Document of the Inter-American Development Bank

**SURINAME**

**Improving Transport Logistics and Competitiveness in Suriname**

**(SU-L1057)**

**monitoring and evaluation plan**

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# **Introduction**

* 1. This document describes the necessary monitoring and evaluation tasks regarding the activities, results and impacts of the loan program “Improving Transport Logistics and Competitiveness in Suriname” (SU-L1057).
  2. **The general objective** of the operation is to enhance Suriname's competitiveness and logistics performance by improving efficiencies and reducing both costs and time to clear goods at the primary Port facility in Suriname. The specific objectives of the program are: (i) improving the infrastructure and operations of the Port of Paramaribo through the provision of port efficient infrastructure, and the acquisition and implementation of equipment and digital platforms to facilitate trade logistics and goods clearance processes; (ii) improving the level of service, capacity, and resilience of adjacent roads and access to the port; and (iii) strengthening institutional capacity to ensure optimal execution, sustainable asset management, and adequate operation. It is expected that the project will result in lower logistic costs and travel times, thus improving the ease of trade for economic activities such as agriculture. The operation will also take into consideration the need for improving resilience standards of road and port infrastructure. The beneficiaries are transport and logistics companies, importers and exporters, and the population of Paramaribo that use the Van ‘t Hogerhuysstraat and adjacent roads.
  3. **Component 1. Port interventions (US$4.5 million).** This component will finance the development of: (i) a logistics center within the port for the classification of cargo and the development of added-value processes. This includes the construction of a truck center, offices and light parking (1.53 hectares) and warehousing facilities (container stuffing and stripping, cross-docking, consolidation, sacking, etc.) (1.52 hectares) in compliance with the regulatory framework for PwD of Suriname or international standards; and (ii) implementation of a PCS to automate operational processes and improve documentary compliance for imports/exports.
  4. **Component 2. Interventions on port’s adjacent road network (US$36.2 million).** This component will upgrade and improve the resilience and safety of the road sections shown in Table 1: (i) Van ‘t Hogerhuysstraat (between Latourweg and Molenpad), the Willem-Campagnestraat (between Van ‘t Hogerhuysstraat and Hernhutterstraat); (ii) Slangenhoutstraat, Hernhutterstraat, and Molenpad; and (iii) the Van ‘t Hogerhuysstraat bridge, replacing the current 3-lane bridge with an expanded 6-lane bridge. It will also finance the detailed designs for the civil works and the supervision activities of the civil works and proposed interventions. This component will implement ITS for traffic control, planning, and enforcement, while integrating traffic lights and variable message signs for sections adjacent to the port and along the road section. The intervention will ensure that the related infrastructure will comply with universal accessibility design.
  5. **Component 3. Institutional strengthening and administration (US$0.7 million).** This component will finance: (i) the development of a Road Asset Management System (RAMS) for the national road network, allowing systematic planning and execution of maintenance practices, the road authority oversees road maintenance and will be the final beneficiary of the RAMS; (ii) training related to project management, engineering, monitoring, and evaluation, and training for various stakeholders to be able to register and use the PCS; (iii) monitoring and evaluation; (iv) execution of a comprehensive gender approach, including training and empowering of women to conduct specialized logistic services and related activities under partnerships with stakeholders; and (v) initiatives targeting the inclusion of PwD in the labor force related to the economic activities of the port.
  6. **Administration, management, audit, and contingencies (US$3.6 million).** The program will also finance an Executing Agency (US$1.895 million), the monitoring and evaluation (US$25,000), an external audit (US$80,000) and contingencies (US$1.6 million).
  7. **Program detailed budget.** Table 1 shows the program costs by component and output, as well as the planned annual investment.

**Table 1. Yearly costs by product**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **WBS** | **Component/ Product** | **Unit of measure** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Total** |
| **1** | **Component 1: Port interventions** |  | **819,764** | **2,697,236** | **943,000** | **-** | **-** | **4,460,000** |
| 1.1 | Product 1: Logistics Center built | ha | 819,764 | 1,230,236 | - | - | - | 2,050,000 |
| 1.2 | Product 2: Access control system installed | system | - | 147,000 | 63,000 | - | - | 210,000 |
| 1.3 | Product 3: Port Community System implemented | system | - | 1,320,000 | 880,000 | - | - | 2,200,000 |
| **2** | **Component 2: Road interventions** |  | **689,213** | **4,514,444** | **11,157,799** | **19,838,545** |  | **36,200,000** |
| 2.1 | Product 4: Primary urban roads rehabilitated | km | 470,077 | 4,003,126 | 7,643,953 | 14,482,845 | - | 26,600,000 |
| 2.2 | Product 5: Bridge over Saramacca channel at Van‘t Hogerhuysstraat built | m | 219,136 | 511,318 | 3,513,845 | 5,355,700 | - | 9,600,000 |
| **3** | **Component 3: Institutional strengthening** |  | **80,000** | **200,000** | **206,667** | **106,667** | **106,667** | **700,000** |
| 3.1 | Product 6: Road asset management system in operation | system | - | 100,000 | 100,000 | - | - | 200,000 |
| 3.2 | Product 7: Technical Training implemented | # | 80,000 | 80,000 | 80,000 | 80,000 | 80,000 | 400,000 |
| 3.3 | Product 8: Programs to improve the participation of women in logistics services, implemented | # | - | 20,000 | 26,667 | 26,667 | 26,667 | 100,000 |
| **4** | **Administration, Monitoring, Evaluation and Audit** |  | **387,000** | **395,000** | **395,000** | **395,000** | **428,000** | **2,000,000** |
| 4.1 | Program Administration | N/a | 379,000 | 379,000 | 379,000 | 379,000 | 379,000 | 1,895,000 |
| 4.2 | Monitoring and Evaluations of the Program | N/a | - | - | - | - | 25,000 | 25,000 |
| 4.3 | External Audit of the Program | N/a | 8,000 | 16,000 | 16,000 | 16,000 | 24,000 | 80,000 |
| **5** | **Contingencies** |  | **-** | **-** | **-** | **984,000** | **656,000** | **1,640,000** |
|  | **Total Costs** | | **1,975,978** | **7,806,679** | **12,702,465** | **21,324,211** | **1,190,667** | **45,000,000** |

* 1. **The M&E plan** presented in this document seeks to ensure the achievement of results and compliance with the targets set in the Results Matrix (RM) and is divided into: i) the Monitoring Plan and; ii) the Evaluation Plan. The Monitoring Plan (section II) lays out the monitoring responsibilities, tools and reports; output indicators, together with their baselines and targets; data sources; arrangements for the monitoring of results; the cost structure of the Program; and timeline and budget for monitoring activities. The Evaluation Plan (section III) presents the ex-post impact evaluation strategy, which includes the logic of the intervention, impact and outcome indicators, evaluation methodology, sampling strategy, data collection strategy, timeline of activities and budget.

# **Monitoring**

**a. Responsibility of monitoring**

1. 1. The borrower will be the Republic of Suriname and the Executing Agency (EA) will be the Ministry of Public Works, Transport and Communications (MPWTC), which will act through a Project Executing Unit (PEU) specifically established for the execution of this program. The PEU 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. As Executing agency of the program, the MPWTC will be responsible for the monitoring of the program through the PEU. The PEU will be financed by the project and will be composed, at least, of: a Program Director; two Technical Coordinators, one for each component (port and roads); one Financial Management Specialist; one Procurement Specialist and; one Environmental and Social Specialist.
   2. The Program Director will be responsible for strategic planning and overall management, monitoring and supervision of the Program. He/she will manage relations and accountability with the donors and the Minister of Public Works. The two Technical Coordinators, each one in his/her field, will be responsible for the good execution of the activities. They will support the planning of the activities, the negotiation and the management of the contracts. The Coordinator for Environmental and Social matters will be responsible for ensuring compliance with IDB’s environmental and social policies. He/she will manage the technical assistance contract on ES matters and will supervise the preparation and implementation of management and action plans for environmental and social safeguards, resettlement, gender mainstreaming and road safety.

**b. Monitoring and reporting tools**

* 1. The main tools and reports for the monitoring of the program are: (i) the Monitoring system; (ii) the monitoring of program management tools: Project Execution Plan (PEP), Annual Operations Plans (AOP), Procurement Plans (PP), Risk Matrix, and Results Matrix (RM); (iii) semi-annual progress reports and the Program Monitoring Reports (PMR); and (iv) final program evaluation.
  2. **The monitoring system** will consist of the following instruments: (i) the Loan Contract; (ii) the initial report; (iii) the Results Matrix (RM); (iv) the PEP; (v) the current AOP; (vi) the PP and the financial monitoring plan; (vii) the semi-annual progress reports; (viii) the PMR; (ix) the risk management analysis; (x) the monitoring and supervision missions; (xi) the administration missions; (xii) the aide memoires or reports resulting from the administration, supervision, and any other relevant missions; (xiii) the latest audited financial statements of the program; and (xiv) the technical supervision reports prepared by the PEU at the request of the Bank.
  3. **Monitoring of program management tools.** Monitoring will be based on the program’s management tools: PEP, AOP, PP, risk matrix, RM, financial plans, audited financial statements, and semi-annual progress reports. The goal is to facilitate the accomplishment of the chronogram, budget, risk mitigation plans, and decision making to optimize the management of the Program.
  4. **Semi-annual progress reports and PMR.** The preparation of the semi-annual progress report by the PEU and their approval by the Bank is a contractual condition of the loan. The objective of the semi-annual progress reports is to report on the progress achieved and to detect any deviations between programming and execution so as to identify the actions necessary to meet the targets and budget of the Program. Semi-annual progress reports incorporate the PMR as the tool to report on the Program’s execution and results. The semi-annual PRs and the PEP will be presented within 60 days after each semester of the calendar year during the disbursement period.
  5. The semi-annual PR will focus on fulfillment of output indicators and progress towards achieving outcomes in the Results Matrix during the reporting period. It should also inform on any changes to the Results Matrix; the factors that have affected execution and their causes; any updates to the risk management matrix and their mitigation plans; the main lessons learned, and the challenges foreseen for the next execution period. Annexes that must be included in the semi-annual progress reports are: PMR, RM, risk matrix, PEP, AOP, PP, cash flow and disbursement programming, audited financial statements, and reports on the use of counterpart resources.

**c. Arrangements for the monitoring of results**

* 1. **Monitoring responsibilities.** The monitoring plan will be carried out during project execution in agreement with the goals and performance indicators identified in the RF. The Project Director, will be the person in charge of monitoring the progress against the project’s indicators, will establish a monitoring system to verify the progress and impact of the project activities and will train staff of the PEU to collect the required data. The Project Director will: (i) collect periodically the information about physical progress (activities) and financial progress (available and invested funds); and (ii) keep updated and accessible the relevant information about the execution of the operation activities and its resources. The IDB, through the project team leader and members of the team, is responsible for coordinating and ensuring that the monitoring plan is carried out with the established technical quality and timeframe. In order to accomplish this, it will carry out periodic meetings with those responsible for monitoring and if needed will ask for additional reports or presentations of results. The monitoring of the plan will be carried out continuously once the operation becomes eligible until its completion.
  2. Monitoring activities will include: (i) baseline data collection and analysis before project implementation and (ii) monthly data collection and analysis for the duration of the project. The monitoring process will be validated with the support of Technical Coordinators. Accordingly, all the output indicators will be measured directly. These measures and estimates will be compared with the expected outputs and outcomes presented in the RF. The frequency of measurement is found in Tables 1 & 2 alongside the respective indicator.
  3. **Monitoring instruments.** Project monitoring will be based on Bank’s standards instruments, to be prepared by the PEU and presented to the Bank according to their corresponding periodicity. These instruments include:
     1. Annual Operations Plan (AOP): The PEU shall submit to the satisfaction of the Bank, within thirty (30) days prior the conclusion of each calendar year during the execution of the project, the corresponding Annual Operation Plan (AOP) for the next year. The AOP consolidates all the activities to be implemented over a determined period of execution, by products and with a financial schedule. The PEU will submit, semi-annually, as an integral part of the semi-annual progress reports, the AOP and the Project Execution Plan (PEP) for the following two semesters, including the activities, schedules and estimated budgets for the projects funded the previous year and those proposed for the following year. The final AOP and PEP from the first year will be included in the initial report. The AOP and PEP will include at least the following elements: (i) the execution status of the project, describing in detail the status of each component; (ii) the procurement plan for the works, goods and services, as well as consulting services including budget and disbursement projections; (iii) the progress in meeting the goals and outcomes of the project; (iv) the progress in meeting output indicators for each component, in accordance with the Results Matrix and its schedule; (v) the problems encountered; (vi) the solutions implemented.
     2. Project Execution Plan (PEP): Consists of a planning tool for scheduling and costing of all program activities, which includes the individual products that are included in the Results Matrix. The PEP matrix contains beginning and ending period of each product, their costs, and the intermediary activities required for their completion. The PEP shall be updated through the implementation period, reflecting the adjustments and changes in the original plans. These adjusted PEPs and the program semi-annual report shall be presented within 60 days after each semester of the calendar year during the disbursement period.
     3. Semi-annual progress reports: which will include an updating of the PEP will be presented within 60 days after each semester of the calendar year during the disbursement period. They will focus on fulfillment of output indicators and progress towards achieving outcomes in the Results Framework, an analysis of problems encountered and proposed corrective measures. The semi-annual reports will include: i) advances in the fulfillment of the goals established in the Results Matrix, through the PMR system; ii) evaluation of the PEP, the progress in its execution, the problems that have arisen and suggestions to solve them; iii) description of the activities executed by each component of the program; iv) evaluation of compliance with the Procurement Plan; v) description of the procurement processes carried out in the reporting period; vi) information on the performance of contractors, consultants and supervisory firms; vii) summary of the financial statements of the Program; viii) updated schedule of advances in physical-financial matters (disbursements); ix) follow-up of the institutional strengthening plan; x) progress with respect to the implementation of environmental audits, including schedule, results and measures implemented to comply with the Environmental and Social Management Report (ESMR); xi) identification of new risks / events that may affect the implementation of the Program and an update of the Risk Matrix; xii) execution plan corresponding to the next two semesters; xiii) maintenance plan for works corresponding to the next two semesters; xiv) estimated Financial Plan for the next two semesters.
     4. Procurement Plan (PP): This instrument is intended to present to the Bank and to publish the details of all procurement to be made in a given period of execution of the project. The PP informs about all acquisitions and contracts that will be executed in conformance with the Policies for Procurement of goods and works financed by the Bank (GN-2349-9) and the Policies for the Selection and contracting of consultants financed by the Bank (GN-2350-9), and in accordance with the Loan Agreement. In order to be considered by the Bank, the PP should be presented with the AOP, as an integral part of the semi-annual progress reports, and should be updated annually or when necessary during the entire period of execution of the project.
     5. Final Report: within 60 days of the last disbursement date, MPWTC will prepare a final report, summarizing all the progress reports prepared during the program’s life. It will also organize a closing workshop to present and discuss the Bank’s Project Completion Report (PCR).
  4. **Collection of Monitoring Data.** The establishment of the monitoring system will be designed and implemented by the Project Director who will among other things commission the PEU members to collect information to monitor the outputs.
  5. Accordingly, all the output indicators will be measured directly. These measures and estimates will be compared with the expected outputs and outcomes presented in the Table 2. The frequency of measurement is found in table 2.
  6. **Inspection Visits.** The Bank will perform periodic visits with the PEU, to discuss: (1) the progress of the activities identified in the AOP and the PEP, (2) the level of compliance with the indicators established in the RF; and (3) the AOP of the following 12 months.
  7. **Indicator Measurement Frequency.** The indicators that will be followed up on are included in the RF. These indicators, in Tables 1 2, will be monitored and recorded in the PMR showing the number of cycles of data collection and the timing or frequency of measurement and data collection.
  8. **Monitoring, Coordination, Work Plan, and Budgets.** The monitoring work plan and budget is presented in Table 3. The Program’s monitoring activities have been budgeted as part of the Administration and Evaluation activities in the PEP, which include management expenses (staff and operational costs of the PEU), and external audits.

**Table 2: Monitoring Output Indicators**

|  |  |  |  |
| --- | --- | --- | --- |
| **Output and Activities Indicators** | | **Frequency of Measurement** | **Primary Source of Verification** |
| Component #1  Port Interventions  (Outputs) | 1. Truck center constructed | Semi-annually | Supervision’s payment certificates and semi-annual reports. |
| 2. Warehousing facilities constructed[[1]](#footnote-2) | Semi-annually |
| 3. Port Community System (PCS) implemented | Semi-annually | Semi-annual reports |
| Component #2  Road Interventions  (Outputs) | 1. Primary urban roads rehabilitated. Includes the following milestones:  a) Designs (road and bridge) approved by Project Executing Unit  b) Primary roads widened and paved  c) Drainage systems with design considerations for climate change constructed  d) Dedicated lanes for pedestrians and bikes constructed  e) Intelligent Traffic System installed  f) Signalization and road safety measures installed | Semi-annually | Supervision’s payment certificates and semi-annual reports. |
| 2. Bridge over Saramacca channel at Van‘t Hogerhuysstraat reconstructed | Semi-annually |
| Component #3  Institutional strengthening and administration (Outputs) | 1. Road asset management system in place | Semi-annually | Semi-annual reports  Attendance lists |
| 2. Training events in road design and maintenance | Semi-annually |
| 3. Training events in project management | Semi-annually |
| 4. Training events in Port Community System and new port processes | Semi-annually |
| 5. Training events focus on women for empowering in specialized logistic services | Semi-annually |
| 6. Programs for the improvement of employability and working conditions of women in logistic activities in the port | Semi-annually |

**Table 3. Monitoring plan and budget**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Activities** | **Year 1** | | | | **Year 2** | | | | **Year 3** | | | | **Year 4** | | | | **Year 5** | | | | **Cost (US$)** | **Responsible** | **Source of financing** |
| **Q1** | **Q2** | **Q3** | **Q4** | **Q1** | **Q2** | **Q3** | **Q4** | **Q1** | **Q2** | **Q3** | **Q4** | **Q1** | **Q2** | **Q3** | **Q4** | **Q1** | **Q2** | **Q3** | **Q4** |
| Monitoring |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | -- | MPWTC/PEU | SU-L1057 |
| Semi-annual reports |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | -- | MPWTC/PEU | SU-L1057 |
| Final Report |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | -- | MPWTC/PEU | SU-L1057 |
| Fiduciary visits |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 10,000 | IDB | IDB |
| Technical Inspection visits |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 20,000 | IDB | IDB |
| External Audits |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 80,000 | MPWTC/PEU | SU-L1057 |

# **Evaluation**

**a. Evaluation methodology**

* 1. The proposed methodologies consist of: i) a quasi-experimental Impact Evaluation using the synthetic control method; and iii) a before-after evaluation to measure the scope of the results.
     1. **Impact Evaluation.** An ex-post impact evaluation will be carried out using the synthetic control method to evaluate the impact in the performance of the port as a result of the improvements financed with the project. The evaluation will attempt to answer the following question: has there been any productivity gains as a result of port interventions? Specifically, the assessment will consider as a potential output variable the costs to import in accordance with the results matrix. Other indicators can be used to answer the same question and also to address how the ease of trade is being improved by the port interventions. Those indicators include cost to export, time to export and time to import, among others. The empirical strategy is based on the synthetic method and will compare the performance of the treated port versus a synthetic unit, generated from a group of ports with similar conditions and constraints. The impact evaluation will follow a similar approach of[Lanzalot *et al*. (2018)](https://blog.iic.org/2018/11/09/expansion-of-panama-canal/) to assess the impact of the intervention by building a synthetic Port of Paramaribo. As described in POD, the problem with inefficiencies is reflected on productivity and ease of trade. Therefore, the evaluation will address the question on how this Intervention enhances Logistic Productivity for Suriname and how it improves the ease of trade. Following [Esfahani and Ramirez (2003](https://www.sciencedirect.com/science/article/pii/S0304387802001050)), [Ismail and Mahyideen (2015)](https://www.adb.org/sites/default/files/publication/177093/adbi-wp553.pdf) and [Suarez *et al* (2015)](https://pdf.sciencedirectassets.com/271795/1-s2.0-S0965856416X00043/1-s2.0-S0965856416000276/main.pdf?x-amz-security-token=AgoJb3JpZ2luX2VjEE4aCXVzLWVhc3QtMSJHMEUCIH8bXOHtMNZUYkXfJqQiUbMSnKBAtvEAyGIjQtOaHBS1AiEAoUKBsGgyvm9H2rxH5p6gHwC4jwKudNigUxVobX4219Iq4wMI9%2F%2F%2F%2F%2F%2F%2F%2F%2F%2F%2FARACGgwwNTkwMDM1NDY4NjUiDCpDer9tZCzzUzUIAiq3Ay9y%2BGh930oxQnR9BxL3JVsGwE1ZrVMfLFGhW8QRHOMHT%2B%2B84mQwd87y6LyJtHjfR5Dqf1o3%2FN7XrC5yEsYoNhl0ak5aIn5AWz5b%2Bwpg0NdM8gf42U3bL02HKJ2CfrVvOzKnlNjpZkOEyT7ic%2BwjlPymATsdsh6MeZJyLC3nBvbcrJRJ4bS%2Bk65rEiPuLtq2br7D4UE0oNLZQ5DP1ZF9PU6M8AIiO1lFHnCJ0zyFr8ld3yj2L9BxVg%2BpXJtQKpRtD6em3sTpr5XLZhu71S2HCIQ737fagv7nXrKE69DPJrGqD0W219234BouTpa8uc8yQABDsrmiCGeOI2HyrO6Ab5RBaudxfmd0xRn%2FjomesmECsSKuTDMXLFtNViy1lMPJqrNG5Q1YQayyefm%2FHWGg29vVzKhXMesftWKBBaGkqsmBdq6%2F9AmKvKaJvLoi1%2BGY3k1kYt727j6gNgny1Rkn%2BqeeoUUhVZ6AoHRyH8a%2FIkZdVwHo9Woi5Vw79r2Gm%2Bb4yBQ6OSOf4TH%2BBXgc5QA8ZIwSwBpmQDQaSLsk7jkssTtGHO414PIy4YYm3gRYPVl1IEco9INU2jIwgbrq5AU6tAFBsIAaQJRpjeat9uGqoDvIMb1DbiYVS%2F%2BULaV8QnSjSas0lN446ZWZ4gfUQ1zwiOvFNOhzIWtM2BhG5F88olUeG7LxIz0D2xmdELzbspXtUi9lz37Y0ur0kxBa%2BEpCX2T5tgqql%2BdSHxyLSDI%2BqrauLBe89BkTgkeVU8IrXvJYUXJ4HWVFxJTK1hghYKjagBhNZyLXyM%2B9R8%2FWq%2BnLdZSF3ezgLjzRUiilRnVh5dQiztHnF9c%3D&AWSAccessKeyId=ASIAQ3PHCVTYSWATKWMI&Expires=1553639460&Signature=oq73Ul99T0GBtsrQDEMkBvpLYpg%3D&hash=c96975fd05162d383037a1e34d1fd95038edf1a024497358a2adb23c0336d5e0&host=68042c943591013ac2b2430a89b270f6af2c76d8dfd086a07176afe7c76c2c61&pii=S0965856416000276&tid=spdf-07fb721e-c1d7-4757-bba9-ac716737030b&sid=e2d38168104ce24149383387e0e79781aa63gxrqa&type=client), the evaluation will estimate, if data permits, a structural model or at least consider covariates that are referenced in previous studies. In order to assess the impact, productivity indicators associated with time and costs savings are going to be considered as output variable and consistently with the Results Matrix of the program. Data about Trading Across Borders is openly available on a yearly basis, both for Suriname and similar economies in the Caribbean and other regions. Other data provided by the Port Authority (Havenbeheer), Customs and data gathered during site visits for the pre-feasibility studies, as well as secondary data (World Development Indicators, logistic aggregated performance information) will also be considered to assess the impact of the intervention. In order to estimate the impact, a Synthetic Control Method (SCM) is going to be implemented, following [Abadie and Gardeazabal (2003)](http://www.nyu.edu/gsas/dept/politics/faculty/beck/abadie_aer.pdf) and [Abadie *et al* (2010)](http://scunning.com/abadie-diamond-and-hainmuel.pdf).
     2. **Preliminary Donor Pool for the Synthetic Unit and Availability of Data.** Following [Abadie and Gardeazabal (2003)](http://www.nyu.edu/gsas/dept/politics/faculty/beck/abadie_aer.pdf) , the SCM uses weighted averages from a donor pool to build a synthetic unit that can be compared to the treated unit. We constrained the donor pool with countries where ports have a berth depth and length similar to that of Suriname ([Lloyd Directory of Ports](https://directories.lloydslist.com/)). Moreover, we propose including predictors to account for specific characteristics of the country regarding its trade performance. Since Suriname has an imbalance between exports and imports, other ports with such an imbalance are considered candidates for the donor pool. Since imports take a major share of the trade between Suriname and its performance, we include a variable that captures how much the country spends in transportations services for imports. Following Esfahani and Ramirez (2003), Ismail and Mahyideen (2015) and Suarez et al (2015), we consider other predictors that are related to the performance of the port and that explain costs to import or the ease of trade between Suriname and its partners. Other covariates account for the scale of the economic performance of the country such as trade as a share of GDP and population. These preliminary covariates are available from 2005 on a yearly basis and from different sources, including Doing Business, World Integrated Trade Solutions and World Development Indicators Databases. The only caveat to be considered is that some indicators in the Doing Business database were adjusted after 2015 with a new methodology. Nonetheless, the indicators can be manipulated in such a way that the time series is consistent for the impact analysis. The following table summarizes the availability of Data for the SCM for all countries listed in the donor pool:

|  |  |  |
| --- | --- | --- |
| **Variable** | **Source** | **Period included** |
| 1.      Country | Reference for output variables and covariates | |
| 2.      Year |
| 3.      Cost to Import(USD per container) | Output variables | |
| 4.      Cost to Export (USD per container) |
| 5.      Time for border compliance (hours) |
| 6. Berth Lenght and Depth (m) | Lloyd Port Directory | 2019 |
| 6.      Documents to export (#) | Doing Business | 2006-2019 |
| 7.      Documents to import (#) | Doing Business |
| 8.      Time to export (days) | Doing Business |
| 9.      Time to import (days) | Doing Business |
| 10.   GDP per capita (constant 2010 USD) | World Development Indicators |
| 11.   Transport services (% of commercial service exports) | Worlt Integrated Trade Solutions |
| 12.   Transport services (% of commercial service imports) | World Integrated Trade Solutions |
| 13.   Trade (% of GDP) | World Integrated Trade Solutions |
| 14.   Trade in services (% of GDP) | World Integrated Trade Solutions |
| 15.   Population | World Development Indicators |

Moreover, a preliminary preliminary estimation of the synthetic control was conducted to assess what predictors should be used to build a synthetic control for Suriname and which countries from the donor pool provide valuable information for the impact assessment. The estimation was conducted following [Abadie and Gardeazabal (2003)](http://www.nyu.edu/gsas/dept/politics/faculty/beck/abadie_aer.pdf). The countries in the donor pool and the covariates included in the estimation are presented in the following tables. Berth depth and length were only used to limit the donor pool to those countries with ports like the Paramaribo Port. The key idea behind SCM is that a weighted combination of unaffected units may resemble the characteristics of the treated unit substantially better than any untreated unit alone. The methodology works by assigning an analytical weight to each untreated country to construct the synthetic version of the treated unit. These weights are chosen in order to minimize the difference in pre-intervention characteristics between the treated unit and the pool of potential comparison countries. The values of W, the vector of weights, are chosen such that the characteristics of the treated unit are best resembled by the characteristics of the synthetic control. The latter is done by minimizing a squared difference of the covariates between the treated and synthetic unit. A comparison of the covariates and outcome variable for the treated and synthetic units is also presented.

|  |  |
| --- | --- |
| **Country (Donor)** | **Weight** |
| Antigua and Barbuda | 0.542 |
| Argentina | 0 |
| Belize | 0 |
| Cabo Verde | 0 |
| Costa Rica | 0.063 |
| Cote d'Ivoire | 0 |
| Dominican Republic | 0 |
| Ecuador | 0 |
| El Salvador | 0 |
| Guatemala | 0 |
| Guyana | 0.395 |
| Honduras | 0 |
| Jamaica | 0 |
| Namibia | 0 |
| Nicaragua | 0 |
| Papua New Guinea | 0 |
| Peru | 0 |
| Tunisia | 0 |
| Ukraine | 0 |
| **Variable** | | | **Treated (average 2006/2015)** | **Synthetic**  **(average 2006/2015)** |
| Cost to Import (USD per container) | | | 1528.11 | 1528.53 |
| Documents to export (#) | | | 8 | 5.395 |
| Documents to import (#) | | | 6 | 6.030889 |
| Time to import (days) | | | 19.22222 | 20.04644 |
| GDP per capita (2010 constant) | | | 8277.976 | 8885.533 |
| Transport services (% of imported services) | | | 21.18474 | 34.16444 |
| Trade services (% of GDP) | | | 16.86509 | 46.51519 |
| Population | | | 526112.9 | 633979.9 |

* + 1. **Method before - after.** To define if the results have been reached, a before-after measurement will be carried out, according to the results indicators established in the matrix (see Table 3). The objective of the evaluation is to verify that the results of the project were achieved, through a reflexive evaluation based on the results matrix. The evaluation will attempt to answer the following questions: (i) has average time for cargo operations at port been reduced?; (ii) have travel times and costs been reduced?; (iii) were the sectorial institutions strengthened through training of key personnel?; and (iv) are more women and people with disabilities accessing to jobs related with logistic activities in the port? To answer the above questions the PEU will hire an independent evaluator to conduct a final evaluation of the project. The results of this evaluation will be used by the Project team to complete the Bank’s Project Completion Report (PCR). The Bank will closely support the PEU on the definition of terms of reference and on the supervision of the study.
  1. **Project´s Ex-Ante and Ex-Post Cost Benefits Analysis.** The expected results will be monitored and evaluated using ex-post and ex-ante methodologies such as an ex-post cost-benefit analysis. This methodology includes the analysis of the costs and benefits results of two scenarios: i) With interventions and ii) Without Interventions. The estimation of the benefits of the project was done throughout the estimation of the reduction of: i) travel times and; ii) the vehicle operation costs (VOC) due to the implementation of the project. To achieve this, we have compared the results between both scenarios. The Generalized Travel Costs was estimated based in the following parameters:
     + 1. **Value of time:** according to the economic evaluation of transport projects model published by the World Bank, written by Kenneth M. Gwilliam[[2]](#footnote-3). This model was further developed by the Mexican Transport Institute to propose a time valuing estimation based on the working time spent on transport and the leisure time spent on transport. This re-revised method takes into account the minim wage, the number of average working hours in a week by employed citizens and an adjustment factor based on the times the minimum wage is earned by a vehicle type occupant.
       2. **Vehicle Operation Costs:** based on fuel consumption by vehicle type per average speed and non-fuel related costs by vehicle type per kilometer. These inputs were obtained from the California Department of Transport Life-Cycle Benefit/Cost Analysis Model[[3]](#footnote-4), using specific calibration parameters for Suriname.
  2. The ex post cost benefit analysis of the works financed by the project will replicate the model used ex ante, held as part of the technical feasibility studies. This analysis will be conducted for two scenarios: i) Measuring and updating the expected benefits and costs of the intervention (CAPEX), holding constant the conditions and prices considered in appraisal; this allows measurement of whether the actual costs incurred, the benefits actually realized and measured at constant prices are sufficient to justify the investment in economic terms and; ii) the second scenario will consider both the benefits and the actual project costs, updated to current prices, thus obtaining an update on whether the project results are an economically worthwhile investment given the real costs and benefits. This analysis permits isolation of an exogenous increase in costs that may effect changes in the benefits achieved.

**b. Main indicators for the evaluation**

* 1. The main of indicators for the evaluation of the program are detailed in Table 4. The method for collection of data for each indicator are detailed in the last column.

**Table 4. Impact and outcome indicators**

**Expected Impact**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Indicators** | **Unit of measure** | **Baseline** | **Baseline Year** | **End of Project**  **(Year 2024)** | **Means of verification** | **Observations** |
| Suriname’s quality of ports | index | 4.4 | 2014[[4]](#footnote-5) | 4.6 | Evaluation: before and after. Source: the Global Competitiveness Report – [World Economic Forum](http://www.weforum.org)[[5]](#footnote-6)  2nd pillar: infrastructure  Indicator: quality of port infrastructure  Frequency: yearly | The index varies from  1–7 (poor–excellent). The goal was estimated by comparison with the index for the Bank’s countries within Central America and the Caribbean region with similar Gross Domestic Product (GDP) and sea cargo volumes[[6]](#footnote-7)  It will be evaluated by comparing the reported index vs the end of the project goal |
| Trading Across Borders Ranking (out of 190) | Position | 87 | 2018 | 85 | Evaluation: before and after. Source: [Doing Business Survey](http://www.doingbusiness.org)  Frequency: yearly  Synthetic Control Method (SCM) impact evaluation (see [OEL#2](http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=EZSHARE-34892997-31), section III) | The ranking of economies in the ease of trading across borders is determined by sorting their distance to frontier scores for trading across borders. These scores are the average of the distance to frontier scores for the time and cost for documentary and border compliance to export and import. The ranking compares 190 countries  Goal: it is expected that in  long-term Suriname’s improvement in trade facilitation will be reflected in the country’s ranking in the indicators by improving at least two positions |
| Cost to import (border compliance) | USD | 658 | 2019 | 647.2 | SCM, for more details refer to [OEL#2](http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=EZSHARE-34892997-31), section III. Source: [Doing Business Survey](http://www.doingbusiness.org)  Frequency: yearly | Target is set based on the average for the region. Following [Abadie and Gardeazabal (2003)](http://www.nyu.edu/gsas/dept/politics/faculty/beck/abadie_aer.pdf) and [Abadie et al*.* (2010)](http://scunning.com/abadie-diamond-and-hainmuel.pdf), will follow an SCM to estimate the impact of the intervention by building a synthetic control group. Data to be used include yearly published Doing Business Indicators, World Development Indicators, and Global Competitiveness Indicators |

**Expected Outcomes**

| **Indicators** | **Unit of**  **measure** | **Baseline**  **Value** | **Baseline**  **Year** | **End of Project (Year 2024)** | **Means of verification** | **Observations** |
| --- | --- | --- | --- | --- | --- | --- |
| **Specific objective: Improving the infrastructure and operations of the port** | | | | | | |
| **Result 1. Reduction in cargo operations time** | | | | | | |
| Average time for cargo operations of trucks at the port[[7]](#footnote-8) | minutes | 300 | 2018 | 120 | Evaluation: before and after  Source and methodology: baseline values based on interviews with the Port Authority, port operators’ personnel, and transport companies  Goals values based on analysis of bottlenecks and optimization of processes according to international best practices  See [OEL#2](http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=EZSHARE-34892997-31), section III | Average time for cargo operation will be calculated based on the same procedures considered to calculate the baseline. The import process is the one presenting benefit if the inspection is carried out before the truck arrival |
| **Specific objective: Improving the level of service, capacity, and resilience of adjacent roads and access to the port** | | | | | | |
| **Result 2. Reduction in travel time for road users** | | | | | | |
| Average travel time along the section *Van ‘t Hogerhuysstraat* (between *Latourweg* and *Molenpad*) from south to north | minutes | 12 | 2018 | 9 | Evaluation: before and after  Source and methodology: as estimated for the baseline scenario, the average travel times will be estimated through a microsimulation process, entering vehicle counts, directions, turns, the geometry of roads, and other key characteristics, to model a traffic flow situation in a road  Collection of data for the microsimulation will be supported using in field pneumatic counters, manual counting, and drone flights | For the baseline, the software [*Vissim*](https://www.ptvgroup.com/en/solutions/products/ptv-vissim/) was used. Software with similar capabilities will be used for the ex post evaluation |
| Average travel time along the section *Van ‘t Hogerhuysstraat* (between *Latourweg* and *Molenpad*) from north to south | minutes | 11 | 2018 | 9 |
| Average travel time in *Willem Campagnestraat* circuit | minutes | 9 | 2018 | 6 |
| Average travel time in *Latourweg*, *Molenpad*, and *Jules Wijdenboschbrug* circuits | minutes | 13 | 2018 | 8 |
| **Result 3. Reduction in generalized travel costs for road users** | | | | | | |
| Generalised Travel Costs (GTC) in section *Van ‘t Hogerhuysstraat* (between *Latourweg* and *Molenpad*)  South to north | US$/km | Car: 0.28  Bus: 1.04  Truck: 0.23  Moto: 0.14 | 2018 | Car: 0.21  Bus: 0.76  Truck: 0.19  Moto: 0.11 | Evaluation: before and after  Source and methodology: travel costs will be calculated using the same methodology as for the baseline scenario, based on the estimation of Value of Travel Time (VTT) and Vehicle Operation Costs (VOC)  See [OEL#1](http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=EZSHARE-34892997-30) | The costs quantified were the VTT and the VOC, using parameters for Suriname  **VTT** estimated using the World Bank  methodology.[[8]](#footnote-9) This model was further developed by the Mexican Transport Institute to propose a time valuing estimation based on the working time spent on transport and the leisure time spent on transport. This method considers the minimum wage, the number of average working hours in a week by employed citizens, and an adjustment factor based on the times the minimum wage is earned by a vehicle type occupant  **VOC** based on parameters of fuel consumption by vehicle type per average speed and non-fuel related costs by vehicle type per kilometer. These inputs were obtained from the California Life-Cycle Benefit-Cost Analysis Model for the 2018 BUILD Applications[[9]](#footnote-10) |
| GTC in section *Van ‘t Hogerhuysstraat* (between *Latourweg and Molenpad*)  North to south | US$/km | Car: 0.24  Bus: 0.90  Truck: 0.22  Moto: 0.13 | 2018 | Car: 0.20  Bus: 0.76  Truck: 0.19  Moto: 0.11 |
| GTC along *Willem Campagnestraat* circuit | US$/km | Car: 0.26  Bus: 0.96  Truck: 0.22  Moto: 0.14 | 2018 | Car: 0.19  Bus: 0.70  Truck: 0.18  Moto: 0.10 |
| GTC along other access (*Latourweg*, *Molenpad*, and *Jules Wijdenboschbrug*) | US$/km | Car: 0.28  Bus: 1.09  Truck: 0.22  Moto: 0.14 | 2018 | Car: 0.20  Bus: 0.75  Truck: 0.19  Moto: 0.11 |
| **Specific objective: Strengthening institutional capacity** | | | | | | |
| **Result 4. Institutional strengthening** | | | | | | |
| Ministry of Public Works, Transport and Communication (MPWT&C) and Road Authority strengthened in road asset management and project management | Public employees certified | 0 | 2018 | 30 | Evaluation: before and after  Source: training and certifications reports | Certification will be given to participants who pass a minimum score in the course’s tests  See [OEL#2](http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=EZSHARE-34892997-31) |
| Key stakeholders of port[[10]](#footnote-11) trained in the use of Port Community Systems (PCS) and port processes | Port operators and users certified | 0 | 2018 | 100 | Evaluation: before and after  Source: training and certifications reports |
| **Result 5. Increase of women in the labor force** | | | | | | |
| Employment opportunities for women in logistics activities in the port improved | Increase of women hired (%) | 0 | 2018 | 15 | Evaluation: before and after  Source: surveys to port stakeholders to collect statistics on women hired vs positions opened | Pro-gender |
| **Result 6. Increase People with Disabilities (PwD)[[11]](#footnote-12) in the labor force** | | | | | | |
| Employment opportunities for PwD in logistics activities in the port improved | Increase of PwD hired (%) | 0 | 2018 | 2 | Evaluation: before and after  Source: surveys to port stakeholders to collect statistics on people with disabilities hired vs positions opened |  |

**d. Project Completion Report (PCR)**

* 1. The PCR is the main instrument of accountability used by the Bank to show both internal and external stakeholders to the Bank, the performance of its operations with sovereign guarantee and the effectiveness in the Development of them. It also presents the main findings and recommendations in order to strengthen the design and execution of future projects.
  2. The evaluation will be conducted based on the analysis of the central criteria and non-central criteria. The central criteria of the PCR basically evaluate the performance of the project and are determined objectively based on the results and products thereof and is rated through four criteria: (i) Effectiveness, (ii) Efficiency, (iii) Relevance and (iv) Sustainability.
  3. The non-central PCR criteria are those that can be evaluated, but do not qualify the effectiveness of the intervention. In default, they evaluate the contribution of the operation to the Bank's development objectives; the contribution to the country's development objectives; compliance with the monitoring and evaluation plan; the use of country systems and the implementation and mitigation of environmental and social safeguards.
  4. The result of the final evaluation will be used as input for the PCR to be prepared by the Bank. The PEU will collect, record and maintain all the information and parameters, including semi-annual reports, annual operating plans, performance plans of the project, and procurement plan, necessary to: (i) support the Bank in preparing the PCR; and (ii) support the IDB Evaluation Office (OVE) in evaluating the impact of the operation. This report will be submitted to the Bank as a final independent evaluation, within 90 days after the date on which 90% of the loan proceeds have been disbursed or after the Bank’s official request, but not limited to, the semi-annual progress reports, the Results Framework, the Audited Financial Statements, and the Project Evaluations. This report will include, at least: (a) the financial performance results for each component; (b) the project impacts; (c) the compliance with established goals, according to agreed outcome indicators; (d) the results and products during execution of the project; (e) the compliance with contractual commitments; (f) the bid processes and results for works, goods and services; (g) the breakdown of the costs by type of work; (h) an ex-post economic evaluation based on the methodologies developed in the ex-ante evaluation; (i) the lessons learned; and (j) the evaluation of the implementation of the works, including the socio-environmental aspects.
  5. **Results Information.** Upon completion of the works, the PEU will provide a Final Report on the evaluation results, which shall include the results of the Ex​​-Post Cost Benefit Analysis and its comparison with the Ex-Ante Cost Benefit Analysis. The Final Report must be approved by the IDB Team Leader.
  6. At the end of the project, the project team will prepare the PCR. This report must be approved by the EA no later than 180 days after the date of full disbursement.

**e. Coordination, Work Plan and Budget**

* 1. The PEU will be responsible for conducting evaluation activities, including ensuring data collection.
  2. Meanwhile the IDB, through the Project Team Leader is responsible for coordinating and ensuring that the plan meets the technical quality and schedule. To do this, he will carry out regular meetings with those responsible for the implementation of this plan and if necessary, request reports or presentations of our-of-the ordinary results.
  3. **Evaluation budget.** Table 5 presents the work plan for the evaluation of the project, which includes the main activities and their respective products, the deadline for compliance, responsible and cost, identifying the source of funding is detailed.

**Table 5. Evaluation plan and budget**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Activities** | **Year 1** | | | | **Year 2** | | | | **Year 3** | | | | **Year 4** | | | | **Year 5** | | | | **Cost (US$)** | **Responsible** | **Source of financing** |
| **Q1** | **Q2** | **Q3** | **Q4** | **Q1** | **Q2** | **Q3** | **Q4** | **Q1** | **Q2** | **Q3** | **Q4** | **Q1** | **Q2** | **Q3** | **Q4** | **Q1** | **Q2** | **Q3** | **Q4** |
| Methodology for Impact Evaluation and Syntethic Contro Unit preparation |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 5,000 | IDB | IDB |
| ExPost Cost-Benefit Analysis |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 10,000 | IDB | IDB |
| Final Evaluation Report |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 10,000 | MPWTC/PEU | SU-L1057 |
| Impact Evaluation |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 10,000 | MPWTC/PEU | SU-L1057 |
| PCR Report |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 10,000 | IDB | IDB |
| Project Closing Workshop |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 2,000 | MPWTC/PEU | SU-L1057 |

# **Auditing**

* 1. **External Audits.** Financial and project audits will be financed with the resources of the operation. An annual audit of the financial project balances will be carried out, and a six-month report will be conducted under previously agreed to procedures of the justifications of the use of advance payments made by the Bank to the PEU. The external audit will be carried out by an independent firm approved by the Bank, and under terms of reference agreed to by the Bank. The audited annual financial statements will be presented within 120 days following the closure of the fiscal year. The report of the audited final financial statements will be presented within 120 days from the date of the last disbursement.
  2. **From a financial perspective:**

1. An annual financial audit report of the project is to be submitted by MPWTC within 120 days of the end of each calendar year (beginning with the year in which the project was made effective);
2. A final financial audit report of the project is to be submitted by MPWTC within 120 days after the date of the last disbursement.
   1. The external audits will be performed by a firm of independent auditors acceptable to the Bank, in accordance with International Accounting and Reporting Standards, and terms of reference previously approved by the Bank. MPWTC will be responsible for the contracting of the independent auditor, which will be selected and hired in accordance with the procedures established by the Bank. The cost of the audits will be financed with project resources.

1. Includes facilities for container stuffing and stripping, cross-docking, consolidation, sacking. [↑](#footnote-ref-2)
2. Available in [this website](http://documents.worldbank.org/curated/en/759371468153286766/The-value-of-time-in-economic-evaluation-of-transport-projects) [↑](#footnote-ref-3)
3. Available in [this website](http://www.dot.ca.gov/hq/tpp/offices/eab/LCBC_Analysis_Model.html) [↑](#footnote-ref-4)
4. Last report available including data for Suriname. [↑](#footnote-ref-5)
5. The Global Competitiveness Report (GCR) is a yearly report published by the World Economic Forum. Since 2004, the GCR ranks countries based on the Global Competitiveness Index (GCI). The different aspects of competitiveness for each country are captured in 12 pillars, which compose the index. Quality of roads and ports indexes are part of the second pillar, infrastructure. [↑](#footnote-ref-6)
6. GCI Indexes: Barbados (5.3), El Salvador (4.7), and Dominican Republic (4.6). [↑](#footnote-ref-7)
7. Includes the next processes: container discharge, customs inspection, pre-truck gate process, access to the port, truck gate in, entrance to the terminal and container loading, truck gate out, and departure from the port. [↑](#footnote-ref-8)
8. Available in [link](http://documents.worldbank.org/curated/en/759371468153286766/The-value-of-time-in-economic-evaluation-of-transport-projects). [↑](#footnote-ref-9)
9. Available in [link](http://www.dot.ca.gov/hq/tpp/offices/eab/LCBC_Analysis_Model.html). [↑](#footnote-ref-10)
10. Includes Port Authority, port concessionaries, port operators, logistic and transport companies, and truck drivers. [↑](#footnote-ref-11)
11. Disabilities is an umbrella term, covering impairments, activity limitations, and participation restrictions. An impairment is a problem in body function or structure; an activity limitation is a difficulty encountered by an individual in executing a task or action; while a participation restriction is a problem experienced by an individual in involvement in life situations (World Health Organization). [↑](#footnote-ref-12)