PUBLIC
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DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

SURINAME

SUSTAINABLE AGRICULTURAL PRODUCTIVITY PROGRAM

(SU-L1052)

LOAN PROPOSAL

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2. Monitoring and Evaluation (M&E) Arrangements
3. Environmental and Social Management Report (ESMR)
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1. Technical Annex - Component I
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ABBREVIATIONS	
ABS	General Bureau of Statistics
AIS	Agricultural Information System
AOP	Annual Operations Plan
CC	Climate Change and Environmental Sustainability
CCA	Climate Change Adaptation
CRF	Corporate Results Framework
CS	Country Strategy
DAS	Division of Agricultural Statistics
DIDCWG	District Irritation and Drainage Coordination Working Group
ERP	Enterprise Resource Planning
ESA	Environmental and Social Analysis
ESMR	Environmental and Social Management Report
ESS	Environmental and Social Strategy
EU	European Union
FAO	Food and Agriculture Organization
FFF	Flexible Financing Facility
GDP	Gross Domestic Product
GHG	Greenhouse Gas Emissions
GoS	Government of Suriname
GS	Global Strategy for Improving Agricultural and Rural Statistics
I&D	Irrigation and Drainage
I&D Vision	Vision for Sustainable Development of I&D Sector
ICAS	Institutional Capacity Assessment System
IDB	Inter-American Development Bank
IFMIS	Integrated Financial Management and Information System
IMIDCG	Inter-Ministerial Irrigation and Drainage Coordination Working Group
IRRI	International Rice Research Institute
LVV	Ministry of Agriculture, Animal Husbandry and Fisheries
MCP	Multipurpose Corantjin Project
MPW	Ministry of Public Works
MRD	Ministry of Regional Development
NDC	Nationally Determined Contribution
O&M	Operation and Maintenance
OC	Ordinary Capital
OWMCP	Overlying Water Board of the Multipurpose Corantijn Project
PBP	Programmatic Policy Based Loans
PDP	Policy Development Plan
PEP	Project Execution Plan
PEU	Program Execution Unit
PMR	Project Monitoring Report
POD	Proposal for Operation Development
POM	Program Operations Manual

ABBREVIATIONS	
PP	Procurement Plan
PR	Progress Reports
SMAP	Suriname Market Access Project
SPF	Safeguard Policy Filter
SSF	Safeguard Screening Form
TSC	Technical Steering Committee
UIS	Update to the Institutional Strategy
UNSC	Statistical Commission of the United Nations
WB	Water Board

PROJECT SUMMARY
SURINAME
SUSTAINABLE AGRICULTURAL PRODUCTIVITY PROGRAM
(SU-L1052)

<table>
<tr><th colspan="5">Financial Terms and Conditions</th></tr>
<tr><td colspan="3" rowspan="2">Borrower: Republic of Suriname</td><td colspan="2">Flexible Financing Facility[a]</td></tr>
<tr><td>Amortization Period:</td><td>24 Years</td></tr>
<tr><td colspan="3" rowspan="2">Executing Agency: Ministry of Agriculture, Animal Husbandry and Fisheries (LVV)</td><td>Disbursement Period:</td><td>6 Years</td></tr>
<tr><td>Grace Period:</td><td>6.5 Years [b]</td></tr>
<tr><td>Source</td><td>Amount (US$)</td><td>%</td><td>Interest rate:</td><td>LIBOR Based</td></tr>
<tr><td rowspan="2">IDB (Ordinary Capital): [d]</td><td rowspan="2">30,000,000</td><td rowspan="2">100</td><td>Credit Fee:</td><td>[c]</td></tr>
<tr><td>Inspection and supervision fee:</td><td>[c]</td></tr>
<tr><td rowspan="2">Total:</td><td rowspan="2">30,000,000</td><td rowspan="2">100</td><td>Weighted Average Life (WAL):</td><td>15.25 years</td></tr>
<tr><td>Currency of Approval:</td><td>Dollars of the United States of America</td></tr>
<tr><th colspan="5">Project at a Glance</th></tr>
<tr><td colspan="5">Project Objective/Description: The project's objective is to increase agricultural productivity in Suriname through investments in infrastructure and management of Irrigation and Drainage (I&D) systems and by improving the quality and availability of agriculture statistics.</td></tr>
<tr><td colspan="5">Special contractual conditions prior to the first disbursement of the financing: (i) the approval of the Program Operations Manual (POM) to the satisfaction of the Bank; and (ii) the establishment of the Program Execution Unit (PEU), with at least the following key personnel appointed: Program Manager, Financial Officer, and Procurement Officer, all in terms agreed with the Bank and in accordance with the specifications set forth in the POM (¶3.6). See other special contractual conditions in Annex III.

Special contractual conditions of execution: (a) Component I. Before the resources of the loan may be used to finance any specific Water Board (WB) infrastructure rehabilitation activities contemplated under Component I (1.32(c) and (d)), evidence shall be presented to the Bank that the specific WB has met the following requirements: (i) the By-Laws (Keur) of the WB have been duly approved and published; and (ii) an agreement has been signed between the relevant WB and LVV indicating the parties' financial responsibilities and arrangements for the operation and maintenance of the WB infrastructure, to the satisfaction of the Bank (¶3.4); and (b) Component II. Before the resources of the loan may be used to finance the implementation of the census, the following requirements shall be fulfilled, to the satisfaction of the Bank: (i) enactment of the 2020 Agricultural Census Law; and (ii) an agreement has been signed between the LVV and the General Bureau of Statistics (ABS), coordinating their responsibilities regarding the census (¶3.5). See other special contractual conditions of execution in Annex B of the Environmental and Social Management Report (ESMR).</td></tr>
<tr><td colspan="5">Exceptions to Bank Policies: None.</td></tr>
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<tr><td colspan="2">Challenges[e]:</td><td>SI ☐</td><td>PI ☑</td><td>EI ☐</td></tr>
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</table>

[a] Under the Flexible Financing Facility (FN-655-1), the borrower has the option to request modifications to the amortization schedule as well as currency and interest rate conversions. In considering such requests, the Bank will take into account operational and risk management considerations.

[b] Under the flexible repayment options of the Flexible Financing Facility (FFF), changes in the grace period are possible as long the Original Weighted Average Life (WAL) and the last payment date, as documented in the loan agreement, are not exceeded.

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

[d] Pursuant to Document AB-2990, the disbursement of Bank financing will be subject to the following maximum limits: (i) up to 15% during the first 12 months; (ii) up to 30% during the first 24 months; and (iii) up to 50% during the first 36 months. All these periods will be counted from the time the loan operation is approved by the Board of Executive Directors (¶2.2).

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

[f] 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 Justification

1.1 The agricultural sector plays an important role in Suriname's economy, accounting in 2017 for 5% of total export earnings (second to mining), 9% of total Gross Domestic Product (GDP) in 2016 (General Bureau of Statistics, 2016), and 8% of the labor force. Suriname has 64,000 ha of arable land and permanent crops, of which 57,000 ha is land equipped for irrigation. Irrigated areas are located in the coastal plains, mainly in the Districts of Nickerie, Coronie, Saramacca and Commewijne. Most agricultural producers in the country are small and medium-size (with 20 ha or less). According to the latest agricultural census (2009), 98% of the 10,230 holdings fell in this category. Suriname's main crops are rice, banana, oranges, plantains and fresh vegetables. In 2017, its food exports totaled US$100 million (rice accounted for 30.5%, bananas 20.7% and fish products 39.2%), while imports were US$203 million.

1.2 Despite its economic importance, the agricultural sector in Suriname has a weak performance. From 1991-2002, agricultural GDP declined by 37%. Growth resumed from 2003-2015, although at rates below overall GDP growth (Suriname Central Bank, 2014; General Bureau of Statistics, 2017). Between 1980-2012, Suriname's agriculture's total factor productivity grew at an annual rate close to zero, lagging behind most of the region (Nin-Pratt et al., 2015). The sector is therefore losing participation in the GDP due to several factors—institutional, public policy, infrastructural, technological—that affect not only its productivity but also its competitiveness.

1.3 With the Bank's support, in 2013 the Government of Suriname (GoS) embarked on a process of policy and institutional reforms to improve the agricultural sector as a whole. The Bank's support was conceived as a strategic, long-term work that would begin with a series of three individual Programmatic Policy Based Loans (PBP) and later would be followed by specific investment operations. The PBP series focused on five main areas identified as obstacles to increase agricultural productivity: (i) agricultural information and statistics; (ii) animal and plant health and food safety; (iii) agricultural innovation system; (iv) fisheries; and (v) Irrigation and Drainage (I&D). The execution of the first operation of the PBP series (Modernization of Agricultural Public Services I – SU-L1033, 3126/OC-SU) was completed in 2014. In addition, significant progress was made during the preparation of the second operation of the PBP series (SU-L1032) and the efforts towards the reforms in those five areas have continued.

1.4 In this regard, the Bank's support to Suriname's agricultural sector is being complemented with specific investment operations in the areas covered by the PBP. The first of these investment operations (Agricultural Competitiveness Program - SU-L1020; 4097/OC-SU), approved in 2017, focuses on animal and plant health and food safety, as well as agricultural innovation. In turn, the project proposed in this document (SU-L1052) will focus on I&D and agricultural information and statistics.

1.5 **I&D and information and statistics have an important effect on Suriname's agricultural productivity.** Most agricultural production in Suriname is irrigated (approximately 89% of all arable land); however, despite this advantage, productivity is comparatively low. Paddy rice, which accounts for more than 50% of all agricultural GDP and is the country's main staple food, is mostly produced in the Nickerie irrigated areas and has an average yield of 5.01 t/ha, while average potential yields with available technologies is 6 t/ha (SNRI/ADRON).

1.6 Several factors are associated with the low yields, including insufficient or untimely access to technical assistance and inputs such as improved seeds/fertilizers, as well as, an unavailability of working capital, the presence of pests, inadequate irrigation and drainage and, in the case of rice, unlevel land.[1] These factors are related to Suriname's relatively small and isolated markets for agricultural inputs and equipment, to producers' financial constraints, as well as to lack of maintenance and investment in public infrastructure. The latter is the main factor accounting for deficiencies in the I&D system, which are important because the lack of water flow control results in insufficient or untimely irrigation in the dry season, loss-causing floods in the rainy season, and inadequate field drainage. Besides affecting productivity, this has a negative impact on water use efficiency. Agricultural information and statistics also play an important, if indirect, role on the sector's productivity, as their paucity and limited reliability constrain the government's capacity to diagnose the sector's problems as well as to design and implement policies to solve them, including in irrigated agriculture.

1.7 **Work done through the PBP in I&D and agricultural information and statistics.** The diagnosis developed during the design of the PBP - which remains valid save for the progress made through that operation - identified that agricultural productivity in Suriname is closely related to the efficient management of the I&D systems. To improve the performance of the agricultural I&D system, various coordination failures within government structures responsible for agricultural I&D, as well as among water users need to be resolved: (i) lack of inter-institutional coordination, both in operating the systems, and planning and executing investments; (ii) lack of technical and managerial capacity in Water Boards (WBs) (water users associations – [¶1.17b]); (iii) lack of coordination in managing the irrigation and drainage operations; and (iv) lack of commitment from Water Board (WB) representatives and farmers to assume responsibility in WB operations. Additionally, the diagnosis showed that I&D infrastructure required rehabilitation and, in some cases, completion. These investment needs were beyond the scope of the PBP and were earmarked for future investment operations (as the one presented here). Table 1 summarizes the reforms achieved in I&D that were fostered by the PBP.

1.8 With regards to agricultural information and statistics, the diagnosis of the PBP identified the need to improve the availability of statistical information and, for that purpose, three areas that required reinforcement: (i) data collection methods and processes; (ii) improved analytical skills; and (iii) timely dissemination of information. Table 1 also presents the PBP's results in the area of agricultural information and statistics.

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[1] See, for instance, Elmont (2005), FAO/WB (2005), and Poerschke (2005). The available information is insufficient to quantify the negative effect of each factor on yields.

Table 1: Reforms achieved in the agricultural PBP series by components

Irrigation and Drainage Component	Statistics and Information Components
Creation of an Inter-Ministerial Irrigation and Drainage Coordination Working Group (IMIDCG)*	2008-2009 agricultural census published in 2013 (which had not been published until then)
Vision for Sustainable Development of I&D Sector (I&D Vision)	Estimates of support to the agricultural sector were prepared and published
Coordination Working Groups established for the Nickerie and Coronie I&D Districts	Agricultural data collection plan prepared
Manual of Operations for the I&D Districts Coordination Working Groups	
Draft rehabilitation plans for four WB Operations and maintenance plans for six WB	

* IMWGID is integrated by the Permanent Secretaries of LVV, Ministry of Public Works, Ministry of Regional Development, and Ministry of Finance.

1.9 **Remaining challenges.** While the reforms achieved with the support of the PBP series have contributed to establish an improved policy and institutional setting, challenges remain to achieve effective I&D and information and statistics systems. In I&D, these challenges are: (i) the poor condition of I&D infrastructure, affecting its technical efficiency; (ii) the institutional arrangements and capacity for future Operation and Maintenance (O&M) of such infrastructure; and (iii) the sustainable management of the water resource. Regarding agricultural information and statistics, the main challenges are: (i) paucity of agricultural statistics; (ii) absence of agricultural information drawn with statistical methods; (iii) low institutional capacity; and (iv) low interinstitutional coordination. These challenges facing I&D and agricultural information and statistics are discussed in the following two sections below.

1. Irrigation

1.10 Irrigated agriculture is heavily concentrated in the district of Nickerie, with more than 80% (47,000 ha) of the country's 57,000 ha of irrigated land. Most of that land is dedicated to growing rice, making Nickerie the rice production center of Suriname (approximately 98% of the production). A sizeable fraction of that production (almost 50%) comes from holdings with 12 ha or less. The agricultural area also includes pastures for cattle breeding and a banana plantation (550 ha). Producers in this area share a common primary I&D infrastructure. Producers are grouped in polders (an area of land used for agricultural production, separated by dykes, canals, and other structures), each of which has its own secondary I&D infrastructure—mainly dug-out canals, gates, sluices, culverts, and access roads. Each individual plot may have private, tertiary infrastructure (e.g., ditches, in the case of rice). The physical condition of the entire irrigation system is precarious and negatively affects productivity and water use efficiency. In addition, the I&D system lacks adequate operation and maintenance.

1.11 Although there are several polders in Nickerie, only 12 are made up of small holders on the left bank of the Nickerie river, and another on the right bank (see map). The GoS is looking to have each small-holder polder governed by a WB but their formalization is still in process. The farmers of the polders started organizing themselves into WBs in the 1930s but were abandoned after

independence, in 1975, situation associated to the broad changes in the political and social context experienced at that time. More recently, in 2005, a new Water Board State Law was approved providing for the O&M of the polder irrigation systems by the WBs. The new law also requires the formalization of the WBs, though to date only one is fully formalized.

1.12 There are currently 13 WB in Nickerie: 12 correspond to the small-holder polders on the left bank of the Nickerie river and the other is the Overliggend Waterschap Multi-purpose Corantijn Project, which includes the 12 WBs and other adjacent areas.[2] These 12 WBs comprise an area of almost 15,200 ha and 2,172 farms. In addition, the area on the left bank includes other "autonomous" polders with medium and large rice producers. These producers get their water from the main I&D system, in some cases through unauthorized canals that cut through the dam separating the irrigated area from the Nanni swamp.

1.13 Given the important problems this area faces, its high concentration of agricultural activity—in contrast with a scattered pattern in the rest of the country—, this project's work on irrigation and drainage will concentrate on the left bank of the Nickerie river. This area faces the following challenges in terms of I&D.

a. I&D infrastructure and technical efficiency

1.14 The main infrastructure currently in use was built in 1981 as part of the Multipurpose Corantjin Project (MCP). In the rainy season, the water level in the Nanni swamp (adjacent to the south of the irrigated area; see map) rises and the water flows by gravity into the irrigation canals. Excess water from the swamp is spilled to the Corantijn river through three spillways on the west side of the swamp. These spillways have a reduced capacity due to insufficient maintenance. In addition, a spillway to the east of the swamp (the "Maratakka spillway") and its canal leading to the Maratakka-Nickerie river was never completed which increases flooding risk in rainy season. In 2017, the water level exceeded its critical level for 60 days and flooded almost 500 ha of rice.

1.15 In the dry season, the water level at the Nanni swamp is lower than the irrigation canals. Water from the Corantijn and Nickerie rivers cannot be used due to the salinity caused by sea-water intrusion, hence water is pumped 60 km upstream from the Corantijn river (at the Wakay pumping station) through the Corantijn canal. At the end of the canal, because a containment structure (the "Nanni weir") was never built, the pumped water flows first into the Nanni swamp until the water level rises sufficiently to flow by gravity into the irrigated area. This results in an inefficient and costly supply of irrigation water (European Commission, 2009).

1.16 Several studies have indicated that deferred maintenance has led to poor conditions of existing I&D infrastructure (mostly canals and culverts blocked by sedimentation and vegetation, as well as broken gates and sluices),[3] resulting in increased costs and production losses (Poerschke, 2005; European Commission, 2009, Garrido, et al., 2013). In fact, O&M during the last decades has been

[2] The OWMCP is a public entity under the Ministry of Regional Development and, unlike all other WBs, it is not run by producers. For that reason, the rest of the document will make reference to 12 Water Boards in Nickerie.

[3] The technical annex for the I&D component lists the main deficiencies found in existing structures.

insufficient, causing the deterioration of existing structures and sedimentation in the canals, and thus resulting in reduced system capacity to operate adequately, conduct water for irrigation and to drain excess water in the rainy season. It also results in considerable water losses when flow-regulating structures are no longer operating. These deficiencies result from insufficient investment which, in turn, is the result of limited public funds, lack of institutional capacity and coordination, and the absence of private producers' contribution to the O&M of the infrastructure.

b. Institutional setting

1.17 The institutional setting for irrigation in Nickerie is characterized by:

a. **Division of responsibilities.** The responsibilities over the O&M of public I&D systems are presently divided between the LVV (responsible for the maintenance of the primary infrastructure in the relatively new polders in Nickerie), the Ministry of Public Works (MPW) (in charge of the construction and maintenance of the primary roads, I&D canals, sluices and other infrastructural works) and the Ministry of Regional Development (MRD) (responsible for the construction and maintenance of the secondary roads, I&D canals and other infrastructural works). The Overlying Water Board of the Multipurpose Corantijn Project (OWMCP), established by the MRD in 2007, is currently responsible for the O&M of the Wakay pumping station and in the process of receiving from LVV responsibility for the O&M of all main canals and intake works in the I&D system of Nickerie.[4] In addition, the GoS is seeking to have WBs contribute to the O&M of the secondary I&D infrastructure—a goal to which this project will contribute. Although an IMIDCG and a District Irrigation and Drainage Coordination Working Group (DIDCWG) were formed with the support of the PBP (SU-L1033; 3126/OC-SU) to facilitate coordination at the district and national level among the various governmental entities involved,[5] an in-depth analysis highlights the need to provide them with: support in the preparation of a nation-wide and district-level I&D plans; promotion of integrated water resource management; preparing annual programs with well-defined objectives and targets; defining monitoring and evaluation systems; and reviewing the work of specific working groups (e.g. for the establishment of a water calendar).

b. **Unsustainable coverage of O&M costs.** Experience shows the key role that irrigation governance and water users participation in the system's decisions have in their success. In particular, systems where user associations are responsible for water management are more efficient at resolving collective action problems, providing better maintenance of systems by empowering associations in relation to the governance of their own resources (Vermillion, 2005; Bandyopadhyay, Shyamsundar and Xie, 2010). A key constraint to improved I&D management lies in users not participating in managing the systems and covering O&M costs (Garrido et. al., 2013). In 2009, a Master Plan for I&D Infrastructure in Nickerie produced by the European Union found

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4 OWMCP was established by state decree in May 2007, covering the irrigated area of the 12 existing WB in Nickerie, as well as private owners. The latter are inside the I&D system but outside the areas of the WB polders.

5 WBs do not participate in the DIDCWG; however, the OWMCP does.

a lack of authority and order in the polders.[6] Although progress has been achieved since then, it is still necessary to get WBs to operate according to pre-established regulations and get producers to contribute to the O&M of their secondary I&D infrastructure. In Suriname, O&M costs of primary and secondary I&D infrastructure (outside farmers' plots) have traditionally been covered entirely by the GoS, causing a significant and unsustainable fiscal burden (during the 2009-2013 period, maintenance costs averaged US$5.4 million/year).

c. **Limited capacities in WB.** WBs still lack adequate technical and legal capacity as well as financial and material means to take over the O&M responsibilities over the secondary infrastructure, as established by the WB Law of 2005, and are not effectively fulfilling their expected role in I&D management. Particularly, their internal regulations (especially their bylaws) are not yet fully approved, limiting the legal basis for them to perform control activities and collect fees. And since WBs cannot collect fees, they also lack the human and financial resources to perform their duties regarding O&M (members of the WB Committees do not have management training, and WBs have no funds and no dedicated space to operate). This lack of capacity needs to be addressed for the new system to be in place, and so farmers can have direct participation and managerial responsibilities. The transition towards a situation in which WB fulfil their role in O&M is proposed to be gradual to allow WBs to improve their capacity and start collecting fees, while receiving technical support from the GoS in that process.

c. Sustainable water resource management

1.18 The management of the water resources of the Nickerie I&D system is complex, with three main water sources: (i) the Nanni swamp; (ii) the pumped water of the Corantijn river; and (iii) the Nickerie river. Even though water from these sources is relatively abundant, during extended dry conditions, pumping water from upstream Corantijn river into the system becomes necessary typically from November to February. To ensure the optimal and sustainable development and management of the ecological sensitive water resource base, it has become essential to better understand the I&D system. Currently, lack of understanding of available water resources impedes the development of adequate management tools to operate and exploit the full potential of the I&D systems in varying drought and excessive rainfall and climate change scenarios. Critical gaps of hydro-climate information and data for proper water resources monitoring exist due to the lack of hydrometric and weather stations. A better understanding of the hydrology will allow an assessment of the potential for a more efficient and sustainable use of available water resources.[7] Moreover, it will allow for the management of a more efficient irrigation supply, the evacuation of excessive floodwaters as well as the monitoring and management of salt intrusions through the Nickerie river. Finally, the I&D Vision acknowledges that sustainable I&D implies an integrated approach to water and that other uses, besides agriculture, have a direct interest in good water use management. Despite initial efforts with a recent EU funded project,

6 European Union, 2009, p. 30.

7 This will also require proper management tools and models to distribute water according to crop needs and various drought, extreme rainfall and climate scenarios and the existence of measurement tools.

which promoted a multi-stakeholder water platform, there is a lack of an adequate institutional structure for integrated water resources management as well as limited technical capacity at the local level.

1.19 Considering the lack of adequate information on the resource, a water balance model, based on the Hydro-BID model, is currently under development as part of the support to the GoS in the context of the proposed operation. This model will provide the basis for a decision support tool to improve the management and planning of water resources in Nickerie. For this purpose, this model will: (i) assess the baseline situation of water supply and demand in the project area; (ii) identify the main current challenges for sustainable water use and management for irrigation purposes; and (iii) build different scenarios based on key variables related to climate change impacts and water management. The model will also help to identify the critical data gaps for water resources management and hence provide specific recommendations for the location and technical characteristics of new equipment for hydro-met monitoring. This monitoring will include both water quantity and quality for the main sources of water used by the system, which will also improve the monitoring of the hydro-ecological equilibrium of the Nanni Swamp as a critical water source for the system.

1.20 The use of water resources for irrigation in Nickerie needs to be made more sustainable. Specifically, there is a need to: (i) increase water use efficiency by improving the irrigation scheduling and their enforcement; (ii) control salinity in some of the irrigated areas (caused by sea water intrusion); and (iii) promote water saving technologies such as land levelling (International Rice Research Institute (IRRI), 2017; ADRON, 2008). The IRRI has shown that land leveling can increase yields, reduce weeding time and overall labor inputs, and increased reliability of direct seeding. Poorly levelled fields result in an increase in pests and diseases and poor germination as well as in increased use of water. Notwithstanding its benefits, land leveling is costly which may be a barrier to adopting this practice (Ritzema and Naipal, 2013; and EU, 2009). In addition, producers would need to receive training to fully realize the benefits of land leveling—for instance in terms of lesser input use.

d. Gender issues in irrigated agriculture

1.21 A gender analysis focused on women's roles and opportunities for advancement in agriculture in Suriname showed women's roles changed dramatically in the case of rice farming in Nickerie since mechanization became widespread decades ago. Mechanization made rice growing less labor intensive and eventually displaced women's labor. Men who could afford to be the sole provider of the family had the image of a successful head of household. Additionally, key resources for rice farming are all controlled by men and no women participate in the WBs. However, in the last decades, roles changed and by improved access to education, some women reinvented their role in rice farming, becoming more involved as administrators of the rice farm, hence accumulating knowledge that can be better used by women to have a larger role in contributing to the development of agricultural based communities if the opportunities are in place. There is ample room for improvement towards a more equitable participation.[8]

[8] See OEL-5.

2. Agricultural statistics and information

1.22 As Gardner, 2004 highlights, agricultural statistics and information play a critical role and have large economic benefits. In the case of Suriname, improving agricultural statistics and information systems is essential to increase the quality and availability of information on the different parts of the agricultural sector, including irrigated agriculture. The latest agricultural census in Suriname was conducted in 2009. Since then, substantial structural changes may have occurred in the sector resulting in outdated data. Additionally, the sample frame necessary to draw probabilistic samples and collect statistically representative data may no longer be valid. The Food and Agriculture Organization (FAO) (2015) highlights the importance of having periodic up-to-date information on the agriculture sector, which can be collected using probabilistic-sample surveys conducted regularly (at least once per year).

1.23 Conscious of this importance and observing a gradual worsening of the quantity and quality of agricultural and rural statistics at the global level, in 2010 the Statistical Commission of the United Nations (UNSC), the WB and FAO developed a Global Strategy for Improving Agricultural and Rural Statistics (GS).

1.24 The implementation of the GS in any given country includes an initial assessment of the country's institutional environment, resources, and methods to generate agricultural and rural statistics as well as the actual availability of data. As part of the preparation of the proposed operation, a GS country assessment was conducted in Suriname in early 2018. Its main findings are: (i) inconsistent coordination between the different statistical offices (LVV's Division of Agricultural Statistics -DAS- with ABS, LVV's Department of Livestock, and LVV's Department of Fisheries); (ii) the absence of an agricultural statistical system based on probabilistic sample surveys; (iii) limited financial resources for an Agricultural Information System (AIS); (iv) insufficient professional and technical staff in headquarters and in the field; (v) no regular training in statistics for staff; (vi) insufficient transportation equipment to carry out field work; and (vii) outdated statistical frames. In addition, decision makers in Suriname currently rely on the data provided by field officials and there is no regular assessment of quality or adequate supervision, providing ample room for improvement. Also, data about women participation in agriculture is particularly scarce, limiting the possibility of adequately tapping into women potential to contribute to the sector's development.

1.25 Aware of these weaknesses, the GoS' Policy Development Plan (PDP) 2017-2021 reflects on the need to upgrade AIS for improved decision making. The Agriculture PBP series (¶1.3-¶1.9) supported the drafting of some of the methodologies, plans and manuals for data collection as well as initial staff training. However, to fully implement these measures, amongst other investments, the GoS needs to update its information base. Considering the importance of irrigated agriculture for the country and for the GoS's objective of increased economic diversification, the census will provide important information to improve public policy and to help in the identification and support of future investments in Suriname's irrigated agriculture.

1.26 **Climate Change**. This operation contributes to Climate Change Adaptation (CCA) and mitigation. Suriname's vulnerability to climate change impacts makes the

challenges to agricultural production and water management previously identified more relevant. For instance, climate change-related events, such as changes in precipitation patterns, have been linked to lower productivity in the sector. In addition, main vulnerable sub-sectors include rice production which is also one of the main sources of Greenhouse Gas Emissions (GHG) in the agricultural sector (Office of the President of the Republic of Suriname, 2016). Moreover, the Second National Communication indicates that the absence of appropriate I&D is one of the main threats to agricultural production; and an important adaptation measure involves increasing the efficiency in irrigation through improvements in infrastructure and capacity building. Lastly, increasing water use efficiency is also an important mitigation action as irrigation is a highly carbon intensive activity (Lal, 2004). Regarding the second component, as highlighted by the Climate Change Sector Framework (IDB, 2015), the design and implementation of climate change adaptation and mitigation actions requires sector-specific information.

1.27 **Lessons Learned.** From the experiences and results obtained in the implementation of a wide range of projects in I&D and agricultural statistics, the following set of relevant lessons have helped shape the project design.

Table 2. Lessons learned and their application in the current project

Lessons Learned	Reflection in Current Project
Irrigation and Drainage	
Success in irrigation projects require the active participation of beneficiaries throughout the whole project cycle and in the management of such systems. Participation through irrigation associations results in more efficient use of water.	WB rehabilitation plans were prepared in cooperation with WB members. Beneficiaries, organized in WB, will have a key role in managing the I&D infrastructure.
Transferring responsibilities to water user associations and achieving full cost-recovery is a challenging process that requires to consider a variety of aspects beyond the infrastructure.	The project includes a set of activities in support of the transfer: improving I&D infrastructure to be transferred; capacity strengthening for WB and government institutions; technical support; equipment; training; and incentives.
Support and training to water users during the construction/repair phase of infrastructure and beyond is key to the success of irrigation projects.	Training activities focused on key aspects of the management of WB and the I&D infrastructure will be provided by the program.
Adequate management for sustainable I&D systems require good information and knowledge about the water resource and its uses.	The program will finance hydrometric and weather stations, as well as key studies and modeling for the water resource in the project area.

Lessons Learned	Reflection in Current Project
Agricultural Information and Statistics	
Lack of coordination is an important source of inefficiencies (duplications, waste of resources and dispersion of efforts) in the functioning of AIS.	A census steering committee will be implemented as part of the program.
Lack of strategic vision and medium/long term planning jeopardize the efforts for reaching a real system.	The program will implement a five-year plan.
Staff trained in statistical methods and analysis are paramount in the establishment of the AIS.	A training plan is an important part of the institutional strengthening activities in the program.
Quality assessment, analysis and dissemination of data are key parts of a census implementation process.	The program includes a post enumeration survey for quality assessment, as well as financing for data analysis and dissemination.

1.28 **Consistency with National Sector Priorities**. The recently approved PDP 2017-2021 states that agriculture policy will be aimed at transferring responsibility in the production cycle to the stakeholders. It also highlights proper I&D and investment measures for information in agriculture as priorities, as well as the need to adequately control the impacts of CC. The project also supports the Action Plan of the country's I&D Vision. Additionally, Suriname's Nationally Determined Contribution (NDC) indicates that adaptation in agriculture is prominent in its approach to CC. Also, the National Agricultural Strategy (2016-2020) prioritizes the provision of public services, including information, to support sector growth.

1.29 **Donor coordination.** The EU and FAO are financing the Suriname Market Access Project (SMAP), which supports the market side of the value chain, being complementary to the IDB projects, focused on the production side (as stated in SMAPS's project document). Also, the Islamic Development Bank will finance I&D on the right bank of the Nickerie river (the IDB project area is the left bank).

1.30 **Bank's strategy and alignment.** The program is consistent with the Update to the Institutional Strategy - UIS (AB-3008) and is expected to contribute to the Corporate Results Framework 2016-2019 - CRF (GN-2727-6) through: the development challenge of Productivity and Innovation, by increasing agricultural productivity of farmers. It also aligns to the cross-cutting issues of: (i) Climate Change and Environmental Sustainability, by promoting good agricultural practices and technologies; as well as improved water management, to facilitate CCA; and (ii) Gender Equality and Diversity, by promoting women participation in agricultural decision-making. The operation is consistent with the Bank's Strategy with Suriname 2016-2020 - EBP (GN-2873), for its contribution to the strategic objective "Increase Agricultural Productivity" by improving conditions for irrigated agriculture; as well as to its cross-cutting themes of: (i) resilience to CC, by improving the efficiency in the use of water for agriculture; and (ii) governance, by promoting evidence-based policymaking through improved agricultural statistics. In addition, the project is included in the Operational Program Report 2018 (GN-2915). It is also consistent with the Sector Framework Document of Agriculture and Natural Resources (GN-2709-5) in the dimension of success

focused on the achievement of high levels of productivity and management of climate impacts, as well as the Sector Framework Document of Climate Change (GN-2835-3) in the dimension of success oriented towards the inclusion of climate change considerations in the sectors. According to the joint MDB approach on climate finance tracking, an estimated 84% of total IDB funding for this program is invested in climate change adaptation and mitigation activities simultaneously.[9] This contributes to the IDBG's climate finance goal of 30% of combined IDB and IDB Invest operational approvals by year's end 2020.

B. Objective, Components and Cost

1.31 The project's objective is to increase agricultural productivity in Suriname through investments in infrastructure and management of I&D systems and by improving the quality and availability of agriculture statistics. The project will directly benefit 2,200 small and medium farmers belonging to WBs as well as the rest of farmers and agricultural activity in Nickerie. The project will be organized in two components.

1.32 **Component I. Irrigation and Drainage (US$26.52 million).** This component aims to improve the operation and management of I&D systems in Suriname, particularly in Nickerie District, by addressing current failings in infrastructure and transferring key management and maintenance responsibilities to farmers organized in WBs. This component is expected to contribute to increasing productivity among producers of irrigated areas and at the same time improve water management and use within I&D areas while reducing government expenditure by having secondary irrigation systems whose maintenance transfers gradually to WB. The project will finance:

a. **I&D infrastructure.** In order to improve the management of water in the Nickerie irrigation system two new structures were identified. These structures, that will be located in parts of the existing canals network, are the Nanni Weir and related structures, as well as the Maratakka Spillway (¶1.14 and ¶1.15). These structures will contribute to reducing water loss from the I&D system into the Nanni swamp in the dry season and provide additional means to evacuate excess water in the wet season (and reduce the risk of flooding).

b. **Rehabilitation of main infrastructure.** The project will finance the rehabilitation of 15 structures that were identified as most critical affecting efficient water use in the irrigation system. These structures include the repair of gates, drain sluices and inlet gates, spillways and distribution structures, as well enlargement of the drainage capacity of canals (¶1.16).

c. **Rehabilitation of secondary systems operated by Water Boards and its O&M.** As part of the project's support to the effective establishment of WB, the project will finance the rehabilitation of selected infrastructure in eligible WBs (see ¶3.4) and partially fund its O&M costs in the years following rehabilitation

[9] See OEL-6.

(to allow for farmers to be able to incrementally contribute to cover costs while the benefits of the investments are materialized in time).[10]

d. **Incentive mechanism and capacity building**. The government's objective is to transfer responsibility of the O&M maintenance to the WB, for which members of the WB will be required to pay an annual fee (¶1.17b). The contribution will be determined by the costs identified in the WB's annual O&M plans. To incentivize producers to pay their contribution, the project will include a mechanism by which O&M costs initially will be financed entirely by the project, diminishing gradually over three years so that producers are paying 100% of the O&M costs by the fourth year. During this period, the infrastructure, management, and services provided to farmers will be improved. Moreover, the Water Controllers, to be hired as part of the institutional strengthening activities, will work directly to assist WBs in the preparation and enforcement of the O&M plans and in general management issues related to the functioning of the WBs (advice in engagement with government authorities, impose fines for contraventions to the By-Laws, maintain and update the list of WB members, training of WB's in the technical and administrative procedures for O&M in the I&D system, etc.). Finally, the project will finance offices and equipment for WBs and training activities (including activities especially oriented to women in WBs).

e. **Promotion of sustainable practices in I&D**. To promote a more sustainable and cost-efficient production, two key aspects of support to farmers have been identified: land leveling (¶1.20) and input management. The project will offer to farmers belonging to WBs and are up to date with the payment of their O&M fees an incentive equal to 85% of the cost of leveling.[11] Besides promoting the sustainable practice of land leveling, the subsidy will be an incentive mechanism to further encourage producers to pay their WB O&M fees. In addition, the project will finance pesticide and fertilizer management training for farmers (¶2.5). Since producers are not used to working on level fields, the training is necessary to ensure that they adapt to the new conditions and make an efficient use of inputs.

f. **Institutional strengthening for I&D and water resource management.** The project will work to enhance the capacity of government institutions in charge of irrigation, water distribution and resource administration (LVV and OWMCP) by including measures to improve the sustainable management of water resources for its different uses (irrigation, environmental and human), particularly taking into account CC impacts (i.e., in regard to water supply and demand) and considering adaptation measures. This will be done by financing the preparation of a national, as well as, district action plans in I&D management; strengthening of the IMICWG; the assignment of Water Controllers and their assistants as well as providing them with training and support to properly advise and assist the WBs; a network of hydrometric stations and data processing; establishment of a water resources monitoring

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10 Rehabilitation: cleaning, sediment removal and reshaping by mechanical means of canals, embankments and dams; and the upgrade of roads inside the polders.

11 A capacity-to-pay analysis has been conducted (included in the Economic Analysis), which determined that producers would be able to pay for 15% of the cost of land leveling.

system to assess the available water resources for management of water for irrigation and to monitor and access the requirements for drainage and outflow of water and flood control; the proposal of irrigation scheduling for Nickerie WBs; design and implementation of a sustainable and Integrated Water Resource Management Plan, including a pesticide survey and water/sediment quality study (¶2.6). In addition, a study on the environmental characterization of the Nanni swamp will be undertaken.

g. **A gender action plan** to be financed by the project will include, in relation to I&D, the following activities: gender awareness training, gender sensitive communications, capacity building and training especially targeting women, and promotion of women participation in WB (¶1.21).

1.33 **Component II. Agricultural Statistics and Information (US$1.67 million).** The objective of this component is to improve Suriname's AIS by improving the quality and availability of data, and by strengthening LVV's DAS operational and analytical capabilities. It is expected that this component will increase the relevance, and therefore the use, of agricultural statistics in public policy and private investment decisions, as well as by the academia, and hence help to provide improved services for the entire agricultural sector. This component will finance the following:

a. **Agricultural census.** The project will finance the costs to conduct the census, technical assistance to LVV, analysis of the data and dissemination of results. The new agricultural census will be a cornerstone for the development of the country's AIS (¶1.24-¶1.25). The census methodology will follow FAO 2020 Census Programme, which includes as one of its themes: *Intrahousehold distribution of managerial decisions and ownership on holding*, with which key gender aspects of the management of the farm are included in the questionnaire. Technical assistance for the census will include gender-sensitive methodologies for data collection and a gender study will be included among the analysis of its results (¶1.24).

b. **Probabilistic-sample agricultural production surveys.** Taking the updated sample frame provided by the census as a basis, the project will finance two nationally representative agricultural production surveys containing essential variables (¶1.24). These surveys will be collected in parallel with the data currently being collected by the country - subjective information reported by field staff which, although lacking statistical validity, offers a quick view at a higher level of disaggregation. This data collection plan combines the benefits of Suriname's current system (promptness and disaggregation) with the benefits of objective data with computable sampling errors, that can be used to validate the former. This advantage, plus the fact that the program will finance the survey in two consecutive years, will contribute to the institutionalization of the probabilistic-sample surveys and of the AIS as a whole.

c. **Institutional strengthening.** In order to address weaknesses identified in the GS's country assessment, the project will finance training in statistics to refresh and enhance key technical staff's analytical capacities. It will also provide office and transportation equipment that are essential for the DAS to carry out its core activities in headquarters and in the field (¶1.24).

1.34 **Project administration, evaluation and audit (US$1.81 million).** The project will finance the Program Execution Unit (PEU), the monitoring and evaluation activities and the external audit of the project.

C. Key Results Indicators

1.35 The project will contribute to increase productivity of the agricultural sector in general and particularly of the farmers on the left bank of the Nickerie river. Impact indicators include rice productivity per ha and small farmer's net income. The main expected results for Component I are: WBs formalized and contributing to O&M of I&D system in Nickerie, reduced pumped water to feed the I&D system, reduced flooding risks and participation of women in WB. For Component II: improved evidence-based policy making and increased information availability.

1.36 **Economic viability.** The economic analysis assesses the project considering total project costs for both components, but only the benefits expected for Component I, given the difficulty to measure the effects of Component II. The financial benefits from Component I come from the increment in yields, cost reductions, and avoided losses due to flooding in cultivated area. The economic benefits of the project also consider the equivalent economic value of water saved and savings in O&M of the I&D system operated by the government, valuated using economic prices. The economic benefit is estimated in US$3.6 million, with an internal rate of return of 15.8%. The uncertainty analysis results indicate that the project will create financial and economic benefits even if the project faces contingencies that reduce expected yields of paddy rice, delays in benefit generation or if there is an increase in investment costs. These results might be considered conservative, since they do not include expected benefits that were not considered in the estimations: benefit generated by more efficient public policies thanks to improved information; the multiplier effect over paddy rice value chain and related sectors in the economy (transport, services); the environmental benefit due to reduction of fertilizer and pesticide use, meaning a decrease in equivalent carbon emissions per hectare and per ton of paddy rice; and the effect of reducing the risk of floods in residential areas due to the improvement of I&D infrastructure. The financial analysis shows that the incremental net income per year is high enough to allow producers to pay O&M fees to WBs.[12]

II. Financing Structure and Main Risks

A. Financing Instruments

2.1 The project is a specific investment operation with a total cost estimated at US$30 million to be financed with resources from the Bank's Ordinary Capital (OC) under the Flexible Financing Facility (FFF) and is designed to be disbursed in six years. Table 3 provides the cost summary by investment categories and components and Table 4 provides the disbursement schedule.

[12] Currently the expected rates to be charged to farmers are between SRD 100-150/ha (US$1 = SRD 7.5, August 2018).

Table 3. Cost Summary (US$ million)

Description	IDB	%
Component I. Irrigation and Drainage	**26.52**	**88.4**
a. I&D infrastructure	6.95	
b. Rehabilitation - main infrastructure	6.53	
c. Rehabilitation - WB infrastructure	10.67	
d. Incentive mechanism and capacity building	0.74	
e. Sustainable practices	0.27	
f. Strengthening in I&D and water resource management	1.32	
g. Gender action plan	0.04	
Component II. Agricultural Statistics and Information	**1.67**	**5.6**
a. Agricultural census	1.05	
b. Probabilistic surveys	0.04	
c. Institutional strengthening	0.58	
Project administration, evaluation and audit	**1.81**	**6.0**
Total	**30.0**	**100.0**

Table 4. Disbursement Schedule (US$ million)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total
Total	1.5	7.5	6	7.5	6	1.5	30
%	5	25	20	25	20	5	100

2.2 Pursuant to Document AB-2990, the disbursement of Bank financing will be subject to the following maximum limits: (i) up to 15% during the first 12 months; (ii) up to 30% during the first 24 months; and (iii) up to 50% during the first 36 months. All these periods will be counted from the time the loan operation is approved by the Board of Executive Directors. These limits may be rendered inapplicable to the extent that the requirements set forth in the Bank's policy regarding said limitations have been fulfilled, provided that the Borrower has been notified of the same in writing.

B. Environmental and Social Safeguard Risks

2.3 Given the nature of the activities and investments, it is anticipated that the environmental and social impacts and risks are likely to be mostly local and short term, for which effective mitigation measures are readily available. Therefore, a Category "B" classification has been assigned to the project in accordance with the Bank's Environment and Safeguards Compliance Policy (OP-703). An Environmental and Social Analysis (ESA) was prepared and disclosed on the Bank's website and the Executing Agency's social media page. An inclusive consultation event was held in April 2018, presenting the programs environmental and social impacts, receiving community comments, and providing responses. The Consultation Summary has been published on the Bank's website, and a summary of main issues has been included in the ESMR.

2.4 According to the ESA and the Bank's due diligence, the project will be largely positive in terms of its contribution to improving the efficiency of water resource use, as well as improving the production of rice due to improved irrigation and drainage systems. In the case of the Nanni Swamp, which is a critical natural habitat, the proposed infrastructure to be financed by the project is expected to return it to its historical natural setting. However, due to the lack of available data, these positive impacts cannot be confirmed, or conversely whether there may be negative impacts associated with these hydrological changes to the ecological functioning of the Swamp (i.e. impacts on critical species or ecosystem services).

2.5 Additionally, the ESA indicates that there may be: (i) indirect, long-term negative impacts related to water quality if increased pesticide use is observed, the scale of which is not well understood due to a lack of data; (ii) temporary construction impacts minimal to moderate in scale; (iii) gender exclusion risks; and (iv) potential misunderstandings or social discontent if water management decisions are not communicated clearly among the stakeholders and actors involved. Additionally, the executing agency lacks overall capacity with respect to environmental, social, health and safety management and mitigation.

2.6 To mitigate against these impacts, and the lack of data, the following studies and mitigation measures will be implemented: (i) preparation of an ecological assessment of the Nanni Swamp; (ii) project specific ESA for the Maratakka Spillway and Nanni Weir, or other new construction subsequently identified for financing under Component I; (iii) a pesticide survey and water/sediment quality study; (iv) a stakeholder engagement and communication plan for the project; (v) a grievance redress mechanism for the program; and (vi) a gender action plan.

2.7 Additionally, the risk analysis performed with stakeholders identified medium risks related to the change towards a new model of sharing responsibilities and costs for O&M: a potential low participation of farmers and even the dissemination of incorrect information about the process that could create resistance to it; and a lack of capacity and means to perform the tasks of the WBs. In order to mitigate those risks the project will include a significant capacity building set of activities and a communication plan, as well as provide with the means and technical assistance to perform the newly transferred responsibilities; as well as incentives for participating and contributing to WBs.

C. Fiduciary Risk

2.8 An institutional evaluation of LVV was conducted by the Bank. The fiduciary risk, as described in Annex III, has been ranked as overall medium for both financial management and procurement. With respect to financial management the main risks identified relate to: (i) noncompliance with internal control norms and procedures; (ii) lack of accounting and reporting requirements; and (iii) delays in processing of transactions. Mitigation measures include: (i) clear norms and procedures established, responsibilities clearly assigned to fiduciary officers, and IDB support and supervision; (ii) an accounting system implemented; and (iii) payment processes and control enhanced. With respect to procurement, the main risks are: (i) lack of internal norms, procedures and fragmentation of procurement activities; and (ii) limited scope and experience of procurement personnel. Additional risks and their mitigation measures can be found in Annex

III. Measures to mitigate these risks are: (i) procurement specialist and clear processes in place for the program; and (ii) IDB-provided support and ex-ante review of procurement processes during first 12 months.

D. Other Key Issues and Risks

2.9 Other risks (medium level) identified are related to the execution agency: (i) lack of qualified human resources for project execution; (ii) changes in key LVV officials; and (iii) loss of trained LVV personnel. Main mitigation measures include: financing technical personnel and consultants for LVV; preparation of briefing books to ensure hand over of key information; training LVV personnel in project management. Also, the risk of lack of capacity of beneficiaries will be mitigated with the training and strengthening activities included in the program. Finally, the risk associated with the requirement of enacting a Census Law in order to be able to proceed with the Census, will be mitigated by timely providing parliament with required information.

2.10 **Sustainability.** By establishing a new public-private cost-sharing system for I&D O&M, the GoS is signaling its commitment to the sustainability of I&D infrastructure and facing the challenges ahead. Additionally, the agreements to be signed between LVV and WBs (¶3.4) will establish responsibilities regarding the sustainability of proposed investments. Nonetheless, GoS role will continue to be important.

III. IMPLEMENTATION AND MANAGEMENT PLAN

A. Summary of Implementation Arrangements

3.1 The borrower will be the Republic of Suriname. The Ministry of Agriculture, Animal Husbandry and Fisheries (LVV) will implement the project and establish a Project Executing Unit (PEU) which will be responsible for general and technical coordination; planning, monitoring and evaluation; financial management; procurement administration; environmental, health and safety management; and communications activities of the project. The PEU will be financed by the project and will be composed of a Project Coordinator; two Technical Coordinators, one for each component, with the Technical Coordinator for Component I based in Nickerie; one Financial Management Specialist; one Procurement Specialist; one Planning, Monitoring and Evaluation Specialist; one Environmental Health and Safety; one Public Communications/Stakeholder Engagement Consultant and one Administrative Assistant. The proposed execution arrangements have considered LVV's recent positive experience in executing the "Agricultural Competitiveness Program" (SU-L1020;4097/OC-SU).

3.2 The Office of the Permanent Secretary will provide the necessary institutional platform for effective institutional streamlining of project execution, decision-making support, delegation of authority and responsibilities, and facilitating the support and coordination of/with other institutions of the GoS. The PEU will coordinate its activities with LVV's Planning and Development Department, the Agriculture Department, the Administrative Services Department, the Division of Agricultural Statistics, and others. The PEU will also coordinate with

other stakeholder institutions participating in the Program including the MPW, the Ministry of Regional Development, OWMCP, and individual WBs under Component I of the project; and the ABS of Suriname, among others, for the execution of Component II.

3.3 Component I will start in the first year by strengthening WB and I&D institutions in Nickerie to prepare them for the transfer of O&M responsibilities and to improve management in I&D and, at the same time, conduct environmental studies and prepare the tender documents for the new structures, rehabilitation of the main system and the WB secondary system. Execution of the works will last between three and four years, period during which continuous support will be provided to WB and institutions. Main I&D infrastructure works will begin with the construction of the new structures (Nanni weir and Maratakka spillway), and the rehabilitation of the existing infrastructure. The secondary I&D infrastructure rehabilitation will take place between years 2, 3 and 4, working on two polders at a time, per year. This staggered approach is intended to facilitate procurement and meet the project's disbursement restrictions. Main activities for improved water management will start in the second year, including the installation of hydrometric equipment. In Component II, initial efforts will be oriented towards the preparation and fieldwork of the census, followed by a processing of its results. The data collected will serve to establish a new sample framework from which probabilistic samples will be drawn to collect agricultural production surveys.

3.4 **Conditions for execution of Component I (WBs eligibility).** In order to ensure the adequate institutional arrangements for execution and sustainability are in place, WBs will be eligible to receive financing for infrastructure rehabilitation (1.32(c) and (d)) if they meet the following criteria: (i) the By-Laws (Keur) of the relevant WB have been duly approved and published; and (ii) an agreement has been signed between the relevant WB and LVV indicating the parties' financial responsibilities and arrangements for the operation and maintenance of the WB infrastructure, to the satisfaction of the Bank, including the financial support offered from LVV to the WB (rehabilitation of infrastructure and co-financing of O&M costs), the responsibilities of the WB for the O&M of WB infrastructure and for the collection of fees from its members[13]. The By-Laws (Condition (i)) will provide that the relevant WB will charge O&M fees to its members. Other conditions for execution will be included in the POM, including the signature of an agreement between the relevant WB and the District Commissioner for the management of a WB bank account.

3.5 **Conditions for execution of Component II (Census implementation).** Prior to the implementation of the census the following will be necessary: (i) enactment of the 2020 Agricultural Census Law, which is needed to assign institutional responsibilities for the implementation of the census and establish the need to create a TSC for the census; and (ii) the signature of an agreement between the LVV and the ABS, coordinating their responsibilities regarding the census and by which ABS agrees to provide needed technical advice in the preparation and execution of the census. The POM will include other requirements for execution, such as the establishment of the TSC for the census through signature of an

[13] Draft by-laws have been prepared and are in the process of approval. Regarding the agreements, the Bank will provide support in preparing the drafts.

interinstitutional agreement among all the institutions that should participate in the TSC.

3.6 **Special Contractual Conditions prior to first disbursement of the financing: (i) the approval of the POM to the satisfaction of the Bank; and (ii) the establishment of the PEU, with at least the following key personnel appointed: Program Manager, Financial Officer, and Procurement Officer, all in terms agreed with the Bank and in accordance with the specifications set forth in the POM.** The POM will provide the details on the project governance mechanism and structure of the PEU and will include, among others, administrative, procurement, financial management policies, procedures, internal control requirements and the Environmental and Social Management Plan (ESMP). POM approval is an important requirement for project implementation since it provides PEU staff with standard operating procedures within the PEU and between the PEU and LVV and MOF. Condition (ii) will be key to start initial project implementation activities (hiring the other PEU personnel, setting up the financial management system) and to manage the funds for proper project execution once they are disbursed.

3.7 **Procurement.** Procurement for the proposed program will be carried out in accordance with the Policies for the Procurement of Works and Goods Financed by the Inter-American Development Bank (GN-2349-9) of March 2011, and the Policies for the Selection and Contracting of Consultants Financed by the Inter-American Development Bank (GN-2350-9) of March 2011.

3.8 **Auditing.** The external audit of the project will be performed by an independent audit firm acceptable to the IDB. Audits will be performed in accordance with IDB's Guidelines for Financial Reports and External Audit. The PEU will be responsible for contracting of an external auditor eligible to the IDB to perform the program audit as follows: (i) an annual financial audit to be submitted within 120 days of the end of each fiscal year; (ii) semi-annual financial statements as part of the semiannual progress report of the program; and (iii) one final financial audit of the program to be submitted within 120 days after the date of last disbursement.

B. Summary of Arrangements for Monitoring Results

3.9 **Planning on monitoring**. LVV will prepare a detailed Annual Operations Plan (POA) 60 days prior to the beginning of each calendar year. The POA for the following calendar year shall include: (i) a forecast of disbursements; (ii) an updated PP and PEP; (iii) detail achievements in relation to planned activities, outputs and outcomes, among others; (iv) an environmental and social compliance report; (v) budget analysis, disbursement and financial plan; and (vi) output indicators and costs. The semi-annual PRs including the PEP will be presented within 60 days after each semester of the calendar year during the disbursement period and will focus on fulfillment of output indicators and progress towards achieving outcomes in the Results Framework, analyze problems encountered and propose corrective measures. Within 60 days of the last disbursement date, LVV will prepare a final report, summarizing all the PR prepared during the program's life and organize a closing workshop to present and discuss the Bank's Project Completion Report. The POA and Progress Reports (PR) will be prepared following a template consistent with the Bank's Project Monitoring Report (PMR).

3.10 **Evaluation**. LVV will submit to the Bank: (i) a mid-term, independent evaluation report no later than 36 months after the date of signature of the loan agreement; and (ii) a final independent evaluation report, within 90 days after the date on which 90% of the loan proceeds have been disbursed or after the Bank's official request.

3.11 **Impact evaluation.** The objective of the impact evaluation will be to measure the farm-level effects in productivity generated by investments in I&D systems. The empirical strategy is based on the difference-in-differences method and will use the fact that will each year during years 2, 3, and 4 of the execution of the project two polders will have their secondary infrastructure rehabilitated. This timing will be used to generate a valid control group: farms in the first two WB polders to benefit from the rehabilitation will constitute the treatment group and farms in the last two WB polders will constitute the control group.

C. Significant Design Activities Post Approval

3.12 During project design, the preliminary designs of the new structures to be financed by the project, the Nanni Weir (plus the regulating structure at the end of the Stondasi Canal), and the Maratakka Spillway were prepared. For the rehabilitation activities, preliminary plans with required works and quantities were also estimated, more precise measurements and specifications will be required.

Development Effectiveness Matrix		
Summary	SU-L1052	
I. Corporate and Country Priorities		
1. IDB Development Objectives	Yes	
Development Challenges & Cross-cutting Themes	-Productivity and Innovation -Gender Equality and Diversity -Climate Change and Environmental Sustainability	
Country Development Results Indicators	-Beneficiaries of improved management and sustainable use of natural capital (#)*	
2. Country Development Objectives	Yes	
Country Strategy Results Matrix	GN 2873	Increase agricutural productivity
Country Program Results Matrix	GN-2915	The intervention is included in the 2018 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	6.5	
3.1 Program Diagnosis	1.8	
3.2 Proposed Interventions or Solutions	1.7	
3.3 Results Matrix Quality	3.0	
4. Ex ante Economic Analysis	10.0	
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	1.0	
4.4 Sensitivity Analysis	2.0	
4.5 Consistency with results matrix	1.0	
5. Monitoring and Evaluation	9.3	
5.1 Monitoring Mechanisms	2.5	
5.2 Evaluation Plan	6.8	
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		
Environmental & social risk classification	B	
IV. IDB´s Role - Additionality		
The project relies on the use of country systems		
Fiduciary (VPC/FMP Criteria)		
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		

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

The objective of the program is to increase agricultural productivity in Suriname through investments in infrastructure and management of Irrigation and Drainage (I&D) systems and by improving the quality and availability of agriculture statistics. To achieve this objective, the program will implement two components: I) Irrigation and Drainage; and II) Agricultural Statistics and Information.

The documentation provides a good summary of the main problems faced by the sector, which affect the sector's productivity; however, due to lack of data, little information is given to understand the magnitude of some of these problems. The diagnosis, does, however, provide a solid description of the main deficiencies of irrigated agriculture, which is mostly focused on rice production. The diagnosis highlights the low state of I&D systems: systems in need of rehabilitation, lack of coordination in operation and maintenance, and the implications this has on productivity. The diagnosis highlights the importance of improving the quality of agricultural data to inform policy decision-making.

The proposed solution is in line with the main problems identified in the diagnosis. The results matrix (RM) reflects the objective of the program and captures a good vertical logic. The two impact indicators—improvements in rice yields and farm profit—are used in the ex-ante economic analysis. The lower-level indicators reflect the design of the two components. The RM includes SMART indicators at the levels of impacts, outcomes and outputs with their respective baseline values and targets and the means to gather information.

The economic analysis (EA) is based on a Cost-Benefit Analysis. The main economic costs and benefits are adequately identified and quantified. The EA analysis reports an Internal Rate of Return (IRR) of 15.8% and a Net Present Value (NPV) of US$3.6 million. A sensitivity analysis is done using variables that can affect the main costs and benefits: for the pessimistic scenario, the NPV is – US$3.8 million, with an IRR of 8.8%, while in the optimistic scenario, the NPV is US$15.1 million, with an IRR of 28.8%. These results can be interpreted as "conservative" given that the EA considers the project costs of both components, but only the benefits for Component I since it is difficult to quantify benefits from the implementation of an agricultural census.

The monitoring and evaluation plan is well designed. An impact evaluation (IE) is proposed based on a quasi-experimental design to measure the effect of the rehabilitation of the secondary I&D infrastructure on rice productivity and farmer profit. This is complemented with a reflexive evaluation for the rest of the outcome indicators in the RM. No rigorous IEs have been done for this type of intervention in Suriname; however, it should be noted that the IE runs the risk of not finding reliable results since the intervention is quite complex with multiple treatments at different levels for all farmers in the area, which makes it difficult to find suitable control units, and since the sample size does not seem to be appropriate based on the results of the power analysis.

The fifteen risks identified in the risk matrix seem reasonable; these include mitigating actions and compliance indicators.

RESULTS MATRIX

Project Objective:	Increase agricultural productivity in Suriname through investments in infrastructure and management of Irrigation and Drainage (I&D) systems and by improving the quality and availability of agriculture statistics.

EXPECTED IMPACTS

Indicator	Unit of Measure	Baseline		Target		Verification means	Comments
		Value	Year	Value	Year		
Rice productivity per ha	Tn/ha	5.01	2017	5.61	2024	LVV reports	
Small farmers' profits from rice production	$/ha	1325	2018	2570	2024	Program-financed survey	Baseline to be reviewed in year 1

EXPECTED OUTCOMES

Expected Outcome	Outcome Indicator	Unit of measure	Baseline		Intermediate		Target		Means of verification	Comments
			Value	Year	Value	Year	Value	Year		
Component I: Irrigation and Drainage										
Costs of operating I&D infrastructure are reduced	Government expenditure in pumping water at Wakay station during dry season	SRD million	3.90	2018			3.12	2024	Costs of fuel and oil at the Wakay pump station. OWMCP records	
Flooding risk reduced	Number of days (annual) in which swamp water level is above critical level	Days	60	2017			0	2020	OWMCP reports	
Water Boards formalized	Number of Water Boards with approved bylaws	Number	0	2018			12	2022	LVV reports	WB with internal regulation in place and WB committee operating

Expected Outcome	Outcome Indicator	Unit of measure	Baseline		Intermediate		Target		Means of verification	Comments
			Value	Year	Value	Year	Value	Year		
WB contribute to payment of O&M costs	Percentage of O&M cost covered by WB members	Percentage	0	2018			60	2024	LVV reports	O&M costs will be determined in O&M annual plans for each WB. That will happen during execution
Improved use of natural capital (water)	Number of farmers beneficiaries of improved management of natural capital	Number	0	2018			2500	2024	LVV reports	
Participation of women in WB increased	% Women members of WB committees	Percentage	0	2018			20	2024	LVV reports	
Improved efficiency of I&D system	Number of seasons (annual) in which irrigation calendar is followed	Number	0	2018			2	2024	LVV reports	
Component II: Agricultural Statistics and Information										
Evidence-based policy making improved	Average CAQ score on the capacity to generate statistics for policy making	Score value	32.5 ((5+30+23+72)/4)	2016			60 ((40+60+60+80)/4)	2024	Country assessment questionnaire (CAQ)	Baseline/target values for each dimension involved in the score: 1. Instit'l env: 5/40 2. Resources: 30/60 3. Methods & P: 23/60 4. Availability: 72/80
Information availability increased	Number of publication of census report	Number	0	2018			1	2023	LVV report	Report including results tables
Gender-specific information availability increased	Index of FAO-recommended gender questions	Number	0	2018			1	2023	LVV report	Index measures fraction of FAO-recommended (World Programme for the Census of Agriculture 2020) gender-disaggregated questions (5) that are included in the agricultural census.

OUTPUTS

Output	Unit of measure	Baseline Value	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	EOP	Means of verification
Component I. Irrigation and Drainage										
1.1. Primary I&D infrastructure rehabilitated	Number of structures (included in MOP)	0		3	4	6	2		15	LVV reports
1.2. New I&D infrastructure built	Number of structures	0			2				2	LVV reports
1.3. I&D action plans formulated	Number of action plans	0		1	1	1	1		4	LVV reports (one national, three district plans)
1.4. Water Board infrastructure rehabilitated	Number of Water Boards	0		2	2	2			6	LVV reports
1.5. Water Boards equipped and trained	Number of water boards that received equipment and training	0				12			12	LVV reports
1.6. Annual communication campaigns implemented	Annual campaigns	0	1	1	1	1	1		5	LVV reports
1.7. Cost of O&M plans for WB co-financed	Number of WB	0			12				12	LVV reports
1.8. Incentives for land leveling provided	Number of farmer receiving incentives	0					200	100	300	LVV reports
1.9. Annual I&D management and coordination program implemented	Annual program implemented	0	1	1	1	1	1		5	Annual programs approved by DIDCWG
1.10. Irrigation calendarization proposal formulated and presented to users	Number of calendarization proposals	0				3	9		12	LVV reports. Three pilots and then the rest
1.11. Hydrometric training for OWMCP	Training sessions	0			3	3	3	3	12	LVV reports
1.12. OWMCP's hydrological flow measurement and model developed	Model developed and delivered to OWMCP	0			1				1	LVV reports

Output	Unit of measure	Baseline Value	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	EOP	Means of verification
1.13. Hydrological and weather network installed	% of equipment delivered and installed (as specified in PP)	0			20	30	30	20	100	LVV reports. 10 hydrometric and 15 telemetric weather stations, 10 telemetric water level recorders
1.14. Operational Decision Support System developed and delivered	System	0						1	1	LVV reports
1.15. Water users trained on sustainable use of water and inputs	Number of water users trained	0			200	200	200	100	700	LVV reports
	Number of women trained	0			20	20	20	20	80	
1.16. Sustainable and integrated Water Resource Management Program developed	Number of program design reports	0					1		1	LVV reports
1.17. Ecological assessment of the Nanni Swamp	Report	0	1						1	LVV reports
1.18. Pesticide survey and sediment quality study	Report	0	1						1	LVV reports
1.19. Water quality monitoring system established	System	0						1	1	LVV reports
1.20. Gender Action Plan implemented	Yearly gender action plan	0	1	1	1	1	1	1	6	LVV reports
Component II: Agricultural Statistics and Information										
2.1 Agricultural census implemented	Census		0	1	0	0	0		1	Census data bases completed. From survey report by LVV
2.2 Post-census survey implemented	Survey				1				1	Survey report by LVV

Output	Unit of measure	Baseline Value	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	EOP	Means of verification
2.3 Surveys with probabilistic sample developed	Number of probabilistic-sample surveys containing at least 16 variables each		0	0	0	1	1		2	Section 4 of the CAQ informs on the method of data capture and the publication of sampling errors and metadata for main variables
2.4 LVV staff trained in statistical and census methods	# staff		0	2	3	3	3	3	14	LVV reports
2.5 LVV/DAS equipped	Equipment delivered to LVV/DAS	0		1					1	LVV reports

FIDUCIARY ARRANGEMENTS

Country:	Suriname
Project Name:	Sustainable Agricultural Productivity Program
Project Number:	SU-L1052
Executing Agency:	Ministry of Agriculture, Animal Husbandry and Fisheries (LVV)
Prepared by:	Rinia Terborg-Tel, Fiduciary Financial Management Specialist; Bhagirath Vikash, Fiduciary Financial Management Consultant; and Mariska Tjon A. Loi, Fiduciary Procurement Consultant

I. PROJECT SUMMARY

1.1 The project's objective is to increase agricultural productivity in Suriname through investments in infrastructure and management of Irrigation and Drainage (I&D) systems and by improving the quality and availability of agriculture statistics. The project is a specific investment operation with a total cost estimated at US$30 million and is designed to be disbursed in six years. There is no local counterpart funding and no co-financing.

II. EXECUTING AGENCY´S FIDUCIARY CONTEXT

2.1 The fiduciary context of the Government of Suriname and its line ministries are documented in the Public Expenditure Financial Accountability (PEFA) report of 2011 and the draft PEFA Report of 2014 indicating that the legal framework and practices for Public Financial Management Systems (PFMS) and procurement are outdated and not consistent with best practices and international standards. Some specific features of LVV are:

a. Weaknesses and limitations with regards to procurement are: (i) the lack of updated and effective process control checklists for routing, provision of supporting documents, and authorization/signatories, applicable to all procurement and payment processes and steps; (ii) the absence of systems mapping and critical path process engineering to identify and effectively address any possible sources of delays in the procurement administration processes; (iii) the lack of an annual Procurement Plan (PP) to guide the overall procurement administration and process for goods, services and works; and (iv) the need to formalize the composition and proceedings of the evaluation commissions, taking into consideration concrete internal controls related to the segregation of authority, balance of power, and independency in their composition.

b. With respect to financial reporting and, monthly preparation of revenue and expenditure reports that are submitted to the Ministry of Finance for review and consideration it is noted the Integrated Financial Management and Information System (IFMIS) platform presents concrete limitations with

respect to required formats and templates, which determines that financial reports are prepared in Excel, from information obtained in IFMIS.

c. Internal Control system (SCI). There is a limited level of progress in the implementation of the IFMIS platform, which requires for financial reporting to be based on Excel applications/worksheets; this in addition the limited number of licenses/authorizations issued by the Ministry of Finance to LVV. The lack of internal processes and procedures which can lead to ambiguities in the management and decision-making structures, including those related to the internal control systems.

III. FIDUCIARY RISK EVALUATION AND MITIGATION ACTIONS

3.1 The overall fiduciary risk rating of the project is medium. The Institutional Capacity Assessment System (ICAS) analysis indicates that there are specific fiduciary areas that require concrete institutional building and/or strengthening efforts. Even though, in most cases such factors will not affect the actual capacity of LVV to commit to project implementation, addressing such aspects would, over the medium-term improve and enhance the Ministry's governance and institutional environment and ultimately contribute to enhanced decision-making capacities, optimal allocation of resources, and safeguard of the Institution's resources.

3.2 It is recommended that LVV effectively coordinates, streamlines and integrates the functions of the technical and fiduciary personnel of the Program Execution Unit (PEU) with the activities of the Ministry as to allow for continuous process of knowledge transfer, as well as the strengthening of its permanent institutional capacity. As LVV progresses with the implementation of both projects, it may consider, under agreement with the Bank, the merging the administration of all externally-funded projects under one institutional unit which can leverage and optimize the allocation and sharing of technical and administrative resources.

Table 1. Risks and Mitigating Measures

Risks Identified	Risk Level	Mitigating Measures
Financial Management: Lack of internal control norms and procedures: (i) formal assignment of functions and responsibilities for Financial Management and Procurement Responsibilities (FMPR) and functions; and (ii) internal norms and procedures, process flows for planning, organizational and FMPR.	Medium	• Establishing specific fiduciary functions and responsibilities assigned to Financial and Procurement Officers. • Overall policies, procedures and internal control requirements of the project areas of planning, budgeting, cash flow, accounting, procurement and reporting processes will be detailed in the Operation Manual. • IDB fiduciary supervision plan will include semi-annual inspection visits to ascertain the proper financial management (i.e. accounting systems, internal control system and procurement activities). • Financial management and training provided by the IDB.
Accounting and Reporting Requirements (ARR): Failure to comply with ARR (the IFMIS system is only partially installed and is not suitable for bookkeeping of the IDB financed projects).	Medium	An off-the-shelf accounting system that will integrate and facilitate the financial reporting and budgeting under the project will be implemented for the project.
Delays in processing of payment through the Treasury Single Account (TSA).	Medium	Enhance payment processing time and control of payment transactions between LVV and Ministry of Finance (Joint Desk).

Risks Identified	Risk Level	Mitigating Measures
Procurement: • Lack of internal norms, procedures, process flow charts, procurement manuals, and PPs to guide the procurement activities; as well as • Fragmentation of procurement activities at the departmental level with limited control and coordination from within the purchasing unit. • Limited scope and experience of procurement personnel.	Medium	• PEU will include a Procurement Specialist. • The POM will contain the administrative and internal control processes for procurement management, including target processing times for each procurement modality. • IDB conducted training on procurement policies. • Ex-ante procurement review methodology for all procurement processes in the first 12 months of execution. After that, upon review of the procurement capacity of the PEU, and satisfactory findings, low risk procurement activities can be moved to ex-post review modality. • Procurement supervision by IDB.

IV. ASPECTS TO BE CONSIDERED IN THE SPECIAL CONDITIONS OF CONTRACT

4.1 The fiduciary arrangements that must be considered in the special conditions are:

a. In addition to the special conditions presented in the POD, related to the POM and the PEU, the **implementation of an accounting software system to facilitate financial reporting and budgeting under the project, according to source of funding and categories of investments (at a minimum) will be a special condition prior to the first disbursement of the financing.** This will be important for managing the funds and charge them to budget components.

b. **Exchange rate agreed on with the executing agency for accountability:** The application of the exchange rate will be as follows: (i) reimbursement of Expenses made: the effective rate of exchange on the date of payment of each expenditure, as published by the Central Bank of Suriname; (ii) reporting on Accounts or justification of the Advance of Funds: the effective rate of exchange used in the conversion of the currency of the operation to the local currency; and (iii) disbursements in alternate currencies from the US Dollar and the Suriname Dollar: In cases of direct payment and reimbursement of a guarantee of letter of credit, the equivalent of the currency of the operation will be fixed in accordance with the amount effectively disbursed by the IDB.

c. **Financial reports and audited financial statements:** (i) semi-annual financial reports are to be included in the semi-annual progress report which will be submitted by the EA to the IDB; (ii) annual financial statements of the project, audited by an independent external audit firm acceptable to the Bank, are to be submitted to the Bank within 120 days at the end of each fiscal year, beginning with the fiscal year in which the first project expenditures are incurred; and (iii) final financial statements, audited by an independent audit firm acceptable to the Bank, are to be submitted to the Bank within 120 days following the last disbursement date of the project.

d. Pursuant to Document AB-2990, the disbursement of Bank financing will be subject to the following maximum limits: (i) up to 15% during the first 12 months; (ii) up to 30% during the first 24 months; and (iii) up to 50% during the first 36 months. All these periods will be counted from the time the loan operation is approved by the Board of Executive Directors. These limits may be rendered inapplicable to the extent that the requirements set forth in the Bank's policy regarding said limitations have been fulfilled, provided that the Borrower has been notified of the same in writing.

V. FIDUCIARY ARRANGEMENTS FOR PROCUREMENT EXECUTION

5.1 The procurement fiduciary arrangements establish the conditions applicable to all procurement execution activities in the project.

5.2 **Procurement Execution**. Procurement will be carried out by the provisions established in the Loan Contract, the PP and as follows:

a. **Procurement of Works, Goods and Non-Consulting Services.** Procurement under the program will be governed by the policies contained in GN-2349-9 Policies for the Procurement of Goods and Works.[1] The PP indicates the procedures to be used for the contracting of works, goods and non-consulting services under the program. Procurement processes subject to International Competitive Bidding will be executed through the use of the Standard Bidding Documents (SBDs) issued by the Bank. Processes subject to National Competitive Bidding (NCB) may be executed through the use of other documents satisfactory to the Bank. Where these are not available the Bank's SBD will be used. The review of technical specifications during the preparation of the selection process is the responsibility of the project sector specialist.

b. **Procurement of Consulting Services.** Procurement of consulting services will be conducted in accordance with GN-2350-9: Policies for the selection and contracting of consultants. The PP indicates the procedures and methods to be used for the procurement of consultancy services. Review of the Terms of Reference (TOR) for consultants is the responsibility of the project sector specialist.

[1] Policies for the Procurement of Goods and Works Financed by the Inter-American Development Bank (GN-2349-9) paragraph 1.1: The services different to consulting services have a similar process as procurement of Goods.

c. **Selection of Individual Consultants.** Individual consultants will be selected in accordance with the policies for the selection and contracting of consultants (GN-2350-9) referenced above and may be done by three (3) Curriculum Vitae comparison (comparison of qualifications), Single Source Selection or open advertisement.

d. **Recurrent Expenses.** This category includes the payment of salaries of the PEU staff.

Table 2. Thresholds (in US$)

International Competitive Bidding Threshold*		National Competitive Bidding Range** (Complex Works and non-common goods)		Consulting Services
Works	Goods	Works	Goods	International Short List
≥1,000,000	≥100,000	100,000 – 1,000,000	25,000 - 100,000	≥100,000

* When procuring simple works and common goods and their amount is under the International Competitive Bidding thresholds, Shopping may be used.

** When procuring complex works and non-common goods with amounts under the NCB range, Shopping shall be used.
Country Thresholds Table (US$) www.iadb.org/procurement

5.3 **Procurement Plan and Supervision.** The PP covering the duration of the project indicates the procedures to be used for the various categories and types of procurement. It also indicates the estimated cost of each contract or group of contracts and the requirement for prior or post review by the Bank. Ex-ante supervision will be maintained for high risk/value activities. Where ex-post review is applied, reviews will be performed at least once per year but may be more frequent if the volume of activities warrant. The ex-post review process will include at least once physical inspection visit. The PP will be updated annually or as necessary as required by the Bank.

VI. FINANCIAL MANAGEMENT

6.1 **Programming and Budget.** For the purposes of the project, the PEU will start with a strategic planning process that is the basis for the annual budgeting. It will prepare and implement an operational plan, which will include the budget plan, PP and financial plan, consistent with a 12-month financial plan that will be required from the PEU on an annual basis. Additionally, the PEU will report on a semi-annual basis on implementation matters via a comprehensive report that covers actual versus planned operational, financial and procurement matters.

6.2 **Treasury disbursements and flow of funds the PEU.** The PEU will establish adequate banking arrangements trough the Ministry of Finance at the Central Bank of Suriname for the management of the Project resources. The financial plan will serve as the basis for the disbursement of funds to the PEU to cover the project's needs and for maintaining Bank's projections. The main disbursement methodology will be the advance of funds to cover a period up to 180 days, based on liquidity needs of the project. The funds will be advanced through the Treasury Single Account. Other disbursement methodologies that will be used on

a smaller scale are the reimbursement of payments made and direct payment to supplier.

6.3 **Accounting and Information Systems.** The PEU will procure and utilize an off- the-shelf accounting and financial management software for the accounting and financial reporting of the project.

6.4 **Internal Control and Audit.** The PEU will establish an internal control system documented in the OM that should provide reasonable assurance that: (i) the project funds are used for their intended purpose; (ii) project assets are properly safeguarded; (iii) project transactions, decisions and activities are properly authorized and documented; and (iv) project transactions are executed in accordance with the established policies, practices and procedures delineated in the legal agreements.

6.5 **External Control and Reporting.** The external audit of the project will be performed by an independent audit firm acceptable to the Bank. Audits will be performed in accordance with the Bank's Guidelines for Financial Reports and External Audit. The PEU will be responsible for contracting of an external auditor eligible to the Bank to perform the project audit as follows: (i) an annual financial audit to be submitted within 120 days of the end of each fiscal year; (ii) semiannual financial statements as part of the semiannual progress report of the project; and (iii) one final financial audit of the project to be submitted within 120 days after the date of last disbursement.

6.6 **Financial Supervision Plan.** Bank fiduciary staff will conduct inspection visits on a semi-annual basis to ascertain the proper functioning of the accounting systems, the adequacy of the internal control system and follow up the fiduciary risk initially assessed.

VII. EXECUTION MECHANISM

7.1 A PEU will be established within the Ministry of LVV and coordinate its activities with LVV's Planning and Development Department, the Agriculture Department, the Administrative Services Department, the Division of Agricultural Statistics, and others. The PEU will be responsible for carrying out all the planning, fiduciary (including procurement, financial management) and technical responsibilities necessary for the project. To this end, the PEU will be composed of a Project Coordinator; two Technical Coordinators, one for each component; one Financial Management Specialist; one Procurement Specialist; one Planning, Monitoring and Evaluation Specialist; one Environmental and Social Specialist; and one Public Communications Consultant.

VIII. RECORDS AND FILES

8.1 All records and files will be maintained by the PEU, in accordance with accepted best practices, and be kept for up to three years beyond the end of the operation's execution period.

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

PROPOSED RESOLUTION DE-__/18

Suriname. Loan ____/OC-SU to the Republic of Suriname
Sustainable Agricultural Productivity Program

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 Republic of Suriname, as borrower, for the purpose of granting it a financing to cooperate in the execution of the Sustainable Agricultural Productivity Program. Such financing will be for the amount of up to US$30,000,000 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 _____ 2018)

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SU-L1052