design in terms of strengthening the capacity of the MoA to implement the Project. During the implementation of this study, risks will be evaluated and identified. Mitigation measures to reduce these risks will be included in the design. Also, this study will help the GoG in the preparation of a consolidated budget for the Project, a draft procurement plan, a draft Project Execution Plan (PEP) and a draft Project Operations Manual.
- b) An Environmental and Social Safeguards analysis. Based on IDB's environment, gender, diversity and other policies, these studies will help the GoG to evaluate the likely impacts on the environment and vulnerable groups in the country. These studies will help the GoG to comply with national environmental legislation and regulations, as well with IDB's policies. Specific activities, identified by this study will be included in the design of the Project.

Indicative Results Matrix⁴

	Indicator	Baseline	Year	Target	Year
Results					
Loan proposal designed and approved by IDB Board		0	2016	1	2016
Products					
Component 1: Technical and feasibility studies					
Proposal for strengthening the research and innovation capabilities of Guyana based on the objectives of the Project (crops and livestock) delivered	Report	0	2016	2	2016
Proposal to strengthen the Sanitary and Phytosanitary (SPS) systems of Guyana, related to cattle and small farms being supported by the Project delivered	Report	0	2016	1	2016
Design of the Agriculture Census, and recommendations for an agricultural information system delivered	Report	0	2016	1	2016
Survey report with detailed analysis of current productivity at the farm level, income and demand for agricultural public services delivered	Report	0	2016	1	2016
Analysis of proposed infrastructure, hydrology and review of water catchment sites delivered	Report	0	2016	1	2016
Component 2: Fiduciary and environmental safeguards analysis					
Financial and fiduciary analyses delivered	Report	0	2016	2	2016
Report of safeguards and opportunities for inclusion delivered	Report	0	2016	3	2016

- 4.3 The total cost of this TC is US\$200,000, to be disbursed from the Food Security Fund (FOD). No local counterpart is included.

⁴ Cost per product, means of verification and targets can be found in the [Detailed Results Matrix](#).

Indicative Budget (US\$)

Activity / Component	Description	IDB Fund / Funding	Total Funding (US\$)
Crops (Research, innovation and extension)	Individual consultant	15,000	15,000
Processing facilities and compliance with SPS	Individual consultant	15,000	15,000
Data analysis and document preparation	Individual consultant	14,000	14,000
Productivity analysis (survey)	Household survey	91,200	91,200
Agricultural information system (includes census for agricultural and NR)	Individual consultant	15,000	15,000
Infrastructure (hydrology, buildings, water catchment)	Individual consultant	12,000	12,000
Diversity and inclusion	Individual consultant	12,000	12,000
Environmental and social safeguards	Individual consultant	10,800	10,800
Financial and institutional analysis	Individual consultant	15,000	15,000
Total		200,000	200,000

V. Executing agency and execution structure

- 4.4 In order to support the MoA in the process of designing the proposed operation GY-L1060, the Bank through the Natural Resources and Rural Development Division (CSD/RND) will be the executing agency of the TC. The Bank will contract individual consultants and consulting firms in accordance with Bank's current procurement policies and procedures (GN-2350-9). The GoG requested the Bank to implement the TC because of the necessary technical, operational or institutional capacity to duly and timely implement the activities of the TC. The MoA does not have the capacity to contract or identify the studies required to approve GY-L1060 on time. During execution of this TC the Bank team will share with GoG/MoA the terms of reference of the studies to be carried out, consultants experience and findings, and intermediate and final reports produced in the different studies. No operations manual will be needed for project implementation.
- 4.5 CSD/RND will assume the execution responsibilities of the proposed TC and monitor and evaluate the proposed outputs of the TC included in the indicative results matrix. Required documentation will be kept in RND archives.
- 4.6 The MoA has designated a team that will work with the Bank and consultants during the implementation of this TC.
- 4.7 With respect to the contracting of consulting services for the productivity analysis (household survey), Single Sourcing of the Conservation International (CI) is recommended to undertake this survey which involves the design of the sample framework; field survey; data cleaning; and preparation of a report. CI is qualified and considered an institution with exceptional worth for the assignment in accordance with 3.10(d) of the Bank's policies for selection and contracting of consultants GN-2350-9. CI is an international NGO with a long history in Guyana with the technical and financial capacity to undertake this assignment. CI has implemented similar surveys in Region 9 (for example, SOFA 2015) and has

access and contacts with Amerindian communities. These are crucial for the successful implementation of the survey. Additionally, CI has several years of experience in undertaking similar assignments and its reputation will give the assurance to all stakeholders that the survey was fairly and accurately executed.

V. Major issues

- 5.1 No risks are expected in the execution of this TC. The GoG is giving high priority to the operation that is supported by the TC. Therefore active participation of technical counterparts is expected in order to complement the work carried out by consultants and the Bank team to complete the design in a timely manner.

VI. Exceptions to Bank policy

- 6.1 There are no exceptions to Banks policies.

VII. Environmental and Social Strategy

- 7.1 This TC is classified as “**B**”, as indicated by the Banks safeguards policies. Studies prepared by this TC will facilitate integration of climate change adaptation and reduction of pressure on fragile ecosystems.

Required Annexes:

- [Request from the client](#)
- [Terms of Reference for activities/components to be procured](#)
- [Procurement Plan](#)

TECHNICAL AND ECONOMIC ANALYSIS FOR THE PREPARATION OF LOAN GY-L1060

GY-T1126

CERTIFICATION

I hereby certify that this operation was approved for financing under the **IDB Food Security Fund (FOD)** through a communication dated **May 20, 2016** and signed by Kai Hertz. Also, I certify that resources from said fund are available for up to **US\$200,000** in order to finance the activities described and budgeted in this document. This certification reserves resource for the referenced project for a period of six (6) calendar months counted from the date of eligibility from the funding source. If the project is not approved by the IDB within that period, the reserve of resources will be cancelled, except in the case a new certification is granted. The commitment and disbursement of these resources shall be made only by the Bank in US dollars. The same currency shall be used to stipulate the remuneration and payments to consultants, except in the case of local consultants working in their own borrowing member country who shall have their remuneration defined and paid in the currency of such country. No resources of the Fund shall be made available to cover amounts greater than the amount certified herein above for the implementation of this operation. Amounts greater than the certified amount may arise from commitments on contracts denominated in a currency other than the Fund currency, resulting in currency exchange rate differences, i.e. represent a risk that will not be absorbed by the Fund.