
# Improving Efficiency, Quality, and Access in Belize's Health System (BL-L1048)

## Environmental and Social Assessment
## Environmental and Social Management Plan




PlanEHS

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# Document Datasheet

| **Project Proponent**<br>**Ministry of Health and Wellness (MOHW), Belize** | **Project**<br>**Improving Efficiency, Quality, and Access in Belize's Health System Program (BL-L1048)** |
|---|---|
| During the preparation of the Improving Efficiency, Quality, and Access in Belize's Health System Program (BL-L1048), Belize's Ministry of Health and Wellness (MOHW) commissioned, with technical cooperation resources from the Interamerican Development Bank, the preparation of an Environmental and Social Analysis for the works under the Program.<br><br>The purpose of this ESA is to provide an environmental and social assessment of the works under the Program against IDB's Social and Environmental Policy Framework. | **Client**<br>Interamerican Development Bank<br><br>**Contract Date**<br>January 2024 |

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# Executive Summary

## Introduction

The objective of this Environmental and Social Assessment (ESA) is to evaluate the interventions included in the **Improving Efficiency, Quality, and Access in Belize's Health System Program (BL-L1048)**, in accordance with the Interamerican Development Bank's Environmental and Social Policy Framework (ESPF).

The specific objectives of the ESA were the following:

1. Conduct a comprehensive diagnostic evaluation of the Environmental and Social Baseline of the Projects Intervention Area. This includes a synthesis of the pertinent legal and institutional regulatory framework.

2. Identify and evaluate the environmental and social impacts and risks associated with the Projects, spanning all the phases from construction to operation and eventual closure. These evaluations encompass the physical, biological, and socioeconomic aspects of the environment.

3. Establish effective mitigation measures and implement robust management procedures to minimize the assessed impacts and risks. This will culminate in the formulation of the Project's Environmental and Social Management Plan, which will serve as a guiding document.

## Program and Project Description

The Program's main objective is to improve the health of the population in Belize.

The Projects included are the following:

1. Infrastructure Development in four hospitals: Southern Regional Hospital, Dangriga; Northern Regional Hospital, Orange Walk Town; Matron Roberts Polyclinic, Belize City; Palm Center, Belmopan.
2. System and Service Delivery Improvement.
3. Capacity Building and Human Resource Development.
4. Technological Advancement.
5. Logistical and Operational Support.

## Legal and Institutional Framework

Chapter 3 of this ESA outlines the legal, sectoral, and institutional framework of the Projects, taking into account environmental, social, occupational health, and safety areas.

The legal framework is described based on international agreements and national environmental laws.

Considering the funding source is the Inter-American Development Bank, it is necessary to guarantee compliance with the ten Environmental and Social Performance Standards stipulated within the recently revised IDB Environmental and Social Policy Framework.

## Environmental and Social Baseline

Chapter 4 of this ESA presents the Environmental and Social Baseline of the Projects, where the analysis carried out allows to know the location and description of the area of execution and influence of the project, to determine its current situation and the critical aspects to consider during the projects' implementation.

In this section of the Study, the baselines for the physical, biological, and socioeconomic environments are described.

Likewise, an analysis of biodiversity and protected areas, vulnerability to natural disasters, and cultural heritage is carried out.

The analysis then focuses on the Area of Direct Influence of the interventions, providing a description based on a photographic register.

## Environmental and Social Impacts and Risks

The Environmental and Social (E&S) Risk and Impact Assessment Process is developed in Chapter 5.

For the impact identification, the interactions between the project actions (identified above) and the environmental components (physical, biological, and socioeconomic environment) were analyzed. The analysis is comprised of two distinct phases: on the one hand, an assessment for the **environmental and social impacts and risks common across all projects**; on the other, individualized assessments for each project, focusing on the **distinct environmental and social impacts and risks of each project**.

**Common E&S Impacts and Risks**

This analysis was carried out through an impact **matrix**, which exposed the interactions between the project's actions and environmental and social factors.

In each box of the matrix, an impact rating was presented, according to its sign and magnitude.

A matrix memory describing the evaluation of other impact attributes (scope, duration, probability of occurrence, and accumulation) was presented.

During the Construction Phase, the primary concerns and risks identified related to all projects were related to occupational hazards and accidents; and waste management, whereas for the Operational Phase, no significant adverse effects were identified.

**Specific E&S Impacts and Risks**

Individualized assessments were conducted for each project. These specific analyses focused on their distinct environmental and social effects.

During this stage of the assessment, the findings of the analysis were articulated and presented in a narrative structure, providing a specific section for each Project.

The main impacts and risks identified for the Projects were the following:

**Southern Regional Hospital:**

Interventions will proceed during hospital operations, potentially causing temporary disruptions to services and risk of hazardous exposure.

**Northern Regional Hospital:** Upgrading electrical and air conditioning systems, expanding neonatal/obstetric units, and installing solar water heating at the Northern Regional Hospital may cause temporary power and service interruptions, and reduce patient service capacity, challenging ongoing hospital operations.

**Matron Roberts Polyclinic:** Upgrades at Matron Roberts Polyclinic, including roof replacement, dental services relocation, and the creation of a sterilization area, may lead to temporary leaks, water damage, disruption of dental services, and impacts on sterilization processes.

**Palm Center:** The planned intervention includes 25 beds expansion and equipment of inpatient beds, roof retrofitting to improve thermal comfort and climate change resilience, windows shutters installation, AC system improvement, and a short/long-term maintenance plan with emphasis in technology (HVAC, solar panels, etc.).

The 'Specific E&S Impacts and Risks' section in Chapter 5 outlines mitigation measures for the project-specific impacts.

## Environmental and Social Management Plan

The ESMP for the construction stage includes the following Programs:

1. Monitoring and Control of Compliance with Mitigation Measures.
2. Construction Sites Management.
3. Air Quality, Noise and Vibrations Management.
4. Erosion Control.
5. Flora and Fauna Management.
6. Waste Management.
7. Effluent Management.
8. Occupational and Community Health and Safety.
9. Traffic and Pedestrian Management.
10. Pest and Vector Control.
11. Socio-Environmental Training for Site Personnel.
12. Disaster Management and Emergency Response.
13. Community Information and Participation
14. Chance Find Procedure.
15. Solar Panel Supply Chaun Risk Management.
16. Works Closure.

The ESMP for the Construction Phase of the projects will be developed by the Contractor Company.

Chapter 6 outlines the essential requirements for ESMP programs for construction stage and provides general guidelines for programs to be implemented during the operational stage (Operational ESPM).

## Conclusions

As usual in works of these characteristics, there are potential impacts and risks, mainly in the construction phase, such as negative impacts due to the risk of occupational accidents during the works, nuisances and service interruptions for current health facilities users, noise and vibrations, risk of soil and water contamination due to accidental spills, and risk of contamination due to poor management of the solid waste generated.

Additionally, the projects have specific vulnerabilities that need attention, due to the completion of work in certain areas of the facilities while they remain operational. These activities can lead to several negative impacts, including increased noise pollution that disrupts the healing environment for patients and the work concentration of medical staff, dust and debris that pose risks for infections and respiratory issues, obstruction of emergency access routes potentially delaying critical care, and overall stress on hospital operations that may compromise patient care quality.

These negative impacts of the construction phase are limited in time, occur during the work period, and affect only the direct area of influence of the projects.

The application of adequate mitigation measures is detailed in Chapters 5 and 6 of this study. Along with the application of good construction practices that guarantee compliance with national regulations, and the IDB Environmental and Social Performance Standards, these measures are expected to mitigate all the identified impacts and risks.

In their operational phases, these projects are expected to yield long-term positive impacts on communities by providing significant benefits to the healthcare system and to the adaptation to environmental challenges.

Therefore, the operation is considered feasible**, without significant negative socio-environmental risks or impacts that cannot be mitigated**.

# 1. Abbreviations

| | |
|---|---|
| AoI | Area of Influence |
| CoC | Code of Conduct |
| DAoI | Direct Area of Influence |
| DOE | Department of the Environment (Ministry of Sustainable Development, Climate Change & Disaster Risk Management) |
| EA | Executing Agency |
| E&S | Environmental and Social |
| EHSS | Environmental, Health, Safety and Social |
| ESA | Environmental and Social Assessment |
| ESMP | Environmental and Social Management Plan |
| ESMPc | Environmental and Social Management Plan at the Construction Stage (ESMPc) |
| ESPF | IDB's Environmental and Social Policy Framework |
| ESPS | Environmental and Social Policy Framework |
| GHG | Greenhouse Gas |
| GoB | Government of Belize |
| GRF | Grant Facility |
| GRM | Grievance Redress Mechanism |
| IAoI | Indirect Area of Influence |
| ICAP | Institutional Capacity Assessment Platform |
| IDB | Interamerican Development Bank |
| KBA | Key Biodiversity Area |
| LMP | Labour Management Procedure |
| MOHW | Ministry of Health and Wellness |
| MRG | Minority Rights Group |
| OA | Operational Area |
| OW | Orange Walk |
| PPE | Personal Protective Equipment |
| PPPMU | Policy, Planning, and Project Management Unit |
| RC | Reinforced concrete |
| SUDS | Sustainable Urban Drainage Systems |
| USD | United States Dollars |

# 1. Introduction

## 1.1. Background

The objective of this Environmental and Social Analysis (ESA) is to **evaluate the environmental and social risks and impacts** of the projects in the Improving Efficiency, Quality, and Access in Belize's Health System Program (BL-L1048), hereinafter "the Program".

The overarching goal of the Program is to improve the health of the population in Belize. This will be achieved by improving the efficiency and quality of healthcare delivery and to improve access to key health services and resilience to emergency situations. To realize these aims, the Program is divided into two key components.

The Program, with a total cost of **USD 15.75 million** (USD 7 million from the investment loan, USD 1.75 million from a Grant Facility (GRF) and USD 7 million from the Korean Infrastructure Development Co-Financing Facility for Latin America and the Caribbean), will be executed by The Ministry of Health and Wellness (MOHW), through its Policy, Planning, and Project Management Unit (PPPMU).

This Environmental and Social Assessment was developed as part of the environmental and social due diligence process of the Program.

Its purpose of which is to predict, identify, assess, and correct potential environmental and social risks and impacts that the activities of the projects included in the Program, and to ensure that the projects comply with the requirements established in the Environmental and Social Performance Standards (ESPS) contained in the IDB Environmental and Social Policy Framework.

By the Bank's Environmental and Social Policy Framework (ESPF) and based on existing information on the program, it has been classified as category "B" since negative environmental and social impacts are expected to be moderate in the short-term duration, which can be managed through specific management plans. According to the type of interventions, the negative environmental and social impacts are moderate during the period of execution of the works, and there are appropriate mitigation measures for the sector to manage said effects and risks.

## 1.2. Objectives

The specific objectives of the Environmental and Social Assessment were:

1. Carry out the expedited diagnosis of the Environmental and Social Baseline of the Project Intervention Areas, as well as the legal and institutional regulatory framework.
2. Identify and assess the main environmental and social impacts and risks on the physical, biological, and socioeconomic environment, in the Construction, Operation and Closing stages of the Project.
3. Identify the mitigation measures and management procedures to minimize the impacts and risks assessed and outline the contents of the Project's Environmental and Social Management Plan.

## 1.3. Scope

This document summarizes the process of environmental and social evaluation of the works included in the Program, as described in Chapter 2.

**Table 1** below presents the outline and organization of the content of this Environmental and Social Analysis.

**Table 1. Contents of the Environmental and Social Assessment (ESA).**

| Chapter number | Content title | Description |
|---|---|---|
| **Executive Summary** | | This chapter provides a summary of the Strategic Environmental and Social Assessment. |
| **1** | **Introduction** | This chapter delineates the formulation and composition of the SESA Report, encompassing its contextual framework and overarching objectives. |
| **2** | **Program and Projects Description** | This chapter offers an overview of the program, delineating the various interventions envisioned across the distinct projects and delineating their respective scopes. |
| **3** | **Legal and Institutional Framework** | This chapter describes the legal and institutional framework applicable to the environmental and social impact evaluation procedure of the program projects, covering the policies on environmental and social safeguards established by the Inter-American Development Bank (IDB). |
| **4** | **Environmental and Social Baseline** | This chapter summarizes the basic information available about the physical, biological and socioeconomic environment within the Program intervention area. |
| **5** | **Environmental and Social Impacts and Risks** | This chapter provides an overview of the methodology employed for assessing the project's effects on the physical, biological, and socioeconomic environment, along with a detailed presentation of the ensuing analysis results. Additionally, both general and specific mitigation measures are identified and expounded upon with the aim of averting, eliminating, diminishing, or compensating for adverse effects on environmental and social receptors, while simultaneously augmenting positive impacts. |
| **6** | **Environmental and Social Management Plan** | The Environmental and Social Management Plan (ESMP) comprehensively addresses the identified mitigation measures, organizing them into structured programs for deployment across all project phases. Additionally, it establishes the framework delineating institutional roles and responsibilities for effective implementation. |
| **7** | **Conclusions** | This chapter summarizes the conclusions and environmental and social viability of the Program. |
| **References** | | This chapter provides an exhaustive account of all the references cited in the report and the documentation employed throughout the evaluation process. |
| **Annexes** | | The technical annexes encompass specific studies and plans, which include: i) Stakeholder Engagement Plan ii) Labor Management Procedure |

# 2. Program and Projects Description

This chapter presents a description of the **Improving Efficiency, Quality, and Access in Belize's Health System (BL-L1048) Program**, including objectives, components and costs, as well as the interventions that are part of the Program.

## 2.1. Background and Justification

In Belize, inefficiencies and low-quality health service delivery significantly contribute to its healthcare challenges. A recent study[1] shows that optimizing health sector resources could extend life expectancy by two years and decrease premature mortality from Non-Communicable Diseases (NCDs) by 7%.

Identified inefficiencies include poor care quality, inadequate staff productivity, and a health budget not aligned with performance targets. The IDB-supported Mesoamerica Health Initiative has made strides in improving healthcare, particularly in maternal, neonatal, and child health, indicating potential for broader application.

However, systemic issues like fragmented healthcare financing, operational silos, and access barriers to electronic health records exacerbate inefficiencies. These challenges are compounded by inadequate supply chains and a need for stronger NCD management within the Ministry of Health and Wellness (MOHW). Access to healthcare is further hindered by insufficient resources in rural PHC facilities and barriers faced by vulnerable groups, including migrants and indigenous populations.

Efforts to address these issues align with Belize's Health Sector Strategic Plan and the IDB's strategic objectives, focusing on enhancing healthcare efficiency, quality, and resilience to climate change and public health emergencies. This approach seeks not only to improve health service delivery but also to leverage digital solutions and capacity building, underscoring the commitment to advancing health equity and sustainability in Beliz.

## 2.2. Objectives

The project's general development objective is to improve the health of the population in Belize.

The specific objectives are to: (i) improve the efficiency and quality of healthcare delivery; and (ii) improve access to key health services and resilience to emergency situations.

## 2.3. Components

The Program is structured in three components:

**Component I. Increasing the efficiency of healthcare delivery.** This component is comprised of three subcomponents, which are mentioned below:

[1] Efficiency of Health Systems in Middle-Income Countries and Determinants of Efficiency in Latin American and the Caribbean (iadb.org)

**Subcomponent 1.1. Quality and efficiency improvement strategy and Human Resource (HR) capabilities.** This sub-component will finance the expansion of the quality and efficiency improvement strategy nationwide (hospitals, polyclinics, and HCs), focusing on MNCH, NCDs, and A&E[2], and HR strengthening, including: (i) developing/updating and implementing guidelines and protocols; (ii) mapping/optimizing clinical and managerial processes; (iii) developing skills in health workers (quality and efficiency improvement) and managers (administration/operation); (iv) deploying the quality and efficiency improvement strategy, including workshops and the development/application of digital tools to automatize data collection/analysis; (v) scholarships to train additional doctors and nurses; (vi) preparing a national HR training plan and strategies to improve recruitment/retention; (vii) preparing/implementing virtual education courses; and (viii) developing/deploying a performance monitoring and evaluation system.

**Subcomponent 1.2. System's governance**. This sub-component will finance interventions to optimize key aspects of the system, including: (i) updating the National Health Strategic Plan[3]; (ii) improving the supply chain of medicines and supplies, including procurement; (iii) strengthening MOHW's epidemiology and NCD unit/department; (iv) developing accreditation guidelines; (v) conducting a costing exercise of key health interventions; and (vi) improving budget planning and execution.

**Subcomponent 1.3. Digital health.** This sub-component will finance interventions aimed at improving the BHIS and the overall digital ecosystem, including: (i) adding features to the BHIS like online appointments, lab results, and an interface/app to support patients' self-care;23 (ii) improving data analytics capabilities; (iii) creating a national digital health strategy and establishing key policies (e.g., interoperability, cybersecurity, and data privacy to ensure secure data analytics while safeguarding patient information); (iv) developing/implementing a change management strategy for new features adoption; (v) building health informatics capacity, such as in data analytics; and (vi) upgrading hardware and data servers to handle the increased complexity of Services.

**Component II. Improving access to healthcare.** This component will finance interventions aimed at improving access to outpatient, inpatient, and long-term care, including: (i) strengthening the CHW platform in rural communities; (ii) piloting a comprehensive mobile clinic unit to serve rural communities; (iii) designing/deploying a telehealth strategy; (iv) piloting a telehealth program for patients with mental health conditions; (v) behavior change communication campaigns to encourage the uptake of health services;26 (vi) expanding, retrofitting, and equipping A&E and obstetric/neonatal wards in three hospitals;27 (vii) expanding, retrofitting, and equipping the Palm Center for long-term care; (viii) adapting health facilities to climate change and public health emergencies28; (ix) training biomedical engineers and maintenance officers; (x) preparing an infrastructure master plan and a healthcare network analysis; and (xi) acquiring ambulances and other vehicles for patients' transportation.

[2] Considering the specificities of different population groups, including men, women, indigenous people, and migrants. For instance, guidelines and protocols will consider the specificities and needs of different population groups, and health workers and managers will be trained accordingly.

[3] This process will be an opportunity to discuss the sector's vision for the future, its main challenges, such as fragmentation and insufficient accountability, and NHI's and KHMK's current and future roles in the network.

**Component III. Project administration.** This component will support project execution, monitoring, and evaluation activities.

## 2.4. Costs and Financing

The IDB will finance this program operation with an allocation of **USD 7 million**, set up as a specific investment loan with a proposed execution timeframe of **5 years**. Complementing this investment, the Grant Facility (GRF) will provide up to **USD 1.75 million** in non-reimbursable funds, primarily aimed at bolstering Latin America and the Caribbean's initiatives to mitigate migration-related challenges. Furthermore, the program anticipates an additional allocation of up to **USD 7 million** from the Korean Infrastructure Development Co-Financing Facility for Latin America and the Caribbean (KIF). Consequently, factoring in all the aforementioned sources, the total funding for the program amounts to **USD 15.75** million.

The following is a detail of the costs classified by component:

**Table 2 - Budget Summary for Project Components.**

| Components | Costs (US) | |
|---|---|---|
| **Component 1** | $ | 7.670.000,00 |
| **Sub-component 1.1** | $ | 2.775.000,00 |
| **Sub-component 1.2** | $ | 955.000,00 |
| **Sub-component 1.3** | $ | 3.940.000,00 |
| **Component 2** | $ | 6.724.550,00 |
| **Administrative costs** | $ | 1.355.450,00 |
| **Total** | **$** | **15.750.000,00** |

## 2.5. Implementation Arrangements

The Ministry of Health and Wellness (MOHW), through its Policy, Planning, and Project Management Unit (PPPMU), credited with the successful implementation of six IDB operations, will serve as the executing agency for this project.

However, due to the absence of a recent Institutional Capacity Assessment Platform (ICAP) evaluation, an ICAP will be undertaken for this project. The PPPMU will incorporate essential staff for the operation's execution, including an engineer, ensuring effective management.

## 2.6. Expected Benefits

The project is designed to serve the entire population of Belize, encompassing migrants, with a notable impact anticipated through the national scale-up of the quality and efficiency improvement strategy.

Specifically, enhancements in healthcare access are projected to advantage approximately 336,057 individuals, including 56,252 indigenous people and 12,435 migrants.

The sustainability of these interventions is underpinned by their potential to elevate health spending efficiency, for instance, through heightened worker productivity, alongside generating cost savings, as evidenced by the development of smart hospitals, and minimizing waste via the optimization of procurement and supply chain management processes.

## 2.7. Description of Projects

In order to achieve the development objectives of the first individual operation and complete the implementation of the program components, the following categories of projects will be developed.

### 2.7.1. Infrastructure Development

In response to the second program's component, it is a section focused on the physical expansion and modernization of healthcare facilities. This facet of the plan addresses the strategic overhaul of infrastructure in four pivotal hospitals: Matron Roberts, Southern Regional, Northern Regional, and Palm Center. Each of these facilities is earmarked for comprehensive baseline assessments to identify current capabilities and future needs. The expansion and retrofitting efforts are not merely structural; they are designed with a view to enhancing the delivery of emergency and obstetric/neonatal services, areas identified as critical to improving health outcomes.

This program's component is designed to significantly enhance the capacity of health facilities to address the dual challenges of climate change and public health emergencies through the implementation of the SMART Hospitals Initiative[4]. By targeting four health facilities to achieve a notable 70A score, the plan transcends traditional construction and refurbishment efforts. Instead, it focuses on equipping these facilities with the resilience needed to withstand the impacts of climate change. This is achieved by integrating 'SMART' (Specific, Measurable, Achievable, Relevant, and Time-bound) measures into their design, ensuring that sustainability and operational efficiency are at the core of these enhancements. Furthermore, this comprehensive approach includes the procurement of essential medical equipment and furniture, aiming to modernize the infrastructure while simultaneously improving the healthcare experience for patients and providers alike. Through these concerted efforts, the initiative seeks to establish a model of healthcare that is both resilient and responsive to the evolving environmental and public health landscape.

At Matron Roberts Polyclinic, for instance, the infrastructure plan includes expanding offices, consultation areas, and patient waiting areas. The focus here is to create a more accommodating space for patients and to streamline the flow of medical consultations. Similarly, for the Southern Regional Hospital, the reorganization and expansion of the labor and delivery care area are prioritized to cater to the specific needs of maternal health services. The Northern Regional Hospital is set to undergo improvements and retrofitting to meet the A-70 score of the Safe and Smart Hospital Index, including, for example, the reorganization with the emergency room and the expansion of labor and delivery care area.

[4] https://www.paho.org/en/health-emergencies/smart-hospitals/smart-hospitals-toolkit

## Design criteria

As indicated above, the program aims to enhance the resilience and sustainability of health facilities through the implementation of the SMART Hospitals Initiative, which focuses on two key assessments: sustainability (GREEN), evaluated on a scale of 0 to 100 points encompassing energy and water efficiency, waste management, and indoor air quality; and resilience (SAFE), rated from A to C based on structural safety, drainage, and accessibility features. To attain SMART certification, which signifies excellence in both sustainability and resilience, facilities must achieve a 70A score, indicative of a 'Smart' gold standard. Despite initial assessments conducted with PAHO from 2017 to 2020 identifying necessary sustainable and resilience measures, the targeted 70A score has not been reached. The strategy to achieve this encompasses assessing vulnerabilities, advocating for resilient new constructions, planning renovations for existing facilities to ensure safety and operational continuity during emergencies, implementing green technologies to lessen environmental impact, and raising awareness among stakeholders of the importance of safe and green health facilities.

## Interventions details

To explain the interventions in further detail, the proposed interventions at the Hospitals are structured into two distinct categories, Infrastructure Retrofitting and Improvements in waste management, and are listed below.

## Interventions at Southern Regional Hospital

The compound of the Southern Regional Hospital, located at Dangriga, contains 2 main structures: a hospital (comprising 2 structures) and a polyclinic, both commissioned in the year 1999. The main hospital East-West orientated comprises two buildings with a floor area of 28,400 square feet, connected by ramps at three locations. The buildings are supported by I-beams place on piled footings and these I-beams, working along with open web lattice joists placed transversely and acting as diaphragms, support the building proper.

This facility deals with outpatients and operates Monday to Friday on a 12-hour basis (from 7am to 7pm) and 7am to 12 noon on Saturdays; and provides the following services:

- Family and Community Health Services: pre-natal care, family planning, cervical cancer screening, breastfeeding counseling, post-natal care, public health monitoring
- Out-patient services: non-communicable disease management, communicable disease management, nutritionist consultations, cancer screening services
- Dressings: short-term and long-term wound dressings
- Specialist services: pediatrics consultations, obstetrics consultations and dental service
- Community outreach and Patient education services
- Morgue

The expected interventions include:

<u>Infrastructure Retrofitting</u>

- Septic Tank Relocation and Upgrading: new septic tank with a redesign of the wastewater treatment.

- Maintenance Strategy: A long-term maintenance plan with emphasis in technology (HVAC, solar panels, etc.).
- Roof Repairs: The roof will undergo repairs to fix leaks and enhance its resilience.
- Accidents and Emergency (A&E) space redesign and expansion.
- Neonatal Area Expansion within the existing building's footprint.
- Flooring Upgrade: Refinishing with vinyl floor finish.
- Water Reserves: A water reserve tank will be installed, ensuring a supply for up to five days.
- Staff Facilities Improvement: New restrooms for staff will be built.
- New Oxygen Deposits.
- Windows and Lighting: The hospital will address the lack of window shutters and improve natural lighting and ventilation, particularly in the waiting area of the Polyclinics.

Improvements in Waste Management

- Wastewater Management Systems Overhaul: Temporary hosing connections will be eliminated, a proper vactor schedule will be implemented, and a health and safety surveillance program will be established, alongside a contingency plan.
- Solid Waste Management Enhancement: The conditions in the temporary holding area for solid waste will be improved, on-site autoclaving will be implemented, and staff will receive additional training on health and safety, complemented by a contingency plan.
- Oxygen Cylinders Storage Solution: An adequate storage area for oxygen cylinders will be constructed, with a contingency plan in place for emergencies.

## Interventions at Northern Regional Hospital

The Northern Regional Hospital (NRH) is in the municipality of Orange Walk Town. The hospital building itself covers some 40,000 sq. ft. comprising of several sections, namely: General, Pediatrics, Maternity, as well as two outpatient departments (General and Child and Maternal health), two surgical theatres and the Emergency Ward.

The building was constructed in 1979 and has a footprint of 35,000 sq. ft. The hospital building is a single-story reinforced masonry block walls on a floating foundation slab with timber roofing covered with metal sheeting (gable roof). Services offered by the hospital are as follows:

- Specialist Services: obstetrics, pediatrics, gynecology consultations, dental and X-Ray Services
- Family and Community Health Services: pre-natal care, family planning, cervical cancer screening, breastfeeding counselling, post-natal care, public health monitoring
- Out-patient services: non-communicable disease management, communicable disease management, nutritionist consultations, cancer screening service
- Vaccination Services, Community Outreach and Patient Education Services
- Morgue Services

The expected interventions include:

Infrastructure Retrofitting

- Natural Ventilation and Air Renovation: Improvement of air quality and thermal comfort in the Neonatal and Obstetrics ward.

- Electrical System Upgrade: Addressing the overloaded system with new installations to ensure reliability and safety.
- Air Conditioning System Overhaul: Repair or replacement of the centralized AC system in the operating theater, including backup units for continuous operation.
- Long-Term Maintenance Planning: Establishment of a detailed maintenance schedule with an emphasis on technology, including HVAC and solar panels.
- Neonatal/Obstetric Expansion: Adding 2 beds within the existing footprint.
- Accidents and Emergency (A&E) Expansion: Increasing capacity by 4 beds outside the current footprint.
- Triage Area Redesign.
- Wastewater Treatment Enhancement: Installation of a new septic tank with redesigned wastewater treatment processes.
- Roof Reinforcement: Strengthening the roof structure to enhance durability and safety.
- Energy Resilience: Introducing a backup generator to provide energy security.
- Efficiency Upgrades: Implementing water and lighting fixtures that reduce energy consumption.
- Solar Water Heating Installation: Incorporating SMART technology for sustainable and efficient heating solutions.

Improvements in Waste Management

- Wastewater Management Systems: Eliminating temporary hosing connections, instituting a proper vactor schedule, and implementing a comprehensive training and health and safety surveillance program with a contingency plan.
- Hazardous Waste Management: Upgrading the temporary holding area, introducing on-site autoclaving, and enhancing training and surveillance programs, complemented by a contingency plan.
- Pest Management: Establishing a chemical storage area with containment features, relocating it away from residential areas, ensuring compliance with the IDB's Environmental and Social Policy Framework (ESPF), and supporting this with training and health and safety programs.

## Interventions at Matron Roberts Polyclinic

Matron Roberts Polyclinic is located at Belize City (South Side). It is a two-story building: the upper floor basically houses the administration and a dental clinic; the ground floor area provides health services to the public. The community it serves has the highest poverty rate in the city and the area is near the sea, low lying, and has poor drainage infrastructure, making it vulnerable to flooding due to precipitation, spring tides and storm surges.

The footprint of the building covers approximately 5,086 square feet. The total number of examination and observations beds in facility is 11. There are no in-patient beds. Health services being offered at the facility include:

- Family and Community Health Services: pre-natal care, family planning, cervical cancer screening, breastfeeding counseling, post-natal care, public health monitoring
- Out-patient services: non-communicable disease management, communicable disease management, nutritionist consultations, cancer screening service
- Dressings: short-term and long-term wound dressings

- Specialist services: pediatrics consultations, obstetrics consultations, and dental service (in the upper floor.
- Community outreach and Patient education services

The expected interventions include:

Infrastructure Retrofitting

- Establishment of a Long-Term Maintenance Plan with an emphasis on technology, including HVAC and solar panels.
- Roof Replacement: Targeting issues related to leakage and enhancing structural resilience.
- Maternity and Waiting Area Redesign and Expansion.
- Dental Services Relocation to another floor.
- Update of Expansion Design: Redesigning the expansion plans to align with new requirements.
- Installation of a Security Perimeter Fence.
- Installation of a Water Reserve Tank.
- Improvement of Exterior Drainage and Walkable Areas: Ensuring proper drainage to mitigate flood risks and creating permeable surfaces.
- Procurement of a New Generator: To provide reliable backup power and ensure uninterrupted operations during outages.
- Repainting Work: Refreshing both the interior and exterior paint of the polyclinic.
- Creation of a Sterilization Area: Establishing a dedicated space for sterilization processes to maintain high standards of hygiene and prevent infections.

### Interventions at Palm Center

The Palm Center, located in the Northeastern corner of Maya Mopan in Belmopan, is a psychiatric institution for the treatment of mental disorders, the provision of care for persons with less severe mental health problems, the prevention of psychological problems, and the promotion of mental health through public mental health services and education. The main facility is equipped with 20 alcoves, which has a capacity to accommodate 40 patients. The occupational therapy building, on the other hand, is divided into nine sections. The building orientation face North-South with a floor Area of 11,165 sq. ft. This facility is used daily for patients' activities such as: arts and crafts, exercising, etc. Currently, there are 34 patients living in the facility: 18 males and 16 females.

The expected interventions include:

Infrastructure Retrofitting

- Establishment of a Long-Term Maintenance Plan with an emphasis on technology, including HVAC and solar panels, to ensure the polyclinic's operational efficiency and resilience.
- Roof Retrofitting: Improving thermal comfort and enhancing resilience to climate change by addressing existing structural issues.
- Windows Shutters Installation.
- AC System Improvement.
- Expansion and Equipment of Inpatient Beds: Adding 25 beds and equipping them to meet the growing needs for inpatient care.

### 2.7.2. System and Service Delivery Improvement

This component targets transformative reforms within the health service delivery model to elevate both efficiency and accessibility. Central to this effort is the integration of the Quality and Efficiency Improvement Strategy (QEIS), initially focused on reproductive, maternal, neonatal, and child health, and now expanding to encompass non-communicable diseases (NCDs), accidents and emergencies (A&E), and surgical services. This expansion, piloted successfully in Belize since 2012, involves comprehensive steps: updating clinical protocols, standardizing care processes, and implementing continuous quality improvement cycles across healthcare facilities. The approach is data-driven, leveraging routine data analysis and dashboards for monitoring, with the establishment of Mortality Review Committees for systematic mortality case reviews.

It also includes updating the National Health Strategic Plan to address the broader social determinants of health.

### 2.7.3. Capacity Building and Human Resource Development

Dedicated to empowering health workers, this area extends scholarships for additional training and encompasses comprehensive training in updated guidelines and protocols for RMNCH, NCDs, A&E, and surgeries. Health Management Training and the creation of Virtual Education Courses aim to enhance the operational competencies of health facility managers and ensure up-to-date clinical practices, respectively. This initiative also involves developing skills enhancement programs, with a focus on new techniques like bubble CPAP for neonates and addressing the care needs of vulnerable populations. Strategic human resources planning activities will support the recruitment, retention, and succession within the health sector, bolstered by training for managers and senior MOHW officials to improve workflow and facility operations efficiency.

### 2.7.4. Access, Cultural Inclusivity, and Patient-Centered Care

This initiative is designed to make healthcare more inclusive and culturally sensitive. The Cultural Adaptation of Health Services ensures that the diverse cultural needs of the population are met, which is especially important in areas with significant indigenous populations. The Community Health Strategy and Mobile Clinics Strategy aim to extend healthcare's reach, bringing essential services directly to communities. Additionally, the Telehealth Program for Mental Health represents a modern approach to mental health care, leveraging technology to provide remote support.

It also has strong emphasis on enhancing both patient and health worker satisfaction. This is achieved through a combination of safety protocols within QEIS and a Behavior Change Communication Strategy, which collectively works to mitigate risks and promote health service utilization.

### 2.7.5. Technological Advancement

In response to the evolving needs of healthcare delivery, this initiative focuses on substantial upgrades to the IT infrastructure across healthcare facilities, aiming to enhance efficiency, cybersecurity, and patient data management. The improvements to the Belizean Health Information System (BHIS) will streamline clinical workflows and support the development of patient self-care and management

functionalities, such as mobile apps or patient portals. This effort is supported by a change management strategy that ensures the effective adoption and utilization of these digital health resources, aligning with the modern healthcare environment's complex requirements.

### 2.7.6. Logistical and Operational Support

This section addresses the critical need for robust Supply Chain Management to ensure the uninterrupted supply of medicines and medical inputs, essential for patient care continuity. By revising and enhancing planning, procurement, storage, and distribution processes, the project aims to bolster the healthcare system's logistical backbone. Additionally, the procurement of vehicles for patient transportation, particularly focusing on the mental health program, and the acquisition of essential equipment for health facilities underscore the comprehensive approach to improving healthcare delivery. A detailed Administrative Costs plan supports these logistical and operational enhancements, providing the necessary resources to sustain the effective management of the developed infrastructure and strategies, ensuring long-term viability and efficiency.

# 3. Legal and Institutional Framework

This chapter describes the legal, sectoral and institutional framework, considering the environmental, social, safety and occupational health areas directly linked to the interventions to be carried out.

## 3.1. Belize Legal Framework

This section presents the International Agreements and National regulations related to the Program and projects under analysis. The information is organized by thematic area in order to facilitate the understanding and subsequent reference of each topic.

### 3.1.1. Environmental Licensing

**Table 3 - Environmental Licensing regulations**

| National Legislation | |
|---|---|
| **Environmental Impact Assessment Regulations S.I. 107/1995 and Amendment - 2020** | It establishes that all persons, agencies, institutions (whether public or private), unless exempted pursuant to these Regulations, shall, before embarking on a proposed project or activity, apply to the Department of Environment (DOE) for a determination whether such project or activity would require an environmental impact assessment (EIA).<br>It also divides the projects into categories that determine, according to their classification, required documentation to be submitted to the DOE:<br>• Schedule I: It requires an environmental impact assessment. The scope and extent of the environmental impact assessment shall be determined by the DOE.<br>• Schedule II: The DOE shall determine or cause to be determined whether any of the undertakings, projects or activities specified in Schedule II require an environmental impact assessment or a limited level environmental study.<br>In accordance with the classification, these projects are classified as Schedule II, Infrastructure Projects. |
| **Environmental Protection Act Chapter 328 of the Substantive Laws of Belize - Revised Edition 2011** | It established the Department of Environment (DOE) and designated it as responsible for monitoring the implementation of the Act and subsequent regulations. The Act provides the DOE with broad regulatory and enforcement authority for the prevention and control of environmental pollution, conservation and management of natural resources, and environmental impact assessment. |
| **Environmental Protection (Effluent Limitations) Regulations (S.I. 94/1995) and Amendment - 2009** | It established a licensing system for effluent discharge under specific conditions. The regulation establishes measures for the treatment of industrial effluents, as well as limitations or standards for physical and chemical effluent parameters.<br>In August 2009, the Effluent Limitation Regulation was amended to include provisions for the treatment of domestic wastewater. This amendment also introduced improvements in effluent standards for both industrial and domestic effluents. |

| National Legislation | |
|---|---|
| **Pollution Regulations (S.I. 56/1996) and Amendment - 2009** | These regulations are established to control air, noise, water and soil pollution. It establishes the prohibition to discharge pollutants into the environment, unless it is done with a permit issued by the Department of the Environment and at acceptable levels of pollutants from certain facilities.<br>In June 2002 and August 2009, the regulations were amended to include, among other things, issues related to commitments under the Montreal Protocol on Substances that Deplete the Ozone Layer. |
| **Environmental Protection (Pollution from Plastics) Regulations - 2020** | It addresses the importation, manufacture, sale and possession of prohibited and restricted single-use plastics and Styrofoam products in Belize. |
| **Summary Jurisdiction (Littering Offences) Act Chapter 98 - Revised Edition 2003** | It deals with the issue of littering, outlines the process for violation tickets and determines the officials authorized to enforce them. |
| **Customs Regulation (Prohibited and Restricted Goods) (Consolidation) (Amendment) Order - 2006** | Regulates the issuance of licenses for the import of used tires and lead-acid batteries and for the export of scrap metal by DOE. |
| **Mines and Minerals Act Chap. 226 - Revised Edition 2000** | It regulates the extraction of all non-renewable resources (except petroleum).<br>The Act also addresses dredging and sand mining. Under Section 36, it requires that any application of a mining (includes dredging) license should be accompanied by a proposal for the prevention of pollution, the treatment of wastes, the safeguarding of natural resources and the minimization of the effects of mining on surface and underground water. |
| **Disaster Preparedness and Response Act, Chapter 145 - Revised Edition 2000** | It is often referred to as the NEMO Act. The National Emergency Management Organization (NEMO) is responsible for coordinating national responses to disasters. This regulation deals with the response to any kind of disaster, being natural or man induced. |

### 3.1.2. Buildings and Public Areas

| National Legislation | |
|---|---|
| **The Belize Building Act (No. 131/2003)** | This Act and its 2005 Revision repeals the Belize City Building Act (CAP. 131 Revised Edition 2000).<br>It establishes the Central Building Authority to administer the provisions of the Act. The Act establishes that the Authority shall appoint a professional engineer or architect as the Director of Building Control who shall sign and issue all building permits, notices of execution and other related documents. The Authority may appoint construction inspectors in order to determine compliance with the terms of the building permit. |
| **Dangerous Buildings (Demolition) Act Chapter 133 – Revised Edition 2020** | This Act focuses on the identification, inspection, and potential demolition of structures deemed hazardous in Belize. It authorizes the Commissioner of Police or senior police officers to inspect any |

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| | suspect building. Within this Act, "building" is broadly defined to include any edifice, wall, or other structure, along with anything attached to or projecting from such structures. |
| **Public Halls Regulation Act, Chapter 141 - Revised Edition 2020** | It is designed to oversee and regulate the use of public halls in Belize. The legislation stipulates that any structure other than churches, whether permanent or temporary, are classified as "halls". The Minister responsible for Local Government and Rural Development is the primary authority for this act. |
| **The Public Safety Act, Chapter 142 - Revised Edition 2020** | This Act grants the Governor-General of Belize the authority to implement regulations in times of civil commotion that threaten public safety. These regulations can pertain to the movement of persons within specific areas, transport mechanisms, supply and possession of intoxicating liquor, firearms, ammunition, explosives, and other offensive weapons. |

### 3.1.3. Water and Water Resources Management

**Table 4 - Water Resources management regulations**

| National Legislation | |
|---|---|
| **The National Integrated Water Resources Act - 2011** | This Act provide for the management, controlled allocation and the sustainable use and protection of the water resources of Belize. It establishes the National Integrated Water Resources Authority with responsibility for the preparation and implementation of a National Water Resources Master Plan, licensing of water abstraction, and responsibility for dealing with issues related to easements required by licensees, control and protection of groundwater and well drilling, and the protection of gathering grounds. It should be noted, however, that this Act has not been fully implemented. |
| **Water Industry Act Chapter 222 - Revised Edition 2020** | This Act regulates the provision and control of water and sewerage services in Belize; promotes the conservation and proper use of water resources; provides for the issuance of licenses to water supply companies; provides for the transfer of the assets and liabilities of the Water and Sewerage Authority to the company or companies authorized by the Public Utilities Commission. This Act repeals the Water and Sewerage Act, Chapter 185 of the Laws of Belize. |
| **Public Utilities Commission Act Chapter 223 - Revised Edition 2000** | Provides for the establishment of a Public Services Commission to regulate the provision of public services in Belize. The function of the Commission will be to ensure that the services provided by a public service provider are satisfactory and that reasonable rates are charged for such services. Public utilities include water supply and sewerage services. |

### 3.1.4. Socio-Economic Legislation

**Table 5 - Socio-Economic Legislation**

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|---|---|
| **Multilateral Agreements** | |
| **International Labour Organization Conventions Act Chapter 304:01 - Revised Edition 2003** | These agreements govern the relationship between contractors and their workers. They include, among others, minimum age, right of association, minimum wage, freedom of association and protection of the right to organize, abolition of forced labor, protection against radiation, paid vacations, etc. |
| **Convention for the Protection of Cultural Property in the Event of Armed Conflict UNESCO (Hague Convention) - 1954** | It aims to protect cultural property, such as monuments of architecture, art or history, archaeological sites, works of art, manuscripts, books and other objects of artistic, historical or archaeological interest, as well as scientific collections of any kind, regardless of their origin or ownership. |
| **Rotterdam Convention - 2004** | The objective of this Convention is to promote shared responsibility and cooperative efforts among Parties in the international trade of certain hazardous chemicals in order to protect human health and the environment from potential harm and to contribute to their environmentally sound use, by facilitating information exchange about their characteristics, by providing for a national decision-making process on their import and export and by disseminating these decisions to Parties. |
| **National Legislation** | |
| **Labour Act Chapter 297 - Revised Edition 2011 and Amendment Act 2020** | It establishes the conditions for labor relations between contractors and their workers (hiring of employees, conditions of employment, payment of wages, disputes resolution, etc.). |
| **Workmen's Compensation Act Chapter 303 - Revised Edition 2000** | The law establishes provisions on the liability of contractors for workers who are involved in accidents at work or while being transported to their workplace (compensation, insurance, insolvency, etc.). |
| **Social Security Act Chapter 44 - Revised Edition 2011** | It requires the contractor to pay worker's social security contributions in case of sickness or injury. |
| **National Occupational Safety and Health Bill** | It is a projected National Law that aims to regulate worker's safety and health. Although it is not yet a law, the provisions of this bill serve as an excellent guide for good practices. |
| **Village Councils Act Chapter 88 Revised edition 2020** | It addresses issues affecting the village's management through a village council. It deals with legal proceedings, elections, finances, etc. |
| **Town Council Act Chapter 87 Revised Edition 2020** | It establishes Town Councils as body corporate with perpetual succession and a common seal. The Council shall consist of a Mayor and six other members duly elected in accordance with this Act and regulations made thereunder. Town Councils have wide powers to manage the affairs of the towns, and operate within declared town limits. They can make subsidiary laws or by laws for the good governance of the towns. |
| **Protection against Sexual Harassment Act Chapter 107 Revised Edition 2000** | This Act provides for the prohibition of sexual harassment in the workplace by an employer to his or her co-workers so that both men and women work in a respectful and pleasant environment. |

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| **Families and Children Act Chapter 173 Revised Edition 2000** | Protects the rights of families and children.<br>Under this legislation, any member of the public who has knowledge of child abuse has a moral duty to report; while anyone whose occupations involve direct contact with children has a legal obligation to do so. |
| **Pesticides Control Act Chapter 216 Revised Edition 2020** | The Pesticides Control Board has the responsibility to license personas to import or manufacture pesticides; to authorize pesticide applicators; and to control the use of them. |
| **Customs and Excise Duties Act Chap 48 Rev. 2000** | This Act regulates the importation or exportation of any goods which for the time being is subject to any number of conditions or restrictions and applies to the importation of all groups of metals. |
| **Dangerous Goods Act Chapter 134 - Revised Edition 2011** | It regulates activities involving the importation, production, transportation, storage and/or distribution of hazardous substances such as explosives, petroleum products, gunpowder, dynamite, nitroglycerin, gun cotton, gunpowder for explosions, mercury or other metal fulminating agents, colored fireworks, etc. |

### 3.1.5. Traffic and Road Safety

**Table 6 - Traffic and Road Safety Legislation**

| National Legislation | |
|---|---|
| **Public Roads Act - Revised Edition 2003** | The Public Roads Act charges the Chief Engineer, subject to the Minister's consent, with the construction, alteration, maintenance and supervision of all public roads of Belize. |
| **Motor vehicles and Road Traffic Act Chapter 230 - Revised Edition 2011** | This Act establishes conditions for registration and licensing of motor vehicles; driving and other offences and general conditions relating to the use of roads; legal proceedings, suspension, cancellation and endorsement of Driving Licenses; and fees and duties. |

### 3.1.6. Noise

**Table 7 – Noise Legislation**

| National Legislation | |
|---|---|
| **Pollution Regulations S.I. 56 - 1996 and Amendment - 2009** | Part XI of the Pollution Regulations sets out the conditions under which certain activities resulting in the emission of noise nuisance are deemed to be violations. |

### 3.1.7. Urban Solid Waste Management

**Table 8 - Urban Solid Waste Management Legislation**

| National Legislation | |
|---|---|
| **The Solid Waste Management Authority Act, Chap. 224 - Revised Edition 2000** | It establishes that The Solid Waste Management Authority regulates the management of waste material resulting from new construction or other work. Contractors are required to properly remove and dispose of all waste material. |
| **Environmental Protection (Prohibition of the open-burning of refuse and other regulations) - 2020** | It establishes the prohibition of open-burning and other combustible materials for the protection of the environment. During the period of public emergency, no person shall cause, suffer, allow, or permit open-burning of any refuse or combustible matter on any private or public land. A person that contravenes this regulation commits an offence and is liable on summary conviction to a fine not exceeding five thousand dollars or to a term of imprisonment not exceeding two years. |

### 3.1.8. Hazardous Waste Management

**Table 9 - Hazardous Waste Management Regulations**

| Multilateral Agreements | |
|---|---|
| **Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their Disposal (BASEL) - 1997** | The objective is to reduce hazardous waste movements between nations. |
| **National Legislation** | |
| **Hazardous Waste Management Regulations -S. I. No. 100/2009** | It establishes rules for transport, storage, and disposal of hazardous waste. The regulations do not address hazardous waste contained in domestic waste or waste generated from the use of agrochemicals since these are addressed in other legislations. |
| **Medical Waste Regulations, 2021** | Ensure that medical waste is managed throughout the country through improved storage, transportation, and final disposal. |

### 3.1.9. Gaseous Emissions Management

**Table 10 - Gaseous Emissions Management Legislation**

| Multilateral Agreements | |
|---|---|
| **United Nations Framework Convention on Climate Change - 1994** | The Convention objective is to stabilize greenhouse gas concentrations at a level that would prevent dangerous anthropogenic (human induced) interference with the climate system. |
| **Vienna convention for the Protection of the Ozone Layer - 1978** | It establishes that the parties shall cooperate through research and exchange of information in order to better understand and assess the effects of human activities on the ozone layer. The objectives are found in the Montreal Protocol. |

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| **Stockholm Convention on Persistent Organic Pollutants - 2004** | The Stockholm Convention is a global treaty that aims to protect human health and the environment from the effects of persistent organic pollutants (POPs). |
| **National Legislation** | |
| **Nationally Determined Contribution under the United Nations Framework Convention on Climate Change** | Belize's Nationally Determined Contribution (NDC) is guided by its commitment to strategically transition to low carbon development while strengthening its resilience to the effects of Climate Change. |

## 3.1.10. Energy

**Table 11 – Energy Legislation**

| **National Legislation** | |
|---|---|
| **National Energy Policy (Proposal) - 2011** | The objective of the policy is to meet the energetic needs of the population through energy efficiency, production, supply, transportation, distribution and end-user systems to contribute to social and economic development in an environmentally sustainable manner.<br>The plan's objectives include: minimize the cost of energy use, minimize the amount of GHG emissions, Maximize the renewability index (percentage of indigenous renewable energy in the total primary energy supply mix), maximize production of energy from indigenous sources, maximize the diversity of the energy supply mix, and maximize the use of electricity in the secondary energy supply mix |
| **Public Utilities Commission Substantive Act Chapter 223 - Revised Edition 2020.** | It created the Public Utilities Commission in 2001 incorporating the traditional regulatory agencies, the Electricity Supply Office and the Telecommunications Office, to regulate the electricity, water and telecommunications sectors in Belize. |

## 3.1.11. Soils

**Table 12 – Soils Legislation**

| **National Legislation** | |
|---|---|
| **Land Acquisition (Public Purposes) Act Chapter 184 – Revised Edition 2000** | The "Land Acquisition (Public Purposes) Act" pertains to the processes and provisions surrounding the acquisition of land for public purposes within Belize. The Act outlines the procedures to be followed when the government identifies land for a potential public purpose. It dictates how the decision to acquire land for public use should be announced, including publication in the Gazette and specifying details about the land in question. The law also confers power to the relevant authorities to survey and investigate land for its suitability for the intended purpose. |

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| **Land Utilization Act Chapter 188 - Revised Edition 2000** | It provides the primary authority for land-use planning in Belize. The Act requires that government approval be obtained before any parcel of land can be subdivided and provides general authority to regulate land use in order to protect watersheds, prevent soil erosion, control clearing of forest, and regulate the type of development permitted in designated areas. |
| **Land Tax Act, Chapter 58 - 2000** | The Department of Lands and Surveys is responsible for the administration of the Land Tax Act, mainly through its valuation and taxation functions. |
| **The National Lands Act No. 6 - 1992 and SI 191 - Revised Edition 2000** | **The Act is designed to establish a framework for the management of national lands, where "national lands" means all lands and seabed, other than reserved forest within the meaning of the Forest Act.** |

### 3.1.12. Protected Areas

**Table 13 – Protected Areas Legislation**

| National Legislation | |
|---|---|
| **Convention for Nature Protection and Wildlife Preservation in the Western Hemisphere - 1940** | Its purpose is to establish national parks, national reserves, natural monuments and strict wilderness reserves in the territories of the parties. |
| **National Protected Areas System Act No. 17 - 2015** | It establishes that in the event that a reclassification of the forest reserve is announced, the Ministry of Agriculture must first conduct a public consultation with the people affected by this decision. |
| **National Park System Act SI 215 - 2000** | It establishes four types of protected areas: Natural Monuments, National Parks, Natural Reserves and Wildlife Sanctuaries. It addresses the mandatory nature of management plans and their periodic revision, and the successful evaluation of protected areas. |

### 3.1.13. Flora, Fauna and Native Forest

**Table 14 - Flora, Fauna and Native Forest Legislation**

| Multilateral Agreements | |
|---|---|
| **Convention on Biological Diversity. Rio de Janeiro 1992. - Ratified 1993** | Its objective is to conserve biological diversity, promote the sustainable use of its components and encourage the equitable sharing of the benefits derived from the natural resource use. |
| **Convention for the Conservation of Biodiversity and Protection of Priority Areas of Central America - 1992** | Its objective is to promote sustainable development in order to conserve the biological diversity and biological resources of the Central American region. |
| **Convention on International Trade in Endangered Species of Wild Fauna and Flora - 1975** | It was designed to ensure that international trade of animals and plants does not threaten their survival in the wild. |

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| **Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat - 1971** | Its main objective is to ensure the conservation and sustainable use of Ramsar sites (wetlands). |
| **National Legislation** | |
| **Wildlife Protection Act, Chapter 220 - Revised Edition 2010** | The Wildlife Protection Act regulates the hunting of wildlife as game or for other use. This act allows for the establishment of regulations controlling hunting by the declaration of closed hunting areas, determining periods for the prohibition of hunting, the prohibition of hunting of specified animals of specific size limits, etc. |
| **The Forest Act, Chapter 123 - Revised Edition 2000** | It regulates the exploitation of forest in nationally held lands.<br>The Forest Act authorizes the Minister to declare forest reserves and to de-reserve forest reserves. The act also authorizes Forest Officers from the Forest Department with wide functions to regulate the forest industry. |
| **Forest Fire Protection Act Chapter 212 - Revised Edition 2020** | It provides that the Minister may declare any area of Belize to be a fire protection area.<br>The Chief Forest Officer shall prepare a fire protection plan for any area declared to be a fire protected area. |
| **Forest (Protection of Mangroves) Regulations Chap 213 – Revised Edition 2003** | It establishes the prohibition to alter, permit, or cause to be altered any mangrove forest in jurisdictional waters without first obtaining a permit from the Department of Forestry. This prohibition applies to both privately and publicly owned land. |

## 3.1.14. Indigenous People and their Communities

**Table 15 - Indigenous Peoples Legislation**

| | |
|---|---|
| **Multilateral Agreements** | |
| **International Covenant on Civil and Political Rights (Article 27) - 1976** | It establishes that in those States in which ethnic, religious, or linguistic minorities exist, persons belonging to such minorities shall not be denied the right, in community with the other members of their group, to enjoy their own culture, to profess and practice their own religion, or to use their own language. |
| **Convention on the Elimination of All Forms of Racial Discrimination 1969** | It requires states to take measures to eradicate all manifestations of racial discrimination wherever they exist, including with regard to property. |
| **Charter of the Organization of American States – 1951 and Protocol of Managua (Amendment) - 1993** | Article XXIII of the American Declaration affirms that the property rights of indigenous peoples are not defined exclusively by entitlements within a state's formal legal regime, but also include that indigenous communal property arises from and is grounded in indigenous custom and tradition. |
| **Charter of the United Nations - 1945** | It seeks to create an international order based on respect for fundamental human rights. To realize this objective, the United Nations established the Human Rights Council, which among other activities continues the special procedures of its predecessor, the Commission on Human Rights, to address violations of human rights in specific contexts. Among these special procedures is the United Nations Special Rapporteur on the Situation of Human Rights and Fundamental Freedoms of Indigenous People. |

## 3.1.15. Cultural Heritage, Archaeological and Historical Sites

**Table 16 - Cultural Heritage, Archaeological and Historical Sites Legislation**

| Multilateral Agreements | |
|---|---|
| **Convention Concerning the Protection of World Cultural and Natural Heritage - 1972** | The World Heritage Convention aims to promote cooperation among nations to protect heritage around the world that is of such outstanding universal value that its conservation is important for current and future generations. |
| **Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property - 1970** | The 1970 Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property urges States Parties to take measures to prohibit and prevent the illicit trafficking of cultural property. It provides a common framework for the States Parties on the measures to be taken to prohibit and prevent the import, export and transfer of cultural property. |
| **Convention for the Safeguarding of the Intangible Cultural Heritage - 2003** | The main objectives are to safeguard intangible cultural heritage and ensure respect for the intangible cultural heritage of the communities, groups, and individuals concerned to raise local, national and international awareness of the importance of intangible cultural heritage. |
| **The Convention on the Protection and Promotion of the Diversity of Cultural Expressions - 2005** | The Convention provides a new framework for informed, transparent and participatory systems of governance for culture. |
| **National Agreements** | |
| **National Institute of Culture and History Amendment Act - 2003** | This Act empowers the Institute of Archaeology to carry out research, interpretation and the protection of the Archaeological Heritage of Belize. The ownership of all ancient monuments and antiquities shall rest in the Institute of Archaeology, Government of Belize. |
| **Ancient Monuments and Antiquities Act 1972 and Chapter 330 of the - Revised Edition 2000** | This Act provides for the protection of declared sites and the protection of archaeological remains discovered during construction sites. |
| **National Cultural Heritage Preservation Act (No. 40) - 2017.** | It prohibits the damage, destruction or intentional disturbance of any ancient monument or antiquity, its marking or defacing, or its removal. It further authorizes the Director of Archaeology to take measures for the adequate protection of ancient monuments or antiquities in the event they are threatened by a contractor's operation. |

## 3.1.16. Involuntary Resettlement

**Table 17 - Involuntary Resettlement Legislation**

| National Legislation | |
|---|---|
| **Land Acquisition (Public Purposes) Act Chapter 184 - Revised Edition 2000** | It establishes provisions for compulsorily acquiring land for public purposes, assessment and compensation, etc. |
| **Housing and Town Planning Act (HTPA) Chapter 182 - Revised Edition 2000** | It deals with Town and Country Planning and also slum clearance and housing. |

## 3.1.17. Miscellaneous

| National Legislation | |
|---|---|
| **Public Health Act Chapter 40** | Sets standards and regulations to ensure that hospitals in Belize provide a high level of medical care. |
| **Disaster Preparedness and Response Act Chapter 145 – Revised Edition** | The Disaster Preparedness and Response Act of Belize provides a comprehensive framework for disaster management in the country. It establishes the National Emergency Management Organization and designates a National Emergency Coordinator to oversee disaster-related functions. |
| **Fire Inquiries Act Chapter 123 – Revised Edition 2020** | The Fire Inquiries Act governs the procedures and guidelines for inquiries into fires or incidents causing serious harm or damage to individuals or property in Belize. |
| **Nuisances Act Chapter 118 – Revised edition 2020** | The Nuisances Act empowers summary jurisdiction courts in Belize to identify and order the immediate or timely abatement of nuisances in buildings, places, or public ways. Non-compliance results in fines, with public health or safety nuisances warranting intervention by city or town councils, who can recover incurred abatement costs from the responsible parties. |

## 3.1.18. National Advisory Policies

**Table 18 - National Advisory Policies**

| National Legislation | |
|---|---|
| **Belize 2014-2024 National Environmental Policy and Strategy** | The strategy sets out policies, priorities, action plans and expected outcomes for the next ten years (2014-2024) based on a clear assessment of existing environmental challenges and resources and the institutional framework and capacities to address them. This report is intended to be used as an operational/management tool for resource mobilization, capacity building (both institutional and legal), and as guidance for addressing gaps and improvement in the implementation of the Department of Environment (DOE) mandate. |
| **Government of Belize Policy on Adaptation to Global Climate Change** | The objectives of Belize's Climate Change Adaptation Policy are to explore and access opportunities being developed through the climate change negotiation process to meet the nation's development objectives; prepare all sectors of Belize to meet the |

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|---|---|
| | challenges of global climate change; promote the development of economic incentives that encourage investment in adaptation measures; develop Belize's negotiating position on climate change at regional and international levels to promote its economic and environmental interests; and encourage the development of appropriate institutional systems to plan for and respond to global climate change. |
| **Horizon 2030 National Development Framework for Belize 2010-2030.** | It is a strategic instrument with a multi-sectoral approach relating to the period 2010-2030. The document embodies the vision for Belize in the year 2030 and the core values that are to guide citizen behavior and inform the strategies to achieve this common vision for the future. The Horizon 2030 Framework covers several thematic areas that are organized under four main pillars: 1) Democratic governance for effective public administration and sustainable development; 2) Education for Development - Education for Life; 3) Economic resilience: Generating resources for long term development; 4) The Bricks and the Mortar - Healthy Citizens and a Healthy Environment. |
| **National Legislation** | |
| **National Gender Policy** | This policy aims to identify the inequalities experienced by both men and women and suggests actions for the correction of gender disparities. This ensures that every citizen has an equal opportunity to participate fully in all actions that have a positive impact on human development. |
| **National Cultural Policy 2016-2026** | The National Cultural Policy provides the policy framework for the safeguarding of Belize's tangible and intangible cultural heritage. It calls upon all stakeholders to fulfil their functions within the mores, laws and customs of a multi-cultural and democratic society. It asks that all cultural actors consider the freedoms which are guaranteed within the Constitution of Belize and to allow the fulfilment of these rights so that persons may properly assert their Belizean cultural identity and exercise creativity for personal growth and national development. |
| **National Sustainable Tourism Master Plan for Belize 2030** | The National Sustainable Tourism Master Plan for Belize is the strategic guideline for tourism development in Belize up to 2030. The master plan divides the country into seven unique destinations that all together converge in a cohesive offering that make Belize a distinctive and highly competitive destination. |
| **National Protected Areas System Policy and Plan** | This plan establishes protected areas as an important resource base for the development and strengthening of economic activities, and therefore seeks to provide local people and tourists with easy access to adjacent tourism-related protected areas. |

## 3.2. IDB Environmental and Social Policy Framework

This section presents a summary of the Environmental and Social Performance Standards (ESPS) that are part of the IDB's Environmental and Social Policy Framework (ESPF). As this Program will be financed with an IDB Loan Operation (BL-L1043), these E&S Performance Standards must be considered during the preparation and implementation of all projects financed under the Program.

Next, Table 19 details the actions to be implemented in the projects in order to comply with them.

### 3.2.1. ESPS 1 – Assessment and Management of Environmental and Social Risks and Impacts

This Standard applies to all investment finance projects and provides the basis for all other Standards by providing guidance on how to assess and manage environmental and social risks and impacts. It defines the importance of having an Environmental and Social Management System (ESMS).

The objectives of this Standard are:

- To identify and evaluate environmental and social risks and impacts of the project.
- To adopt a mitigation hierarchy and a precautionary approach to anticipate and avoid, or where avoidance is not possible, minimize, and, where residual impacts remain, compensate/offset for risks and impacts to workers, project-affected people, and the environment.
- To promote improved environmental and social performance of Borrowers through the effective use of management systems.
- To ensure that grievances from project affected people and external communications from other stakeholders are responded to and managed appropriately.
- To promote and provide means for adequate engagement with project-affected people and other stakeholders throughout the project cycle on issues that could potentially affect them and to ensure that relevant environmental and social information is disclosed and disseminated.

The Borrower, in coordination with other government agencies and third parties, as appropriate, will conduct a process of environmental and social assessment and establish and maintain an ESMS appropriate to the nature and scale of the project and commensurate with the level of its environmental and social risks and impacts.

The main characteristics of an EMS are:

- Dynamic and continuous process initiated and led by the executing agency.
- It implies a collaboration between the borrower, its workers, the people affected by the project and, when appropriate, other interested parties.
- Uses the "plan, do, check and act" process to manage environmental and social risks and impacts.

The ESMS will incorporate the following elements:

i. Project-specific environmental and social framework;
ii. Identification of risks and impacts;
iii. Management programs;
iv. Organizational capacity and competency;
v. Emergency preparedness and response;
vi. Stakeholder engagement;
vii. Monitoring and review.

### 3.2.2. ESPS 2 - Labor and Working Conditions

Environmental and Social Performance Standard (ESPS) 2 recognizes that pursuit of economic growth through employment creation and income generation should be accompanied by protection of the fundamental rights of workers.

The objectives of this Standard are:

- To respect and protect the fundamental principles and rights of workers.
- To promote the fair treatment, non-discrimination, and equal opportunity of workers.
- To establish, maintain, and improve the worker-employer relationship.
- To ensure compliance with national employment and labor laws.
- To protect workers, including workers in vulnerable situations such as women, people of diverse sexual orientations and gender identities, persons with disabilities, children (of working age, in accordance with this ESPS) and migrant workers, workers engaged by third parties, and primary supply workers.
- To promote safe and healthy working conditions, and the health of workers.
- To prevent the use of child labor and forced labor (as defined by the ILO).
- To support the principles of freedom of association and collective bargaining of project workers.
- To ensure that accessible and effective means to raise and address workplace concerns are available to workers.

The scope of application of this Performance Standard depends on the type of employment relationship between the borrower and the project worker. Applies to project workers hired directly by the borrower (direct workers), those hired through third parties to perform work related to core project functions for a significant period (contract workers), and those hired by the borrower's primary suppliers (workers in the main supply chain).

The borrower shall adopt and apply labor management policies and procedures appropriate to the nature and size of the project and its workforce. In the application of this Performance Standard, the requirements related to gender equality and stakeholder participation must also be considered, in accordance with NDAS 9 and 10.

### 3.2.3. ESPS 3 - Resource Efficiency and Pollution Prevention

Environmental and Social Performance Standard (ESPS) 3 recognizes that increased economic activity and urbanization often generate increased levels of pollution to air, water, and land and consume finite resources in a manner that may threaten people and the environment at the local, regional, and global levels. This ESPS outlines a project-level approach to resource management and pollution prevention and control, and avoidance and minimization of GHG emissions. It builds on the mitigation hierarchy, and the "polluter pays" principle. It recognizes the disproportionate impact of pollution on women, children, the elderly, and the poor and vulnerable. Appropriate mitigation measures, technologies, and practices should be adopted for efficient and effective resource use, pollution prevention and control, and avoidance and minimization of GHG emissions, in line with internationally disseminated technologies and practices.

The objectives of this Standard are:

- To avoid or minimize adverse impacts on human health and the environment by avoiding or minimizing pollution from project activities.
- To promote more sustainable use of resources, including energy and water.
- To avoid or minimize project-related emissions of GHG.
- To avoid or minimize generation of waste.
- To minimize and manage the risks and impacts associated with pesticide use.

The borrower must apply technically and financially viable and effective measures to improve its efficiency in the consumption of energy, water and other important resources and inputs. In addition, during the design and operation of the project, the borrower must consider alternatives to avoid or minimize greenhouse gas emissions, and the prevention of contamination of the air, water and soil components.

### 3.2.4. ESPS 4 - Community Health, Safety, and Security

Environmental and Social Performance Standard (ESPS) 4 recognizes that project activities, equipment, and infrastructure can increase community exposure to risks and impacts, including those caused by natural hazards and climate change. In addition, communities that are already subjected to adverse impacts from natural hazards and climate change may also experience an acceleration and/or intensification of adverse impacts due to project activities.

The objectives of this Standard are:

- To anticipate and avoid adverse impacts on the health and safety of the
- project-affected people during the project life cycle from both routine and non-routine circumstances.
- To ensure that the safeguarding of personnel and property is carried out in accordance with relevant human rights principles and in a manner that avoids or minimizes risks to the project-affected people.
- To anticipate and avoid adverse impacts on the project itself from natural hazards and climate change during the project life cycle.

This ESPS addresses potential risks and impacts to the project-affected people from project activities. It also addresses potential risks and impacts to the project itself that may result from natural hazards and climate change.

Occupational health and safety requirements for workers are included in ESPS 2; environmental standards to avoid or minimize impacts on human health and the environment due to pollution are included in ESPS 3; requirements to address sexual and gender-based violence risks in instances of communal conflict and influxes of outside workers are included in ESPS 9; and stakeholder consultation and information disclosure requirements are included in ESPS 10.

### 3.2.5. ESPS 5 - Land Acquisition and Involuntary Resettlement

Environmental and Social Performance Standard (ESPS) 5 addresses impacts of project-related land acquisition, including restrictions on land use and access to assets and natural resources, which may cause physical displacement (relocation, loss of land or shelter), and/or economic displacement (loss

of land, assets, or restrictions on land use, assets, and natural resources leading to loss of income sources or other means of livelihood).

Unless properly managed, involuntary resettlement may result in long-term hardship and impoverishment for the project-affected people, as well as environmental damage and adverse socio-economic impacts in areas to which they have been displaced. For these reasons, involuntary resettlement should be avoided. However, where involuntary resettlement is unavoidable, it should be minimized, and appropriate measures to mitigate adverse impacts on displaced persons and host communities should be carefully planned and implemented.

The objectives of this Standard are:

- To avoid, and when avoidance is not possible, minimize displacement by exploring alternative project designs.
- To avoid forced eviction.
- To anticipate and avoid, or where avoidance is not possible, minimize adverse social and economic impacts from land acquisition or restrictions on land use by

i. providing compensation for loss of assets at replacement cost and transitional hardships;
ii. minimizing disruption to their social networks and other intangible assets;
iii. ensuring that resettlement activities are implemented with appropriate disclosure of information, consultation, and the informed participation of those affected.

- To improve or restore the livelihoods and standards of living of displaced persons.
- To improve living conditions among physically displaced persons through the provision of adequate housing with security of tenure, and safety at resettlement sites.

### 3.2.6. ESPS 6 - Biodiversity Conservation and Sustainable Management of Living Natural Resources

Environmental and Social Performance Standard (ESPS) 6 recognizes that protecting and conserving biodiversity, maintaining ecosystem services, and sustainably managing living natural resources are fundamental to sustainable development. The requirements set out in this ESPS have been guided by the Convention on Biological Diversity, which defines biodiversity as "the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species, and of ecosystems."

Ecosystem services are the benefits that people, including businesses, derive from ecosystems. Ecosystem services are organized into four types: (i) provisioning services, which are the products people obtain from ecosystems; (ii) regulating services, which are the benefits people obtain from the regulation of ecosystem processes; (iii) cultural services, which are the nonmaterial benefits people obtain from ecosystems; and (iv) supporting services, which are the natural processes that maintain the other services.

The objectives of this Standard are:

- To protect and conserve terrestrial, freshwater, coastal and marine biodiversity.
- To maintain the ecosystem functions to ensure the benefits from ecosystem services.
- To promote the sustainable management of living natural resources through the adoption of practices that integrate conservation needs and development priorities.

Based on the risks and impacts identification process, the requirements of this ESPS are applied to projects (i) located in modified, natural, and critical habitats; (ii) that potentially impact on or are dependent on ecosystem services over which the Borrower has direct management control or significant influence; or (iii) that include the production of living natural resources (e.g., agriculture, animal husbandry, fisheries, and forestry).

### 3.2.7. ESPS 7 - Indigenous Peoples

Environmental and Social Performance Standard (ESPS) 7 recognizes that Indigenous Peoples, as distinct social and cultural peoples, are often among the most marginalized and vulnerable segments of the population. In many cases, their economic, social, and legal status limits their capacity to defend their rights to, and interests in, lands and natural and cultural resources, and may restrict their ability to participate in and benefit from development that is accordance with their worldview.

There is no universally accepted definition of "Indigenous Peoples." Indigenous Peoples may be referred to in different countries by such terms as "original peoples" (pueblos originarios), "autochthonous peoples" (pueblos autóctonos), residents of indigenous counties (comarcas) or reserves (resguardos), or any other formally recognized indigenous peoples in Latin America and the Caribbean. In the ESPF, the term "Indigenous Peoples" is used in a generic sense to refer to distinct social and cultural peoples possessing some of the following characteristics in varying degrees:

i. Self-identification as members of a distinct indigenous cultural group and recognition of this identity by others.
ii. Collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories.
iii. Customary cultural, economic, social, or political laws and institutions that are separate from those of the mainstream society or culture.
iv. A distinct language or dialect, often different from the official language or languages of the country or region in which they reside.

The objectives of this Standard are:

- To ensure that the development process fosters full respect for the human rights, collective rights, dignity, aspirations, culture, and natural resource-based livelihoods of Indigenous Peoples.
- To anticipate and avoid adverse impacts of projects on communities of Indigenous Peoples, or when avoidance is not possible, to minimize and/or compensate for such impacts.
- To promote sustainable development benefits and opportunities for Indigenous Peoples in a culturally appropriate manner.
- To establish and maintain an ongoing relationship based on Informed Consultation and Participation (ICP) in a culturally appropriate manner with the Indigenous Peoples affected by a project throughout the project's life cycle.
- To ensure the FPIC of the Project-Affected Communities of Indigenous Peoples when the circumstances described in this ESPS are present.

### 3.2.8. ESPS 8 - Cultural Heritage

Environmental and Social Performance Standard (ESPS) 8 recognizes the importance of cultural heritage for current and future generations. Consistent with the Convention Concerning the Protection of the World Cultural and Natural Heritage, this ESPS aims to ensure that Borrowers protect cultural heritage in the course of their project activities. In addition, the requirements of this ESPS with respect to a project's use of cultural heritage are based in part on standards set by the Convention on Biological Diversity.

The objectives of this Standard are:

- To protect cultural heritage from the adverse impacts of project activities and support its preservation.
- To promote the equitable sharing of benefits from the use of cultural heritage

For the purposes of this ESPS, cultural heritage refers to (i) tangible forms of cultural heritage, such as tangible moveable or immovable objects, property, sites, structures, or groups of structures, having archaeological, paleontological, historical, cultural, artistic, and religious value; (ii) unique natural features or tangible objects that embody cultural values, such as sacred groves, rocks, lakes, and waterfalls; and (iii) certain instances of intangible forms of culture that are proposed to be used for commercial purposes, such as cultural knowledge, innovations, and practices of communities embodying traditional lifestyles.

### 3.2.9. ESPS 9 - Gender Equality

This ESPS recognizes, regardless of the cultural or ethnic context, the right to equality among genders as established in applicable international agreements. The pursuit of equality requires actions aimed at equity, which implies providing and distributing benefits and/or resources in a way that narrows existing gaps, recognizing that the existence of these gaps can harm people of all genders.

This ESPS aims at identifying potential gender-based risks and impacts and introducing effective measures to avoid, prevent, or mitigate such risks and impacts, thereby eliminating the possibility of reinforcement of pre-existing inequalities or creating new ones. For purposes of this ESPS, affirmative action specifically aimed at closing existing gender gaps, meeting specific gender-based needs, or ensuring the participation of people of all genders in consultations will not constitute discrimination or exclusion.

The objectives of this Standard are:

- To anticipate and prevent adverse risks and impacts based on gender, sexual orientation, and gender identity, and when avoidance is not possible, to mitigate and compensate for such impacts.
- To establish actions to prevent or mitigate risks and impacts due to gender throughout the project cycle.
- To achieve inclusion from project-derived benefits of people of all genders, sexual orientations, and gender identities.
- To prevent SGBV, including sexual harassment, exploitation and abuse, and when incidents of SGBV occur, to respond promptly.
- To promote safe and equitable participation in consultation and stakeholder engagement processes regardless of gender, sexual orientation, and/or gender identity.

- To meet the requirements of applicable national legislation and international commitments relating to gender equality, including actions to mitigate and prevent gender-related impacts.

### 3.2.10. ESPS 10 - Stakeholder Engagement and Information Disclosure

This ESPS recognizes the importance of open and transparent engagement between the Borrower and stakeholders, especially project-affected people, as a key element that can improve the environmental and social sustainability of projects, enhance project acceptance, and contribute significantly to the project's successful development and implementation. This ESPS is consistent with the objective of implementing the rights of access to environmental information, public participation in the environmental decision-making process, and access to justice in environmental matters.

For the purpose of this ESPS, "stakeholder" refers to individuals or groups who:

- Are affected or likely to be affected by the project ("project-affected people") and
- May have an interest in the project ("other stakeholders").

The objectives of this Standard are:

- To establish a systematic approach to stakeholder engagement that will help the Borrower identify stakeholders, especially project-affected people, and build and maintain a constructive relationship with them.
- To assess the level of stakeholder interest in and support for the project and to enable stakeholders' views to be considered in project design and environmental and social performance.
- To promote and provide the means for effective and inclusive engagement with project-affected people throughout the project's life cycle on issues that could potentially affect or benefit them from the project.
- To ensure that appropriate information on environmental and social risks.

### 3.2.11. Summary of Compliance with IDB Environmental and Social Policy Framework

Table 19 details the actions that will be carried out to ensure compliance with the requirements established in the Environmental and Social Performance Standards (ESPS) during the preparation and execution of the projects to be financed under the Program.

**Table 19 - Summary of Compliance with the IDB Environmental and Social Policy Framework**

| IDB Environmental and Social Performance Standards (ESPS) | Applies |
|---|---|
| **ESPS 1 – Assessment and Management of Environmental and Social Risks and Impacts** | **YES/NO** |
| The operation will be executed by the Ministry of Health and Wellness (MOHW), through its Policy, Planning, and Project Management Unit (PPPMU).<br>The PPPMU**,** credited with the successful implementation of six IDB operations, is currently responsible for verifying compliance with the environmental and social instruments of other operations financed by the IDB and prepared under the ESPF. | **YES** |

| IDB Environmental and Social Performance Standards (ESPS) | Applies |
|---|---|
| To meet the requirements of ESPS 1, MOHW had the technical support of an external environmental and social consultant contracted during the preparation, and this Environmental and Social Assessment (ESA) includes the identification and control of the potential environmental and social impacts and risks of the projects, and incorporates an Environmental and Social Management Plan (ESMP) to address these impacts and risks in accordance with the requirements established in the ESPF, and applicable ESPS.<br>Additionally, a Labor Management Procedure and a Stakeholder Engagement Plan have been included, with a Code of Conduct and Grievance Redress Mechanism (GRM) for the community and workers. Gender issues were considered.<br>The Stakeholder Engagement Plan meets the requirement of ESPS 10. | |
| **ESPS 2 - Labor and Working Conditions** | **YES/NO** |
| The works and activities that result in interventions include construction processes and mobilization of personnel, which brings with it risks and impacts associated with labor and working conditions, including the health and safety of workers.<br>A Labor Management Procedure has been included to this ESA/ESMP, with Code of Conduct and Grievance Redress Mechanism (GRM) for workers.<br>The ESMS of the Program will incorporate requirements ensuring compliance with ESPS 2 related to worker health and safety and working conditions.<br>The handling of hazardous materials, including potential asbestos presence, and the generation of hospital effluents and solid bio-infectious waste during the operation phase, are fully addressed through specific measures detailed in the Environmental and Social Management Plan (ESMP).<br>The Program may finance the acquisition of solar panels. As such, there is a potential risk of forced or child labor associated with their procurement. To mitigate this risk, guidelines for this procurement have been included in Annexes 3 and 4. | **YES** |
| **ESPS 3 - Resource Efficiency and Pollution Prevention** | **YES/NO** |
| The projects will be developed in the urban areas of Belize, Belmopan, Dangriga, and Orange Walk. During the construction phase, localized and temporary negative impacts are expected, such as: (i) noise pollution, (ii) dust dispersion, (iii) vibration generation, (iv) gas and particulate emission, (v) solid waste, (vi) potential spillage of hazardous materials into water bodies due to improper handling, (vii) poor management of liquid and solid waste, (viii) fauna proliferation, (ix) soil erosion, and damage to natural drainage. During the operation phase, negative impacts can be expected such as: (i) generate an increased amount of hazardous waste, (ii) increased generation of wastewater from hospital workers and users.<br>This ESA identified direct, indirect, and cumulative impacts and risks of environmental contamination and management measures aimed at their proper management were established, using the mitigation hierarchy. | **YES** |
| **ESPS 4 - Community Health, Safety, and Security** | **YES/NO** |

| IDB Environmental and Social Performance Standards (ESPS) | Applies |
|---|---|
| The impacts and risks on the people affected by the projects in the Program were assessed in this ESA. The use of hazardous materials and exposure to diseases, were analyzed. During the execution of the works, it is expected that the current users of the health facilities, as well as the surrounding population will be exposed to noise, vibrations, dust, vehicle and heavy machinery emissions, traffic disruptions, temporary blockage of access to homes and/or businesses, increased insecurity, increased likelihood of accidents, etc.<br>Patients could suffer moderate impacts if care is disrupted by the closure of some medical services. The most severe risk to patient care would include the closure of health services and transfer to other hospitals.<br>The corresponding management plans were proposed in the ESMP.<br>The disaster risk has been identified as moderate because the area of influence is exposed to Hurricanes and Tropical Storms, Flooding, Extreme Temperatures and Climate change impacts.<br>Belize has a National Climate Change Strategy and Action Plan that update Belize's Nationally Determined Contribution (NDC) and includes actions aligned with the operation such as activities to build adaptation and resilience to climate change and reduce disaster risk. Also, the operation includes a component to strengthen the resilience of the infrastructures to manage climate change.<br>The ESA included a simplified qualitative risk analysis for the works in the Program. According to the results, all projects are classified as moderate. | **YES** |
| **ESPS 5 - Land Acquisition and Involuntary Resettlement** | **YES/NO** |
| There will be no land acquisition or physical displacement for this Operation. All physical activities (construction and refurbishment of healthcare facilities) will be carried out in existing properties, all previously owned by the MOHW. Due to the characteristics of the works, economic displacement is not expected. | **NO** |
| **ESPS 6 - Biodiversity Conservation and Sustainable Management of Living Natural Resources** | **YES/NO** |
| The projects will be developed in urbanized areas that have been previously intervened. While Belize City and Dangriga are within the boundaries of the KBA "*Belize Coastal and near shore islands",* all interventions occur in urbanized areas and mostly within existing buildings. The ESMP includes a fauna and flora management plan, considering all actions to avoid disturbances to the fauna or potential impact on existing trees. It also outlines guidelines for revegetation activities, including the incentivization and inclusion of native species in landscaping activities within the ESMP. | **NO** |
| **ESPS 7 - Indigenous Peoples** | **YES/NO** |
| No negative or adverse impacts on indigenous peoples are anticipated. The activities to modernize and adapt the eight healthcare facilities to climate change and the expansion, retrofitting, and equipment for the Palm Center for long-term care will not have any impact on indigenous populations. Regarding coordination with indigenous populations in the indirect influence area of the Program to ensure their inclusion in the activities and assets to be financed by the Program, MOHW should also consider measures for effective sociocultural appropriate communication with community leaders. | **NO** |
| **ESPS 8 - Cultural Heritage** | **YES/NO** |
| According to the information available to date, the works in the Program will not be implemented nor will they affect tangible and intangible cultural heritage. | **NO** |

| IDB Environmental and Social Performance Standards (ESPS) | Applies |
|---|---|
| Notwithstanding, the ESMP oincludes an Archaeological Finding Procedures Program in accordance with national regulations and ESPS 8. | |
| **ESPS 9 - Gender Equality** | **YES/NO** |
| The presence of contractors in the communities during the execution of the projects can increase the risk of sexual and gender violence against women, girls, boys, LGTQI+ people in the community and project workers.<br>To mitigate this possible risk, the ESMP includes the following measures: (i) adoption by contractors of a Code of Conduct that prohibits acts of sexual harassment, sexual or gender violence, as well as establishing the corresponding measures in in case of non-compliance, (ii) training for workers on respectful relations with the communities, how to avoid gender violence and the Code of Conduct of the Program, (iii) information to the communities regarding the standards of conduct for project personnel , (iv) considerations to be integrated into the project's complaints mechanism to receive, register and address claims related to sexual harassment or gender violence and (v) definition of referral protocols for victims who require it to care services of gender violence or competent authorities. | **YES** |
| **ESPS 10 - Stakeholder Engagement and Information Disclosure** | **YES/NO** |
| This ESA/ESMP includes a Stakeholder Engagement Plan, which includes the mapping of stakeholders, community relations processes, the complaints, and claims response mechanism, as well as what is pertinent to the consultation process.<br>During the due diligence, a consultation process will be developed to present to those affected and interested groups: the project, the environmental and social impacts, the mitigation measures, the complaints and claims response mechanism, as well as having feedback. of the interested parties. The consultations must be carried out by the Municipalities and the PPPMU and their results will be taken into account in the preparation of the final environmental and social documents of the operation. | YES |

# 4. Environmental and Social Baseline

## 4.1. Introduction

The main objective of this chapter is to characterize the area where the projects under analysis will be developed. The analysis carried out allows to identify the location and description of the area of execution and influence of the projects, to determine its current situation and the relevant environmental and social aspects to consider.

This chapter analyses general aspects and components of the natural and social environment, and specifies the area of influence (AoI) of the specific projects, in order to be able to analyse the potential environmental and social impacts attributable to, or derived from, project activities.

## 4.2. Definition of Area of Influence

This ESA considers both the construction and operations phase of the Project, and focuses mainly on the relevant existing physical, biological, and socioeconomic environments within the direct footprint of the Project, namely the area surrounding the proposed interventions on Corozal, Orange Walk and San Pedro. As such, both a Direct Area influence (DAoI) and an Indirect Area of Influence (IAoI) are defined for the Project as follows below.

### 4.2.1. Direct Area of Influence

The Direct Area of Influence (DAoI) for the Project is defined as the footprint of the Project, where the majority of the E&S impacts from the Project are expected to occur and/or be experienced most acutely, namely a radius of 100 meters around the hospitals located in the different cities: Belize, Belmopan, Dangriga and Orange Walk.

### 4.2.2. Indirect Area of Influence

The Indirect Area of Influence (IAoI) is the area within which indirect impacts are expected to occur, that is, those impacts that transcend the physical space of the project and its associated infrastructure.

For this ESA, the full extent of each of the 4 cities in the representative projects: Belize (Belize Distict), Belmopan (Cayo District), Dangriga (Stann Creek District) and Orange Walk (Orange Walk District) were defined as an Indirect Area of Influence. This expanded area of influence is the one that will receive the environmental and social benefits derived from the project interventions.

## 4.3. General Context

Belize is a country located on the northeast coast of Central America. Situated south of the Yucatán Peninsula, Belize is a land of mountains, swamps, and tropical jungle. It is bounded by Mexico to the north, Guatemala to the west and south, and the Caribbean Sea to the east. The country has a 174-mile (280-km) coastline.

The country is divided into six districts: Corozal; Orange Walk; Belize; Cayo; Stann Creek y Toledo.

The cities where the projects are proposed are located in four of the six districts as mentioned previously.

**Belmopan**, the capital of Belize since 1970, is strategically located in the inland Belize River valley within the Cayo District, approximately 83 kilometres (52 miles) west of Belize City, the country's economic and commercial hub. This central positioning, chosen for its accessibility and safety, was a direct response to the destruction of Belize City by Hurricane Hattie in 1961, highlighting the need for a capital less vulnerable to climate-induced disasters. A committee selected this site in 1962, recognizing the importance of relocating the capital inland to mitigate the risks of flooding and tropical storms.

Upon its completion, Belmopan assumed its role as the administrative center of Belize, housing the Prime Minister's office, governmental headquarters, foreign embassies, the national university, and key national and international organizations.

**Belize City**, with a total population of 333,200 and a literacy rate of 75.1%, is positioned on the coastal delta of the Belize River, leading into the Caribbean Sea. It is nestled on lands barely above sea level, surrounded by mangrove swamps, which highlights its unique ecological setting. This city, operating under a democratic government with a bicameral legislature, thrives on exports such as sugar, timber, citrus fruits, seafood, and agricultural products, supported by local industries like furniture making, boat building, and sawmilling. Its harbour, enhanced by a deepwater port, and an international airport nearby facilitate both domestic and international connectivity.

**Dangriga**, located on the east-central coast of Belize, is the Stann Creek District's largest town. Situated at the mouth of the 20-mile-long North Stann Creek on the Caribbean coast, it emerged as a port and trading center, pivotal for the export of bananas, timber, coconuts, and fish, alongside hosting facilities for canning and freezing orange juice.

Dangriga benefits from its strategic location, enhancing both its connectivity to major urban centers like Belize City, located 40 miles north, and its access to the interior via road to Roaring Creek, 50 miles inland. This geographic advantage facilitates cultural exchange and economic activities. It is distinguished by its diverse demographic composition; the Garifuna, constituting 60% of the urban populace with around 5,300 residents, underscore the town's role as a significant cultural hub within the Garifuna community. The remaining population includes Creole, Mestizo, East Indian, and Chinese communities.

**Orange Walk Town** is the capital, administrative and commercial center of the Orange Walk District. It is located on the western bank of the New River, 53 miles north of Belize City, and 43 miles from Chetumal, Quintana Roo, Mexico[5]. Sugarcane and citrus fruit cultivation and rum distilling are the main economic activities. The area's inhabitants are primarily Spanish-speaking mestizos[6].

[5] Organge Walk Town Council. Webpage: https://owtc.org/about-us/

[6] https://www.britannica.com/place/Orange-Walk

# 4.4. Physical Environment Baseline of Indirect Area of Influence

## 4.4.1. Climate

Belize As shown in **Figure 1**, Belize is characterized by a tropical climate according to Köppen-Geiger Climate Classification. The north region exhibits a savanna climate, where **Orange Walk** town is located. The central region, in which the cities of **Belmopan** and **Belize** are located, exhibits a tropical monsoon climate. **Dangriga** is located on the boundary that divides the tropical monsoon climate zone from the tropical rainforest climate.

Belize's climate is made up of two seasons, wet (rainy) and dry. Its wet season occurs during the months of June to November, starting in the south of the country and moving northward. During this season, the average monthly rainfall is less than 100 mm of rain per month for the north and up to 237mm for the south[7]. Its dry season begins in February and lasts until April.

As shown in **Figure 2**, the average annual temperature oscillates between 23 and 27°C. The country's average maximum temperature varies between 27 and 32°C, while the average minimum temperature varies between 18 and 23°C.

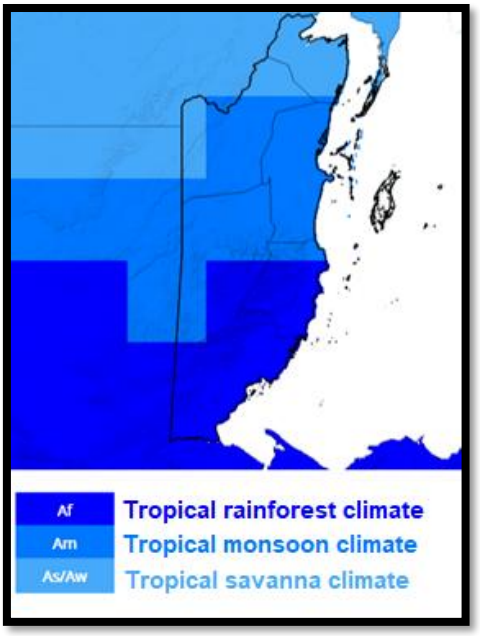



**Figure 1. Belize Climate (Köppen-Geiger Climate Classification)[8].**

[7] World Bank Group. (2021). Belize - Climatology. Climate Change Knowledge Portal. Retrieved from https://climateknowledgeportal.worldbank.org/country/belize/climate-data-historical

[8] Source: World Bank Group.

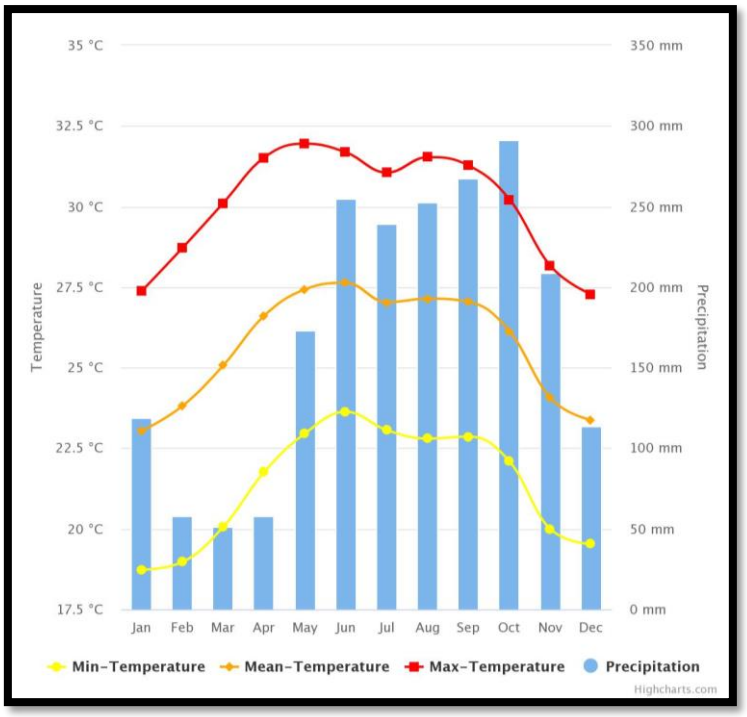



**Figure 2. Monthly Climatology of Belize Temperatures and Precipitation from 1991-2020[9].**

In addition to the dry and wet seasons mentioned above, Belize has a hurricane season that runs from early June to the end of November and results in strong winds, heavy rainfall and flooding. It is a country vulnerable to tropical cyclones, being bordered on the East by the Caribbean Sea.

**Climate Change and Vulnerability**

Climate change has significant impacts on Belize's territory, population and major economic sectors.

Agricultural yields and ecological resources, such as rainforest, mangroves, wetlands and coral reefs, are highly sensitive to changes in rainfall, temperature and extreme weather events; tourism, which accounts for a large part of the country's income, is affected by sea level rise, coral bleaching and impacts on biodiversity; and Belize's major infrastructure, such as public buildings and health, commercial and transportation facilities located on or near the coast, are extremely susceptible to sea level rise.

However, the country is committed to achieving the ultimate objective of the United Nations Framework Convention on Climate Change and supports the target to limit the increase in global average temperature to 1.5°C, and to developing a long-term strategy aligned with achieving net zero global emissions by 2050.

[9] Source: World Bank Group.

### 4.4.2. Geology

The Belize mainland can be subdivided into three geological provinces: Northern Belize, South Central and Southern Belize[10].

Northern Belize is a low-lying and generally flat plain, an extension of the Yucatan Platform, a tectonically stable region. **Figure 3** shows the geology of northern Belize, which consists mainly of hard dense limestone (Caliza) from the Eocene era. This portion of the country-where **Orange Walk** town is located- while generally level, intersperses with occasional areas of hilly karst terrain, underlined by multiple stratigraphic, tectonic, and depositional events. The prevalent geological feature is the karst topography, prominently developed within carbonate rocks. Specifically, the Cretaceous limestones dominate the geological landscape, while Tertiary dolomites and Quaternary carbonates intermittently appear, characterized by their solutional features**Invalid source specified.** The northern areas also contain significant areas of low plateau, characterized by limestone lands and swamps less than 60 meters above sea level.

**Belmopan** is underlain primarily by early tertiary sediments of the Doublon Formation/El Cayo Group. It consists of lagoonal laminated limestone and dolomitic sections, marls, numerous gypsum occurrences, bentonitic clays of volcanic origin and chert nodules, which are unconformable overlain by late tertiary Red Bank Group deposits of variegated clays, generally grey to red mottled with some gypsum sands and chert deposits that would be representative of a slag deposit and some Quaternary alluvial deposits, sands, sands and gravels.

The cities of **Belize** and **Dangriga** are situated within the alluvial zone, an area characterized by its composition of the coastal plain. This coastal plain is distinguished by its low elevation and minimal relief. Along the coast of Belize, there are evident traces of former beach ridges and deposits of detrital materials that have originated from the western uplands. These coastal deposits exhibit a notable variation in composition along the coastline. Particularly, the deposits located north of Belize City are characterized by a higher content of limestone fragments compared to those found south of the city.

Although mostly level, this part of the country also has occasional areas of hilly, karst terrain, such as the Yalbac Hills along the western border with Guatemala and the Manatee Hills between Belize City and Dangriga.

[10] Aitken, J. A., Stewart, R. R., & Moldoveanu, M. (2002). Subsurface imaging of a Maya Plaza complex using ground penetrating radar (GPR) in Belize, Central America. University of Calgary.

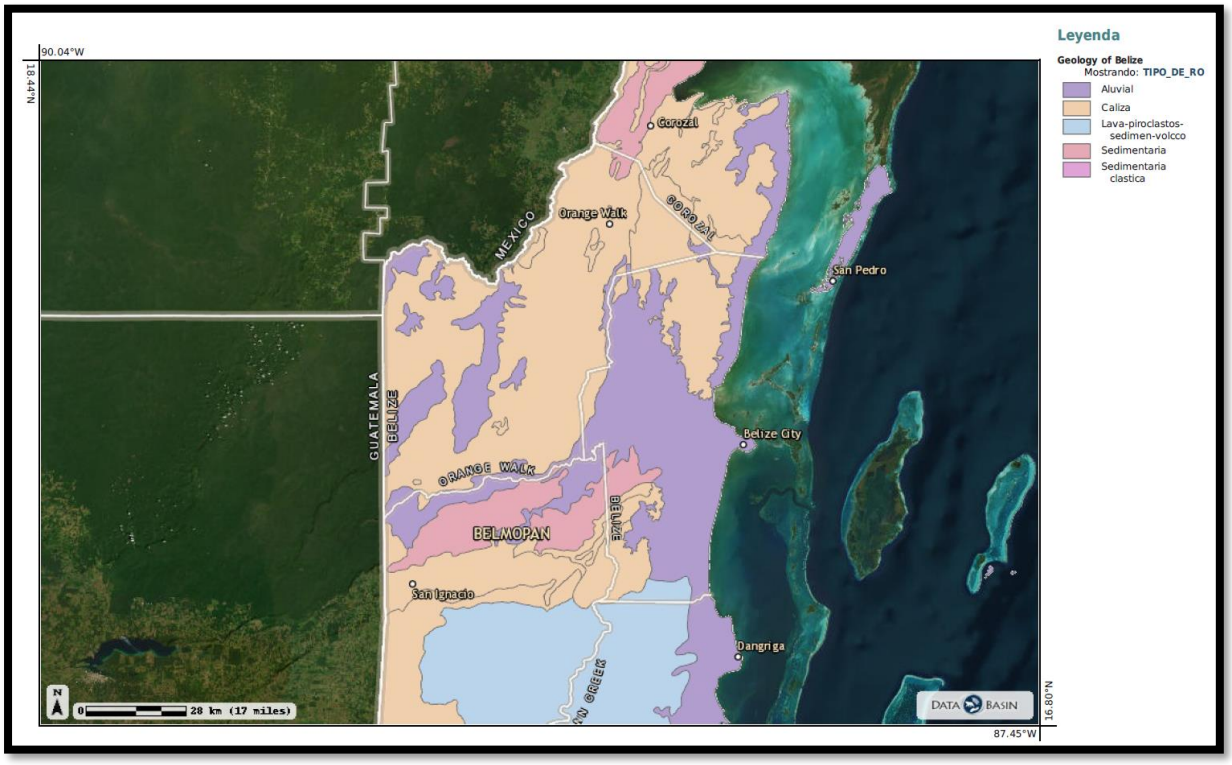



**Figure 3. Geology of Northern Belize[11].**

## 4.4.3. Hydrology

Belize is divided into 33 watersheds distributed in five main regions, most of which originate in the Maya Mountains and flow into the Caribbean Sea (**Figure 4**).

[11] Source: Conservation Biology Institute Data Basin.

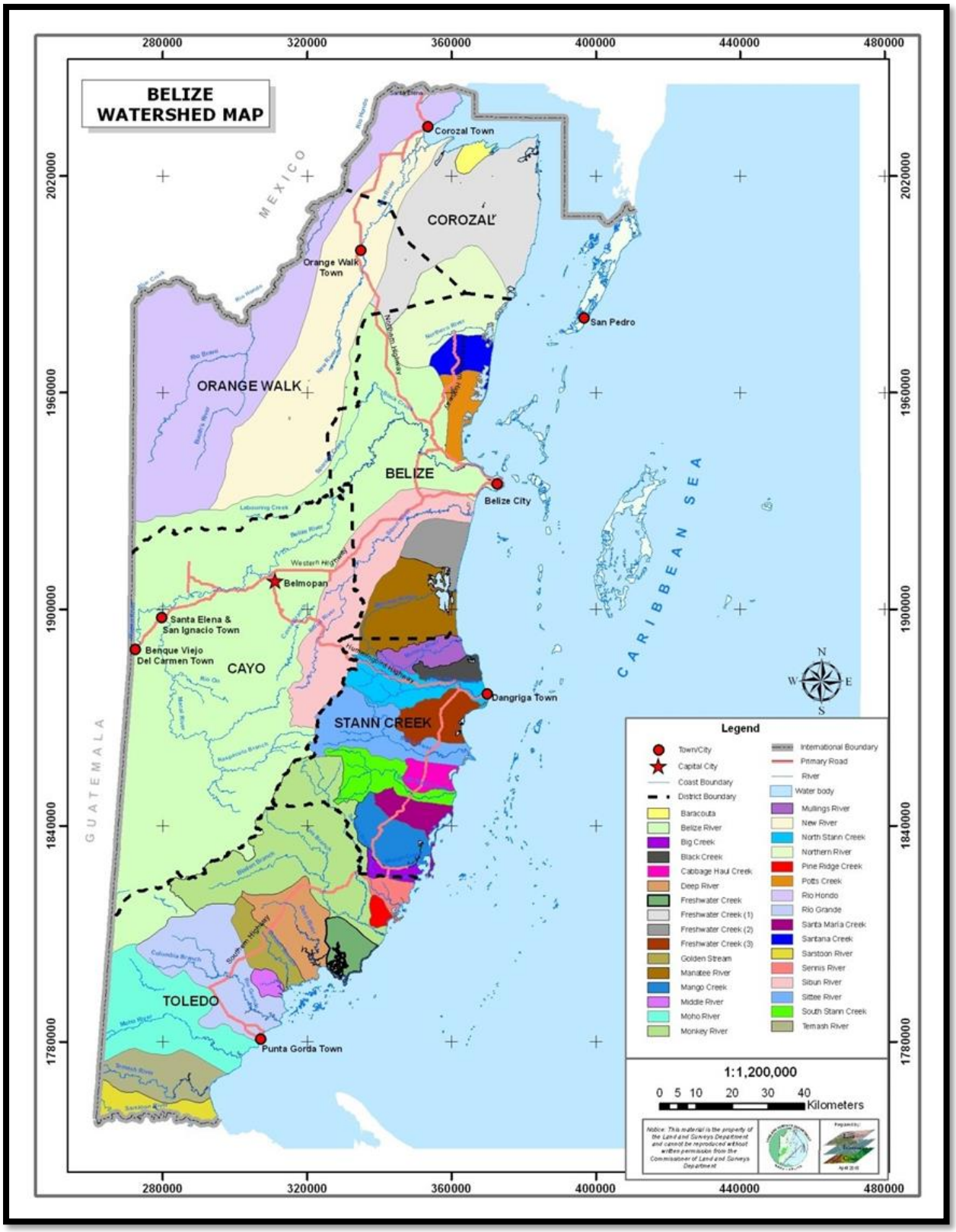



**Figure 4. Belize's Watersheds.[12]**

[12] Source: Land Information Center – Ministry of Natural Resources.

Belize's watersheds consist of both surface water, which include springs, streams, rivers, and lagoons and groundwater resources which are found under our soils and rocks.

As can be observed in **Figure 4**, the city of **Corozal** is located on the boundary between the Rio Hondo and New River watersheds. The cities of **Belize** and **Belmopan** are situated within the Belize River watershed, while **Dangriga** is in the North Stann Creek watershed.

**Surface hydrology**

Belize's surface water resources are supplied by twenty-nine major river basins and many streams, the majority of these streams originate in the Maya Mountains and discharges into the Caribbean Sea. In addition, numerous freshwater and brackish water lakes or lagoons are scattered throughout the central and northern coastal areas and low-lying inland areas. Surface water resources are abundant throughout the country, except on the Vaca Plateau, where streams disappear into the porous limestone. The rivers in the north have meandering channels, while those in the south have smaller basins and flow more rapidly to the sea. The sum of quantified river discharges is 15 km3/year, occupying 59% of the territory[13]. **Figure 5** shows all the rivers that cross the country.

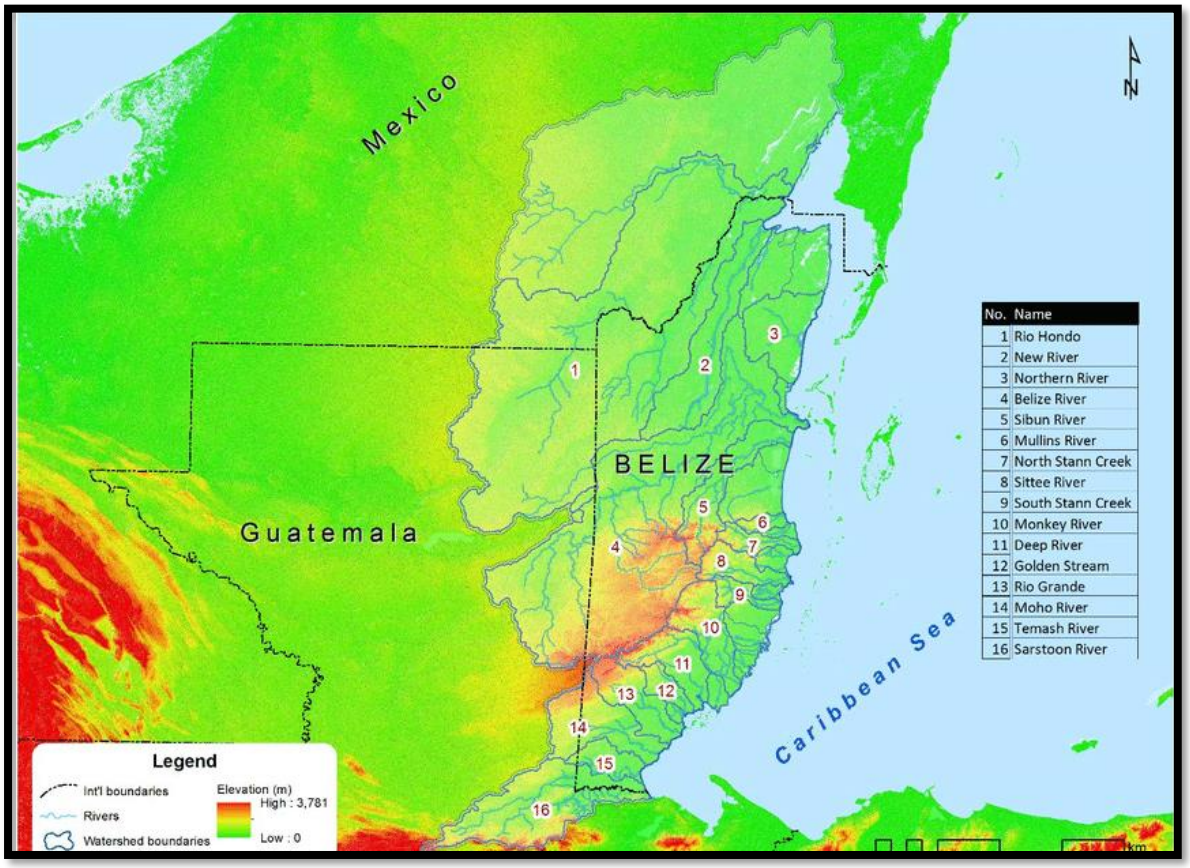



**Figure 5. Belize rivers map.[14]**

[13] UN Global Compact. (n.d.). Water Action Hub. Retrieved from https://wateractionhub.org.

[14] Source: ResearchGate

Recurrent atmospheric/oceanic phenomena such as the El Niño Southern Oscillation (ENSO) and the North Atlantic Oscillation (NAO) generate periods of drought that affect these watercourses, but these are recovered thanks to the tropical rainfall regime that occurs in the northwestern region.

**Groundwater Hydrology**

Generally, groundwater is available throughout the less mountainous areas of Belize and favourable yield characteristics can be attributed to geology and climatic conditions. The northern region consists of calcareous sediments that have shown high permeabilities. In the south, where limestones are found, similar groundwater yield conditions are indicated, while the shales and slates are naturally poorly permeable and therefore have low capacity for groundwater extraction[15].

In some areas along the coast and in some inland wells in the northern half of the country, water with high concentrations of chloride, hardness and sulphates is found. In addition, during times of drought, water quality is expected to be poorer than usual. Despite this, however, in general the quality of groundwater throughout the country is acceptable.

Belize is divided into seven groundwater areas or provinces, as seen in **Figure 6**.

**Orange Walk** and **Belice** belong to the Coastal Plain province. The limestone aquifers of the Coastal Plain Groundwater area are one of the most important groundwater resources of Belize.

**Dangriga** is situated within the Savannah province. Being a part of a coastal plain, the Savannah Groundwater Province is rich in lagoons, mangrove swamps, deep estuaries and river-mouth bars (Hartshorn et al., 1984). Water from water courses is commonly used as a reliable water source. Surface water is generally suitable for irrigation purposes but in some places is used as drinking water source as well[16].

**Belmopan** falls under the jurisdiction of the Campur province.

[15] UN Global Compact. (n.d.). Water Action Hub. Retrieved from https://wateractionhub.org.

[16] United Nations Development Programme (UNDP). (2014). Assessment of Groundwater Resources in the Southern Coastal Water Province of Belize Referred to as Savannah Groundwater Province: Final Report, Volume A. UNDP.

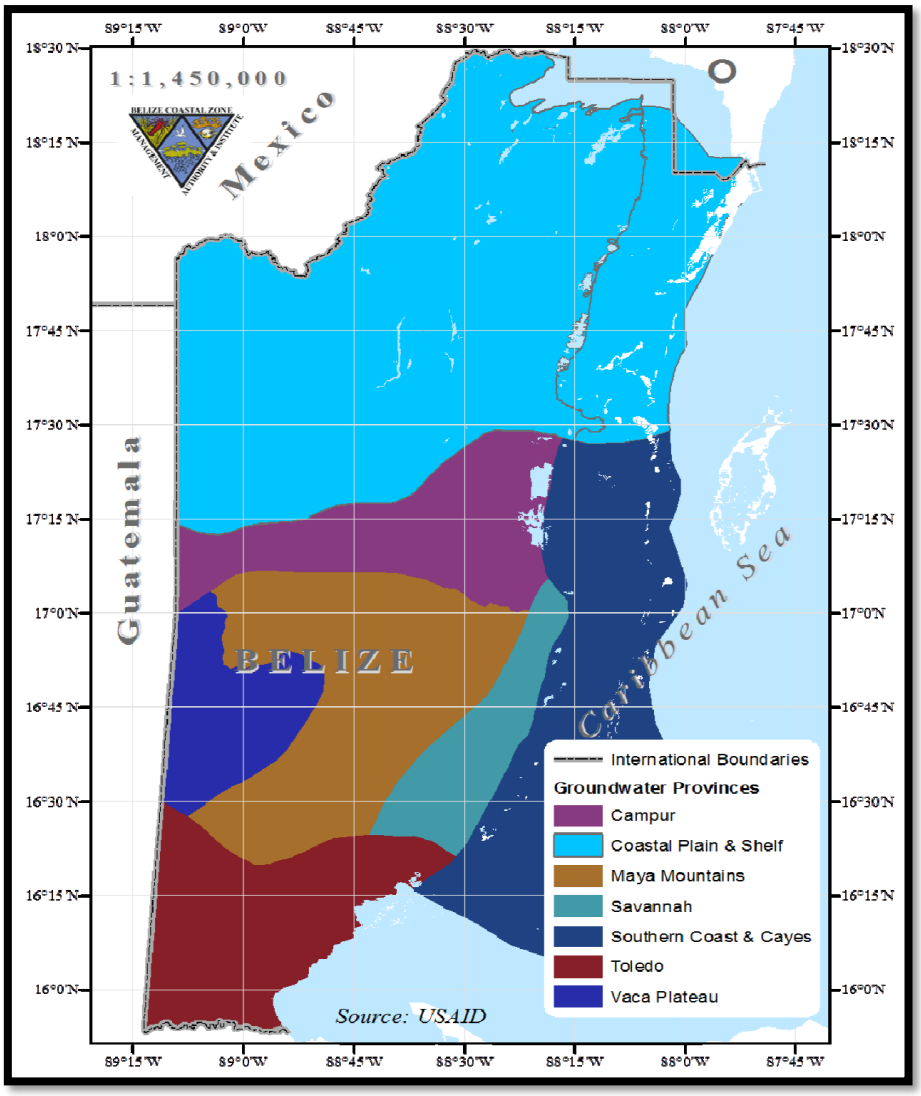



**Figure 6. Belize Groundwater Provinces. Source: Country Environmental Profile.**

**Water Use and Quality**

The freshwater resources demand in Belize comes from three major economic sub-sectors: agricultural, industrial and domestic/residential. In 2005, agricultural, industrial and domestic/residential users required 43.7 per cent, 36.5 per cent and 19.7 per cent respectively of the total demand[17].

In Belize, 70% of the water used in urban areas is surface water. Groundwater is also used as a source of drinking water in the towns of Corozal, Orange Walk, Cayo and Toledo districts and in some rural areas of Toledo and Cayo. Per capita domestic water consumption is between 240 and 280 liters per day in urban areas and about 160 liters per day in rural areas[18].

In general, Belize has abundant good quality water resources. However, it is estimated that much of the surface water in urban areas is polluted due to inadequate disposal of domestic, agricultural and

[17] UN Global Compact. (n.d.). Water Action Hub. Retrieved from https://wateractionhub.org.
[18] UN Global Compact. (n.d.). Water Action Hub. Retrieved from https://wateractionhub.org.

industrial liquid and solid waste. Municipal waste is the most common form of water pollution in Belize, wastewater from homes and businesses often enters rivers and streams.

### 4.4.4. Disasters Risks

According to a systematic diagnosis conducted by the World Bank Group, Belize is one of the most affected countries in the world by weather events and other natural hazards, ranking 8th out of 167 countries by climate risk.

Based on the Belize Updated Nationally Determined Contribution (2021)[19] the key vulnerabilities identified include:

1. Hurricanes and tropical storms causing severe losses from wind damage and flooding due to storm surges and heavy rainfall. On average, hurricanes happen about 3 times a year.
2. Flood damage due to its low-lying land and exposed positions on the coast; low lying topography makes the country's coastal areas especially vulnerable to sea level rise.
3. Extreme temperatures affecting crops and livestock.
4. Coral Reef vulnerability due to global warming.

**Figure 7** provide an overview of the most frequent natural disaster in Belize and the impacts of those disasters on human populations.

[19] Belize. (2021). Updated Nationally Determined Contribution August 2021. NDC Partnership, IRENA, FAO, UNFCCC RCCMRVH, Vivid Economics, Lucid Solutions, FOLU Roundtable under the Ministry of Sustainable Development, Climate Change and Disaster Risk Management, Coalition for Rainforest Nations, WWF, the Pew Charitable Trusts, the Initiative for Climate Action Transparency, the Commonwealth Secretariat, Rocky Mountain Institute, Climate Technology Collaboration Network (through Fundacion Bariloche), & UNDP Country Office in Belize.

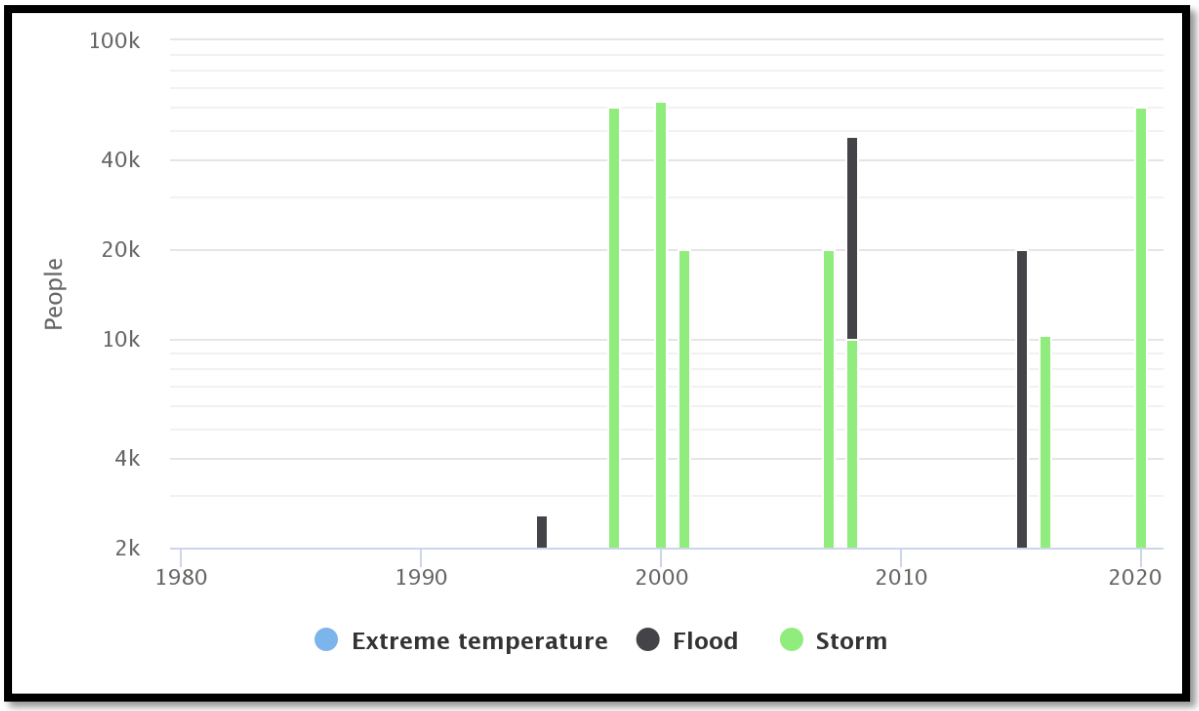



**Figure 7. Key Natural Hazard Statistics for 1980-2020 (number of people affected). Source: World Bank Group**

As can be observed in **Figure 7**, storms and floods, to a lesser extent, have been the greatest source of damage for the Belizean population.

Belize hurricane and storms season officially runs from June 1 until November 30 each calendar year. The most sensitive areas to hurricane damage are the cays and coastal areas, including popular destinations such as San Pedro on Ambergris Caye, Caye Caulker, and Placencia on the mainland[20].

The body in charge of prepare for and respond to Hurricanes and Flood in Belize is The National Emergency Management Organization (NEMO). It was established on the 1st of February 1999 after category 5 Hurricane Mitch threatened Belize for five days in October of 1998[21].

In addition to these climatic events that occur by geographical area, Belize, like the rest of the world, is facing the consequences of global warming. Projected climate change impacts for Belize include a rise in temperature of between 2°C and 4°C by 2100, a 7-8% decrease in the length of the rainy season, a 6-8% increase in the length of the dry season and a 20% increase in the intensity of rainfall in very short periods[22].

In April 2016, Belize ratified the Paris Agreement and submitted its first Nationally Determined Contributions (NDCs) to implement the agreement, and it includes actions to mitigate climate change consequences in multiples sectors.

[20] U.S. Embassy in Belize. (2023). https://bz.usembassy.gov/. Retrieved from U.S. Embassy in Belize.
[21] National Emergency Management Organization. (n.d.). Retrieved from http://site.nemo.org.bz/.
[22] Belize. (2021). Updated Nationally Determined Contribution August 2021. NDC Partnership, IRENA, FAO, UNFCCC RCCMRVH, Vivid Economics, Lucid Solutions, FOLU Roundtable under the Ministry of Sustainable Development, Climate Change and Disaster Risk Management, Coalition for Rainforest Nations, WWF, the Pew Charitable Trusts, the Initiative for Climate Action Transparency, the Commonwealth Secretariat, Rocky Mountain Institute, Climate Technology Collaboration Network (through Fundacion Bariloche), & UNDP Country Office in Belize.

Belize has mainstreamed climate change into its national development planning framework and in addition to NDC, has developed a National Climate Change Policy, Strategy and Action Plan. It sets the guidelines for the strategic transition of Belize's economy towards low carbon development.

## 4.5. Biological Environment Baseline of Indirect Area of Influence

### 4.5.1. Flora

Despite being less than 23,000 km$^2$, Belize is home to at least 50 different tree species as almost 60% of the country is covered by forest (**Figure 8**).

In the north, limestone soils support deciduous forests, predominated by sapodilla and mahogany. The rivers are largely bordered by swamp forests. On the southern coastal plain and inland from Belize City, open savanna (grassland) is marked by scattered oaks, pines, and palmetto palms. The coast is fringed with mangrove trees. The highlands are mostly forested and are largely uninhabited[23].

**Orange Walk**, it is situated within a region in which part of the land is indicated as land for agricultural uses-mostly sugan, soybean and honey- while another part corresponds to the lowland broadleaf forests. The lowland broadleaf forests are composed of a substantial number of deciduous tree species. The composition of plant species depends on soil type. On calcareous soils, the characteristic species are wild mammal, cohune, cowfoot, breadnut, gombolimbo, give-and-take tree, wild grape, glass, wood, cabbage bark, sapodilla, black poisonwood, allspice, copal, laurel, mahogany, cushion, fiddlewood, and prickly yellow. On poorer soils nargusta, banak and polewood can be found[24].

In the case of **Belize** city, according to the results of a recent study[25], it has experienced significant urban expansion, particularly influenced by the development of the Port of Belize, leading to notable changes in land use and a reduction in green spaces. Analysis of satellite imagery from 1991 to 2021 reveals a decrease in forested areas and alterations in the natural landscape, impacting local flora. Early growth concentrated along the Belize River has shifted towards more sporadic suburban development in recent years. Despite attempts at regulated urban planning, challenges such as delays and weak enforcement have allowed for continued unplanned urbanization. This urban sprawl not only reduces the availability of natural habitats but also threatens biodiversity and the ecological balance within the city.

Regarding the situation of **Belmopan** city, as referenced in the Climate Action Guidelines 2022-2023,[26] it was initially envisioned with a design that integrates expansive green spaces and pedestrian walkways, promoting a harmonious blend of urban living and natural landscapes. This foundational concept ensured the city's residents could enjoy safe and easy access to its lush surroundings. However, the urban expansion into newer residential subdivisions has seen a departure from this vision, with a notable deficiency in public open spaces and pedestrian infrastructure.

[23] Encyclopædia Britannica, Inc. (2024). In Encyclopædia Britannica. Retrieved from https://www.britannica.com/

[24] Department of Environment. (2019). Chapter 5 - Biodiversity. In D. o. Environment.

[25] Li, C., Sen Roy, S., Grant, R., & Rhode-Barbarigos, L. (2023). Analysis of the spatial and temporal patterns in land use land cover in Belize city from 1991 to 2021.

[26] I. De Jesús, "Climate action guidelines 2022-2030: city of Belmopan, Belize", Project Documents (LC/TS.2022/129), Santiago, Economic Commission for Latin America and the Caribbean (ECLAC), 2022.

The 2014 Municipal Development Plan took a significant step towards conserving Belmopan's natural heritage by identifying key areas for protection against development. These areas include the ecologically rich east bank of the Roaring Creek, the Riviera Area known for its recreational value and swimming spots, and the Mount Pleasant Creek system, which serves as a natural division and a green corridor between Maya Mopan and San Martin and the University of Belize. Additionally, the plan highlights the importance of the Cohune Walk catchment reserve, a vital habitat for protected species, showcasing the city's commitment to preserving its biodiverse flora.

**Dangriga**, is nestled in an ecologically diverse region of Belize. Its surroundings transition from the coastal plains to the verdant Maya Mountains, fostering a broad spectrum of flora. The area's rivers, originating from these highlands, enrich the coastal soils, supporting diverse plant life and contributing to the local agriculture, notably citrus and banana production.

The broadleaf jungles near Dangriga are rich in plant species, providing habitats for wildlife and sustaining agricultural communities. Adjacent marine ecosystems, including the barrier reef and mangrove islands, host varied marine and coastal plants vital for the ecological balance and marine biodiversity.

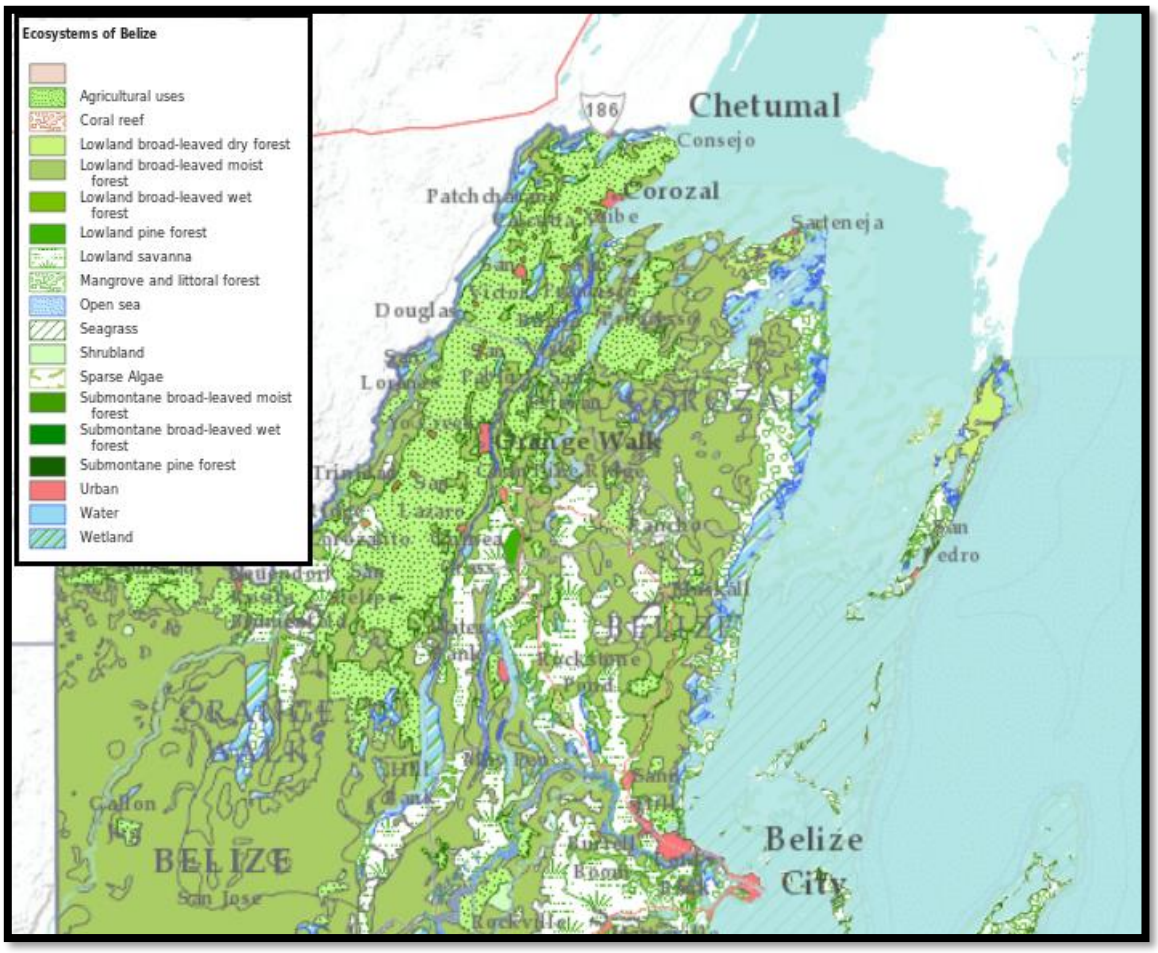



**Figure 8. Ecosystems of Belize.**[27]

[27] Source: DataBasin.org

### 4.5.2. Fauna

Belize has a great variety of both terrestrial and aquatic species. The country's savannahs and lowlands are home to waterfowl and tropical birds, tapirs, pumas. There are an estimated 145 species of mammals, 580 species of birds and 139 species of reptiles and amphibians. The Jaguar (*Pantera onca*) is considered an important indicator species in Belize. The presence or lack thereof of this top predator can reveal the health of Belize's forest ecosystems[28].

However, in urban areas such as the cities analysed in this baseline, road construction, timber harvesting, agricultural conversion, and other factors have contributed to the loss of wildlife habitat. As urbanization increases, wildlife has less space and resources to survive.

### 4.5.3. Protected Areas

Belize has a National Protected Areas System plan created with the intention of protecting and preserving the country's biological diversity. The main objective of the plan is to maintain healthy ecosystems and maximize their social, cultural and economic contribution to local and national development.

The World Conservation Union (IUCN), of which Belize is a member, recognizes seven international categories for protected areas. These give a complete spread of options from total protection (Category 1) to maintaining a harmonious interaction of mutual benefit to man and nature at a landscape level (Category V) and a sustainable flow of products and services to meet the needs of all levels of society (Category VI). All the Belizean protected areas fall into one of these international categories although the category indicated by the designation and that indicated by actual management may differ. Under the present network, the various protected areas can be categorized as sites designated for:

I. Biodiversity protection and research (Nature Reserves);
II. Biodiversity protection, research, recreation, education and visitation (National
III. Parks);
IV. All of the above but protecting particular species or communities requiring special
V. interventions. In practice these areas meld human activity and conservation
VI. management (Wildlife Sanctuaries, Bird Sanctuaries, Spawning Aggregations);
VII. Protection of significant landscape features alongside research, recreation,
VIII. education and visitation (Natural Monuments);
IX. Protection of cultural heritage alongside research, education and visitation
X. (Archaeological Reserves);
XI. Multiple use, zoned to allow controlled extraction of natural resources as well as
XII. biodiversity protection, research, education, recreation and visitation (Marine
XIII. Reserves, Forest Reserves).

There is considerable overlap between these various protected area types, largely due to designations made under three different enabling laws each giving responsibility to a different

[28] Goverment of Belize. (2010). IV National Report to the United Nations Convention on Biological Diversity.

government department – Forest Department, Fisheries Department, and the Institute of Archaeology. Management precepts in the private reserves may also correspond to one or more of these categories. Finally it has been observed that the designations do not always correspond to the most effective management regime. Despite a persistent belief that protected areas take territory out of the productive sector, the multiple use areas allowing for good management of natural resources are in fact the most extensive category on land and sea. This coverage is even larger when multiple use zones in the private protected areas (e.g., Rio Bravo Conservation and Management Area and Shipstern Conservation and Management Area) and Wildlife Sanctuaries and National Parks that are de facto multiple use areas (e.g., Crooked Tree, Sarstoon-Temash) are taken into account. The reality is that management regimes are a form of land use and usage tends towards the most practical and appropriate form for a given area, whatever its formal designation. Nature. Culture. Life. The Rationalization Process recommends that all national protected area categories be retained with their regulations, and that two further categories be added, with the recognition of Private Protected Areas and the division of Wildlife Sanctuaries into two, to better regulate traditional use. According to the plan, there are currently one hundred and three protected areas within the NPAS (National Protected Areas System). Of these, fifty-two protected areas are under the administration of the Department of Forestry, while another nine marine reserves and twelve spawning aggregation sites are administered by the Department of Fisheries. In addition, there are seven bird sanctuaries, a single mangrove reserve, four public reserves, sixteen archaeological sites (administered by the Institute of Archaeology), eight private areas (not yet legally integrated into the national framework) and other private lands in the Maya Mountains Marine Corridor.

However, **Figure 9**, detailing the **Protected Areas** across the country and the four cities involved in the projects (Orange Walk, Dangriga, Belize city and Belmopan), confirms that none of the cities undergoing interventions are located within these designated zones.

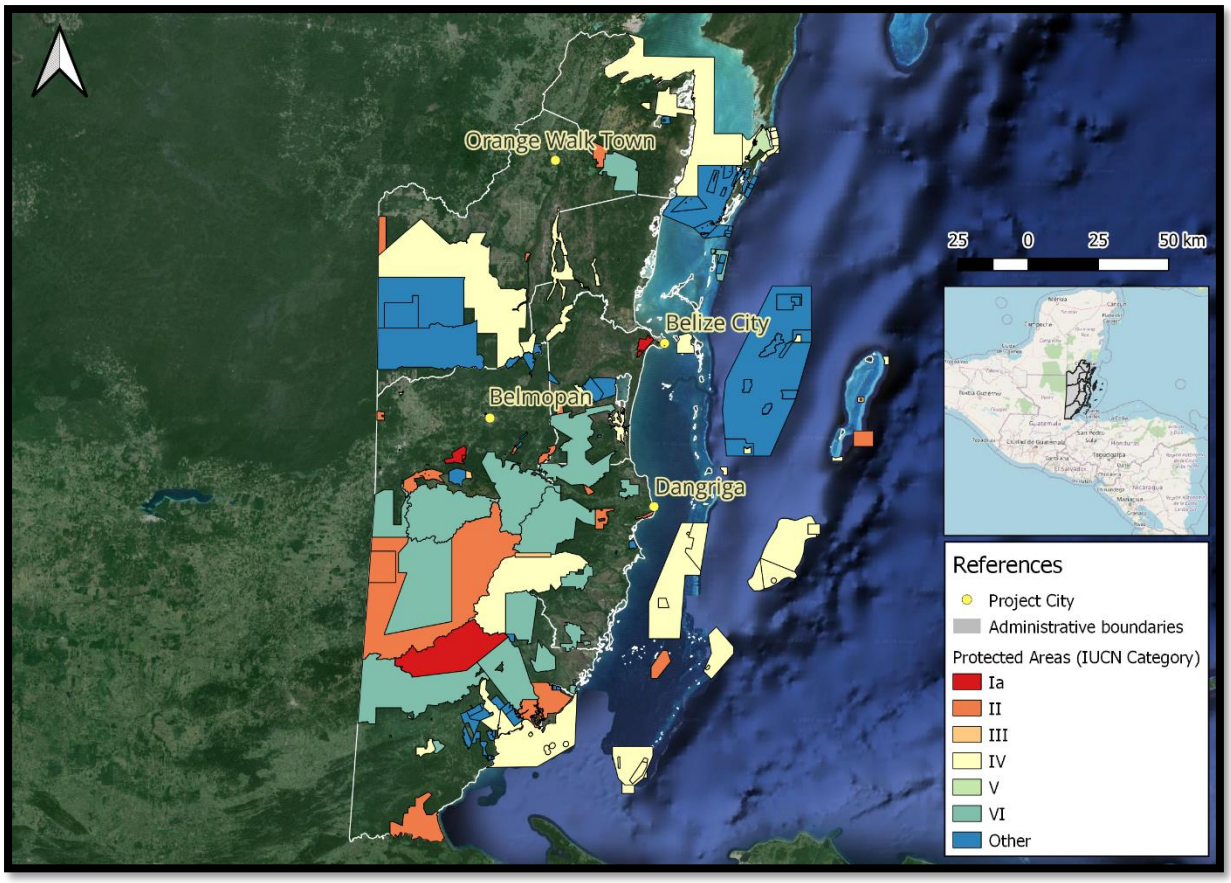



**Figure 9. Belize Protected Areas.**[29]

Belize, considered a high biodiversity area with relatively low human footprint, has also defined several **Key Biodiversity Areas (KBAs)**. The concept of KBAs was developed by global practitioners seeking to identify and ultimately ensure that networks of globally important sites are safeguarded. A collaborative effort between the Government of Belize, Belize Tropical Forest Studies, Conservation International, and the Critical Ecosystem Partnership Fund resulted in the definition of KBAs in Belize in 2007, based on which priority areas for biodiversity protection were identified focusing on the presence of globally threatened species (as per the IUCN Red List criteria) and species of national concern (e.g., the scarlet macaw).

The **Figure 10** shows the KBAs of Belize and the locations of the four cities where the projects will be developed. As can be seen, both Belize City and Dangriga are within the boundaries of the KBA **Belize Coastal and Near Shore Islands**.

[29] Source: Prepared by the author, 2024 (based on layers from http://www.biodiversity.bz).

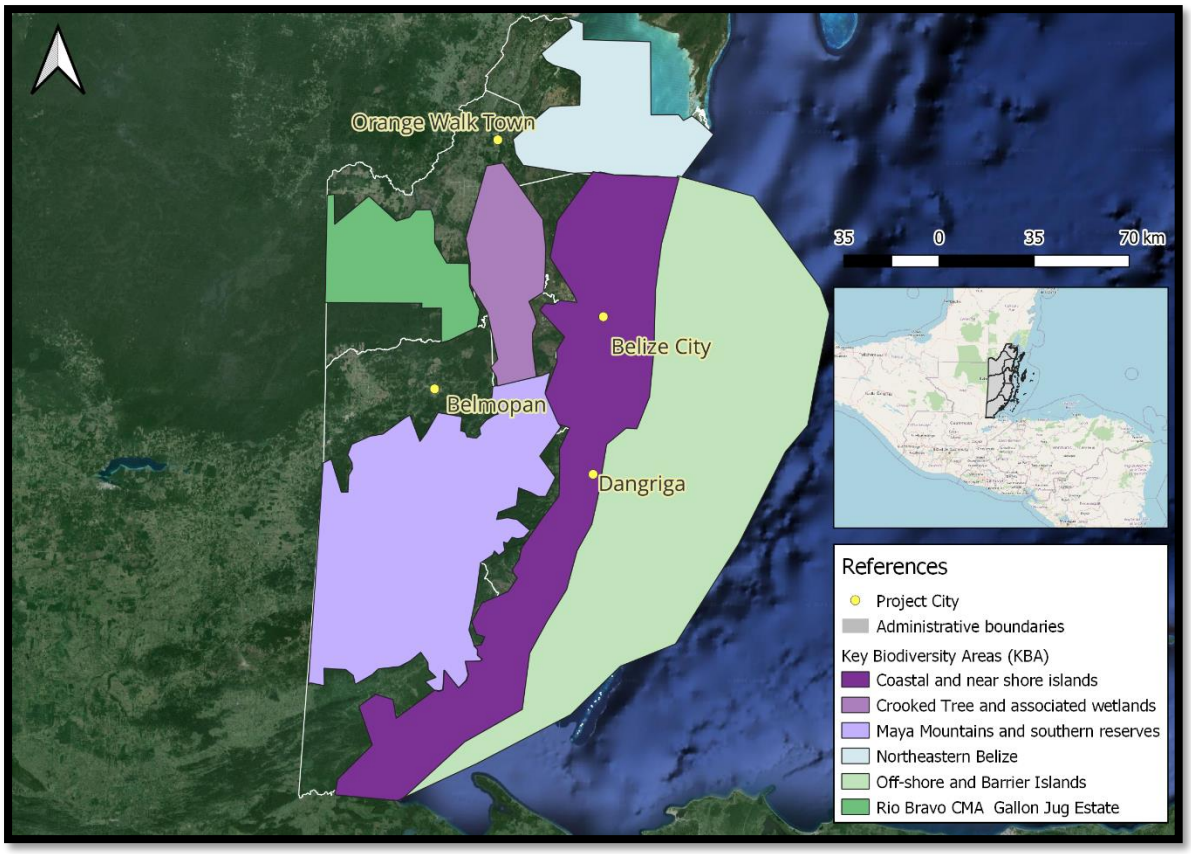



**Figure 10 . Key Biodiversity Areas and project's cities in Belize[30].**

The mentioned KBA in the area of indirect influence of the project is described below.

**Belize Coastal and Near Shore Islands**

Both Belize City and Dangriga are located within the KBA Belize Coastal and Near Shore Islands. It represents a Key Biodiversity Area (KBA) of international significance, meeting the Global Standard for the Identification of KBAs through criteria A1a, A1c, B1, and D1a as assessed in 2007. This site encompasses an area of approximately 700,965 hectares, ranging from 0 to 50 meters in altitude, with a protected area coverage of 19%. The compilation of this site's description was completed in 2008, highlighting its diverse ecosystem that includes three Marine Reserves (Hol Chan, Caye Caulker, and Port Honduras), seven Forest Reserves (Grants Works, Mango Creek, Swasey-Bladen, Machaca, Caye Caulker, Deep River, and Manatee), four Wildlife Sanctuaries (Aguascaliente, Gales Point, Swallow Caye, and Corozal Bay), two National Parks (Sarstoon-Temash and Payne's Creek), four Bird Sanctuaries (Bird Caye, Monkey Caye, Los Salones, and an unnamed caye), one Archaeological Reserve (Altun Ha), and one Nature Reserve (Burdon Canal). This rich mosaic of habitats supports a wide range of biodiversity, with forests covering 61-70% of the area, savannas 21-30%, and wetlands 11-20%.

[30] Source: Prepared by the author, 2024 (based on layers from http://www.biodiversity.bz).

## 4.6. Socioeconomic Environment Baseline of Indirect Area of Influence

Given the 2010 census data no longer accurately represents the prevailing conditions, data from the Statistical Institute of Belize's annual reports are employed to ensure current representation.

### Population and Growth

According toBelize Abstract Of Statistics 2022[31], the total population of Belize increased from 419,199 in 2020 to 441,471 in 2022. This period saw a growth in both the male and female populations, from 209,603 males and 209,596 females in 2020 to 220,739 males and 220,732 females in 2022. Regarding the specific area of interest for the project:

**Table 20. Mid-Year Population Estimates by Cities and Sex: 2020 - 2022[32]**

| | 2020 | | | 2022 | | |
|---|---|---|---|---|---|---|
| City | Total | Male | Female | Total | Male | Female |
| Orange Walk | 13,665 | 6,586 | 7,079 | 13,655 | 6,553 | 7,102 |
| Belize City | 65,173 | 31,474 | 33,699 | 67,016 | 32,353 | 34,663 |
| Belmopan | 25,583 | 12,598 | 12,985 | 28,264 | 13,938 | 14,326 |
| Dangriga | 10,680 | 5,042 | 5,637 | 10,930 | 5,140 | 5,790 |

In **Orange Walk Town**, the population Decreased from 13,665 in 2020 to 13,655 in 2022, a numerical decline of 10, representing a -0.07% change. In terms of gender dynamics, the male population decreased by 33, translating to a -0.50% change, while the female population saw an increase of 23, or 0.32%. This indicates a relatively stable population with a minor shift towards a higher female ratio.

Meanwhile, **Belmopan**, the capital city, witnessed a substantial increase in population from 25,583 in 2020 to 28,264 in 2022, a numerical increase of 2,681, equivalent to a 10.48% growth rate. The male population saw an increase of 1,340 (10.64%), slightly outpacing the female population, which grew by 1,341 (10.33%). This near-equivalent growth rate across genders underscores Belmopan's rapid urban development and balanced demographic expansion.

**Belize City** also experienced population growth, with its numbers moving from 65,173 in 2020 to 67,016 in 2022, marking a numerical growth of 1,843, or 2.83%. The gender analysis reveals that the male population grew by 879 (2.79%), and the female population increased by 964 (2.86%). This

[31] Statistical Institute of Belize (2022). Abstract of Statistics.

[32] Source: Statistical Institute of Belize.

balanced growth across genders maintains a slightly higher female to male ratio, indicative of consistent demographic trends in urban settings.

**Dangriga**, located in the Stann Creek District, saw its population rise from 10,680 in 2020 to 10,930 in 2022, an increase of 250, or 2.34%. The analysis of gender changes shows that the male segment of the population increased by 98 (1.94%), whereas the female segment grew by 153 (2.71%). This modest overall growth, with a slightly faster increase in the female population, suggests a continuing trend of balanced demographic development with a slight female predominance.

### 4.6.1. Infrastructure and Services

#### Water and Sanitation

The availability, adequacy and location of sanitary facilities such as toilets, bathing and cooking facilities, as well as ready access to potable water, have implications for the health and well-being of everyone, especially as it relates to the control/elimination of contagious and water-borne diseases[33].

According to the World Bank's database for Belize[34], at the national level, the availability of basic drinking water services in urban areas has remained consistently high, with 98.88% of the urban population having access to at least basic services from 2018 to 2022. Additionally, urban residents have maintained a high level of access to basic handwashing facilities, with a steady percentage of 92.14% over the same period.

While access to electricity in urban areas showed a marginal improvement, from 97.9% in 2018 to 98.4% in 2020, the percentage of urban households with access to at least basic sanitation services has been consistently high at 93.57%.

Despite the high access rates to basic water and sanitation services, the country still faces challenges. The mortality rate attributed to unsafe water, unsafe sanitation, and lack of hygiene was recorded at 4.3 per 100,000 population in 2019, underscoring the importance of improving water quality and sanitation facilities to enhance public health outcomes.

- Water source

The following table shows water service data for the different districts according to the Abstract of Statistics 2022. Because the document does not provide this type of data by city, data from the districts to which each IIA city belongs will be used.

**Table 21. Households by Major Administrative Area and Main Water Source: 2021 - 2022[35]**

| District | | 2021 | 2022 |
|---|---|---|---|
| | Improved Water Source | 13,458 | 14,351 |

[33] Statistical Institute of Belize. (2010). Belize Population and Housing Census Report

[34] https://databank.worldbank.org/source/world-development-indicators#

[35] *Improved Water Source: Public or private piped into dwelling or yard, Public Standpipe, Protected Dug Well *Unimproved Water Source: Unprotected Dug Well, Private Catchment, River, Creek, Spring, Stream, Pond, Other
Source: Statistical Institute of Belize

| | | | |
|---|---|---|---|
| **Orange walk** | Unimproved Water Source | 273 | 409 |
| | Dont Know or Not Stated | 29 | - |
| **Belize** | Improved Water Source | 41,623 | 41,751 |
| | Unimproved Water Source | 1,678 | 1,067 |
| | Dont Know or Not Stated | - | - |
| **Cayo** | Improved Water Source | 27,220 | 28,845 |
| | Unimproved Water Source | 2,293 | 1,643 |
| | Dont Know or Not Stated | - | - |
| **Stann Creek** | Improved Water Source | 12,796 | 14,062 |
| | Unimproved Water Source | 785 | 678 |
| | Dont Know or Not Stated | - | 40 |
| **Country (Total)** | Improved Water Source | 116,784 | 123,431 |
| | Unimproved Water Source | 7,419 | 4,701 |
| | Dont Know or Not Stated | 93 | 171 |

According to the data provided in Table 21, in Orange Walk, there was a notable increase in households with an improved water source, rising from 13,458 in 2021 to 14,351 in 2022. This demonstrates a positive trend in water infrastructure development. However, there was also an increase in households with an unimproved water source, from 273 to 409, which raises concerns about the equitable distribution of water services.

The Belize District saw a marginal increase in households with an improved water source, up from 41,623 in 2021 to 41,751 in 2022. Conversely, the number of households with an unimproved water source decreased significantly, from 1,678 to 1,067.

Cayo District experienced a substantial increase in households with an improved water source, from 27,220 in 2021 to 28,845 in 2022, indicating ongoing improvements in water infrastructure. The district also saw a decrease in households with an unimproved water source, from 2,293 to 1,643, reflecting progress in the provision of safer water access.

Stann Creek witnessed an increase in households with an improved water source, from 12,796 in 2021 to 14,062 in 2022. There was a slight reduction in households with an unimproved water source, from 785 to 678.

At the national level, Belize made significant progress, with households having an improved water source increasing from 116,784 in 2021 to 123,431 in 2022. There was also a noteworthy decrease in households with an unimproved water source, from 7,419 to 4,701.

- Sanitation and Bathing Facilities

In the absence of data for the cities, the Abstract of statistics 2022 data for each district to which they belong will be used in this case.

**Table 22. Households by Major Administrative Area and Main Type of Toilet Facility: 2021 - 2022**[36]

| District | | 2021 | 2022 |
|---|---|---|---|
| Orange walk | Improved Sanitation | 10,695 | 13,236 |
| | Unimproved Sanitation | 3,036 | 1,524 |
| | Dont Know or Not Stated | 29 | - |
| Belize | Improved Sanitation | 41,873 | 40,853 |
| | Unimproved Sanitation | 1,268 | 1,965 |
| | Dont Know or Not Stated | 159 | - |
| Cayo | Improved Sanitation | 25,268 | 26,662 |
| | Unimproved Sanitation | 4,245 | 3,826 |
| | Dont Know or Not Stated | - | - |
| Stann Creek | Improved Sanitation | 11,145 | 11,764 |
| | Unimproved Sanitation | 2,436 | 2,976 |
| | Dont Know or Not Stated | - | 40 |
| Country (Total) | Improved Sanitation | 105,127 | 112,400 |
| | Unimproved Sanitation | 18,951 | 15,668 |
| | Dont Know or Not Stated | 218 | 216 |

Orange Walk District saw a significant increase in households with improved sanitation facilities, from 10,695 in 2021 to 13,236 in 2022, reflecting a commendable advancement in public health infrastructure. Concurrently, there was a substantial decrease in households with unimproved sanitation facilities, from 3,036 to 1,524.In the Belize District, there was a decrease in households with

[36] *Improved Sanitation: Water Closet linked to BWS Sewer System, Septic tank, Pit Latrine Elevated or Ventilated
*Unimproved Sanitation: Pit Latrine not Elevated or Ventilated, Other and None
Source: Statistical Institute of Belize

improved sanitation facilities, from 41,873 in 2021 to 40,853 in 2022. This regression is accompanied by an increase in households with unimproved sanitation facilities, from 1,268 to 1,965.

Cayo District experienced an increase in households with improved sanitation facilities, from 25,268 in 2021 to 26,662 in 2022, indicating ongoing commitment to enhancing sanitation access. There was also a slight decrease in households with unimproved sanitation facilities, from 4,245 to 3,826.

Stann Creek displayed a modest increase in households with improved sanitation facilities, from 11,145 in 2021 to 11,764 in 2022. However, there was also an increase in households with unimproved sanitation facilities, from 2,436 to 2,976.

### Cooking Facility and Fuel

According to the World Bank's database for Belize[37], at the national level, access to clean fuels and technologies for cooking in urban areas remained relatively stable, with a slight decrease from 95.45% in 2018 to 95.1% in 2021.

In the absence of data for the towns, Abstract of statistics 2022 data for each district to which they belong will be used in this case.

**Table 23. Households by Major Administrative Area and Main Type of Cooking Fuel: 2021 - 2022**

| District | | 2021 | 2022 |
|---|---|---|---|
| Orange walk | Gas (Butane/Biogas) | 11,336 | 13,764 |
| | Wood/charcoal | 1,852 | 849 |
| | Kerosene | - | - |
| | Electricity | 88 | 110 |
| | Does not cook | 455 | 37 |
| | Other | - | - |
| | Dont Know or Not Stated | - | - |
| Belize | Gas (Butane/Biogas) | 39,393 | 41,487 |
| | Wood/charcoal | 771 | 254 |
| | Kerosene | - | - |
| | Electricity | 960 | 784 |

[37] https://databank.worldbank.org/source/world-development-indicators#

| | | | |
|---|---|---|---|
| | Does not cook | 2,043 | 293 |
| | Other | 133 | - |
| | Dont Know or Not Stated | - | - |
| **Cayo** | Gas (Butane/Biogas) | 26,289 | 29,354 |
| | Wood/charcoal | 2,714 | 991 |
| | Kerosene | - | - |
| | Electricity | 79 | - |
| | Does not cook | 431 | 81 |
| | Other | - | 62 |
| | Dont Know or Not Stated | - | - |
| **Stann Creek** | Gas (Butane/Biogas) | 11,465 | 12,943 |
| | Wood/charcoal | 1,459 | 1,158 |
| | Kerosene | 32 | - |
| | Electricity | 78 | - |
| | Does not cook | 515 | 639 |
| | Other | 32 | - |
| | Dont Know or Not Stated | - | 40 |

In Orange Walk, there has been a significant increase in the use of gas (butane/biogas), rising from 11,336 households in 2021 to 13,764 in 2022, suggesting a shift towards cleaner and potentially more accessible cooking fuels. Concurrently, the reliance on wood/charcoal has nearly halved, and the number of households that do not cook has drastically decreased, which may reflect changes in living standards or data collection methodologies.

Belize district exhibits a similar increase in gas use, from 39,393 to 41,487 households. There is a notable decrease in households using wood/charcoal and a substantial reduction in those that do not cook. The use of electricity for cooking saw a slight decrease, which could be due to various factors including energy costs or fuel availability.

In Cayo, gas usage also increased significantly, indicating a consistent country-wide trend towards this fuel type. The substantial decrease in wood/charcoal use and the reduction in households that do not cook align with the national pattern of transitioning to more efficient cooking methods. The

emergence of 'Other' as a category in 2022 suggests there may be new forms of cooking fuel being adopted.

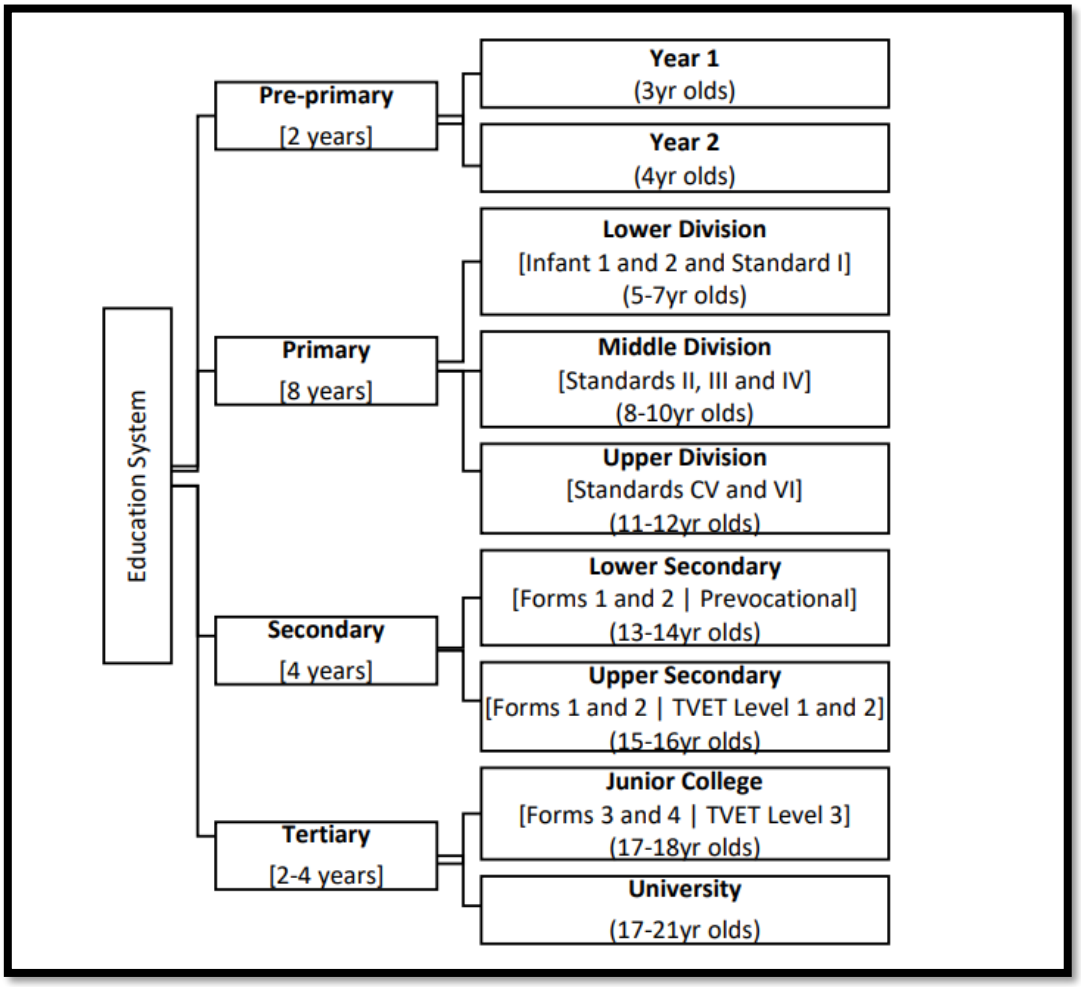
Stann Creek's data reinforces the national shift towards gas, with an increase from 11,465 to 12,943 households. The number of households using wood/charcoal decreased, while those that do not cook increased, an anomaly when compared to other districts. This could be indicative of unique socio-economic factors influencing cooking habits in Stann Creek.

### 4.6.2. Education

Three types of educational institutions operate in Belize—government, government-aided and private. Government schools are owned and funded by the Government of Belize.

Under the Laws of Belize, the mandatory school age begins at five years, and children are required to be in school as long as they have not attained their fourteenth year or have not completed primary school[38]. People who have completed at least Standard Five at primary school are considered literate.

**Figure 11** illustrates the current structure of the educations system, including levels, typical duration and corresponding age groups.




[38] Statistical Institute of Belize. (2010). Belize Population and Housing Census Report.

**Figure 11. Belize Education System.**[39]

The following table shows the School Enrolment for urban areas in the different districts involved in the project by level and sex, during the 2020-2021 period.

**Table 24. School Enrolment for urban areas. Source: Abstract of Education Statistics 2021-2022, Government of Belize**

| District (Urban Areas) | Male | Female |
|---|---|---|
| **Pre-primary level** | | |
| **Belize** | 729 | 724 |
| **Cayo** | 282 | 320 |
| **Orange Walk** | 135 | 141 |
| **Stann Creek** | 99 | 110 |
| **Primary level** | | |
| **Belize** | 6047 | 5783 |
| **Cayo** | 4050 | 3700 |
| **Orange Walk** | 1622 | 1472 |
| **Stann Creek** | 955 | 812 |
| **Secondary level** | | |
| **Belize** | 2980 | 3364 |
| **Cayo** | 2175 | 2423 |
| **Orange Walk** | 1003 | 1183 |
| **Stann Creek** | 668 | 772 |

According to the data presented in **Table 24**, there is a distinct pattern in educational enrollment by level and gender within the urban areas of four districts in Belize: Belize, Cayo, Orange Walk, and Stann Creek. The data allows for a comparative analysis across pre-primary, primary, and secondary levels, highlighting gender disparities in educational participation.

[39] Source: Abstract of Education Statistics 2021-2022, Government of Belize.

At the pre-primary level, enrollment numbers are relatively balanced between males and females across all districts, with Belize showing nearly equal numbers (729 males vs. 724 females). Cayo, Orange Walk, and Stann Creek all exhibit a slight female predominance, indicating a slightly higher engagement rate of young girls in early educational activities.

Moving to the primary level, a more significant disparity emerges. In Belize district, there are more males (6047) enrolled than females (5783), contrasting with the pre-primary level's gender balance. Cayo and Orange Walk districts follow a similar pattern, with male enrollment exceeding that of females, 4050 to 3700 and 1622 to 1472, respectively. Stann Creek is the exception at this level, where the difference between males (955) and females (812) narrows but still maintains a male predominance.

At the secondary level, the trend reverses, with female enrollment surpassing that of males in all districts. Belize district reports 2980 male and 3364 female students, indicating a significant shift towards higher female participation in secondary education. This pattern is consistent in Cayo (2175 males vs. 2423 females), Orange Walk (1003 males vs. 1183 females), and Stann Creek (668 males vs. 772 females), suggesting that girls are either more likely to continue their education at this level or boys are more likely to drop out or shift to vocational training.

### 4.6.3. Healthcare

In Belize, The Ministry of Health & Wellness is dedicated to providing accessible, quality health care. It focuses on universal access to quality health services through primary care, promoting the health of children, adolescents, and adults, while aiming to reduce health disparities. The Ministry emphasizes healthy lifestyles, safe environments, disease control, and reducing disabilities. It also seeks to enhance the health sector's efficiency and sustainability through improved policy, planning, and management, ensuring effective use of resources in partnership with the private sector.

Among the ministry's functions is the management of the **Public Health Program**. It operates under the Principal Public Health Inspector. Its core mission is to enhance the health and wellness of the Belizean population through strategic collaboration with various sectors, including ministries, departments, units, organizations, and communities. This collaborative effort is realized through both intra and multi-sectoral coordination and participation, ensuring a comprehensive approach to public health.

The program oversees a wide range of services critical to public health, including Food Safety, Sea and Airport Health, Drinking Water Testing and Plant Approvals, Solid Waste Management for domestic waste, Institution Health, Environmental Sanitation, Communicable Disease Investigation, Rabies Control, as well as the Investigation of Complaints and Prosecution of Offenders. These services are fundamental in maintaining and improving health standards and safety across the nation.

Strategically placed, the program operates out of nine Public Health Offices distributed countrywide. Notably, four of these offices are located in the cities of the AII, **Orange Walk Town, Belize City, Belmopan, and Dangriga**. The positioning of these offices in key urban areas underscores the program's commitment to addressing public health needs across diverse communities, facilitating a targeted approach to health promotion and disease prevention in areas of high population density and strategic importance.

Additional vital service areas within the ministry encompass the Drug Inspectorate Unit, Epidemiology Unit, Public Health, Nursing Department, Pharmacy, Vector Control Program, Central Medical

Laboratory, Belize Dental Program, Nutrition, International Relations, Policy, Planning and Project Management, National Drug Abuse Control Council, Licensing and Accreditation, and Mental Health.

### 4.6.4. Indigenous Peoples and Minorities

In a general context, Belize has a population formed by several indigenous communities. According to the Statistics Institute of Belize 2010 Census, 52,9 per cent of population are Mestizo, 26 percent Creole, 21 per cent are descendants of black Africans and Mulattos (descendants of black Africans and Europeans), 11,3 per cent are indigenous Maya and 6,1 per cent are Garifuna (descendants of black Africans and Caribbeans), and 7,8 per cent are white, of British or Spanish origin. The rest of the population comprises small communities of European, Mexican, Guatemalan, U.S., Honduran, Jamaican, East Indian, Chinese and Far Eastern origins.[40]

Maya are the direct descendants of the original indigenous inhabitants of the Yucatán peninsula. Today there are three Maya groups in Belize, namely Yucatec, Mopan, and Q'eqchi' Maya and they are mainly subsistence farmers. **Yucatec** reside in the Corozal, **Orange Walk**, and **Cayo** Districts; **Mopan Maya** settlements are in Toledo District and there are also other villages in the **Cayo** District; and Q'eqchi' Maya settled in the lowland areas along rivers and streams and established small, isolated villages throughout Toledo district.

**Garifuna** are an Afro-indigenous community resulting from the inter-marriage of African maroons (escaped slaves) and indigenous Kalinago (Carib-Arawak) on the Caribbean Island of St Vincent. They have their own language and culture. They are located predominantly in the southern towns of Punta Gorda and **Dangriga**.

**Mennonites** are a Dutch/German descent community. They established six communities in the **Orange Walk** and **Cayo** Districts and they have their own exclusive schools, churches, and financial institutions in their community. They specialize in agriculture, poultry and furniture production.

The **Mestizo** population are the mixed descendants of indigenous Maya and Spanish Colonizers. They are found everywhere in the country but mostly live in the northern lowlands of Corozal and Orange Walk and in the western district of Cayo.

Creoles are Afro-European descendants. They live primarily in the coastal region and are the dominant group in most social and political institutions.

The social and economic conditions of indigenous peoples in Belize in general, are characterized by poverty, marginalization and inequality, in addition to a lack of recognition for their rights. The Constitution recognizes the cultural diversity of the country's territories, but has not been amended to provide for government action on multiculturalism. Moreover, it does not recognize customary rights or indigenous jurisdiction. Nevertheless, the Government of Belize has undertaken a commitment to reactivate initiatives promoting respect for the rights of indigenous peoples, in accordance with the provisions of the United Nations Declaration on the Rights of Indigenous Peoples, which the government adopted in 2007.[41]

[40] Centre for Indigenous Peoples' Autonomy and Development. (2017). Country technical note on indigenous peoples' issues.

[41] Centre for Indigenous Peoples' Autonomy and Development. (2017). Country technical note on indigenous peoples' issues.

## 4.6.5. Archaeological, Historical and Cultural Heritage

Belize has a unitary system of management in which ownership of all cultural heritage is vested in the people and government of the country.

In 2003, the National Institute of Culture and History (NICH) was created and it is responsible for the management of the country's tangible and intangible heritage. It comprises of four institutions, each with their own mandates and missions but subject to Chapter 331 of the Laws of Belize, called the NICH Act.

The four institutions that comprise the NICH are:

- Institute of Archeology
- Institute of Social & Cultural Research
- Museum of Belize and Houses of Culture
- Institute Creative Arts

### Institute of Archeology (IA)

the IA's goals are geared to the research, protection, preservation, and sustainable management of Belize's cultural and archaeological resources. The IA is divided into varying departments, including Parks Management and Research and Education and it manages Belize's seventeen archaeological sites that have been declared reserves.

### Institute for Social and Cultural Resource (ISCR)

ISCR's objective is to promote, recover, monitor, document and conduct historical, social, cultural and anthropological research. Among the ISCR's recent initiatives is an increased emphasis on safeguarding intangible cultural heritage (ICH). The ISCR, upon request, conducts presentations and exhibitions at schools and other public events.

### Museum of Belize and Houses of Culture (MOB)

The MOB's main focus is education through the exhibition of prehistoric and historic period objects and the promotion of other cultural events. The MOB accomplishes its goals not only via exhibitions at the museum itself, but with exhibits and cultural programs at seven Houses of Culture (HOC) spread across the country (Beardall, 2021).

### Institute Creative Arts (ICA)

The ICA, is headquartered at the Bliss Center for Performing Arts in Belize City. It is responsible for managing the Belize Film Commission and the Belize Youth Orchestra and Choir and focuses on artistic expression in all its forms, including dance, theater and visual arts.

### Outstanding Heritage Resources

Among some of the heritage resources of Belize, it can be highlighted:

- The Cayo Green Iguana Conservation Project (Belmopan), which aims to conserve and care for Belize's endangered Green Iguana species. The project uses exhibits and interactive programs to help educate visitors and raise awareness among the general public.
- The Belize Barrier Reef, the only UNESCO world Heritage Site in Belize, which consists of seven reserves: Bacalar Chico National Park and Marine Reserve, Blue Hole Natural Monument, Half

Moon Caye Natural Monument, South Water Caye Marine Reserve, Glover's Reef Marine Reserve, Laughing Bird Caye National Park and Sapodilla Cayes Marine Reserve. This barrier reef is the largest in the Northern Hemisphere and is an important habitat for some endangered animal species such as sea turtles, manatees and the American crocodile.

- The Xunantunich Archaeological Site in Cayo (Belmopan), a Mayan archaeological site that includes a set of six plazas surrounded by more than twenty-five temples and palaces.
- The Lamanai Maya Archeological Site in Orange Walk, where three large temples can be observed: Temple of Jaguar, the Mask Temple, adorned by a huge stone mask representing an ancient Maya king and the Temple of Alto.
- The Image Factory Art Foundation in Belize, a non-profit contemporary art institution dedicated to the promotion, exhibition and documentation of Belizean art.

## 4.7. Direct Area of Influence Baseline

Below is a succinct description of the Direct Area of Influence of each project, accompanied by corresponding photographs showcasing these areas.

### 4.7.1. Matron Roberts Polyclinic II (Belize City)

The Matron Roberts Polyclinic II is located in Belize City, within a residential and commercial neighborhood. The clinic's address is FRW4+6CV, Johnson St, Belize City, Belize.


**Figure 12. Matron Roberts Polyclinic II. Source: Government of Belize Press Office**

Surrounding the clinic, the Atlantic Bank is situated 100 meters to the south, and a church is found 100 meters to the north. Constitution Park is located 50 meters to the southeast, offering a nearby

area for outdoor activities. Additionally, an 80-meter distance to the east lies a Gas Station. The vicinity of the clinic features a variety of stores, including clothing shops, welding supply stores, and restaurants, catering to the diverse needs of those visiting or working at the clinic.

Detailed information about the facility is presented in the table below.

**Table 25. Matron Roberts Polyclinic II details**

| **General Information** |
|---|
| **Name: Matron Roberts Polyclinic II** |
| **Location: FRW4+6CV, Johnson St, Belize City, Belize.** |
| **Building Orientation: North-South** |
| **Building Floor Area: 5,086 ft²** |
| **Size of Property: 30,375 ft²** |
| **Number of Floors: 2** |
| **Parking Spaces: 7 for visitors, 9 for workers** |
| **Type of Building Construction: Reinforced concrete** |
| **Type of Roof Construction: Wooden truss with metal roofing** |
| **Water and Waste Management** |
| **Water Supply: Provided by Belize Water Services Limited, with an additional 550-gallon storage for emergencies. Drinking water is purchased separately.** |
| **Wastewater Management: Evacuated into the public sewer system.** |
| **Waste Disposal: Normal waste managed by municipal sanitation; hazardous waste burned weekly at a designated disposal site.** |
| **Health Services Offered** |
| **Family and Community Health Services (e.g., pre-natal care, family planning)** |
| **Out-patient services (e.g., disease management, nutritionist consultations)** |
| **Dressings for wounds** |
| **Specialist services (e.g., pediatrics, obstetrics)** |
| **Community outreach services** |
| **Patient education services** |
| **Dental service (upper floor)** |
| **Building Details** |
| **Floors Use: Upper floor for administration and dental clinic; ground floor for public health services.** |
| **Examination/Observation Beds: 11** |
| **Upgrades: Last retrofitted in 2006 by Gutierrez and Associates (Architects).** |

| Environmental and Safety Concerns |
| --- |
| **Located in a flood-prone area due to poor drainage, near the sea.** |
| **Generates normal and hazardous waste, managed with color-coded bags.** |
| **Considered a model by NHI for polyclinics, meets resilience criteria with proposed hydraulic control upgrades.** |
| **Facility Infrastructure** |
| **No. of Buildings on Plot: 1** |
| **Maximum Height of Buildings: 23 ft 1 in.** |
| **Plot Area: 30,375 ft²** |
| **Building Area: 3,102.5 ft²** |
| **Total Floor Area: 5,086 ft²** |
| **Site Coverage: 10.21%** |

### 4.7.2. Palm Centre View – Smart Health Facility (Belmopan)

The Palm Center, situated in the Northeastern sector of Maya Mopan in Belmopan, serves as Belize's sole residential psychiatric institution. It offers a comprehensive range of services including the treatment of mental disorders, care for individuals with less severe mental health issues, prevention of psychological problems, and enhancement of mental health via public services and education. Emphasizing a team-based approach, the Center commits to providing professional and dedicated care and rehabilitation for patients afflicted with chronic mental illnesses from across the nation.

**Figure 13. Palm Centre View. Source: Google User Uploads.**

The center is situated on the outskirts of Belmopan, in a locale distinguished by its notably low population density. The closest buildings are found roughly 70 meters to the south.

Detailed information about the facility is presented in the table below.

**Table 26. Palm Center View Details**

| General Information |
|---|
| **Name: Palm Center** |
| **Location: Northeastern corner of Maya Mopan, Belmopan, Cayo District, Belize** |
| **Size of Property: 871,200 $ft^2$** |
| **Building Orientation: North-South** |
| **Building Floor Area: 11,165 $ft^2$** |
| **Number of Floors: 1** |
| **Parking Spaces: 2 for visitors, 0 for workers** |
| **Building Capacity: 40 beds, Facility Capture Population: Patients from all parts of the country** |
| **Type of Building Construction: Reinforced concrete** |
| **Type of Roof Construction: Wooden truss with metal roofing** |
| **Water and Waste Management** |
| **Water Supply: Provided by Belize Water Services Limited, with a 3,300-gallon storage capacity for emergencies. Drinking water is purchased separately.** |
| **Wastewater Management: Evacuated into 2 septic tanks with a combined capacity of 10,053 gallons.** |
| **Waste Disposal: Normal waste managed by municipal sanitation; hazardous waste burned weekly at a designated disposal site.** |
| **Mental Health Services Offered** |
| **Restorative care and treatment** |
| **Occupational therapy for rehabilitation of daily living and working skills** |
| **Inter-professional team approach including psychiatrists, medical officers, nurses, and support staff for comprehensive patient care** |
| **Coordination with Western Regional Hospital for non-mental health conditions or medical emergencies** |
| **Facility Layout** |
| **Land Area: 871,200 $ft^2$, including the main facility, three houses for independent living, and an occupational therapy building.** |
| **Main Facility: 20 alcoves with a capacity for 40 patients.** |
| **Occupational Therapy Building: Divided into nine sections for patient activities.** |
| **Environmental and Safety Concerns** |

| |
|---|
| **All buildings are safe and well-maintained, although some sections of the occupational therapy building are used for storage.** |
| **Facility Infrastructure** |
| **Number of Buildings on Plot: 5** |
| **Maximum Height of Buildings: 20 ft** |
| **Plot Area: 871,200 ft²** |
| **Building Area: 9,426 ft²** |
| **Total Floor Area: 11,165 ft²** |
| **Site Coverage: 1.08%** |

## 4.7.3. Southern Regional Hospital (Dangriga)

The facility is positioned on the outskirts of Dangriga, along the Hummingbird Highway, within a predominantly commercial area featuring a variety of shops and restaurants. To the west, approximately 200 meters away, lies the Gulisi Garifuna Museum, and further in the same direction but at a distance of 100 meters, there is a food store. Meanwhile, a service station is located about 150 meters to the east.

**Figure 14. Southern Regional Hospital. Source: channel5belize.com**

The compound of the Southern Regional Hospital, contains 5 main structures: the polyclinic; the hospital (comprising 2 structures); an eye clinic; and a garage shed.

Detailed information about the facility is presented in the table below.

**Table 27. Southern Regional Hospital Details**

| General Information |
| --- |
| **Name: Southern Regional Hospital** |
| **Location: Mile 1.5 George Price Drive, Dangriga, Stann Creek District, Belize** |
| **Building Orientation: Polyclinic (North-South), Hospital (East-West)** |
| **Building Floor Area: Hospital (28,400 $ft^2$), Polyclinic (5,000 $ft^2$)** |
| **Size of Property: 248,621 $ft^2$** |
| **Number of Floors: 1** |
| **Parking Spaces: Visitors 30, Workers 19** |
| **Type of Building Construction: Pre-fabricated** |
| **Type of Roof Construction: Metal trusses with metal roofing** |
| **Water and Waste Management** |
| **Water Supply: Belize Water Services Limited (BWS) with on-site reverse osmosis treatment systems. Additional water storage capacity of 2,800 gallons.** |
| **Wastewater Management: Managed by a Waste Treatment Facility with gravity movement to a large septic tank and aeration facility.** |
| **Waste Disposal: Regular waste is managed by municipal sanitation; hazardous waste is processed by burning at a designated site weekly.** |
| **Health Services Offered** |
| **Family and Community Health Services** |
| **Out-patient Services** |
| **Dressings for wounds** |
| **Specialist Services (pediatrics, obstetrics)** |
| **Community Outreach Services** |
| **Patient Education Services** |
| **Dental Service** |
| **Eye Clinic** |

| |
|---|
| **Morgue** |
| **Building Details** |
| **Facility Usage: Polyclinic for outpatients; main hospital for inpatient and emergency services. Polyclinic operates Monday to Friday, 7am to 7pm, and Saturdays 7am to 12 noon.** |
| **Environmental and Safety Concerns** |
| **Structural Integrity: Supported by I-beams on piled footings with open web lattice joists, classified as safe despite sensitivity to moving loads.**<br><br>**Waste Treatment Facility: Inadequacies noted with air-blowers at the end of the waste treatment process.**<br><br>**Solid Waste Disposal: Managed through color-coded bags for regular and hazardous waste.** |
| **Facility Infrastructure** |
| **Number of Buildings on Plot: 6 (the polyclinic; the hospital (comprising 2 structures); an eye clinic; and a garage shed).**<br><br>**Maximum Height of Buildings: 18 ft**<br><br>**Plot Area: 248,621 ft²**<br><br>**Building Area: 33,820 ft²**<br><br>**Total Floor Area: 37,820 ft²**<br><br>**Site Coverage: 13.6%** |

### 4.7.4. Northern Regional Hospital (Orange Walk Town)

The Northern Regional Hospital (NRH), situated in Orange Walk Town, functions as a comprehensive care facility providing primary and secondary medical services including pediatrics, emergency medicine, anesthetics, general medicine, obstetrics & gynecology, and psychiatry. Located approximately one mile north of the town center, adjacent to the village of Trail Farm, the hospital spans an area of about 40,000 square feet. It encompasses various departments such as General, Pediatrics, Maternity, two outpatient departments for General and Child and Maternal health, two surgical theatres, and an Emergency Ward.

Positioned within a mixed residential and commercial zone, the NRH is within a 100-meter radius of several dining establishments and just 50 meters south of the New Life Presbyterian Primary School.


**Figure 15. Northern Regional Hospital. Source: raphaeldist.com.**

Detailed information about the facility is presented in the table below.

**Table 28. Northern Regional Hospital Details**

| General Information |
|---|
| **Type of Facility: Health Care Facility** |
| **Location: Orange Walk Town, near Trail Farm village** |
| **Number of Beds: 57** |
| **Physical Description: Single-story, reinforced masonry block walls, floating foundation slab, timber roofing with metal sheeting.** |
| **Building Area: 35,000 $ft^2$.** |
| **Plot Size: 243936 $ft^2$** |
| **Parking Spaces: Visitors: 20, Workers: 10** |
| **Medical Services Offered** |
| **Specialist Services (Obstetrics, Pediatrics, Gynecology)** |
| **Family and Community Health Services** |
| **Dental Service** |
| **X-Ray Services** |
| **General Surgery** |
| **Out-patient Services** |
| **Community Outreach Services** |
| **Patient Education Services** |

| |
|---|
| **Vaccination Services** |
| **Morgue Services** |
| **Building Layout** |
| **Block A: Administration, Outpatient, Specialist Clinic, Maternal and Child Healthcare** |
| **Block B: Accident and Emergency, Dentist, Radiology, Asthma Bay, Ancillary Services** |
| **Block C: General Ward, Cafeteria, Maternity Ward** |
| **Block D: Surgical Ward, Operating Theatre** |

# 5. Environmental and Social Impacts and Risks

This chapter describes the potential environmental and social impacts and risks for the projects of the Improving efficiency, quality, and access in Belize's health system Program (BL-L1048), on the physical, biological, and socioeconomic environment.

## 5.1. Methodology for the Impact and Risk Assessment

### 5.1.1. Impact and Risk Assessment Process

The steps involved in the impact and risk assessment are:

1 **Impacts Identification:** determine what could happen in the different environment components, as a consequence of the project and its associated activities and facilities.
2 **Impact Assessment**: evaluate the significance of the predicted impacts and risks, considering their magnitude and occurrence probability, and the sensitivity, value and importance of the factor or component of the impacted environment.
3 **Mitigation / Improvement**: identify appropriate measures to mitigate negative impacts, and enhance positive impacts.
4 **Residual Impact Assessment**: evaluate the significance of impacts assuming the effective implementation of mitigation and improvement measures.

### 5.1.2. Analysed Phases

For the identification of environmental and social impacts and risks, the analysis time horizon was divided into three phases:

- **Construction**
- **Operation and Maintenance**
- Decommissioning or abandonment

The project involves infrastructure that is considered to have a long service life (hospitals and clinics). It is assumed that this infrastructure will be permanently incorporated into the MOHW's assets. Therefore, the decommissioning or abandonment stage **was not considered for the impact assessment**.

### 5.1.3. Project Activities Summary

#### Project Activities in the Construction Phase

There are several activities in the construction phase that must be considered from the socio-environmental perspective. Activities identified for the project included:

**Work Preparation**

A. Transportation, movement and stockpiling of materials, equipment, and machinery. Labor mobilization.
B. Site preparation, land clearing and dismantling of old or damaged facilities.

**Main work**

C. Infrastructure Retrofitting (upgrades and expansions in septic systems, roofs, neonatal and A&E spaces, flooring, water reserves, staff facilities, lighting, and ventilation).
D. Waste Management Improvements (revamping of wastewater and solid waste systems, safety programs, oxygen and hazardous materials storage, and pest management).

**Work demobilization**

E. Demobilization of construction sites and workers. Removal of surplus materials.

### Project Activities in the Operational Phase

For the purposes of the analysis, the operational phase was divided into:

F. Operation of renewed and newly installed infrastructures.
G. Maintenance of renewed and newly installed infrastructures.

## 5.1.4. Physical, Biological and Socioeconomic Environment Components Summary

The components of the physical, biological, and socioeconomic environment likely to be affected by the project include:

**Physical Environment**

1. Air. Gaseous emissions and particulate matter.
2. Air. Noise and vibrations.
3. Waters. Water table and groundwater. Surface water courses.
4. Soil.

**Biological Environment**

5. Biota. Flora and fauna

**Socioeconomic Environment**

6. Infrastructure and services. Road network and traffic.
7. Infrastructure and services. Main services.
8. Infrastructure and services. Waste Management. Municipal solid waste.
9. Infrastructure and services. Waste Management. Special and hazardous waste.
10. Infrastructure and services. Waste Management. Construction and demolition waste.
11. Occupational and Community Health and Safety. Risk of occupational and community accidents
12. Socio-Economic development. Labor employment. Commercial and service activities.
13. Cultural and Archaeological Heritage.
14. Land Use and Activities in the Area. Residential Use.
15. Landscape and Public Space. Visual impact. Landscape perception.

## 5.1.5. Impacts Identification and Assessment

For the impact identification, the **interactions between the project actions** (identified above) and **the environmental components** (physical, biological, and socioeconomic environment) were analyzed. The analysis is comprised of two distinct phases, described as follows.

### Common E&S Impacts and Risks

Initially, an assessment was undertaken to evaluate the collective environmental and social impacts and risks common across all projects within the Program. This evaluation was graphically represented using a **matrix** format.

The matrix reproduces in a simplified way the conditions of the studied system and allows to visualize with simple symbology the representative interactions. It is a double-entry table in which the columns correspond to actions owned or induced by the project with environmental or social implications, while the rows are the physical, biological, and socioeconomic environment components likely to be affected.

The intersections between Project actions and the environmental components considered, allow us to visualize interaction relationships where differentials were evaluated between the "without project" situation and the "under project" situation, that is, impacts and risks.

The impact assessment to complete the matrix was carried out through: (i) interviews with sector experts and project team staff; (ii) expedited field survey; (iii) literature review – including checklists and impact evaluations for similar projects; and (iv) the consultant's experience.

Details of the impact assessment can be found in the matrix report.

### Impact Attributes

In each matrix cell, the impact is rated according to the attributes detailed below:

1. **Impact Sign**: refers to the nature of the impact (whether it is a positive or negative impact)
2. **Impact Magnitude (scale)**: qualitatively, it will be indicated if it is an impact of high, medium, or low significance **(Table 29).**
3. **Impact Scope**: indicates whether it is a restricted impact (effect restricted to the Operational Area - OA), specific (effect located within the Direct Area of Influence - DAoI), or major (if it impacts neighboring areas, outside the Indirect Area of Influence - IAoI).
4. **Impact Duration (persistence)**: it is determined whether it is a transitory or permanent impact.
5. **Impact probability:** it is a measure of the probability of the impact occurrence.
6. **Accumulation:** for the most significant impacts identified, the cumulative impacts of the execution and operation of the works with respect to existing or potential projects will be analyzed.

**Table 29** provides definitions that serve as a basis for determining the magnitude of the impact.

**Table 29. Keys to determine the impacts magnitude.**

| Impact Magnitude | Physical and Biological environment | Socio-economic environment |
|---|---|---|
| **High** | It is defined as one that affects the environment or a subcomponent thereof, | It is defined as one of long duration (persisting over several generations), or |

| Impact Magnitude | Physical and Biological environment | Socio-economic environment |
|---|---|---|
| | either in its entirety, or in a high percentage, altering its characteristics in a forceful way, so that it can be presumed that the impact will make it impossible to use it in the current conditions of this environment, in the modality and abundance in which it is currently used. | one that affects a definable group of people to such an extent as to cause a significant change in the quality of life or in culturally established and socially valued positive or appropriate patterns of an activity that will not return to pre-project levels for at least several generations. |
| **Medium** | It is defined as that which affects the environment or a subcomponent of it, partially, in a non-majority fraction, altering its characteristics in an evident manner, but in such a way that it can be presumed that the impact will not significantly impede the use of the resource in the current conditions of this environment, in the modality and abundance in which it is currently used. | It is defined as one that affects a definable group of people in a significant magnitude, enough to cause an alteration in the quality of life or in culturally established and socially valued as positive or adequate patterns of an activity. |
| **Low** | It is defined as that which affects the environment or a subcomponent of it, partially, in a clearly minority fraction, not significantly altering its characteristics, in such a way that it can be presumed that the impact will not make it impossible to use this environment in the current conditions, in the modality and abundance in which it is currently used. | It is defined as one of short duration or one that affects a reduced group of people in a localized area, but does not imply an evident alteration in the quality of life or in culturally established and socially valued as positive or adequate patterns of an activity. |

**Specific E&S Impacts and Risks**

Individualized assessments were conducted for each project. These specific analyses delved into the unique and **particular impacts of each project**, focusing on their distinct environmental and social effects.

During this stage of the assessment, the findings of the analysis were articulated and presented in a narrative structure, providing a specific section for each Project.

### 5.1.6. Mitigation Measures Identification

Once the impacts have been identified and assessed, mitigation measures are identified to avoid, reduce, correct or compensate for them.

All negative impacts identified in the impacts and risks analysis of this Study require preventive, mitigatory, corrective or compensatory measures, which must be incorporated to minimize environmental impact and ensure the sustainable performance of the project.

Within the **mitigation hierarchy,** preventive (pre-impact, avoid impact at source) and mitigatory measures (minimize impact, reduce impact at source, or on the receiving body) are preferred over measures involving treatment (post-impact), such as restoration and compensation.

### 5.1.7. Residual Impact Determination

Once mitigation measures are identified, the next step in the assessment process is to assign a residual impact value. This step is, in essence, a new impact assessment, considering the effective implementation of the mitigation measures identified.

### 5.1.8. Management, Monitoring and Audit

The last stage in the impact assessment process is the definition of monitoring and management measures, to ensure that the identified impacts remain within the ranges of applicable standards, and that mitigation measures are being effectively implemented, reducing impacts in the manner originally predicted in the analysis.

The summary of these management processes is part of the Environmental and Social Management Plan (ESMP), which is the subject of the next chapter (**Chapter 6**).

## 5.2. E&S Impact Assessment General Matrix

### 5.2.1. E&S Impact Matrix

As a first approach to the analysis, a matrix was prepared to identify environmental and social impacts and risks **common to all projects**. The matrix contains the sign and magnitude of the impact. This matrix is presented in **Figure 16**.

**Matrix for the identification of Envirnomental and Social Impacts and Risks of Improving efficiency, quality, and access in Belize's health system (BL-L1048; BL-J0008)**

| | | | | PROJECT ACTIVITIES WITH ENVIRONMENTAL AND SOCIAL IMPACT | STAGES | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | CONSTRUCTION | | | | | | OPERATION |
| | | | | | Work preparation | | Main work | | Work demobilization | Maintenance and operation | |
| | | | | | Transportation, movement and stockpilling of materials, equipment, and machinery. Labor mobilization | Site preparation, land clearing, soil movement and excavation | Infrastructure Retrofitting (upgrades and expansions in septic systems, roofs, neonatal and A&E spaces, flooring, water reserves, staff facilities, lighting, and ventilation). | Waste Management Improvements (revamping of wastewater and solid waste systems, safety programs, oxygen and hazardous materials storage, and pest management). | Demobilization of construction sites and workers. Removal of surplus materials | Operation of renewed and newly installed infrastructures | Maintenance of renewed and newly installed infrastructures |
| | | | | | A | B | C | D | E | F | G |
| ENVIRONMENTAL COMPONENTS LIKELY TO BE AFFECTED BY THE PROJECT | | | | | | | | | | | |
| PHYSICAL MEDIA | AIR | Gaseous emissions and particulate matter | | 1 | | | | | | | |
| | | Noise and vibrations | | 2 | | | | | | | |
| | WATER | Water table and groundwater | | 3 | | | | | | | |
| | SOIL | Soil | | 4 | | | | | | | |
| BIOLO GICAL MEDIA | BIOTA | Flora and fauna | | 5 | | | | | | | |
| SOCIO-ECONOMIC MEDIA | INFRAESTRUCTURE AND SERVICES | Road network and traffic | | 6 | | | | | | | |
| | | Main Services (water, sewage, energy, gas) | | 7 | | | | | | | |
| | | WASTE MANAGEMENT | Solid waste | 8 | | | | | | | |
| | | | Hazardous or special waste | 9 | | | | | | | |
| | | | Construction waste | 10 | | | | | | | |
| | OCCUPATIONAL AND COMMUNITY HEALTH AND SERVICES | Risk of accidents (occupational, road, community and staff accidents) | | 11 | | | | | | | |
| | SOCIO-ECONOMIC DEVELOPMENT | Labor empployment. Commercial and service activities | | 12 | | | | | | | |
| | CULTURAL HERITAGE | Cultural, Archaeological and Paleontological Heritage | | 13 | | | | | | | |
| | LAND USE | Current activities in the project area and land use | | 14 | | | | | | | |
| | LANDSCAPE | Visual impact. Landscape and perception | | 15 | | | | | | | |

**Sign and Magnitude of the impact**

- **Negative**: High, Medium, Low
- **Positive**: High, Medium, Low
- **Neutral**

**Figure 16. Project Environmental and Social Impacts and Risks Matrix**

### 5.2.2. E&S Impact Matrix Report

The following report explains the criteria used in the weighting of the impacts shown graphically in the Impacts and Risks Matrix. It also expands on the valuation of the other attributes identified for the impacts (scope, duration, frequency and duration). Finally, it identifies mitigation measures to be applied, determining the residual impact resulting from effectively applying these measures.

## Impacts - Construction Phase

### Air. Gaseous Emissions and Particulate Matter

Impact Assessment

| **Impact Description** | Air quality impacts of gaseous emissions and particulate matter | | |
|---|---|---|---|
| **Impact Nature** | Negative | Positive | Neutral |
| **Magnitude** | Low | Medium | High |
| **Scope** | Restricted (OA) | Punctual (DAoI) | Local (IAoI) |
| **Duration** | Transitory | Permanent | |
| **Probability** | Low | Medium | High |
| **Accumulation** | Non-cumulative | Cumulative | |

Impact Discussion

During the construction phase, various activities like setting up worker camps, storing materials, moving machinery and vehicles, preparing the site, clearing land, dismantling old facilities, excavating, moving soil, and constructing new infrastructure typically lead to the release of particulate matter and emissions from combustion engines. These emissions contribute to air pollution, which is considered negative in impact.

However, these effects are relatively minor (low magnitude), limited to specific areas (punctual) directly influenced by the construction activities, and temporary, occurring solely during the construction phase (transitory).

Mitigation Measures

- **Covered Transportation and Material Handling:** All materials prone to generating dust will be transported in vehicles equipped with tarpaulins and maintained at adequate humidity levels to minimize dispersion during transit. Additionally, during on-site stockpiling, regular wetting of materials susceptible to dust generation will be enforced. Efforts will be made to minimize stockpile quantities, wherever operationally feasible, to reduce potential emissions.
- **Dust Control during Earth Extraction:** When excavating or moving soil, measures will be taken to mitigate dust emissions. This will include the application of water or other appropriate suppressants to the material during extraction to minimize airborne dust.
- **Machinery Maintenance and Compliance:** Regular maintenance checks and technical verifications will be conducted to ensure construction machinery remains in good working condition. This proactive approach not only minimizes emissions but also ensures compliance with environmental standards and regulations.

Residual Impact

The associated residual impact remains of low magnitude.

## Noise and vibration

Impact Assessment

| | | | |
|---|---|---|---|
| **Impact Description** | Impacts by noise and vibration generation | | |
| **Impact Nature** | Negative | Positive | Neutral |
| **Magnitude** | Low | Medium | High |
| **Scope** | Restricted (OA) | Punctual (DAoI) | Local (IAoI) |
| **Duration** | Transitory | Permanent | |
| **Probability** | Low | Medium | High |
| **Accumulation** | Non-cumulative | Cumulative | |

Impact Discussion

During the construction phase, several activities—such as setting up worker camps, storing materials, moving machinery and vehicles, preparing the site, clearing land, dismantling old facilities, excavating, moving soil, and constructing new infrastructure—typically generate noise and vibrations due to the use of machinery and equipment.

These impacts are considered to be of high magnitude mainly due to the exposure to hospitals and clinics staff and patients in areas close to the interventions, and in addition due to the urban location of the interventions, where residential houses, commerce, and other economic activities are in close proximity. Consequently, the people in these areas are exposed to noise. However, the impact is limited to the project areas directly affected by the construction activities (punctual) and is transitory, occurring solely during the construction phase.

Mitigation Measures

- Implementation of an **Information and Community Participation Program** within the Environmental and Social Management Plan (ESMP) to disseminate detailed information to hospital staff and neighboring communities regarding the duration and scheduling of construction works and transparent communication to manage community expectations.
- Careful **scheduling of high noise-generating activities** in collaboration with the hospital staff, to avoid impacts during sensitive hours, and prioritizing times that minimize disturbance to affected people.
- **Regular inspections and upkeep of construction machinery and equipment** to maintain optimal condition and mitigate noise emissions originating from the equipment.
- **Adherence to established noise guidance levels and standards**, implementing IFC Guidelines, (noise levels of 55 dBA during the day, prohibition of construction activities at night) and compliance with specific noise-related legislation at national and local levels.

Residual Impact

Effective implementation of detailed mitigation measures is expected to result in low medium residual impact.

## Water table and groundwater. Surface water.

Impact Assessment

| | | | |
|---|---|---|---|
| **Impact Description** | Impacts on groundwater and surface water resources | | |
| **Impact Nature** | Negative | Positive | Neutral |
| **Magnitude** | Low | Medium | High |

| | | | |
|---|---|---|---|
| **Scope** | Restricted (OA) | Punctual (DAoI) | Local (IAoI) |
| **Duration** | Transitory | Permanent | |
| **Probability** | Low | Medium | High |
| **Accumulation** | Non-cumulative | Cumulative | |

Impact Discussion

Construction activities can potentially cause adverse effects on the water table through various mechanisms. Accidental spills, such as those involving hydrocarbons, oils, or other chemical substances used on-site, pose a significant risk. Additionally, inadequate effluent management during construction operations, encompassing sanitary effluents or mixer washing residues, can further contribute to this issue.

Moreover, natural site drainage and surface runoff undergo alterations in projects entailing soil cleaning and movement. These modifications disrupt the natural flow patterns and exacerbate the impact on water sources.

The impacts and risks associated with these interventions are negative but low in magnitude. These interventions constitute small-scale works, and are implemented within previously intervened areas. Furthermore, these impacts are transitory, arising solely during the construction phase of the project.

Mitigation Measures

- Implement an **Effluent Management Program** that:
  - Identifies and categorize all potential sources of effluents,
  - Incorporates specific protocols for handling different types of effluents (domestic, construction, stormwater runoff) to ensure their proper containment, treatment, and disposal, and
  - Includes regular monitoring, testing, and treatment of effluents discharged from the construction site.
- Provide portable toilets to workers, with efficient waste management systems that minimize the release of pollutants into the environment and/or low-water-consumption sanitation solutions to decrease the overall water usage and environmental impact.
- Implement recycling systems for wastewater from sanitation facilities, where feasible, through greywater treatment for non-potable uses like irrigation or construction purposes.
- Conduct regular training sessions for construction personnel on the proper handling, storage, and disposal of potentially harmful substances to prevent accidental spills or leaks.

Residual Impact

The magnitude of residual impacts remains low.

## Soil

Impact Assessment

| | | | |
|---|---|---|---|
| **Impact Description** | Impacts on soil resources from conversion, erosion, sediment runoff, and/or pollution | | |
| **Impact Nature** | Negative | Positive | Neutral |
| **Magnitude** | Low | Medium | High |
| **Scope** | Restricted (OA) | Punctual (DAoI) | Local (IAoI) |
| **Duration** | Transitory | Permanent | |

| **Probability** | Low | Medium | High |
|---|---|---|---|
| **Accumulation** | Non-cumulative | Cumulative | |

Impact Discussion

Construction activities such as the storage and handling of construction materials, machinery operations, and overall construction practices pose potential risks of soil contamination. This may arise from oil and hydrocarbon spills, mismanagement of sewage effluents, or improper disposal of solid construction waste.

Furthermore, processes like land clearing, soil movement, drilling, excavations, demolition, and subsequent filling can inevitably degrade soil composition. These activities often result in adverse effects such as erosion, compaction, and alterations in the natural sequence of soil layers (edaphic sequence). Soil stockpiling during excavation stages can lead to sediment runoff, particularly impacting nearby water streams and courses, a risk further amplified during flooding or tropical storm events.

These identified impacts, while negative, typically exhibit low magnitude and transitory nature as they occur solely during the construction phase, localized within the immediate project area (punctual). However, certain activities, such as constructing new facilities, impose a lasting impact by permanently sealing surfaces, leading to soil impermeability.

Unlike the temporary effects, these alterations are permanent, persisting throughout the entire lifespan of the project. They also manifest as negative impacts of low magnitude, primarily affecting areas that have already been intervened in or degraded, and remain localized within the project's direct influence area (punctual).

Mitigation Measures

- Establish a **Hazardous Materials Management Program** that includes:
  - Containment Protocols: Implement containment measures for chemical storage areas to prevent leaks and spills from reaching the soil.
  - Regular Inspections: Schedule routine inspections of storage areas.
  - Spill Response Training: Conduct comprehensive training for all personnel on spill response protocols, emphasizing immediate containment, reporting, and clean-up procedures.
- Establish a **Contingency Plan** that incorporates periodic drills to ensure the effectiveness of spill response actions outlined in the plan and includes regular revisions and updates based on lessons learned from drills or past incidents.
- Implement an **Effluent Management Program** that incorporates specific protocols for handling different types of effluents and ensures frequent servicing and maintenance of sanitation systems to prevent leaks or spillages that could affect the soil.
- Establish a **Tools and Machinery Maintenance Protocol.** Efforts will be made to avoid on-site tool and machinery washing. When such washing is unavoidable, cleaning areas will be designated and equipped with containment measures to prevent the washing of tools and machinery from affecting the surrounding soil. Explore and encourage the use of eco-friendly cleaning agents to minimize environmental impact.
- Adopt an integrated approach for pest and vector control that includes prevention strategies, monitoring, and targeted interventions to **control pests without causing harm to the soil** or surrounding environment.

Residual Impact

The residual impact remains low.

## Biota (flora and fauna)

Impact Assessment

| | | | |
|---|---|---|---|
| **Impact Description** | Impacts on Flora and Fauna due to construction activities | | |
| **Impact Nature** | Negative | Positive | Neutral |
| **Magnitude** | Low | Medium | High |
| **Scope** | Restricted (OA) | Punctual (DAoI) | Local (IAoI) |
| **Duration** | Transitory | Permanent | |
| **Probability** | Low | Medium | High |
| **Accumulation** | Non-cumulative | Cumulative | |

Impact Discussion

The tasks associated with land clearing, materials stockpiling for construction preparation, and excavation for civil works in the development of new infrastructure require the removal of vegetation, including shrub cover and, possibly, trees. This process may disrupt the local fauna, and pose an additional risk of wildlife being harmed by vehicular movement and construction equipment.

These identified negative impacts primarily affect areas that have previously undergone intervention or degradation. They are relatively low in magnitude and are confined to specific locations within the direct influence area of the project (punctual). These alterations are permanent in nature, as much of the removed vegetation will be replaced with infrastructure, persisting throughout the entirety of the projects' lifespan.

Mitigation Measures

- Implement a **Flora and Fauna Management Program** that includes specific guidelines tailored to mitigate impacts on flora and fauna, emphasizing the importance of preserving and protecting native biodiversity.
- Prioritize the retention of mature and significant trees, with clear criteria for removal only when absolutely necessary. Compensatory measures should include planting indigenous tree species in nearby areas.
- Develop proactive communication channels with adjacent communities to disseminate information about the planting initiatives, with the aim of engaging neighbors in the preservation of local vegetation.
- Strictly prohibit the introduction of invasive plant species into the project area. Conduct regular inspections and implement measures to prevent their inadvertent introduction or spread, ensuring that only native species are used in landscaping and rehabilitation efforts.
- Conduct periodic audits to ensure compliance with the Vegetation and Fauna Management Program, making necessary adjustments based on monitoring results and feedback from stakeholders.
- Provide comprehensive training to construction personnel on the importance of biodiversity conservation and the implementation of mitigation measures. Organize awareness programs for workers and local communities to foster a collective responsibility towards protecting flora and fauna.

Residual Impact

The residual impact remains low. Furthermore, the successful application of these measures could mean a positive impact on local biodiversity during the operational stage of the projects.

## Road and Traffic Impacts

Impact Assessment

| | | | |
|---|---|---|---|
| **Impact Description** | Competitive impacts on the use of the road network | | |
| **Impact Nature** | Negative | Positive | Neutral |
| **Magnitude** | Low | Medium | High |
| **Scope** | Restricted (OA) | Punctual (DAoI) | Local (IAoI) |
| **Duration** | Transitory | Permanent | |
| **Probability** | Low | Medium | High |
| **Accumulation** | Non-cumulative | Cumulative | |

Impact Discussion

During the entire construction phase, impacts will be generated by increased traffic and competition in the use of the road network (by the transport of materials, equipment and machinery related to the works of the project).

In general, since the majority of the impact is on urban areas, impacts are classified as negative, low magnitude, localized in the direct influence area, and transitory in nature (only occurring during construction) for preparation and demobilization activities.

Mitigation Measures

- Implement an Information and Community Participation Program in the ESMP, which provides information to neighbors about the works duration, scheduling and mitigation measures of possible risks and impacts produced by the works.
- Establish a Road Safety and Traffic Management Program in the ESMP.

Residual Impact

The residual impact is expected to result in low negative impact.

## Waste Management

Impact Assessment

| | | | |
|---|---|---|---|
| **Impact Description** | Contamination by improper disposal of solid waste | | |
| **Impact Nature** | Negative | Positive | Neutral |
| **Magnitude** | Low | Medium | High |
| **Scope** | Restricted (OA) | Punctual (DAoI) | Local (IAoI) |
| **Duration** | Transitory | Permanent | |
| **Probability** | Low | Medium | High |
| **Accumulation** | Non-cumulative | Cumulative | |

Impact Discussion

The operation of the camp and the construction front involve the generation of solid waste assimilable to domestic.

In all construction activities, surplus construction, demolition waste (iron cuttings, cables, remains of plastic pipes, wood, aggregates from pavement breaks, dismantling/demolition of facilities, etc.) and green waste (resulting from weeding, land cleaning, etc.) are also expected.

Due to the characteristics of the activities to be carried out in the works of the project, it is not expected that special or hazardous waste will be generated, except for smaller quantities resulting from the maintenance of machinery and vehicles affected by the work (lubricating oils, etc.), or from the disposal of existing liabilities in a health facility. These special waste streams must be disposed of in accordance with current regulations, using authorized transporters and operators, and in compliance with specific regulations.

However, improving the conditions of the temporary hazardous waste storage areas may involve moving waste to different locations, which can increase the risk of spills, cross-contamination, and attract pests if not properly managed.

Surplus excavation soils (if any) must be properly disposed of (e.g., used as backfill at other approved sites – quarries).

Improper waste management on site can cause contamination, and risk of proliferation of rodents and other vectors.

The risk of contamination due to poor solid waste management on site is considered a medium negative impact (primarily due to the possible movement of hazardous wastes), of medium probability and of a transitory nature (occurring during the work execution phase).

Mitigation Measures

- Establish a Waste Management Program in the ESMP, which defines the guidelines for proper management of all waste streams to be generated on site – including surplus excavations, in accordance with current legislation and good practices.
- Where hazardous wastes are to be handled and transported, implement a detailed waste movement plan to minimize handling times and distances, provide spill containment kits at temporary storage sites, and enhance pest control measures to prevent infestations.
- Establish a Socio-Environmental Training Program for Construction Personnel, which includes training in the correct management of construction waste.
- Establish a Monitoring and Control Program that includes a protocol for analyzing soil contamination from excavations.
- Establish a Pest and Vector Control Program in the ESMP.

Residual Impact

The residual impact of solid waste management is expected to be low.

## Occupational and Community Safety

Impact Assessment

| | | | |
|---|---|---|---|
| **Impact Description** | Risk of accidents (occupational - road) | | |
| **Impact Nature** | Negative | Positive | Neutral |
| **Magnitude** | Low | Medium | High |
| **Scope** | Restricted (OA) | Punctual (DAoI) | Local (IAoI) |
| **Duration** | Transitory | Permanent | |
| **Probability** | Low | Medium | High |
| **Accumulation** | Non-cumulative | Cumulative | |

Impact Discussion

The execution of these tasks carries inherent risks, primarily of an occupational nature. These risks are attributed to the high-risk nature of various construction activities, encompassing excavations, electrical work, accidents involving heavy machinery, potential for hearing impairment due to noise-producing equipment, welding and hot work operations, as well as ergonomic hazards.

In addition, handling and treating wastewater and solid waste, especially hazardous waste and asbestos, can expose workers to biological and chemical hazards. There is also a risk of contamination and accidents affecting the community if waste is not properly managed.

There exists an additional risk of forced or child labor associated with procuring solar panels.

Lastly and of greatest significance, construction activities in proximity to active healthcare operations can lead to accidents, noise pollution, and dust contamination, posing risks to patients, some of whom may be in vulnerable health conditions, as well as to hospital staff. This also raises the risk of needing to close certain hospital areas, necessitating the relocation of patients.

These impacts and risks are classified as negative, of medium magnitude for main work instances and low magnitude for work preparation and demobilization activities, and of a transitory nature (occurring during the work execution phase).

Mitigation Measures

- Implement an Occupational Health and Safety Program within the ESMP that aligns with current national and local regulations and incorporates elements from globally recognized occupational health and safety management systems (ISO 45001:2018).
- Develop a Socio-Environmental Training Program for on-site personnel in the ESMP, encompassing comprehensive training on personal protective equipment (PPE), work-related risks, contingency planning, safe handling of chemical substances, and related subjects.
- Establish a Road Safety and Traffic Management Program within the ESMP, aimed at proactively preventing road accidents involving personnel and construction vehicles through measures such as safe driving practices and proper signage at work sites and detours.
- Create a Works Installation and Camp Set-up Program in the ESMP, ensuring the installation of fencing, access control, and appropriate signage at camp sites, work areas, ditches, and other relevant locations.
- Develop a Contingency Plan within the ESMP to ensure a swift and effective response to medical emergencies.

- Implement a Solar Panel Supply Chain Risk Management Program to address potential risks within the supply chain associated with solar panel procurement.
- Develop a Safety Protocols for Relocation. If patient relocation is necessary, develop a comprehensive plan that includes pre-relocation planning, safety protocols, and communication strategies to ensure the process is smooth and safe for patients and staff.

Residual Impact

As a result of the effective implementation of the proposed mitigation measures, the residual impact associated with occupational safety is reduced to low magnitude.

## Economic development

Impact Assessment

| **Impact Description** | Impacts on employment, business and services | | |
|---|---|---|---|
| **Impact Nature** | Negative | Positive | Neutral |
| **Magnitude** | Low | Medium | High |
| **Scope** | Restricted (OA) | Punctual (DAoI) | Local (IAoI) |
| **Duration** | Transitory | Permanent | |
| **Probability** | Low | Medium | High |
| **Accumulation** | Non-cumulative | Cumulative | |

Impact Discussion

The activities foreseen in the construction phase will require labor – skilled and unskilled – and acquisition of construction materials and services. This will have a positive impact on employment generation, and on the dynamization of the activity of trade in goods and services. In particular, the items that will benefit include those related to the sale of construction inputs and materials, equipment, vehicles, machinery, spare parts and accessories, mechanical services, fuel, logistics, and food, among others.

These impacts are considered positive, of low magnitude, of a transitory nature, and geographically distributed in the indirect influence area of the project, except for work demobilization period, where the impact is low negative due to the completion of the tasks.

Mitigation Measures

- Require the contractor to establish a Code of Conduct, which has a transversal gender approach and guarantees respect for the community and harmonious coexistence during the works. The code of conduct shall include commitments to ensure the creation and maintenance of a work environment free from: (i) discrimination based on ethnic, racial, gender, gender identity, sexual orientation, or religion; (ii) violence, in particular violence against women, girls and adolescents; (iii) child labor.
- Establish a Training Program that includes training in the Code of Conduct and gender issues for the Company's employees.
- Establish a Grievance Management Mechanism for the Project.

Residual Impact

The residual impact of the area revitalization by the action of the Project implementation remains in positive low.

## Land Use and Activities in the Area

Impact Assessment

| **Impact Description** | Disruptions to established activities due to the presence of personnel, construction machinery and asset assignment. | | |
|---|---|---|---|
| **Impact Nature** | Negative | Positive | Neutral |
| **Magnitude** | Low | Medium | High |
| **Scope** | Restricted (OA) | Punctual (DAoI) | Local (IAoI) |
| **Duration** | Transitory | Permanent | |
| **Probability** | Low | Medium | High |
| **Accumulation** | Non-cumulative | Cumulative | |

Impact Discussion

The construction work and the presence of personnel and construction machinery have a disruptive effect on the current uses established in the project sites, patient services, hospital traffic flow, and emergency response times. There is also the risk of conflicts between workers and facility users at the sites.

During the construction phase, although the contractor is contractually obliged to limit the duration of these impacts, due to the nature of the works, they may cause temporary difficulties of access to emergency routes and service areas. In all cases, the corresponding measures will be implemented to minimize the impacts and compensate those whose will be affected.

In the event that the executive design of the project affects common uses in service areas, it must be ensured that the impact on the use of the property is minimized, and the uses that would have been affected by the construction are restored (both those temporary ones that derive from the activities of the work and the permanent ones, such as the impacts on equipment).

In addition, the construction will likely occupy areas previously available for parking and other hospital uses, requiring a reassignment of these assets that could inconvenience patients and staff.

The impact on residential use is categorized as high negative for the entire work. These impacts are of a transitory nature.

Mitigation Measures

- Where facilities are temporarily inaccessible, provide alternative spaces for service areas and other essential functions. Temporary walkways, signage, and barricades can be installed to ensure safe transit within the different areas.
- Maintain open and clear access lanes for ambulances and emergency vehicles at all times, provide additional signage, and inform construction personnel about keeping emergency pathways clear.
- Develop a comprehensive parking management plan, including the provision of additional off-site parking, if necessary, with shuttle services to and from the hospital.

- Implement an Information and Community Participation Program in the ESMP, which provides adequate communication to neighbors, hospital users and staff about the type and duration of the impact, measures planned to mitigate it, hours of traffic and services cuts, if applicable, as provided in the corresponding section of the ESMP, and expected date for the restoration of the existing conditions before the work.
- Require the contractor to establish a Code of Conduct, which has a transversal gender approach and guarantees respect for the community and harmonious coexistence during the works. The code of conduct shall include commitments to ensure the creation and maintenance of a work environment free from: (i) discrimination based on ethnic, racial, gender, gender identity, sexual orientation, or religion; (ii) violence, in particular violence against women, girls and adolescents; (iii) child labor.
- Establish a Training Program that includes training in the Code of Conduct and gender issues for the Company's employees.
- Establish a Grievance Management Mechanism for the Project.
- Conduct surveys, based on the final designs of the project, to determine if there is any impact on common use facilities. In the event that the survey identifies any impact on equipment or facilities, a plan will be designed and implemented to reestablish uses (e.g., relocation of equipment within the same site or other improvements agreed upon with local or national authorities, as appropriate, and in consultation with the people using the site) to ensure that activities can continue to be carried out normally on the area of the site not affected by the work.

Residual Impact

The residual impact of land use and activities in the area by Project action is medium.

## Cultural and Archaeological Heritage

Impact Assessment

| **Impact Description** | Negative impacts on cultural and archaeological heritage | | |
|---|---|---|---|
| **Impact Nature** | Negative | Positive | Neutral |
| **Magnitude** | Low | Medium | High |
| **Scope** | Restricted (OA) | Punctual (DAoI) | Local (IAoI) |
| **Duration** | Transitory | | Permanent |
| **Probability** | Low | Medium | High |
| **Accumulation** | Non-cumulative | | Cumulative |

Impact Discussion

According to the information in the Environmental and Social Baseline, there is no probability of finding evidence of cultural or historical heritage on the operational area of the project. However, the possibility of chance finds must be addressed. The activities of soil movement could entail a risk of impact on the cultural, historical and archaeological heritage of the area, due to the degradation or loss that could result from improper management of archaeological assets that are in the intervened area.

This risk is assessed as negative, of low magnitude, irreversible (permanent).

Mitigation Measures

- Implement a Procedure of Fortuitous Discoveries in the ESMP, which ensures the correct management of findings that could have archaeological value.

Residual Impact

The residual risk of negative impacts on the archaeological heritage remains low.

### Landscape and Public Space

Impact Assessment

| | | | |
|---|---|---|---|
| **Impact Description** | Visual and landscape impact | | |
| **Impact Nature** | Negative | Positive | Neutral |
| **Magnitude** | Low | Medium | High |
| **Scope** | Restricted (OA) | Punctual (DAoI) | Local (IAoI) |
| **Duration** | Transitory | Permanent | |
| **Probability** | Low | Medium | High |
| **Accumulation** | Non-cumulative | Cumulative | |

Impact Discussion

The activities of the construction phase and presence of camps, fences, construction machinery, excavation, etc. have a negative effect on the perception of the landscape (visual alteration).

This impact is valued as low negative, and transitory.

Mitigation Measures

Mitigation measures are not considered for this impact.

Residual Impact

The residual impact is considered low.

## Impacts – Operational and maintenance Phase

### Air. Noise and vibrations

Impact Assessment

| | | | |
|---|---|---|---|
| **Impact Description** | Impacts by noise and vibration generation | | |
| **Impact Nature** | Negative | Positive | Neutral |
| **Magnitude** | Low | Medium | High |
| **Scope** | Restricted (OA) | Punctual (DAoI) | Local (IAoI) |
| **Duration** | Transitory | Permanent | |
| **Probability** | Low | Medium | High |
| **Accumulation** | Non-cumulative | Cumulative | |

Impact Discussion

During the operation and maintenance phase noise can be expected to come from equipment operation and maintenance. This impact is expected to be low negative, punctual and transitory.

Mitigation Measures

- Careful **scheduling of high noise-generating activities** in collaboration with the hospital staff, to avoid impacts during sensitive hours, and prioritizing times that minimize disturbance to affected people.
- **Regular inspections and upkeep of construction machinery and equipment** to maintain optimal condition and mitigate noise emissions originating from the equipment.
- **Adherence to established noise guidance levels and standards**, implementing IFC Guidelines, (noise levels of 55 dBA during the day and 45 dBA at night) and/or compliance with specific noise-related legislation at national and local levels.

Residual Impact

Effective implementation of detailed mitigation measures is expected to remain in low negative residual impact.

### Water and groundwater. Surface water.

Impact Assessment

| **Impact Description** | Impacts on groundwater and surface water resources | | |
|---|---|---|---|
| **Impact Nature** | Negative | Positive | Neutral |
| **Magnitude** | Low | Medium | High |
| **Scope** | Restricted (OA) | Punctual (DAoI) | Local (IAoI) |
| **Duration** | Transitory | | Permanent |
| **Probability** | Low | Medium | High |
| **Accumulation** | Non-cumulative | | Cumulative |

Impact Discussion

Operation and maintenance activities can potentially cause adverse effects on the water table through various mechanisms. Accidental spills, such as those involving chemical substances used on-site and wastes, pose a significant risk. Additionally, inadequate effluent management during operations, encompassing sanitary effluents, can further contribute to this issue.

The impacts and risks associated with these interventions are negative but low in magnitude. Furthermore, these impacts are permanent.

Mitigation Measures

- Implement an **Effluent Management Program** that:
  - Identifies and categorize all potential sources of effluents,
  - Incorporates specific protocols for handling different types of effluents (domestic, sanitary) to ensure their proper containment, treatment, and disposal, and
  - Includes regular monitoring, testing, and treatment of effluents discharged from the site.
- Implement recycling systems for wastewater from sanitation facilities, where feasible, through greywater treatment for non-potable uses like irrigation or construction purposes.

- Conduct regular training sessions for construction personnel on the proper handling, storage, and disposal of potentially harmful substances to prevent accidental spills or leaks.

Residual Impact

The magnitude of residual impacts remains low.

## Soil

Impact Assessment

| | | | |
|---|---|---|---|
| **Impact Description** | Impacts on soil resources from conversion, erosion, sediment runoff, and/or pollution | | |
| **Impact Nature** | Negative | Positive | Neutral |
| **Magnitude** | Low | Medium | High |
| **Scope** | Restricted (OA) | Punctual (DAoI) | Local (IAoI) |
| **Duration** | Transitory | Permanent | |
| **Probability** | Low | Medium | High |
| **Accumulation** | Non-cumulative | Cumulative | |

Impact Discussion

Operation and maintenance activities such as, machinery operations and waste management, pose potential risks of soil contamination. This may arise from chemical substances and hazardous waste spills, mismanagement of sewage effluents, or improper disposal of solid waste.

These identified impacts, while negative, typically exhibit low magnitude, localized within the immediate project area (punctual).

Unlike the temporary effects, these alterations are permanent, persisting throughout the entire lifespan of the project.

Mitigation Measures

- Establish a **Hazardous Materials Management Program** that includes:
  - Containment Protocols: Implement containment measures for chemical storage areas to prevent leaks and spills from reaching the soil.
  - Regular Inspections: Schedule routine inspections of storage areas.
  - Spill Response Training: Conduct comprehensive training for all personnel on spill response protocols, emphasizing immediate containment, reporting, and clean-up procedures.
- Establish a **Contingency Plan** that incorporates periodic drills to ensure the effectiveness of spill response actions outlined in the plan and includes regular revisions and updates based on lessons learned from drills or past incidents.
- Implement an **Effluent Management Program** that incorporates specific protocols for handling different types of effluents and ensures frequent servicing and maintenance of sanitation systems to prevent leaks or spillages that could affect the soil.
- Establish a **Tools and Machinery Maintenance Protocol.** Efforts will be made to avoid on-site tool and machinery washing. When such washing is unavoidable, cleaning areas will be designated and equipped with containment measures to prevent the washing of tools and machinery from affecting the surrounding soil. Explore and encourage the use of eco-friendly cleaning agents to minimize environmental impact.

Residual Impact

The residual impact remains low.

### Infrastructure and services. Main Services (Water, Sewage, Energy, Gas)

Impact Assessment

| **Impact Description** | Main services (Water, Sewage, Energy, Gas) | | |
|---|---|---|---|
| **Impact Nature** | Negative | Positive | Neutral |
| **Magnitude** | Low | Medium | High |
| **Scope** | Restricted (OA) | Punctual (DAoI) | Local (IAoI) |
| **Duration** | Transitory | | Permanent |
| **Probability** | Low | Medium | High |
| **Accumulation** | Non-cumulative | | Cumulative |

Impact Discussion

The operational phase will see improved water and sewage systems due to upgrades, which is a positive and permanent impact. Enhanced energy management systems and the introduction of backup generators will significantly improve energy reliability, representing a high positive impact.

Mitigation measures

No mitigation measures are considered for this impact.

Residual Impact

The assessment of the magnitude of the residual impact remains positive high.

### Waste management

Impact Assessment

| **Impact Description** | Domestic and hazardous waste generation | | |
|---|---|---|---|
| **Impact Nature** | Negative | Positive | Neutral |
| **Magnitude** | Low | Medium | High |
| **Scope** | Restricted (OA) | Punctual (DAoI) | Local (IAoI) |
| **Duration** | Transitory | | Permanent |
| **Probability** | Low | Medium | High |
| **Accumulation** | Non-cumulative | | Cumulative |

Impact Discussion

In the operation phase, the project is anticipated to generate an increased amount of hazardous waste (Pathogenic waste, Pathological waste, Hazardous chemical waste, Hazardous pharmaceutical waste, Sharps). Improper management of this waste could potentially affect air quality and pose risks to people, particularly if hazardous materials are burned on-site or managed inadequately. Additionally, there could be moderate impacts from the increased generation of wastewater from hospital workers and users.

Mitigation Measures

- Establishment of designated areas for the temporary collection of hazardous waste, ensuring secure and appropriate storage before treatment
- Management of hazardous waste through the operation of autoclaves, with personnel overseeing the process to verify destruction before final disposal.

- Integration of a health surveillance program for personnel involved in the collection, storage, transport, and treatment of hazardous waste.
- Develop and provide comprehensive training programs for all staff handling hazardous waste. This training will cover proper waste segregation, handling, storage, and treatment procedures, including the operation of autoclaves and emergency response protocols.

Residual Impact

The assessment of the magnitude of the residual impact remains medium negative.

## Occupational and Community Safety

Impact Assessment

| **Impact description** | Risk of accidents in maintenance tasks of the buildings | | |
|---|---|---|---|
| **Impact Nature** | Negative | Positive | Neutral |
| **Magnitude** | Low | Medium | High |
| **Scope** | Restricted (OA) | Punctual (DAoI) | Local (IAoI) |
| **Duration** | Transitory | | Permanent |
| **Probability** | Low | Medium | High |
| **Accumulation** | Non-cumulative | | Cumulative |

Impact Discussion

The operation and maintenance of the built infrastructure gives rise to risks of accidents and occupational diseases. These can arise from exposure to energized equipment, ergonomic hazards, etc.

These are qualified as a low negative impact, of a permanent nature.

Mitigation Measures

- Reinforce signage and occupational health and safety measures in the intervened facilities.
- Establish an Occupational Health and Safety Program in the ESMP for the operational phase, which complies with the requirements of current national and local regulations, and is nourished by elements of internationally recognized occupational health and safety management systems (ISO 45001: 2018).
- Establish a Contingency Plan in the operational ESMP, which ensures the response to medical emergencies.
- Establish a Socio-Environmental Training Program for Plant Personnel in the operational ESMP, which includes training in the use of PPE, risks during maintenance tasks, contingency plan, etc.

Residual Impact

As a result of the proper implementation of the proposed mitigation measures, the residual impact associated with occupational safety is considered of low magnitude.

## Economic development

Impact Assessment

| **Impact Description** | Impacts on employment, business and services | | |
|---|---|---|---|
| **Impact Nature** | Negative | Positive | Neutral |
| **Magnitude** | Low | Medium | High |
| **Scope** | Restricted (OA) | Punctual (DAoI) | Local (IAoI) |
| **Duration** | Transitory | | Permanent |
| **Probability** | Low | Medium | High |
| **Accumulation** | Non-cumulative | | Cumulative |

Impact Discussion

The activities in operation and maintenance phase will require labor – skilled and unskilled – and services. This will have a positive impact on employment generation.

These impacts are considered positive, of low magnitude, of a permanent nature, and geographically distributed in the indirect influence area of the project.

Mitigation Measures

- Require the contractor to establish a Code of Conduct, which has a transversal gender approach and guarantees respect for the community and harmonious coexistence during the works. The code of conduct shall include commitments to ensure the creation and maintenance of a work environment free from: (i) discrimination based on ethnic, racial, gender, gender identity, sexual orientation, or religion; (ii) violence, in particular violence against women, girls and adolescents; (iii) child labor.
- Establish a Training Program that includes training in the Code of Conduct and gender issues for the Company's employees.
- Establish a Grievance Management Mechanism for the Project.

Residual Impact

The residual impact of the area revitalization by the action of the Project implementation remains in positive low.

## Land use

Impact Assessment

| **Impact Description** | Positive impacts on residential activity | | |
|---|---|---|---|
| **Impact Nature** | Negative | Positive | Neutral |
| **Magnitude** | Low | Medium | High |
| **Scope** | Restricted (OA) | Punctual (DAoI) | Local (IAoI) |
| **Duration** | Transitory | | Permanent |
| **Probability** | Low | Medium | High |
| **Accumulation** | Non-cumulative | | Cumulative |

Impact Discussion

The completion of the hospital renovations is expected to lead to more optimized land use within the facility. This includes better utilization of space due to the redesign of various hospital areas such as A&E and neonatal care, which is a positive and permanent impact. Improvements in the facility could also provide better access to community services and enhanced facilities, contributing positively to the local area.

Mitigation Measures

No mitigation measures are considered for this impact.

Residual Impact

The residual impact is considered medium positive.

### 5.2.3. Cumulative Impacts Assessment

The projects do not demonstrate evident cumulative impacts.

The four projects (Southern Regional Hospital, Norther Regional Hospital, Matron Roberts Polyclinic, and Palm Center) are characterized by their relatively small scale, limited areas of influence, and short-term interventions. These initiatives are predominantly situated in urban areas and have not shown any observable interaction with concurrent or related developments.

Additionally, there are no anticipated significant deforestation activities associated with any of the projects, nor are there activities expected to result in substantial or enduring sources of contamination or effluence. Furthermore, neither project entails the extensive use or exploitation of natural resources or substantial energy consumption.

Appropriate mitigation measures have been outlined to address all identified risks and negative impacts across these projects.

Considering the aforementioned factors and the distinct nature of the projects, no cumulative impacts have been identified.

### 5.2.4. E&S Residual Impacts Matrix

After applying the mitigation measures identified for Project's environmental and social impacts and risks, the matrix of residual environmental and social impacts is obtained, shown in the following table.

## Matrix for the identification of Envirnomental and Social Impacts and Risks of Improving efficiency, quality, and access in Belize's health system (BL-L1048; BL-J0008)

**PROJECT ACTIVITIES WITH ENVIRONMENTAL AND SOCIAL IMPACT**

**STAGES**

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CONSTRUCTION | | | | | OPERATION | | |
| | | | | | | | Work preparation | | Main work | | Work demobilization | Maintenance and operation | | |
| | | | | | | | Transportation, movement and stockpilling of materials, equipment, and machinery. Labor mobilization | Site preparation, land clearing, soil movement and excavation | Infrastructure Retrofitting (upgrades and expansions in septic systems, roofs, neonatal and A&E spaces, flooring, water reserves, staff facilities, lighting, and ventilation). | Waste Management Improvements (revamping of wastewater and solid waste systems, safety programs, oxygen and hazardous materials storage, and pest management). | Demobilitization of construction sites and workers. Removal of surplus materials | Operation of renewed and newly installed infrastructures | Maintenance of renewed and newly installed infrastructures |
| **ENVIRONMENTAL COMPONENTS LIKELY TO BE AFFECTED BY THE PROJECT** | | | | | | | A | B | C | D | E | F | G |
| PHYSICAL MEDIA | AIR | Gaseous emissions and particulate matter | | | | 1 | | | | | | | |
| | | Noise and vibrations | | | | 2 | | | | | | | |
| | WATER | Water table and groundwater | | | | 3 | | | | | | | |
| | SOIL | Soil | | | | 4 | | | | | | | |
| BIOLO GICAL MEDIA | BIOTA | Flora and fauna | | | | 5 | | | | | | | |
| SOCIO-ECONOMIC MEDIA | INFRAESTRUCTURE AND SERVICES | Road network and traffic | | | | 6 | | | | | | | |
| | | Main Services (water, sewage, energy, gas) | | | | 7 | | | | | | | |
| | | WASTE MANAGEMENT | Solid waste | | | 8 | | | | | | | |
| | | | Hazardous or special waste | | | 9 | | | | | | | |
| | | | Construction waste | | | 10 | | | | | | | |
| | OCCUPATIONAL AND COMMUNITY HEALTH AND SERVICES | Risk of accidents (occupational, road, community accidents) | | | | 11 | | | | | | | |
| | SOCIO-ECONOMIC DEVELOPMENT | Labor empployment. Commercial and service activities | | | | 12 | | | | | | | |
| | CULTURAL HERITAGE | Cultural, Archaeological and Paleontological Heritage | | | | 13 | | | | | | | |
| | LAND USE | Current activities in the project area and land use | | | | 14 | | | | | | | |
| | LANDSCAPE | Visual impact. Landscape and perception | | | | 15 | | | | | | | |

**Sign and Magnitude of the impact**

| | | |
|---|---|---|
| **Negative** | High | |
| | Medium | |
| | Low | |
| **Positive** | High | |
| | Medium | |
| | Low | |
| **Neutral** | | |

**Figure 17. Project Residual Environmental and Social Impacts and Risks Matrix**

## 5.3. E&S Impacts for Specific Projects

Additionally, to the previously mentioned impacts common among all projects, distinct and project-specific impacts have been identified. The unique impacts for each individual project (or type of project) are provided in detail below.

### 5.3.1. Southern Regional Hospital

**Septic System Upgrading**

- Risk of soil contamination during construction due to potential spills or leaks.
- Improved wastewater management post-construction, reducing the risk of groundwater contamination.

**Roof and A&E Space Repairs and Redesign**

- Temporary noise and dust pollution could affect patients and staff during the construction.
- Long-term benefits include improved patient care facilities and a safer environment within the hospital.

**Neonatal Area and Staff Facilities Expansion**

- Construction activities may disrupt hospital services and access temporarily.
- Enhanced capacity for neonatal care and better amenities for staff well-being post-construction.

**Waste Management Systems Overhaul**

- Risk of hazardous exposure during construction if existing waste is not properly managed.
- Significantly reduced environmental impact from waste post-upgrade, with better waste segregation and treatment.

### 5.3.2. Northern Regional Hospital

**Electrical and Air Conditioning System Upgrade**

- Possible interruptions in power and climate control during the upgrade, affecting hospital operations.
- Increased energy efficiency and reliability of services once upgrades are complete.

**Neonatal/Obstetric Expansion and Triage Area Redesign**

- Construction may temporarily reduce the hospital's capacity to serve patients.
- Improved patient care capabilities and streamlined triage procedures after expansion.

**Solar Water Heating Installation**

- Installation activities may require temporary rerouting of hospital services.
- Renewable energy source post-installation, leading to long-term environmental and economic benefits.

### 5.3.3. Matron Roberts Polyclinic

**Roof Replacement and Exterior Drainage Improvements**

- The risk of temporary leaks and water damage during construction.
- Permanent improvements in building resilience and mitigation of flood risks.

**Dental Services Relocation and Security Enhancements**

- Potential disruption to dental services during relocation.
- Improved security and dental care environment once relocation is complete.

**Creation of a Sterilization Area**

- Construction may temporarily impact the sterilization processes.
- Better infection control and patient safety with the new sterilization area.

### 5.3.4. Palm Center

**Establishment of a Long-Term Maintenance Plan with an Emphasis on Technology**

- Risk of temporary operational disruptions as systems for HVAC and solar panels are integrated and staff are trained.
- Long-term benefits include enhanced operational efficiency, reduced energy costs, and increased resilience to environmental challenges.

**Roof Retrofitting**

- Potential for temporary internal environment discomfort or leaks during the retrofitting process.
- Improved thermal comfort and enhanced resilience against climate change, leading to a safer and more comfortable environment for patients and staff.

**Windows Shutters Installation**

- Short-term inconvenience and potential security concerns during installation.
- Long-term improvements in energy efficiency, patient privacy, and protection against extreme weather conditions.

**AC System Improvement**

- Possible interruptions in climate control leading to temporary discomfort for patients and staff.
- Enhanced air quality and temperature control, contributing to a healthier and more comfortable inpatient environment.

**Expansion and Equipment of Inpatient Beds**

- Construction and installation may lead to temporary noise pollution and space limitations within the care facility.
- Increased capacity for inpatient care and improved patient comfort through modern, well-equipped beds, meeting the growing healthcare demands.

**Mitigation Measures for All Projects**

- Implement stringent health and safety protocols to minimize construction impacts on ongoing medical services.
- Schedule disruptive activities during off-hours to limit patient and staff exposure.
- Engage in thorough planning to ensure continuity of care and access to services during renovations.
- Conduct frequent monitoring and communicate with stakeholders to address any emerging issues promptly.

## 5.4. Risk Analysis

The preceding analysis considers the impacts and risks caused by the project implementation on the environment, whether physical, biological, or socioeconomic.

To complement this analysis, an analysis will be made of: (i) Disaster and climate change risks to the project and its feasibility, and (ii) Risks that the project will increase the vulnerability of human populations to existing disaster and climate change risks.

### Risk Definition

For the purposes of this Study, a risk is defined as any element or situation of the environment (physical or anthropic) that may represent a threat to the Project, and that is caused by external (not predictable) forces.

### Project Risk Identification

The risks in the project areas include:

- **Hurricanes and tropical storms** causing severe losses from wind damage and flooding due to storm surges and heavy rainfall.
- **Flood** damage due to its low-lying land and exposed positions on the coast; low lying topography makes the country's coastal areas especially vulnerable to sea level rise.
- **Extreme temperatures**.

### Project Criticality and Vulnerability

In compliance with NDAS 4, 'Community Health and Safety,' all projects involving infrastructure works financed with Program funds must undergo a Disaster Risk Analysis using the IDB Methodology**.**

For the project's criticality and vulnerability analysis, the Methodology for social infrastructure projects proposed by the IDB [42] was applied.

According to this methodology, the resulting Disaster and Climate Change rating for each intervention may be High, Moderate or Low. For interventions with a moderate or high disaster risk rating, at least a risk narrative and a commensurate disaster risk management plan will be developed. Likewise, those with a high-risk rating and those with a moderate risk rating whose risk narrative identifies gaps with

[42] Disaster and Climate Change Risk Assessment Methodology for IDB Projects (Downloadable at https://publications.iadb.org/es/metodologia-de-evaluacion-del-riesgo-de-desastres-y-cambio-climatico-para-proyectos-del-bid)

respect to an adequate risk assessment will be required to supplement the narrative with at least a full qualitative analysis.

### Methodology for social infrastructure projects

This methodology considers the key characteristics presented in **Figure 18**.

| Key characteristics | Low | Moderate | High |
|---|---|---|---|
| Service area (km²) | <2 | 2 to 30 | >30 |
| Service population (capita) | <300 | 300 to 3,000 | >3,000 |
| Capacity of facility (people) | <50 | 50 to 500 | >500 |
| Size of building(s) (m²) | <100 | 100 to 3,000 | >3,000 |
| Number of critical facility staff active during event | <10 | 10 to 50 | >50 |
| Communication methods | Extensive and redundant | Redundant | Limited |

**Figure 18. Categorization of Criticality and Vulnerability in Social Infrastructure Projects**[43]

Based on the information available to date[44] and following the analysis in **Figure 18**, the results for each project are shown:

**Matron Roberts Polyclinic (Belize City)**

- Service Area (km²): given the urban setting and the catchment area with 4 other health facilities, the service area might be moderate.
- Service Population (capita): Serving approximately 24,000 individuals, the polyclinic falls into the High category.
- Capacity of Facility (people): With 11 beds for outpatient services and no in-patient beds, the daily capacity is likely Moderate.
- Size of Building(s) (m²): The building's size is approximately 472.7 m² (5,086 ft²), placing it in the Low to Moderate category for size.
- Number of Critical Facility Staff Active During Event: With 45 full-time employees, the number of critical staff active during any event falls into the High category.
- Communication Methods: The polyclinic is considered a model by NHI, implying it likely has Redundant communication methods, which places it in the Moderate category for communication.

Updated Risk Analysis Summary

**Table 30. Updated Risk Analysis Summary - Matron Robert Polyclinic**

| Key Characteristics | Category Assigned |
|---|---|
| **Service Area** | Moderate |
| **Service Population** | High |

[43] IDB, 2019.

[44] The analysis utilized data extracted from the "SMART Hospitals Baseline Assessment Report," which was conducted in 2017 under the auspices of the Pan American Health Organization (PAHO) for each hospital.

| Key Characteristics | Category Assigned |
|---|---|
| **Capacity of Facility** | Moderate |
| **Size of Building(s)** | Low to moderate |
| **Number of Critical Facility Staff** | High |
| **Communication Methods** | Moderate |

Overall Criticality & Vulnerability for Matron Roberts Polyclinic: Despite several key characteristics categorizing as high due to the Matron Roberts Polyclinic II's extensive service population and the critical nature of its healthcare services, the hospital's strategic infrastructure upgrades are set to mitigate these risks. Although the facility faces inherent vulnerabilities, such as its flood-prone location, the comprehensive refurbishments — including the roof replacement for enhanced resilience, the implementation of a robust water reserve system, and the establishment of improved drainage and permeable surfaces — are poised to significantly reduce these risks. The criticality remains high due to the essential nature of the services provided and the scale of the population served, yet the vulnerability is actively being addressed through these targeted interventions. Collectively, these measures reflect a proactive approach to risk management and infrastructure maintenance, aiming to recalibrate the facility's overall risk status towards a "Moderate" classification despite the initial high-risk indicators.

**Southern Regional Hospital (Dangriga)**

- Service Area: Since the hospital serves the Dangriga area and contains multiple buildings within a compound, the service area is likely moderate.
- Service Population: The exact service population is not provided, but given that the facility includes a hospital, polyclinic, eye clinic, and serves as a referral center, the service population would be expected to be high.
- Capacity of Facility: The hospital has 60 beds and operates 24/7, placing it in the moderate category for capacity.
- Size of Building(s): The total floor area for the hospital is 28,400 ft² (approximately 2,637 m²), and the polyclinic is 5,000 ft² (approximately 465 m²), both of which place them in the moderate category.
- Number of Critical Facility Staff Active During Event: With 198 full-time and 50 part-time employees, the number of critical staff active during any event is high.
- Communication Methods: The PAHO/WHO Hospital Safety Index has been applied, suggesting that communication methods are likely redundant, which would be moderate to high.

Updated Risk Analysis Summary

**Table 31. Updated Risk Analysis Summary - Southern Regional Hospital**

| Key Characteristics | Category Assigned |
|---|---|
| **Service Area** | Moderate |
| **Service Population** | High |
| **Capacity of Facility** | Moderate |
| **Size of Building(s)** | Moderate |
| **Number of Critical Facility Staff** | High |
| **Communication Methods** | Moderate |

Overall Criticality & Vulnerability for Southern Regional Hospital

The Southern Regional Hospital is a key healthcare facility with moderate to high criticality due to its extensive service offerings and significant service population. It has a moderate physical capacity, which is leveraged by a high number of staff to provide continuous and diverse medical services. The hospital's infrastructure upgrades, including septic tank relocation and water reserve tank installation, are set to enhance its resilience, reducing the facility's vulnerability to flooding and other infrastructural challenges. While the service area and building sizes fall within moderate ranges, the high service population and staff numbers elevate the hospital's critical role in the region. The planned infrastructure improvements indicate a proactive approach to risk management, aiming to maintain the facility's operations at a "Moderate" risk level despite potential high-risk scenarios.

**Northern Regional Hospital (Orange Walk)**

- Service Area: With the facility located approximately 1-mile north of Orange Walk Town center, the service area could be considered moderate given the surrounding residential areas and the catchment population size.
- Service Population: The catchment population for NRH is 40,000, which places it in the high category.
- Capacity of Facility: With 57 beds available, the capacity of NRH falls into the moderate category.
- Size of Building(s): The hospital covers a floor area of 35,000 sq. ft., which is approximately 3,252 m², placing it in the moderate category for size.
- Number of Critical Facility Staff Active During Event: NRH employs 232 full-time and 5 part-time staff. This suggests a high number of critical staff could be active during an event.
- Communication Methods: The application of the PAHO Hospital Safety Index indicates that NRH likely has sufficient, possibly redundant communication methods, which would categorize as moderate.

Updated Risk Analysis Summary

**Table 32. Updated Risk Analysis Summary - Northern Regional Hospital**

| Key Characteristics | Category Assigned |
|---|---|
| **Service Area** | Moderate |
| **Service Population** | High |
| **Capacity of Facility** | Moderate |
| **Size of Building(s)** | Moderate |
| **Number of Critical Facility Staff** | High |
| **Communication Methods** | Moderate |

Overall Criticality & Vulnerability for Northern Regional Hospital

The NRH is a critical healthcare institution with a large service population and moderate capacity. While the size of the building and the number of beds reflect a moderate level of criticality, the high number of staff underscores its importance in managing healthcare events. The planned interventions, such as upgrading the electrical system, retrofitting the AC system, expanding neonatal

and emergency services, and installing solar water heating, are proactive measures aimed at addressing current infrastructural strains and increasing the facility's resilience. These measures collectively suggest that while NRH has a high service population and a high number of staff, which could increase its vulnerability during events, the mitigations in place are expected to manage these risks effectively, potentially reclassifying its overall risk status to "Moderate" despite the initial high-risk indicators.

**Palm Center (Belmopan)**

- Service Area: As a national facility serving patients from across the country, the service area would be categorized as High.
- Service Population: The facility captures a specialized population of patients with chronic mental illnesses from all parts of Belize, placing it in the High category, given the nationwide catchment.
- Capacity of Facility: With 40 beds and currently housing 34 patients, the capacity of the facility falls within the Low category, considering the specific needs of the patients and the nature of the services provided.
- Size of Building(s): The main facility covers a floor area of 11,165 ft², which is approximately 1,037 m², placing it in the Moderate category for size.
- Number of Critical Facility Staff Active During Event: With 30 full-time employees, the facility has a Moderate number of critical staff active during an event.
- Communication Methods: The PAHO/WHO Hospital Safety Index has been applied, suggesting that the facility likely has at least Redundant communication methods, categorizing it as Moderate.

Updated Risk Analysis Summary

**Table 33. Updated Risk Analysis Summary – Palm Center**

| Key Characteristics | Category Assigned |
|---|---|
| **Service Area** | High |
| **Service Population** | High |
| **Capacity of Facility** | Low |
| **Size of Building(s)** | Moderate |
| **Number of Critical Facility Staff** | Moderate |
| **Communication Methods** | Moderate |

Overall Criticality & Vulnerability for Palm Center

The Palm Centre, as the only residential psychiatric facility in Belize, has a high criticality due to its specialized service population and national service area. The moderate size of the building and the number of staff align with the expected operational needs of such a specialized institution. The application of the PAHO/WHO Hospital Safety Index and the description of the buildings as safe suggest a proactive approach to risk management. The vulnerability of the Palm Centre may primarily lie in its infrastructural limitations regarding the storage of unserviceable items and underutilization of certain buildings. However, the risk status of the facility could be considered "Moderate" overall, due to the implementation of safety standards and the facility's maintenance, despite the high criticality associated with its service population and area.

**Conclusions**

The integrated analysis of the Northern, Southern, Palm Centre, and Matron Roberts Polyclinic facilities within Belize has highlighted the **moderate risk classification** for these healthcare institutions. This classification reflects a balance between the critical services provided, existing vulnerabilities, identified project risks, and the ability to mitigate these risks effectively.

Key risks include hurricanes, tropical storms, and the resultant flooding, particularly given the coastal and low-lying locations of these facilities. Additionally, the threat posed by sea-level rise cannot be overlooked, considering the country's topography. Extreme temperature fluctuations also present a risk, potentially impacting both the physical infrastructure and the operational capacity of these health centers.

**Table 38** summarizes the environmental risk analysis of the environment for the projects, identifying effects, criticality (based on the probability of occurrence), and mitigation measures to be used to manage this risk.

**Table 34 - Environmental and Social Risk Mitigation Measures for the Program**

| Risk | Risk effect | Criticality | Mitigation Measures |
|---|---|---|---|
| **Hurricanes and Tropical Storms** | Structural damage, operational disruption. | Consequence: High<br>Likelihood of occurrence: Probable<br>Criticality: High | Utilization of shutters as a protective measure for windows and doors.<br>Ensure regular inspection and maintenance.<br>Use appropriate construction codes and best practices.<br>Comprehensive emergency response planning incorporating all new facility upgrades. |
| **Flooding** | Damage to physical infrastructure and facilities due to the effect of water. | Consequence: High<br>Likelihood of occurrence: Probable<br>Criticality: High | Design and implement efficient drainage systems. |
| **Extreme Temperatures** | Impact on patients' health, energy consumption. | Consequence: Moderate<br>Likelihood of occurrence: Possible<br>Criticality: Moderate | Use of shutters to contribute to the thermal insulation of buildings.<br>Maintenance of climate control systems, implementation of natural ventilation strategies, and installation of solar water heating to mitigate reliance on non-renewable energy sources. |

| Risk | Risk effect | Criticality | Mitigation Measures |
|---|---|---|---|
| **Climate change impacts** | Increased frequency/intensity of flooding; | Consequence: High<br>Likelihood of occurrence: Likely<br>Criticality: Moderate | Incorporate climate-resilient designs. Continuous monitoring and updating of infrastructure based on latest climate projections. Community education and preparation for extreme events. |

# 6. Environmental and Social Management Plan

The Environmental and Social Management Plan (ESMP) is a tool that guides the environmental and social implementation of any development project, providing procedures for environmental and social management.

This Plan will guide the Executing Agency (Ministry of Health and Wellness (MOHW)) to ensure an adequate level of environmental and social management in the implementation of the activities of the projects. The ESMP outlines necessary environmental and social mitigation measures during the distinct implementation stages of each project.

## 6.1. Roles and Responsibilities

### 6.1.1. Design

During the design phase of the interventions, the MOHW, as the Executing Agency of the Program (EA), through its Policy, Planning and Project Management Unit (PPPMU), will develop the executive project (engineering design) of each project to be financed under the Program.

The Ministry will prepare the bidding documents for the works, and the environmental and social specialist from the EA will incorporate the necessary environmental, social, and occupational health and safety clauses and requirements, both general and specific to the projects, which arise from this ESA and ESMP, and including the needs for reporting and monitoring. These aspects will be included in the Environmental and Social Technical Specifications.

The bidding documents must outline the minimum content of the Environmental and Social Management Plan at the Construction Stage (ESMPc) for each project.

The proposals received during the bidding process for the works must contain a budget that includes the cost of implementation and compliance with the environmental, social, and occupational health and safety mitigation measures required by the project, to guarantee compliance with the IDB ESPF and applicable national and local regulations.

### 6.1.2. Construction

Prior to the start of the works, MOHW will conduct the due diligence with the applicable environmental authority (Department of the Environment (DOE)) to obtain any required environmental clearance for the works.

Prior to the start of the works, the MOHW will conduct the due diligence with the applicable environmental authority (Department of Environmental Planning and Protection) to obtain certificate of environmental clearance for the works.

During the Construction Phase, the Contractor Company will be responsible for preparing and implementing the Construction Environmental and Social Management Plan (ESMPc), as well as obtaining the environmental and occupational health and safety qualifications and insurances required according to the national and local regulatory framework. The Contractor will also need to

obtain others applicable permits, which could include tree cutting permits, easements, excavation permits, construction permits, public road occupancy permits, waste disposal permits, etc.

Before the start of the works, the Contractor must submit to the EA, for its approval, a Construction Environmental and Social Management Program (ESMPc). This ESMPc will contain, as a minimum, the programs and subprograms detailed in the following section of this ESA, together with the specific recommendations that arise from the analysis of the project and as reflected in the Environmental and Social Technical Specifications of the bidding documents.

Once the ESMPc is approved, the Contractor Company will be responsible for its compliance, using the necessary means to implement the Programs that are formulated within its framework. The Contractor Company must have an environmental and social representative and a person responsible for hygiene and safety, who will be responsible for carrying out the implementation of the ESMPc. Likewise, the contractor must comply with and make the operators and subcontractors comply with all the provisions contained in said Plan, national and local environmental legislation, and the IDB Environmental and Social Policy Framework, during all stages of the execution of the works. at your expense.

The Contractor Company will prepare monthly reports to EA, detailing the actions and results of the ESMPc implementation.

The inspection, control, and monitoring activities of the ESMPc will be carried out by EA. EA may carry out inspection visits, prepare reports for internal use for the Project, and determine and impose corrective measures based on the stipulations of the bidding documents.

The environmental authority (DOE) may also carry out control audits of the work.

At the end of the works, the Contractor must submit a Final Environmental and Social Report, which includes the information corresponding to the implementation of ESMPc, including records of implementation of plans and programs, and a report on compliance with all environmental and social indicators considered at different stages of the project cycle.

### 6.1.3. Operation and Maintenance

During the operational stage, EA will be responsible for the operation and maintenance of the infrastructure built under the Program, in accordance with its current environmental policies and environmental and social management systems, including the ESMP for the operational and maintenance stage of each work.

### 6.1.4. Role of IDB

The IDB will be in charge of reviewing and supervising the implementation, by EA, of the environmental and social management system for all projects under the Program. This includes the review and approval of the semi-annual environmental and social compliance reports submitted by EA, as well as the performance of environmental and social supervision missions. This follow-up is carried out at all stages of the project cycle.

Table 35 summarizes the environmental and social management responsibilities of the entities involved in the different phases of the projects.

**Table 35 - Roles and Responsibilities for E&S Management of the Projects**

| Project Cycle Phase | Activity | Responsible Party | Monitoring | Supervision |
|---|---|---|---|---|
| **Design** | **Grievance Redress Mechanism (for the duration of the Program)** | MOHW | | IDB |
| | **Executive Project / Engineering Design** | MOHW | | IDB |
| | **Environmental and Social Assessment** | MOHW | | IDB |
| | **Public Consultation** | MOHW | | IDB |
| | **Preparation of E&S Technical Specifications for Bidding Documents** | MOHW | | IDB |
| | **Environmental Permits** | MOHW | | DOE |
| **Construction** | **ESMPc: Preparation and Implementation** | Contractors | MOHW | IDB |
| | **Environmental and Social compliance during construction** | Contractors | MOHW | IDB |
| | **E&S Progress Reports** | Contractors to MOHW (monthly) | MOHW | |
| | **E&S Progress Reports** | MOHW to IDB (half-annually) | | IDB |
| | **Final E&S Report** | Contractors | MOHW | |
| | **Final E&S Report** | MOHW | | IDB |
| **Operation** | **Operation and maintenance of the infrastructure** | MOHW | | IDB (for a period of 3 years after commissioning) |
| | | | | |

## 6.2. Environmental and Social Management Plans

Mitigation measures were grouped into two different ESMPs, each one targeting different phases of the project:

- **Construction/installation ESMP**: aimed at mitigating the impacts and risks of construction activities.
- **Operational ESMP:** aimed at mitigating the negative impacts and risks of the operational stage.

### 6.2.1. Construction Environmental and Social Management Plan

This ESMP presents the minimum environmental and social guidelines that must be implemented during the construction activities of the project's infrastructure.

Based on these guidelines, the Contractor Company must prepare the final version of the construction ESMP, which will contain at least all the programs described below.

**Table 36. ESMP Programs for the Construction/Installation Phase.**

| Program Number | Program |
|---|---|
| **1** | Monitoring and Control of Compliance with Mitigation Measures |
| **2** | Construction Sites Management |
| **3** | Air Quality, Noise and Vibrations Management |
| **4** | Erosion Control |
| **5** | Flora and Fauna Management |
| **6** | Waste Management |
| **7** | Effluent Management |
| **8** | Occupational and Community Health and Safety |
| **9** | Traffic and Pedestrian Management |
| **10** | Pest and Vector Control |
| **11** | Socio-Environmental Training for Site Personnel |
| **12** | Disaster Risk Management and Emergency Response |
| **13** | Community Information and Participation |
| **14** | Chance Find Procedure |
| **15** | Solar Panel Supply Chain Risk Management |
| **16** | Works Closure |

Below, the guidelines for each of the Construction ESMP programs are presented.

## Program 1: Monitoring and Control of Compliance with Mitigation Measures

<table>
<tr><th colspan="2">Program 1: Monitoring and Control of Compliance with Mitigation Measures</th></tr>
<tr><td>Socio-environmental effects to be prevented or corrected:</td><td>Deviations in implementation of mitigation measures</td></tr>
<tr><th colspan="2">Management Measures</th></tr>
<tr><td colspan="2">To ensure effective oversight of compliance with the identified mitigation measures, the contractor will establish and maintain a comprehensive "compliance monitoring system". This system will serve as a means to oversee the implementation of each mitigation measure during the construction stage. The compliance monitoring system will include, but is not limited to, the following elements:<br>• Actions to be Implemented: A detailed description of specific actions and steps to be taken to execute each mitigation measure.<br>• Necessary Material Resources: An inventory of the materials, equipment, and resources required to carry out mitigation measures effectively.<br>• Responsible Staff: Identification of personnel responsible for execution and supervision of each mitigation measure, including their roles and responsibilities.<br>• Indicators of Compliance: Establishment of clear and measurable indicators that will be used to assess the degree of compliance with each mitigation measure.<br>• Goals and Frequency of Monitoring: Defined objectives for achieving compliance, along with the frequency and methodology for monitoring progress towards these goals.<br>This structured compliance monitoring system will ensure that the construction project adheres to the established mitigation measures and operates in a manner that minimizes potential environmental or regulatory impacts.</td></tr>
<tr><th colspan="2">Monitoring and Compliance</th></tr>
<tr><td colspan="2">Indicators<br>• Number of ESHS Non-Conformities (environmental, social and safety and hygiene) identified during the inspections.<br>• Number of ESHS Non-Conformities closed on time.</td></tr>
<tr><td>Responsible for the measure implementation</td><td>Works Director</td></tr>
<tr><td>Responsible for the control of the measure</td><td>Works Inspector</td></tr>
</table>

## Program 2: Construction Sites Management

<table>
<tr><th colspan="2">Program 2: Construction Sites Management</th></tr>
<tr><td>Socio-environmental effects to be prevented or corrected:</td><td>Minimize the environmental and social impacts of the preparatory activities of the works</td></tr>
<tr><th colspan="2">Management Measures</th></tr>
<tr><td colspan="2">The work sites must ensure the minimal impact on the environment and incorporate the following considerations:<br><br>• Establishment of a materials storage and collection area.<br>• Implementation of an efficient waste collection and storage system.<br>• Supply of sufficient water resources for sanitary and operational needs.<br>• Installation of appropriate signage for safety and guidance.<br>• Availability of a well-equipped first aid kit.<br>• When deemed necessary, provision of an electric generator with a waterproof base.<br><br>Among the specific recommendations, the following guidelines have been established:<br><br>• Provision of Adequate Communication Equipment: All work sites shall be equipped with reliable communication tools, such as radios, to facilitate prompt request for assistance during emergencies.<br>• Fire Safety Measures: Work sites must be equipped with fire extinguishers or other appropriate fire suppression systems.<br>• Emergency Response Training: Personnel shall undergo comprehensive training in emergency response procedures, first aid, and proper hygiene practices.<br>• Site Cleanup: Upon completion of construction activities at each work site, all residual materials must be promptly removed, ensuring a clean and organized environment.<br>• Machinery Maintenance and Compliance: Regular maintenance checks and technical verifications will be conducted to ensure construction machinery remains in good working condition.<br>• Runoff management: The drainage of excess water, soil movement, and stockpile management shall prioritize the preservation of natural drainage patterns and land runoff levels to prevent erosion and its associated environmental impacts.<br>• Covered Transportation and Material Handling: All materials prone to generating dust will be transported in vehicles equipped with tarpaulins and maintained at adequate humidity levels to minimize dispersion during transit. Additionally, during on-site stockpiling, regular wetting of materials susceptible to dust generation will be enforced. Efforts will be made to minimize stockpile quantities, wherever operationally feasible, to reduce potential emissions.<br>• Road and Site Maintenance: To control dust emissions from roads lacking an asphalt layer, a regular watering schedule will be implemented, ensuring these surfaces are dampened at least twice a day. The speed of construction vehicles using access roads without asphalt will be regulated and limited (ranging from 20 to 40 km/h depending on specific conditions).<br>• Dust Control during Earth Extraction: When excavating or moving soil, measures will be taken to mitigate dust emissions. This will include the application of water or other appropriate suppressants to the material during extraction to minimize airborne dust.</td></tr>
<tr><th colspan="2">Monitoring and Compliance</th></tr>
<tr><td colspan="2">Indicators<br>• The ratio of work sites where management measures have been applied to the total number of active work sites.</td></tr>
<tr><td>Responsible for the measure implementation</td><td>Works Director</td></tr>
<tr><td>Responsible for the control of the measure</td><td>Works Inspector</td></tr>
</table>

## Program 3: Air Quality, Noise and Vibrations Management

<table>
<tr><th colspan="2">Program 3: Air Quality, Noise and Vibrations Management</th></tr>
<tr><td>Socio-environmental effects to be prevented or corrected:</td><td>Impacts of air quality, dust and noise near community or urban areas.</td></tr>
<tr><td colspan="2">Management measures</td></tr>
<tr><td colspan="2">Emissions Control Measures:<br>• Ensure all construction equipment is maintained in accordance with manufacturer's specifications.<br>• Implement dust suppression measures as necessary in unpaved areas.<br>• Prohibit incineration of non-vegetative wastes (e.g., refuse) at construction sites.<br>• Reduce unnecessary idling of construction equipment and delivery trucks when they are not in active use.<br>• Maintain cleanliness, especially of tires, on work vehicles to prevent tracking of dirt both within and outside the construction site.<br>• Covering of work vehicles transporting friable materials to prevent dispersion of materials beyond the site.<br>• Minimize drop heights of materials during construction operations.<br>• Establish and enact a comprehensive grievance procedure in the event of receiving complaints related to dust and/or exhaust emissions.<br>Noise Control measures:<br>• Ensure maintenance of all construction equipment in accordance with manufacturer's specifications to minimize noise emissions.<br>• Strategic Work Scheduling: Plan construction, modification, and rehabilitation activities to take place during daylight hours when heightened noise levels are generally more acceptable to the surrounding community.<br>• Develop and implement a comprehensive Construction Communications Plan to proactively notify hospital staff and patients, and neighboring receptors such as residents, commercial establishments, religious institutions, and hotels, about upcoming construction activities.<br>• Consider Acoustic Enclosures: Evaluate the necessity of installing acoustic enclosures where applicable to mitigate noise generated by construction activities.<br>• Discourage unnecessary idling of construction equipment and trucks to minimize noise emissions and environmental impact.</td></tr>
<tr><td colspan="2">Monitoring and Compliance</td></tr>
<tr><td colspan="2">Indicators<br>• Absence of grievances voiced by hospital staff and patients, neighboring commercial establishments and/or the local community.<br>Monitoring<br>Regular daily site inspections shall be conducted, encompassing the following critical aspects:<br>• Visual assessment for dust migration in order to detect any instances of dust transgressing site perimeters.<br>• Visual assessment of areas with a heightened propensity for dust emissions, such as haul roads, stockpiles, and operational zones.<br>• Equipment and machinery service records.</td></tr>
<tr><td>Responsible for the measure implementation</td><td>Works Director</td></tr>
<tr><td>Responsible for the control of the measure</td><td>Works Inspector</td></tr>
</table>

## Program 4: Erosion Control

| Program 4: Erosion Control | |
|---|---|
| **Socio-environmental effects to be prevented or corrected:** | Effects of erosion and sedimentation on the environment. Soil disturbance, degradation, and erosion. |
| **Management measures** | |
| **Erosion control measures**<br>• The minimization of disturbance area will be a paramount objective, and clear demarcation will be established to delineate the boundaries of this zone.<br>• All activities will strictly occur within the designated work zone, ensuring that the work scope is confined to this specific area.<br>• Vehicle movements will be confined to predefined roads and tracks, thereby mitigating potential off-road impacts.<br>• Management of runoff water, and soil displacement and accumulations will be carried out with a primary focus on preserving their natural flow patterns and adhering to the natural runoff levels of the terrain.<br>• Monitoring and periodic inspections will be conducted to assess the effectiveness of sediment controls, particularly after significant rainfall events exceeding 10mm in a 24-hour period. | |
| **Monitoring and Compliance** | |
| **Indicators**<br>• Absence of Substantial Sediment Deposition: There should be no noticeable accumulation of sediment beyond the designated works area.<br>**Monitoring**<br>• Daily inspections of the work site will be conducted.<br>• Sediment controls will be assessed during site inspections and following significant rainfall events (defined as more than 10mm of rainfall within 24 hours, leading to site runoff). The assessment will also encompass the removal of any accumulated sediments as needed. | |
| **Responsible for the measure implementation** | Works Director |
| **Responsible for the control of the measure** | Works Inspector |

## Program 5: Flora and Fauna Management

<table>
<tr><th colspan="2">Program 5: Flora and Fauna Management</th></tr>
<tr><td>Socio-environmental effects to be prevented or corrected:</td><td>Impacts on vegetation cover and wildlife</td></tr>
<tr><th colspan="2">Management measures</th></tr>
<tr><td colspan="2">This Program incorporates measures aimed at mitigating impacts on local flora and fauna and aims to cultivate a shared responsibility among all involved parties in safeguarding and preserving the local flora and fauna. Throughout its execution, regular audits will be carried out to ensure adherence to it. Necessary modifications will be made based on monitoring outcomes and feedback received from stakeholders. Furthermore, comprehensive training sessions will be provided to construction personnel, emphasizing the significance of biodiversity conservation and the application of mitigation measures. Additionally, awareness activities will be organized for both workers and the local communities.<br><br>Flora management measures<br>• Assess the net area of natural vegetation loss once construction sites are defined.<br>• The Contractor must implement a revegetation scheme for zero net loss of vegetation and prioritize the retention of mature and significant trees, with clear criteria for removal only when absolutely necessary. Compensatory measures should include planting indigenous tree species in nearby areas. A 3:1 compensation ratio for tree removal is required.<br>• Ensure that only native species are used in landscaping and rehabilitation efforts.<br>• Determine the revegetated area four months after planting, considering surviving vegetation.<br>• Remove vegetal cover just before construction commences.<br>• Minimize time on construction sites to limit disturbance to the natural habitat.<br>• Store the topsoil separately for ground leveling, respecting the edaphic sequence.<br>• Strictly prohibit the introduction of invasive plant species into the project area. Conduct regular inspections and implement measures to prevent their inadvertent introduction or spread, ensuring that only native species are used in landscaping and rehabilitation efforts.<br>• Develop proactive communication channels with adjacent communities to disseminate information about the planting initiatives, with the aim of engaging neighbors in the preservation of local vegetation.<br>Fauna<br>• Ensure all personnel receive proper training in identification and safeguarding of native flora and fauna, as well as protocols for dealing with potentially hazardous animals.<br>• Implement specific measures for fauna's habitat restoration, such as the installation of nesting boxes or shelters to support the local fauna population.<br>• Implement strategies to deter wildlife from areas earmarked for vegetation clearance. Encourage their relocation to adjacent areas without the need for capture. For less mobile species, promote rescue and relocation to nearby suitable habitats.<br>• Recommend the adoption of reduced vehicle speeds within the project area.<br>• Enforce a strict prohibition on hunting within the project area.</td></tr>
<tr><th colspan="2">Monitoring and Compliance</th></tr>
<tr><td colspan="2">Indicators<br>• Reduction in vegetation cover surface.<br>• Persistence of revegetated cover surface four months after planting.</td></tr>
<tr><td>Responsible for the measure implementation</td><td>Works Director</td></tr>
<tr><td>Responsible for the control of the measure</td><td>Works Inspector</td></tr>
</table>

## Program 6: Waste Management

| Program 6: Waste Management | |
|---|---|
| **Socio-environmental effects to be prevented or corrected:** | Pollution due to improper handling of waste generated on site. |

**Management measures**

Waste generated during the construction phase comprises two distinct categories: common household waste, characterized by low hazard, and specialized waste, considered potentially dangerous.

The first category encompasses materials such as packaging waste, plastics, pipe cuttings, wood, cardboard, food scraps, wires, bags containing lime and cement, cables, bricks, and similar non-hazardous items.

The second category comprises hazardous materials such as rags, contaminated wood, filters, gloves, or other solid objects tainted with oils, hydrocarbons, traces of solvents, varnishes, paints, as well as waste stemming from coating and welding electrodes. Additionally, it includes used oils and containers or packaging with residues of the aforementioned substances.

This last category may also include, depending on the task, the handling of hospital waste such as Pathogenic waste, Pathological waste, Hazardous chemical waste, Hazardous pharmaceutical waste and Sharps, which require precise segregation, storage and disposal processes.

**Waste Management Measures**

- Personnel training and waste management: all personnel must be adequately trained to distinguish between the two distinct categories of waste and to rigorously maintain their segregation throughout the entirety of the project's development. This includes the proper handling and management of waste.
- Waste storage and categorization: all waste materials must be segregated based on their inherent properties, such as reusability, recyclability, or categorization as household or special waste. This segregation should occur under controlled conditions to preserve their inherent characteristics and prevent any unintended dispersion.
- Waste disposal prohibitions: no form of waste generated during the construction phase, whether it is of household or special nature, solid or liquid, may be incinerated, buried, or discharged into water bodies or the soil. Strict adherence to these prohibitions is mandatory.
- Prevention of unattended waste: under no circumstances shall unattended waste be left unattended at construction sites, where it may be accessible to both wildlife and individuals.
- Waste documentation: a comprehensive record of the waste generated at each construction site must be diligently maintained, documenting the type, volume, and detailed characterization of the waste produced.
- Effluent management: whenever feasible, the practice of washing tools and machinery on the construction site should be avoided. In cases where this is unavoidable, a designated location must be provided for the temporary containment of effluents. These effluents must be removed from the project area at the conclusion of each phase of work.

**Low Hazard Waste Management Measures**

- When the recycling of assimilable household waste is both technically and economically viable, it will be carried out.
- Should recyclable materials prove valuable to the residents of the locality, they shall be made available to those who express a need for them, following consultations and mutual agreement with the local populace.
- Waste materials that remain unutilized within the Project Area must be securely stored and promptly removed upon the successful conclusion of each phase of the project.

**Special Waste Management Measures**

- Special waste must be securely stored in appropriate containers, in compliance with the nature of the substances, and managed as hazardous waste, in accordance with prevailing legal regulations.
- Develop and implement emergency response plans for the accidental spillage of hazardous chemicals and biohazard materials. These plans should include immediate containment measures, notification procedures, and cleanup protocols to mitigate environmental and health risks.

| Program 6: Waste Management | |
|---|---|
| • In the event of accidental spills, the Environmental Agency (EA) will be immediately informed, and necessary measures for the containment and elimination of the spilled hydrocarbon or chemical product will be carried out. Immediate absorption using suitable materials (such as absorbent cloths or clay) shall be applied. Any contaminated soil or vegetation shall be treated as special waste.<br>• Any generation of pathological waste resulting from personal accidents requiring first aid care must be carefully separated, stored, and treated in strict adherence to prevailing legislation.<br>• Hazardous waste generated as a result of construction activities should be diligently managed, adhering to current legislation. These materials must be securely stored within designated facilities, ensuring their proper preservation. After competition of the works, prompt removal and transportation of special waste to an appropriate facility for treatment and final disposal must be carried out.<br>• Transportation and disposal of special waste must exclusively be carried out by licensed and authorized operators. Under no circumstances will the ultimate disposal of special waste be conducted at open dumps or landfills designated for household waste.<br>• Implement strict segregation protocols for hospital waste at the source to differentiate between pathogenic, pathological, hazardous chemical, pharmaceutical waste, and sharps. Use clearly labeled and color-coded containers that are compatible with the waste type to minimize cross-contamination and facilitate safe handling.<br>• Prohibit the incineration of hospital waste on-site unless using an approved autoclave that meets all regulatory emissions standards.<br>• For autoclave operations, adhere to the MOHW "Standard Operating Procedures for Safe Autoclave Operations (SOPs)." These standards are designed to establish a thorough framework for conducting autoclave procedures safely, encompassing guidelines for operators, maintenance and quality control protocols, detailed operating procedures, and a contingency plan.<br>• Implement stringent measures for the disposal of sharps, ensuring they are placed in puncture-proof containers and treated as hazardous waste. Sharps require special attention due to their potential to cause injury and spread infection.<br>• Conduct regular audits of waste management practices and facilities to ensure compliance with health, safety, and environmental regulations. Inspections should include the verification of proper waste segregation, the condition and security of storage areas, and the appropriateness of disposal methods. | |
| **Monitoring and Compliance** | |
| **Indicators**<br>• Hazardous waste managed according to standards / hazardous waste generated by the project.<br>• Properly managed dry waste and construction surplus / total dry waste and construction surplus generated by the project.<br><br>**Monitoring**<br>• Training in supervising hazard waste registration forms for key personnel.<br>• Records of the removal of hazardous waste for its ultimate disposal.<br>• Reviewing hazardous waste removal records for compliance.<br>• Verifying accreditation certificates for hazardous waste disposal. | |
| **Responsible for the measure implementation** | Works Director |
| **Responsible for the control of the measure** | Works Inspector |

## Program 7: Effluent Management

| Program 7: Effluent Management | |
|---|---|
| **Socio-environmental effects to be prevented or corrected:** | Pollution due to inadequate management of effluents generated by work activities. |
| **Management Measures** | |
| **Effluent Management Measures**<br>• Identify and categorize all potential sources of effluents.<br>• Implement specific protocols for handling different types of effluents (domestic, construction, stormwater runoff).<br>• Conduct regular training sessions for construction personnel on the proper handling, storage, and disposal of potentially harmful substances to prevent accidental spills or leaks.<br>• Regularly monitor, test, and treat effluents discharged from the construction site.<br>• Prioritize managing water drainage, soil movements, and stockpiles in alignment with natural flow patterns and land runoff levels.<br>• Implement erosion and sediment control measures to minimize the introduction of sediment-laden runoff into water bodies.<br>• Install impermeable flooring in susceptible areas and a surrounding channel connected to an autonomous drainage system to direct rainwater towards treatment facilities.<br>• Install a sufficient number of portable toilets or equivalent facilities. Prioritize toilets with efficient waste management systems and low-water-consumption sanitation solutions. Effluents from these facilities will be removed and sanitized daily by authorized operators or service providers.<br>• Implement wastewater recycling systems for sanitation facilities, where feasible, using greywater treatment for non-potable purposes like irrigation or construction.<br>• Establish a **Tools and Machinery Maintenance Protocol**. Efforts will be made to avoid on-site tool and machinery washing. When such washing is unavoidable, cleaning areas will be designated and equipped with containment measures to prevent the washing of tools and machinery from affecting the surrounding environment. Explore and encourage the use of eco-friendly cleaning agents to minimize environmental impact. | |
| **Monitoring and compliance** | |
| **Indicators**<br>• Effluent types managed according to standards / Total effluent types generated by the project.<br>**Monitoring**<br>• Record sheet documenting the withdrawal and inspection of portable toilets by the contractor. | |
| **Responsible for the measure implementation** | Works Director |
| **Responsible for the control of the measure** | Works Inspector |

## Program 8: Occupational and Community Health and Safety

| Program 8: Occupational and Community Health and Safety | |
|---|---|
| **Socio-environmental effects to be prevented or corrected:** | Accidents and incidents that affect occupational and community health and safety |

**Management measures**

The contractor shall regularly ensure compliance with relevant standards and regulations, including international best practices (such as the International Finance Corporation guidelines). This will involve retaining a team of professional advisors.

All personnel are required to receive training on equipment operation, machinery use, and vehicle operation in accordance with prevailing regulations within protected areas.

Clear and permanent identification of all available elements must be conducted, alongside the use of signage and instructional materials for educational purposes.

The contractor must supply Personal Protective Equipment (PPE) and provide comprehensive induction training to workers, covering PPE types, proper usage, characteristics, and limitations.

**Occupational Health and Safety Subprogram**

A comprehensive assessment of risk factors associated with each job role, including an enumeration of the workforce exposed to these risks, must be carried out. The following measures are recommended to enhance workplace safety:

- Conduct **Daily 5-Minute Safety Talks** before commencing work. Topics should be tailored to the specific risks associated with ongoing activities.
- Develop and implement **Safe Work Procedures** for the safe execution of activities. Emphasize adherence to established safety protocols.
- Regularly **inspect and ensure the proper functioning of equipment, machinery**, and essential safety apparatus such as fire extinguishers.
- Apply **Safety Data Sheets** for hazardous products, ensuring that relevant information is readily accessible to workers.
- Provide necessary **Personal Protective Equipment** (PPE) to all workers on the construction site in accordance with the specific requirements of their tasks.
- **demarcate work** areas and storage zones using appropriate signaling in order to promote awareness and help prevent accidents.
- Develop a comprehensive **Contingency Plan** and ensure that all workers are proficiently trained in its implementation to address unforeseen circumstances.
- Conduct proper **Waste Management** by exercising control over the collection, treatment, and disposal of residues and waste, while adhering to basic sanitation standards.
- Verify that personnel operating equipment possess the necessary **licenses and certifications**.
- **Training in Environmental, Health, Hygiene, and Occupational Safety.**

The following activities are classified as high-risk within the occupational context, and demand a diligent commitment to safety protocols, continuous training, and strict adherence to established guidelines to mitigate potential hazards and ensure the well-being of personnel involved:

- Work at Heights and on Scaffolding
- Hot Work (Welding)
- Machinery Maintenance
- Electrical Work

**Community Health and Safety Subprogram**

This subprogram is designed to address potential risks and impacts on the health and safety of communities affected by the project. The Contractor is required to conduct a comprehensive evaluation of the project's potential effects on the health and safety of the affected communities, with specific attention to individuals facing vulnerability due to the proximity of the activities that will be carried out in the projects, such as hospital staff and patients. Subsequently, the Contractor is expected to propose mitigation measures in strict adherence to the mitigation hierarchy. The assessment will encompass the following key aspects:

**Program 8: Occupational and Community Health and Safety**

- Scheduling strategies that minimize construction noise and vibrations during peak hospital hours.
- Using sound barriers and vibration damping techniques to reduce disturbances in sensitive areas.
- Strict adherence to infection control protocols to prevent the spread of dust and pathogens. Implement containment measures in construction areas adjacent to operational sections of the hospital.
- Ensure continuous, safe access to emergency departments, patient care areas, and other critical facilities. Implement temporary wayfinding signage and adjust pedestrian and vehicle routes as necessary to accommodate construction activities without compromising safety or accessibility.
- Thorough evaluation of the impact on **traffic and road safety**, with the aim of minimizing any adverse effects on the community.
- Implementation of clear and effective **signaling** and delineation measures at work sites to enhance safety and minimize potential hazards.
- Rigorous management and safety protocols for handling **hazardous materials** to prevent any harm to the health and safety of the affected communities.
- Development and implementation of a comprehensive **emergency preparedness and response plan**, ensuring swift and effective actions in the event of unforeseen circumstances.
- If patient relocation is necessary, develop a comprehensive plan that includes pre-relocation planning, safety protocols, and communication strategies to ensure the process is smooth and safe for patients and staff.

The Contractor is expected to integrate these measures into the project's execution, reflecting a commitment to responsible and conscientious project management.

**Labor Management Procedure Subprogram**

The contractor is required to formulate a comprehensive Labor Management Procedure (LMP) designed to articulate a structured framework governing the actions and responsibilities of both the employer and the workforce. This protocol is applicable to individuals employed directly by the contractor and extends to personnel engaged through third-party entities (sub-contractors).

The primary objective of the LMP is to establish and maintain employment relationships grounded in the principles of equal opportunities and equitable treatment. The employment of child or forced labor is strictly prohibited. The contractor, along with its subcontractors, is expressly prohibited from engaging individuals below the minimum age of employment as prescribed by relevant legal statutes, with a minimum threshold of no less than 15 years of age.

The LMP will include the creation of a **grievance redress mechanism**. This mechanism is designed to provide a channel through which workers, and where applicable, their affiliated organizations, can voice concerns related to the workplace. Additionally, it serves as a platform for the lodging of complaints pertaining to instances of sexual and gender-based violence. The contractor is tasked with ensuring the effectiveness and accessibility of this grievance redress mechanism to facilitate a transparent and responsive resolution process.

**Monitoring and Compliance**

**Indicators**

- Frequency rate (number of accidents x 200,000/man-hours worked in the period).
- Severity Index (number of serious accidents x 200,000/ man-hours worked in the period).
- Fatal Accident Incidence Rate (Number of fatal accidents x 200,000/Number of exposed workers).
- Number of personnel using PPE according to the risk of the activity / Total number of personnel.
- Number of workers with Medical and Labour Insurance / Total number of workers in the project

**Monitoring**

- Work accident registration forms.
- PPE delivery record forms.
- Record sheets for training in the use of PPE.
- Certification forms for the use of specific machinery.
- Safety procedures for critical activities.

| Program 8: Occupational and Community Health and Safety | |
|---|---|
| • Risk analysis and checklists for critical activities. | |
| **Responsible for the measure implementation** | Works Director |
| **Responsible for the control of the measure** | Works Inspector |

## Program 9: Traffic and Pedestrian Management

<table>
<tr><th colspan="2">Program 9: Traffic and Pedestrian Management</th></tr>
<tr><td>Socio-environmental effects to be prevented or corrected:</td><td>Accidents and incidents that affect occupational and community health and safety</td></tr>
<tr><td colspan="2">Management measures</td></tr>
<tr><td colspan="2">The Master Contractors will prepare the Traffic and Pedestrian Management Program. Consultation with key stakeholders will be conducted prior to Program finalization. The Contractors will ensure implementation of this Program.<br>The Traffic and Pedestrian Management Program shall:<br>• Identify the sensitive location (religious facility, educational facility, heath facility, commercial areas) along the site access roads and in hospitals adjacent areas.<br>• Identify the road condition, traffic congestion areas and peak traffic load period.<br>• Identify the traffic hotspots like road junctions, market areas, school areas.<br>• Provision of traffic marshal (signalman) in identified traffic sensitive locations.<br>• Identify any major road repairing requirement along the site access road.<br>• Prepare the Traffic and Pedestrian Management Program based on local sensitivity (religious gathering, school timing, market timing and peak traffic timings);<br>• Implement procedure to follow road safety requirements by the drivers & helpers.<br>• Implement procedure to check fit certificates of the vehicles to minimize the emission of air and noise.<br>• Monitor road conditions in order to identify any damage of road or structures and remedy immediately to reduce the potential for significant impacts to the local communities.<br>Contractors are responsible for ensuring that drivers receive instructions in accordance with the Traffic and Pedestrian Management Program to maintain appropriate speeds. Additionally, they must conduct induction and training sessions for all drivers to promote safe driving practices. Furthermore, contractors are obligated to enforce compliance among drivers, ensuring adherence to all legal and project-specific safety regulations relevant to road safety measures.</td></tr>
<tr><td colspan="2">Monitoring and Compliance</td></tr>
<tr><td colspan="2">Indicators<br>• Number of work fronts marked with signs in accordance with the approved Traffic and Pedestrian Management Program /Number of work fronts that require signage in accordance with Traffic and Pedestrian Management Program.<br>• Number of road accidents.<br>Monitoring<br>• Weekly inspection program<br>• Monthly inspection report<br>• Road safety accident records</td></tr>
<tr><td>Responsible for the measure implementation</td><td>Works Director</td></tr>
<tr><td>Responsible for the control of the measure</td><td>Works Inspector</td></tr>
</table>

## Program 10: Pest and Vector Control

| Program 10: Pest and Vector Control | |
|---|---|
| **Socio-environmental effects to be prevented or corrected:** | Spread of pests and vectors |
| **Management Measures** | |
| To safeguard public health, it is strongly advised that the Contractor engages the services of a certified and proficient company with the following responsibilities:<br>• Pest disinfection: before the removal of green waste and soil movement, the contracted company should conduct thorough pest disinfection. This involves the use of appropriate products and methods to eliminate pests effectively.<br>• Municipal coordination: the contracted company must collaborate with municipal authorities to prevent the unlawful deposition of municipal solid waste on neighboring properties without structures and in adjacent streets. This coordination helps maintain a clean and sanitary environment.<br>• Product protocols: to ensure safety, it is recommended to request and monitor the protocols for the products used in pest elimination. This includes assessing potential side effects and residual impacts, ensuring that only approved and safe products are utilized.<br>• Waste management: the company responsible for pest disinfection must manage the waste generated during their operations. They should promptly remove containers used for pest control, and evidence of proper disposal should be provided.<br>• Food handling and fire prevention: to prevent the attraction of rodents and snakes, no food remnants should be left exposed, and open fires should be avoided. Both hot food and ash can be an attractant for these species, posing risks to public health.<br>• Eco-friendly pest control: when addressing pest and vector control, prioritizing environmentally conscious products is imperative. It is essential to explore alternatives with minimal ecological impact for non-targeted species. Whenever feasible, the use of highly toxic substances should be minimized or avoided entirely. | |
| **Monitoring and compliance** | |
| **Indicators**<br>• Completed pest and vector disinfection/control applications to the total planned applications in the Program.<br>**Monitoring**<br>• Verification of disinfection certificates in alignment with the predetermined disinfection schedule, including projected fumigation dates, specified products for use, outlined safety protocols, Contingency Plan, etc.<br>• Validation of bait withdrawal and proper final disposal confirmation. | |
| **Periodicity of Supervision of the degree of Compliance and Effectiveness of the Measure** | Monthly |
| **Head of Audit** | Construction Inspection |

## Program 11: Socio-Environmental training for construction personnel

| Program 11: Socio-Environmental Training for Construction Personnel | |
|---|---|
| **Socio-environmental effects to be prevented or corrected:** | Lack of knowledge regarding the personnel's role in preserving, protecting, and conserving the environment, as well as ensuring occupational safety in the performance of their duties |

**Management measures**

**Socio-Environmental Training**

To carry out the training process, informative sessions will be conducted prior to the commencement of work. Subsequently, ongoing exchange and training meetings will be organized, tailoring content to meet the specific requirements of diverse projects with environmental implications. Additionally, drills addressing emergency response protocols will be conducted.

The planning and execution of these training sessions will be conducted under the oversight of safety, hygiene, and environmental professionals employed by the contractor. The training program encompasses a comprehensive agenda, including, but not limited to, the following topics:

- Basic induction in environmental protection.
- Evaluation and control of risks with a focus on personnel safety.
- Management of environmental contingencies such as spills and fires.
- Fire prevention and control measures.
- Comprehensive waste management procedures, including hazardous wastes.
- Protection and management of plant species in the immediate environment.
- Safe handling of chemical substances.
- Familiarization with the company's Code of Conduct and addressing gender-related issues.
- The implementation of this program will ensure a thorough understanding of essential environmental and safety protocols, contributing to the effective management of potential risks and emergencies.

**Code of Conduct**

The Contractor is required to develop and implement a comprehensive Code of Conduct for Site Personnel, as exemplified in Annex 2, Appendix A. This code shall be incorporated into employment contracts for both the Contractor and Subcontractors, adhering to the guidelines outlined in the LMP. To mitigate the risk of gender, social, political, cultural, or racial conflicts, and to maintain order, the Contractor must take necessary measures and precautions. This includes preventing tumult or disorder among construction personnel, employees hired by them, or Subcontractors, while ensuring the preservation of order, protection of inhabitants, and the security of public and private property within the project's area of influence.

The Code expressly prohibits harassment, violence, exploitation, and racism. Its application is mandatory for all individuals involved in the project, both during and outside of working hours.

Non-compliance or infringement of the established rules of conduct will result in sanctions, fines, or dismissals, depending on the severity of the violation. All construction personnel, irrespective of their hierarchical level, are required to participate in training sessions and discussions related to the Code.

Furthermore, the Contractor is obligated to conduct a minimum of two activities addressing non-discrimination and gender equity for all personnel affected by the project. These activities will focus on: 1) the prevention of sexual exploitation of children and adolescents, including labor and criminal consequences; and 2) fostering positive relationships between men and women in the workplace.

Prior to these activities, the Contractor must submit an Action Plan for approval by the Construction Management. This plan should outline the responsible parties for implementation, the methodology, and the schedule. Upon completion, a comprehensive evaluation report must be submitted.

Additionally, the Contractor is required to establish, within an agreed-upon timeframe with Construction Management, a protocol addressing sexual harassment in the workplace.

**Monitoring and Compliance**

| Program 11: Socio-Environmental Training for Construction Personnel | |
|---|---|
| **Indicators**<br>• Percentage of personnel trained in accordance with the Training Program.<br>• Percentage of training sessions given out of the total training sessions required according to the Training Program. | |
| **Responsible for the measure implementation** | Works Director |
| **Responsible for the control of the measure** | Works Inspector |

## Program 12: Disaster Risk Management and Emergency Response

| Program 12: Disaster Management and Emergency Response | |
|---|---|
| **Socio-environmental effects to be prevented or corrected:** | Human, economic, and environmental losses associated with an emergency situation and protect areas of social, economic, and environmental interest located in the area of influence of the project. |

**Management measures**

**Contingency Prevention and Control Strategies**

**Contractor Responsibilities:**

- Strict compliance with general and specific regulations, rules, procedures, and instructions pertaining to health, hygiene, and occupational safety.
- Identification and mitigation of all potential risks leading to workplace accidents or occupational illnesses.
- Identification and rectification of unsafe conditions within work areas.
- Enforcement of standards and procedures outlined in environmental management plans.
- Development of programs aimed at enhancing working conditions and implementing procedures to ensure greater safety during project execution.
- Implementation of training and awareness campaigns for workers focused on Occupational Health practices.
- Periodic communication of specific job risks to each worker, along with information about environmental risks and preventive measures.
- Ensuring that the design, engineering, construction, operation, and maintenance of equipment align with safety norms and procedures endorsed by Construction Supervision.
- Establishment of periodic and preventive maintenance programs for machinery, equipment, and facilities.
- Facilitation of inspections and investigations related to occupational health conditions conducted by competent authorities.
- Provision of necessary and suitable personal protective equipment based on the level of risk, adhering to Industrial Safety recommendations.
- Development of an emergency response plan in collaboration with the National Emergency Management Organization (NEMO).
- Ensuring availability of essential resources and materials for effective response to emergencies.

**Employee Responsibilities:**

- Execute tasks with utmost care, ensuring operations adhere to safety standards, environmental regulations, and the guidelines outlined in the management plan programs.
- Vigilantly monitor machinery and equipment to promptly identify and report any risks or dangers to superiors. Address human, physical, mechanical, or environmental issues that arise during work.
- Refrain from operating unauthorized machines or allowing unauthorized personnel to handle equipment under their responsibility.
- Avoid the introduction of alcoholic or intoxicating substances in the workplace and avoid working under their influence.
- Workers operating machinery with moving parts must avoid wearing loose clothing, jewelry, or accessories. If they have long hair, secure it with a cap or hairnet.
- Safely utilize and maintain company-provided work items, safety devices, and personal protective equipment. Maintain cleanliness and order in workplaces and services.
- Actively participate in company-approved programs for preventing occupational accidents, illnesses, and community health issues.
- Promptly report any procedures or operations that violate safety regulations and pose a threat to individuals, colleagues, or company assets.
- Vehicle drivers must adhere to internal traffic regulations and those of protected areas during work execution.
- Propose activities that promote occupational health within the workplace.
- Implement actions specified in emergency protocols and strategies.

| Program 12: Disaster Management and Emergency Response | |
|---|---|
| **Fire Prevention and Control:**<br><br>The Contractor is responsible for preventing and controlling fires in the workplace. In case of a fire, the following actions will be taken:<br>• Utilize the nearest fire extinguishers to prevent the fire from spreading.<br>• Request external support when necessary and initiate control procedures with available resources as a first response.<br>• Establish means for maintaining constant communication, such as radios or telephones.<br>• Evacuate individuals from the work front and the camp until the emergency is under control.<br>• Identify and evaluate the emergency, determining the point of occurrence, cause, magnitude, consequences, actions to follow, and necessary support for control.<br>**Actions in Case of Floods:**<br><br>• In the event of flash flooding, immediately move to higher ground.<br>• Stay vigilant for sudden flooding in streams, drainage channels, and other areas.<br>• Avoid driving through flooded areas.<br>• Once the emergency is controlled, the emergency coordinator will prepare a comprehensive final report. | |
| **Monitoring and Compliance** | |
| **Indicators**<br><br>• Number of environmental and health accidents managed in accordance with the defined procedure / Total number of environmental and health accidents that occurred in the project. | |
| **Responsible for the measure implementation** | Works Director |
| **Responsible for the control of the measure** | Works Inspector |

## Program 13: Community Information and Participation

| Program 13: Community Information and Participation | |
|---|---|
| **Socio-environmental effects to be prevented or corrected:** | Misinformation of the public regarding the progress and tasks of the project. |
| **Management measures** | |
| **Contractor Responsibilities:**<br>• **Project Reporting:** Maintain timely and updated records on the project's implementation and progress. Promptly address queries, observations, complaints, and claims from the Works Inspection, proactively identifying and implementing solutions to identified problems.<br>• **Communication Channels:** Provide the public with a transparent and accessible means of communication. Establish a complaints book for public access. Make available a 24-hour contact telephone number, an email address, and a web interface for the community to submit their claims, complaints, and suggestions. Ensure that all submitted comments are promptly analyzed and receive a swift response.<br>• **Community Information and Participation:** Implement the Community Information and Participation Program consistently throughout the project's lifecycle. Give special attention to ensuring clear, transparent, and timely communication with all individuals benefiting from the program.<br>• **Community Engagement:** Establish a mode of engagement with the community affected by the project's development, specially and with the hospitals staff and patients. Inform them about the project's schedule and progress to foster transparency.<br>• **Access to Information:** Facilitate equal access to information, with a commitment to promoting gender equity among all interested social sectors. These responsibilities underscore the contractor's commitment to effective communication, community engagement, and transparency throughout the project. | |
| **Monitoring and Compliance** | |
| **Indicators**<br>• Percentage of complaints managed properly during the month according to the defined mechanism over the total number of complaints generated.<br>• Percentage of public consultations carried out over the total number of public consultations required. | |
| **Responsible for the measure implementation** | Works Director |
| **Responsible for the control of the measure** | Works Inspector |

## Program 14: Chance Find Procedure

<table>
<tr><th colspan="2">Program 14: Chance Find Procedure</th></tr>
<tr><td>Socio-environmental effects to be prevented or corrected:</td><td>Destruction of historical, cultural, archaeological, and paleontological heritage.</td></tr>
<tr><td colspan="2">Management measures</td></tr>
<tr><td colspan="2">This program will be systematically implemented throughout the duration of the project, with the following key provisions:<br>• Continuous Monitoring: A permanent monitoring initiative will be conducted across the entire area directly impacted by the project to identify any archaeological elements.<br>• Immediate Action on Discovery: Should any property of potential archaeological significance be discovered; the construction team is obligated to promptly cease activities that may impact the identified area. Adequate surveillance measures will be implemented to prevent unauthorized access and looting.<br>• Alternative Worksite Consideration: If necessary, the project team will explore alternative locations for project activities to mitigate any potential impact on archaeological finds.<br>• Notification of Competent Authority: The relevant national authority will be promptly notified, and the project will adhere to their instructions for further action in response to the archaeological discoveries.<br>• Salvage Operations: In the event of cultural remains emerging during activities such as ditching, earth removal, or excavations, salvage operations will be promptly initiated. Recognized archaeologists, under supervision, will conduct these operations with the utmost consideration for preserving the contextual integrity of the archaeological remains. Work will resume only upon the archaeologist's determination of an appropriate timeframe and location.<br>• Comprehensive Reporting: Upon completion of the project, a comprehensive final report will be prepared. This report will detail the quantity and nature of the recovered materials and will be submitted to the competent authority.<br>• Consultation with Competent Authority: The competent authority will be consulted regarding the proper procedures for delivering archaeological materials as part of the project's commitment to compliance and transparency.</td></tr>
<tr><td colspan="2">Monitoring and Compliance</td></tr>
<tr><td colspan="2">Indicators<br>• Number of archaeological and cultural resources found in the project and managed according to the defined procedures / Number of archaeological and cultural resources found in the project.</td></tr>
<tr><td>Responsible for the measure implementation</td><td>Works Director</td></tr>
<tr><td>Responsible for the control of the measure</td><td>Works Inspector</td></tr>
</table>

## Program 15: Solar Panel Supply Chain Risk Management

<table>
<tr><th colspan="2">Program 15: Solar Panel Supply Chain Risk Management</th></tr>
<tr><td>Socio-environmental effects to be prevented or corrected:</td><td>Potential labor violations within supply chain of photovoltaic solar panels (child labor / forced labor / modern slavery)</td></tr>
<tr><td colspan="2">Management measures</td></tr>
<tr><td colspan="2">Mitigation measures<br><br>• Solar Panels Supplier Evaluation: solar panel suppliers must be evaluated through the guidelines provided in Annex 3. These guidelines encompass criteria related to labor practices, ensuring suppliers adhere to ethical standards and do not engage in any form of child labor, forced labor, or modern slavery.<br>• Affidavit: Suppliers will be required to sign an affidavit confirming their non-awareness and non-engagement in forced labor during the production of solar panels. This affidavit should serve as a formal commitment to ethical practices, providing a legal document affirming the supplier's adherence to labor rights. An affidavit model is provided in Annex 4.</td></tr>
<tr><td colspan="2">Monitoring and Compliance</td></tr>
<tr><td colspan="2">Indicators<br>• Affidavit signed.<br>• Guidelines for the Procurement of Solar Panels properly applied.</td></tr>
<tr><td>Responsible for the measure implementation</td><td>Works Director</td></tr>
<tr><td>Responsible for the control of the measure</td><td>Works Inspector</td></tr>
</table>

## Program 16: Works Closure

| Program 16: Works Closure | |
|---|---|
| **Socio-environmental effects to be prevented or corrected:** | Impacts on the environment once the work is finished. |
| **Management measures** | |
| **Mitigation measures**<br>• All installations utilized in the execution of the project will undergo systematic removal.<br>• An exhaustive examination of environmental and social liabilities will be conducted, and identified issues will be promptly addressed and remedied.<br>• Disposal of waste and solid materials must adhere to the guidelines set by environmental and social supervision, ensuring their transfer to approved sites.<br>• Areas where vegetation has been cleared must undergo revegetation using the same species originally present.<br>• Surplus reusable or recyclable materials are eligible for donation, while the delivery of materials constituting environmental liabilities is strictly prohibited.<br>• The incineration of waste during the dismantling process is expressly forbidden.<br>• Dismantled sites are obligated to be left in impeccable condition, seamlessly integrated into the surrounding environment. | |
| **Monitoring and Compliance** | |
| **Indicators**<br>• Absence of claims by the authorities, the surrounding population, and the community in general.<br>**Monitoring**<br>• Photographic record before and after work. | |
| **Responsible for the measure implementation** | Works Director |
| **Responsible for the control of the measure** | Works Inspector |

### 6.2.2. Operational Environmental and Social Management Plan

This ESMP provides mitigation measures for the negative impacts and risks for **the operation and maintenance phase** of the implementation of the projects.

Table 37 outlines the minimum requirements that the Environmental and Social Management Plan must meet for the Operational Phase.

During the Operational Phase, the MOHW will be in charge of the operation and maintenance of the infrastructure to be built and of the equipment and machinery, according to the guidelines presented below.

**Table 37 - Operational Environmental and Social Management Plan**

| Plan / Program | Impact to avoid | Minimum Mitigation Measures | Responsible Party | Indicators and Compliance, Records | Supervision |
|---|---|---|---|---|---|
| **Waste Management Program** | Contamination due to inadequate management of assimilable household, and hazardous waste. | Development and implementation of a Waste Management Program | MOHW | Environmental Audit of the sites | Competent authority |
| **Occupational Health and Safety Program** | Occupational risks due to the maintenance of infrastructure. | Compliance with current national regulations.<br>Adopt international best practices. | MOHW | Frequency Index (number of accidents x 200,000/man-hours worked in the period).<br>Severity Index (number of serious accidents x 200,000/ man-hours worked in the period).<br>Fatal Accident Incidence Rate (Number of fatal accidents x 200,000/Number of exposed workers). | Competent authority |
| **Grievance Redress Mechanism** | Impacts on local community and workers for the non-attention to the claims and complaints. | There must be an efficient tool for receiving, registering, monitoring and resolving claims. | MOHW | Registration of claims and complaints | Competent authority |
| **Training Program** | Lack of knowledge about the role of personnel in the preservation, protection and conservation of the environment and occupational safety in the exercise of their functions. | Minimum training:<br>- Basic induction in environmental protection and safety.<br>- Risk assessment and control. Security of persons, movable and immovable property.<br>- Electrical Work<br>- Waste management | MOHW | Percentage of operators trained according to Training Program<br><br>Training Registration Sheets | Competent authority |
| **Disaster Risk Management** | Poor management of natural disasters / | Define the structure and organization for emergency | MOHW | Number of environmental and safety accidents managed | Competent authority |

| Plan / Program | Impact to avoid | Minimum Mitigation Measures | Responsible Party | Indicators and Compliance, Records | Supervision |
|---|---|---|---|---|---|
| **and Contingency Planning** | environmental / occupational contingencies | response, the roles and responsibilities of the people, the necessary resources, and the preventive and operational strategies to be applied in each of the possible scenarios. | | according to the defined procedure / Total number of environmental and health accidents occurring in the project. | |

## 6.3. Budget for Implementation of the ESMP

Table 38 includes the estimated costs, schedules, and responsible entities for the implementations of the ESMPs.

**Table 38. Costs, Schedules, and Responsible Entities for the implementations of the ESMPs.**

| Measure | Description | Estimated cost | Schedule | Responsible |
|---|---|---|---|---|
| **Implementation of Mitigation Measures and Programs of Construction ESMP** | Preparation of the ESMP at the construction level and implementation during the construction of the project; socio-environmental monitoring of the works. | 1% of the total cost of the Project | From the beginning of the works, until their finalization | Contractor |
| **Implementation of Mitigation Measures of Operational ESMP** | Incorporation of mitigation measures for the operational stage within the project activities | [incorporated in MOHW operational budget] | Throughout the lifecycle of the infrastructure | MOHW |

The cost for the implementation of the ESMP mitigation measures and programs is indicative and does not constitute a prescriptive element of contractual obligation. The implementation of the ESMP is monitored exclusively in terms of its performance (results), and not based on the inputs used (resources expended by the contractor).

# 7. Conclusions

This Environmental and Social Analysis evaluated the environmental and social impacts and risks associated with the Projects of the Improving Efficiency, Quality, and Access in Belize's Health System Program (BL-L1048).

The analysis of impacts and risks focused on the interactions between project activities and the components of the physical, biological, and socioeconomic environment likely to be affected.

As usual in works of these characteristics, there are potential impacts and risks, mainly in the construction phase, such as negative impacts due to the risk of occupational accidents during the works, nuisances and service interruptions for current health facilities users, noise and vibrations, risk of soil and water contamination due to accidental spills, and risk of contamination due to poor management of the solid waste generated.

Additionally, the projects have specific vulnerabilities that need attention, due to the completion of work in certain areas of the facilities while they remain operational. These activities can lead to several negative impacts, including increased noise pollution that disrupts the healing environment for patients and the work concentration of medical staff, dust and debris that pose risks for infections and respiratory issues, obstruction of emergency access routes potentially delaying critical care, and overall stress on hospital operations that may compromise patient care quality.

These negative impacts of the construction phase are limited in time, occur during the work period, and affect only the direct area of influence of the projects.

The application of adequate mitigation measures is detailed in Chapters 5 and 6 of this study. Along with the application of good construction practices that guarantee compliance with national regulations and the IDB Environmental and Social Performance Standards, these measures are expected to mitigate all the identified impacts and risks.

In their operational phases, these projects are expected to yield long-term positive impacts on communities by providing significant benefits to the healthcare system. This will enhance the quality of life for residents, bolstering the community's overall well-being by ensuring access to superior healthcare services. Additionally, it will promote resilience to climate change, equipping the healthcare infrastructure to better withstand and adapt to environmental challenges.

Therefore, the operation is considered feasible**, without significant negative socio-environmental risks or impacts that cannot be mitigated**.

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# Annex 1. Stakeholder Engagement Plan

## Introduction

As part of the socialization process of the Improving efficiency, quality, and access in Belize's health system Program (BL-L1048), this Stakeholder Engagement Plan was developed.

This Plan sets out the general principles of participation and a collaborative strategy to identify stakeholders and plan a participatory process in line with Environmental and Social Performance Standard 10: "Stakeholder Engagement and Information Disclosure" along with ESPS 1 "Assessment and Management of Environmental and Social Risks and Impacts" and ESPS 9 "Gender Equality".

Stakeholder engagement is an inclusive, continuous, and iterative process that takes place throughout the project lifecycle (preparation, implementation, and closure). The process must be properly designed and carried out, sustained by the establishment of solid, constructive, and responsive relationships that are important for the satisfactory management of the environmental and social risks and impacts of the Program/Project.

The nature, scope and frequency of stakeholder engagement is commensurate with the nature and scale of each project, its development and implementation schedule, and its potential risks and impacts. The MOHW will be responsible for defining and evaluating the necessary instances of participation and dissemination of the works.

The entire participation process must be properly documented. The MOHW shall take steps to maintain confidentiality where required and where necessary to protect personal data.

It is in this context, the following Stakeholder Engagement Plant is proposed, which presents the minimum guidelines and criteria to carry out the consultation process.

## Objective

The objective of the consultation process is to present to the affected population and other interested parties the description of the Project, its potential environmental and social impacts and the mitigation measures planned to ensure adequate environmental and social management during the execution of the works, and their subsequent operation.

This instance of participation aims to respond to the doubts and concerns that may arise, and to collect suggestions which will be evaluated in order to determine the possibility of incorporating them into the design of the Project, when appropriate.

## Institutional Arrangements for Plan Implementation

The MOHW as the Executing Agency is responsible for leading and implementing the Project Consultation Plan.

# Consultation Process

The programming and dissemination of the consultation should be carried out in such a way as to ensure the participation of stakeholders. Every effort will have to be made to involve groups likely to be affected by the activities of the project, and those groups that have been identified as stakeholders, regardless of whether they do not belong to the affected population.

It is important to recognize the reduced accessibility to these consultation spaces by populations with greater vulnerabilities such as women, aboriginal communities, in situations of immobility, in street situations, LGBTIQ + populations (lesbian, gay, bisexual, trans, intersex, queer), among others. With this, it must be ensured that the call is made considering the obstacles that these populations may face for participation.

The consultation process shall consider at least the following elements:

- **Stakeholder Mapping**
- **Documents to disclose and availability of information**
- **Dissemination of the consultation process through the MOHW website, social media and other means**
- **Development of content and documentation to be socialized**
- **Public consultation procedure**
- **Report of the public consultation process**

Below is a brief description of the requirements to be considered at each stage of the consultation process.

## Stakeholder Mapping

Stakeholder mapping consists of identifying the directly affected population and organizations relevant to the consultation.

From a preliminary identification, it emerges that, at a minimum, the stakeholders presented Table 39 should be included in the process.

It is important to note that the proposed stakeholder mapping is preliminary, and that the final selection of the stakeholders can be adjusted by the MOHW. Therefore, any other stakeholders that the authorities consider appropriate to invite to contribute to guaranteeing a broad, representative and meaningful participatory process may then join.

**Table 39 - Stakeholder Map**

| Guy | Stakeholder | Relationship with the Program/Project |
|---|---|---|
| **Institutional Stakeholders** | **MOHW** | Executing Agency |
| | **Beneficiary cities** (authorities) | Interested party |
| | **Stakeholders related to other infrastructure in the project areas** (E.g., operators of electricity networks, etc.) | Affected party |
| **Civil Society Stakeholders** | **Beneficiary Population of the Program:** area residents, hospital staff, patients | Affected party |
| | **Civil Society Organizations** (in particular, those working in environmental and social issues) | Interested Party |
| **Community** | **Population of the cities reached by the Project and community in general,** including population nearby the health centers | Interested Party |

## Documents to Disclose and Availability of Information

Below are the documents to be socialized, which must be published on EA's website and other means, and available to the public for at least 14 days prior to the consultation events.

- Environmental and Social Assessment, including the Environmental and Social Management Plan (first draft, Fit for Disclosure)
- Summary information on the Project (description, works, etc.)

Once the information is available on the website, the consultation process will be disseminated to interested parties.

## Disclosure of the Event

The invitation to the event will be made directly to the interested parties identified in the map of stakeholders, and to the public through publication in relevant information media, such as radio, local TV and / or digital media, important newspapers, and on the institutional website and social network profiles of EA and the municipalities involved. Also, personal email submissions and brochure handing can be used, to ensure the adequate dissemination of the process.

The following information shall be detailed:

- Project Proponent
- Project/Programme

- Website with the publication of the documentation and as a space for the channeling of queries and concerns about the Project.
- Procedure of the consultation process
- Duration of the consultation process
- Topics to be addressed (Including: Project and main works to be carried out, Benefits associated with the operation of the Project, Parties involved and institutional responsibilities, Outline of the applicable regulatory framework and relevant standards, Main environmental and social impacts identified, Main management measures, and Existing mechanisms to address complaints and resolve conflicts).
- Documentation available.

The **consultation period** is estimated to run from March 15th to March 30th, 2024. To ensure participation, the consultation events will take place during weekends, and will be held at the respective local community centers.

There will be **one** consultation event across the country. The stakeholders will mostly consist of institutional representation (cities and hospitals authorities and civil society organizations).

These consultation events will be complemented in community information campaigns, to be conducted prior to the start of the works.

## Development of the Public Consultation Process

The consultation process will be carried out in person. The coordination of the process will be in charge of EA with social specialists with experience in consultation instances.

### Publication on the website

EA must publish the ESIA for a minimum of 14 days prior to the event.

It should explain the objective of the consultation, clarifying that, although it is not in itself binding, the questions and proposals arising from the persons participating will be analyzed and answered and, where relevant, the proposed amendments will be incorporated into the Their Article.

Then the context in which the consultation takes place will be explained, and the description of the Project will be made, including its objectives, main characteristics and alternatives considered, the environmental and social impacts both in the work and operation stages, as well as the mitigation measures designed for an adequate environmental and social management of the Project.

It should be ensured that the explanation is clear, and that the language used allows the community to understand the main aspects of the project and its impacts.

The **Grievance Redress Mechanism** the Program and the available channels for making complaints or consultations on the Project will also be disclosed, regardless of those made within the framework of the consultation process.

EA must disclose the estimated date and how the consultation report will be published so that all stakeholders can see it and make their observations, if any.

## Consultation Report

A report will be prepared containing the main concerns raised (both during the consultation process and any prior or subsequent requests that may be received), indicating how they were addressed at the time or, where appropriate, what responses were subsequently prepared and how they were communicated to stakeholders and the public.

Although, as mentioned, the consultation is not binding, the proposals received should be evaluated and the explanation of their relevance or not included in the report. If these are relevant, the consultation report will result in proposals for changes to the Project and/or the ESMP, specifically recommendations for: (i) project design; (i) mitigation measures and (iii) mechanism for dealing with complaints and grievances.

The consultation report will also include the invitation process, the links to the web pages where the project has been published and the corresponding environmental and social documentation, the description of the call mechanism used, the list of participants, photos or screenshots of the process, informative banners, publications made in local media, and other dissemination materials used.

The following is a **minimum content outline of the Consultation Report**:

1. Participation strategy: Description of how the consultation process was developed (prior coordination with authorities, key stakeholders, methodology, selection of topics to be addressed, etc.).
2. Stakeholder mapping (groups, institutions or people who were invited) and selection criteria of the invited stakeholders; Invitation mechanism.
3. Dissemination: Invitations issued and publications of the event on institutional websites and media.
4. Website and term.
5. Analysis of the people who participated compared to the guests.
6. Gender-disaggregated data of participants.
7. Materials submitted and/or published during the consultation process.
8. Queries made and responses (Proposals, claims or questions made by the different stakeholders, and how they were addressed).
9. Indication of how the proposals and/or complaints received were incorporated/or will be incorporated into the design of the project. Any formal agreement reached with the persons consulted.
10. The main conclusions on positive or negative perception of the project by the participants, including the agreements.
11. Elements collected from the consultations and included in the final version of the ESIA and ESGP.
12. ANNEX. Copy of the presentation made (it must be ensured that the impacts and mitigation measures of the specific project have been presented).
13. ANNEX. Sample copy of invitation letters sent.

14. ANNEX. Copy of the acknowledgments of receipt of the sending of the invitation letters.
15. ANNEX. List of invited people.
16. ANNEX. List of participants: interested persons/affected persons, governmental, institutional, and general population participants.
17. ANNEX. Photographs of the activity.

The consultation report must be published on the institutional website of EA, as communicated to the persons participating in the consultation meeting.

## Grievance Redress Mechanism

The Program and its projects will have a feedback / claims management system that includes their entry / reception, analysis, monitoring, and resolution.

The principles of the GRM are:

- The interaction/claims management system will have mechanisms in accordance with the local context and the sociocultural characteristics of the groups involved in each project to be financed by the Program, with special consideration and respect for the most vulnerable groups (Youth, Women, people with disabilities, migrants, people belonging to indigenous communities, among others).
- The procedures for complaint, the process that will follow, the deadline and the resolution mechanisms will be widely disseminated for the knowledge of interested parties and complainants.
- In all cases, a record will be kept of the reception, analysis and resolution of claims and conflicts.

### GRM Guidelines

In general, the Mechanism will follow the following guidelines:

- **Proportional:** The Mechanism will proportionally take into account the level of risk and possible negative impacts on the affected areas.
- **Culturally appropriate:** The Mechanism will be designed to take into account the local customs of the area.
- **Accessible:** The Mechanism will be designed in a clear and simple way so that it is understandable to all people. There will be no cost related to it.
- **Anonymous:** The complainant may remain anonymous, as long as it does not interfere with the possible resolution of the complaint or problem. Anonymity is distinguished from confidentiality in that it is an anonymous complaint, the personal data (name, address) of the complainant are not recorded.
- **Confidential:** The Program will respect the confidentiality of the complaint. Information and details about a confidential report will only be shared internally, and only when it is necessary to report or coordinate with the authorities.

- **Transparent:** The process and operation of the Mechanism will be transparent, predictable, and readily available for use by the population.

## Management of the GRM

The procedure begins with the presentation of the consultation, claim, complaint and / or suggestions (orally or written) by any person linked to the actions of the Program. The process ends with the closure and agreement in the resolution of both parties. The process will be documented by means of a record (in a physical and digitized file).

Complaints received by EA must be addressed and classified.

Complaints received at the level of individual projects to be financed by the Program (via the contractors of each work, or departmental or municipal agencies) must be redirected to EA for management and follow-up.

## Scope

The GRM applies and may be used by any person (general population) who expresses any type of claim, complaint or query related to the activities planned by the projects to be financed by the Program.

## Dissemination of the Grievance Redress Mechanism

For the reception and registration of claims, a specific email address and a complaints mailbox will be enabled in the workshops of the contractors of projects under the Program.

Information on these means of receiving complaints must be disseminated through the different dissemination channels used by the Program, among which are:

1. **Signs at Worksites:** Each project will include the contact details of the executing agency for receiving complaints (telephone, email and website)
2. **Formal and informal meetings** in places close to the works of the projects, for the dissemination and communication of activities related to environmental preservation and conservation defined in the project, as well as to disseminate the means to address concerns and claims. In these meetings, EA's contact details for receiving complaints (telephone, email and/or website) will be disseminated.
3. **Social networks of EA and Municipalities** (WhatsApp, Instagram, Facebook, Twitter, etc.).
4. **Others** (to be agreed with the community)

The specific dissemination mechanisms should be detailed based on the information collected on the specific communities to be impacted by the benefits of the Program.

## Receipt and Registration of Claims

The following mechanisms and channels will be available for the reception of concerns:

- Email: [to be completed by MOHW]
- Phone number: [to be completed by MOHW]
- Website: [to be completed by MOHW]

## Claims Evaluation

In the case of a claim related to the work, it will be considered and responded to by the Contractor company or the Executing Agency.

In the event that the claim or complaint is rejected, the complainant will be informed of the decision and the reasons for it. To this end, relevant and understandable information will be provided in accordance with the sociocultural characteristics of the claimant.

Complaints received will be categorized according to the following:

- **NOT ADMISSIBLE:** Complaints or claims that do not meet one or more of these requirements:
    - It is not directly related to the work, its contractors, and the actions of the project.
    - Its nature exceeds the scope of GRM.
    - There is no real cause of the action.
    - There are other formal mechanisms and institutions for filing complaints according to the nature of the complaint.
    - Related to labor issues must be addressed to the corresponding instances of the construction company.
- **LOW IMPORTANCE**: This category corresponds to complaints that do not require resolution, but only require information or a certain clarification that must be provided to the complainant. This category includes complaints that have been previously evaluated and received a definitive response from the Program.
- **MEDIUM IMPORTANCE:** Complaints and claims related to health, the environment, transportation, and contractors and subcontractors.
- **HIGH IMPORTANCE:** Includes complaints related to the safety of personnel, as well as those related to the health and safety of construction workers.

Within a period not exceeding **ten working days**, the social manager of the contractor or the unit in which the complaint is registered will have to evaluate the documentation presented by the claimant.

Where possible, if additional information is required for the proper evaluation of the complaint, EA will contact the complainant within a maximum of ten working days, to obtain the necessary information. Once the complaint is completed and reviewed, project staff will proceed to register the complaint.

The file should include, along with the complaint, a summary and the name of the person who received and processed it. Registration information will be updated periodically to reflect the current status of the case until the complaint has been finalized.

## Grievance Closure and Monitoring Mechanism

The resolution of claims will be carried out through two instances:

1. **Internal**. The management of reception of claims and resolution of conflicts is the responsibility of EA and will be referred to the competent agency in the subject according to the complaint / claim.
2. **Mediation**. Cases of claims and conflicts not resolved in the first instance will be dealt with under the mediation mechanism. The person in charge of this instance must have sufficient authority to mediate for the resolution of claims and conflicts, and sufficient independence to project credibility in the parties.

## Conflict Resolution

In the event that there is no agreement between EA and a complainant, either because of a rejected concern or because there is no agreement on the solution to be implemented, the means to reach a joint agreement between the parties must be arbitrated. This may include, among others: promoting the participation of technical third parties, inviting dialogue tables, mediations, conciliations, etc.

EA shall ensure that claims handling and dispute resolution are conducted in an appropriate and comprehensive manner.

In the event that the complaint cannot be handled within the scope of the work, the interested party may present his claim through the regular Justice procedures.

The IDB's Independent Consultation and Investigation Mechanism (ICIM), available on its website https://www.iadb.org/mici/, is also available.

## Deadlines for Response to Claims

All complaints must be registered and your proposed solution must be communicated to the interested party within the following deadlines: low importance complaints will be dealt with within a maximum period of 30 calendar days, medium-importance complaints will be dealt with within 15 calendar days, and high importance complaints will be dealt with within a maximum period of 7 calendar days. The deadlines set can be adjusted by EA.

In all cases, a complaint response report will be drawn up and signed by the person who filed the complaint in accordance with the attention of the complaint. EA will systematize the complaint records and the minutes of attention of these.

The information provided will be relevant and understandable according to the sociocultural characteristics of the person who consults.

Likewise, it will be in charge of supervising the process, detecting deviations and ensuring its solution.

## Monitoring and Documentation

EA will be responsible for maintaining an up-to-date database with all documentation and information related to complaints submitted. It will also be responsible for following up on the complaint processing process, in coordination with the areas involved, and for facilitating the complainant's participation in the process.

A follow-up form will be completed for each case. Once an agreement is reached, follow-up will be followed up to confirm that the relevant resolution measures are being implemented.

The complaint registry must demonstrate that all these actions and processes were carried out in accordance with this document.

It will include:

- Date on which the complaint was registered;
- Person responsible for the complaint;
- Information on the remedies proposed/communicated by the complainant (if applicable);
- Date on which the complaint was closed; and
- The date of the response was sent to the complainant.

In the Semiannual Compliance Reports, EA will report to the IDB on the status and follow-up of the management of complaints and grievances received in the framework of the execution of the Program's projects.

## Monitoring

Any complaint closed with conformity by the complainant must be monitored for a reasonable period of time in order to verify that the reasons for the complaint or claim were effectively resolved. The estimated period for this purpose is 6 (six) months from the response and / or solution to the claim.

## Implementation Timeline

The GRM will be available throughout the execution of the Program.

## IDB Program Grievance Mechanism

In addition to the Grievance Redress Mechanism (GRM) of the Program implemented by EA, the IDB on the Project page (https://www.iadb.org/en/project/BL-L1045) has a public access mechanism with which complaints and claims that have not been resolved with the mechanism of each project can be managed.

## IDB's Independent Consultation and Investigation Mechanism

The IDB also has an Independent Consultation and Investigation Mechanism (MICI, more info at https://www.iadb.org/en/mici/mici-independent-consultation-and-investigation-mechanism), which can also be accessed to process complaints that could not be resolved at the previous two levels of grievance mechanisms.

MICI is a grievance office independent of the project teams, which facilitates dispute resolution processes to resolve concerns raised. In addition, it conducts independent investigations to determine whether the IDB Group has met its standards and improve the Group's practices.

Keep in mind that the handling of a complaint must start at the local level to be eligible at the next level. All grievance mechanisms will be available throughout the duration of the Program.

# Annex 2. Labour Management Procedure (LMP)

## Introduction

The purpose of this Labor Management Procedure (LMP) is to establish the scope and application of ESPS 2 "Labor and Working Conditions" for the BL-L1048 Program.

The Labor Management Procedure will be managed as part of the Environmental and Social Management Plan (ESMP). The requirements included in the LMP will be systematically integrated into the legal requirements of the Program, the tender documents and the contracts of the contracting companies and suppliers.

The LMP is a dynamic document and should therefore be revised and updated as necessary during the life cycle of the Program.

The LMP presents the guidelines, guidelines and minimum contents for the labor management and working conditions of the works of the Program to be fulfilled by the main contractor, the companies involved and the executing agency. The responsibility for ensuring compliance with this procedure shall be the responsibility of EA.

The LMP is governed by the principles of equality, opportunity and fair treatment ensuring that no employment decisions will be made based on personal characteristics outside the requirements inherent to the job, refraining from discrimination in any aspect of the employment relationship, such as recruitment and hiring, remuneration (wages and benefits), working conditions and terms of employment, access to training, job assignment, promotion, dismissal or retirement and disciplinary practices. Measures shall be taken to prevent and address violence, harassment, intimidation or exploitation, especially with regard to women, persons of diverse sexual orientations and gender identities, persons with disabilities, and migrant workers. Under no conditions shall child or forced labour be permitted.

A safe and healthy work environment shall be ensured, taking into account the risks inherent in the Programme and specific hazards for women, persons of diverse sexual orientations and gender identities, persons with disabilities, children (of working age, in accordance with this Performance Standard), and migrant workers. Measures shall also be taken to prevent accidents, injuries and illnesses that may arise from, be associated with, or occur during work, minimizing, to a reasonable extent practicable, the causes of hazard factors.

## Scope of the Labour Management Procedure (LMP)

Environmental and Social Performance Standard 2 "Labor and Working Conditions" of the IDB's Environmental and Social Policy Framework pursues the following objectives:

- Respect and protect the fundamental principles and rights of workers.
- Promote fair treatment, non-discrimination and equal opportunities for workers.
- Establish, maintain and improve relations between workers and the employer.

- Ensure compliance with national legislation on employment and labour.
- Protect workers, including those in vulnerable situations, such as women, persons of diverse sexual orientations and gender identities, persons with disabilities, children (of working age, in accordance with this Performance Standard) and migrant workers, workers hired by third parties and workers in the main supply chain.
- Promote safe and healthy working conditions and promote workers' health. and Prevent the use of child labour and forced labour (as defined by the ILO).[45]

This standard applies to:

- **Direct workers:** are persons employed or hired directly by the borrower to work specifically in relation to the Programme. The direct worker is employed or hired by the borrower, is paid directly by the borrower, and is subject to the borrower's instructions and day-to-day control.
- **Contract workers:** Persons engaged through third parties to perform work related to core functions of the Programme for a considerable period of time where that third party exercises continuous control over the work, working conditions and treatment of the worker in relation to the project[46]
- **Main supply chain workers**: Workers in the main supply chain, provides goods and materials to the project, where the supplier exercises control over this worker for the work, working conditions and treatment of the worker[47]

Where public employees are working in connection with the Project on either full-time or part-time basis, they will be subject to the terms and conditions of their existing public sector employment agreement or arrangement, unless their employment or hiring has been effectively legally transferred to the Project.[48]

Requirements relating to gender equality and stakeholder participation (including a grievance mechanism) should also be considered in the implementation of this Performance Standard in accordance with ESPS 9 and 10. In no case and under no circumstances shall child and forced labour be permitted.

[45] International Labour Organization.

[46] The core functions of the project are those corresponding to the construction, production and service processes that are essential for a specific activity, without which it could not continue.

[47]Primary or primary suppliers are those that continuously supply goods or materials essential to the core functions of the project.

[48] ESPS 2 is not intended to interfere with the relationship between the borrower when it comes to a government agency and its public administration officials, who are typically employed under specific terms and conditions that may reflect mandatory legal requirements.

## Description of the Project's Workforce

**Identification and characterization of workers involved in the project:**

Depending on the activities foreseen in the project, it is estimated that the organization of the workforce involved will be as follows:

1. **Direct workers:** In accordance with the organizational structure foreseen for this Program, it is considered that the direct hiring of personnel under the modality of contracting services will be coordinated by EA and are mostly linked to the hiring of personnel to carry out the supervision and technical inspections (environmental and social) of works.
2. **Project workers: It** is expected that the largest number of staff will be employed under this category. The contracting companies will carry out the construction works foreseen for each project.
3. **Workers in the main supply chain: Personnel employed by the** companies supplying inputs and infrastructure linked to the works foreseen by the Program. The Program must carry out due diligence to ensure that inputs produced under conditions of forced labor are not procured and that the working conditions of suppliers comply with current regulations with their personnel.

**Table 1. Summary Table of Type of Workers Linked to the Project**

| Type of Worker | Characteristics |
|---|---|
| **Direct Workers** | Individual Consultants directly hired by the Program |
| **Contract workers** | Workers hired by the contracting firms hired by the project.<br>It is expected by the type of works that the largest number of people involved in the Program be incorporated under this modality of contracting. |
| **Primary Supplier Workers** | The number of workers to be hired under this modality and the specific characteristics will be information provided by the contractor awarded the work. |

## Assessment of possible occupational hazards

Depending on the activities to be carried out by the staff in the project, the main risks for each of the most relevant jobs must be identified.

The existing risks involve adopting measures for the prevention of accidents and incidents with the development of safe working methods, with a correct choice and training of personnel to perform such work, in addition to using the appropriate tools and personal protection elements (PPE).

The following table provides a brief summary of the main activities, with the possible risks identified and those responsible.

**Table 2 – Example of activities and risks identified in the project**

| Activity Group | Activity | Location | Risks identified | Responsible |
|---|---|---|---|---|
| **Management and Administration** | • Planning, design, execution and implementation, evaluation and monitoring of Projects | Office: EA | No specific and significant risks are identified. Possible risks related to occupational health and safety in internal environments (ergonomic risks, accidents, stress, mental load, psychophysical factors) | EA |
| **Training and Awareness for people hired by the contractor** | • Train, inform and raise awareness especially among construction personnel both orally and in writing about the expected environmental and social problems, the implementation and control of environmental and social protection measures and the specific and relevant aspects applicable to the execution of projects in accordance with current environmental and social regulations and regulations.<br>• Conduct gender-sensitive training and code of conduct for all contracted personnel, including the management staff of the contractor company.<br>• Have updated the technical file of the personnel with the training carried out and the elements of security and personal protection delivered | Workshops / offices | No specific and considerable risks are identified as long as the facilities of the workshops comply with current regulations. Possible risks linked to occupational health and safety in internal environments (accidents, stress, mental load, psychophysical factors). | Contractor (Environmental and Social Manager) |

| Activity Group | Activity | Location | Risks identified | Responsible |
|---|---|---|---|---|
| **Civil works of infrastructure and equipment** | Carrying out interventions for improvement of water systems | [Project Locations] | Specific risks are identified that can be avoided with the corresponding security measures and protocols<br>**In workshops and place of work:**<br>• Risks of gender-based violence<br>• Occupational and community accident risks<br>**In the recruitment processes**:<br>• Risk of exclusion of vulnerable groups<br>• Exclusion of local labour and discrimination<br>• Influx of labor from outside the place.<br>**In the execution of the planned works:**<br>**Occupational hazards:**<br>• Accidents and falls of different levels<br>• Falling objects<br>• Road accidents (circulation of trucks and machinery)<br>• Temporary hearing loss due to operation of equipment and machinery.<br>**Ergonomic risks:**<br>• Forced posture; Repetitive motion; Cargo handling; Application of forces: Overexertion | Contractor Company |

| Activity Group | Activity | Location | Risks identified | Responsible |
|---|---|---|---|---|
| **Construction supervision** | Supervise the environmental and social management plan, occupational safety and health; monitor environmental, social, health and safety risks, their impacts and actions taken (including in the field, if necessary). | Office / Field activities at the site of implementation of the works | **In Office:** No specific and considerable risks are identified. Possible risks linked to occupational health and safety in internal environments (accidents, stress, mental load, psychophysical factors).<br>**In the field:**<br>Risks linked to accidents in the work area. They can be minimized if PPE is properly used. | EA / Construction Inspection |

**Description of prevention and mitigation measures to address possible risks in the workplace**

Based on the identification of the main risks by activity group, the priority measures to prevent and minimise the risks identified are detailed below, by way of example:

Prevention and mitigation measures in the workshops:

- Implement hygiene, safety and health standards and conditions
- Install workshops of size according to the number of people employed and as required by Laws and Decrees.
- Training and awareness on health and safety, non-discrimination and prevention of gender-based violence, prevention of child exploitation, forced labor, prevention of discrimination and / or violence against people from indigenous communities or vulnerable groups in compliance with the code of conduct.

Prevention and mitigation measures in staff recruitment processes:

- The contractor will seek to approach its recruitment process with a gender perspective, seeking to make equal opportunities for men and women effective.
- Personnel with criminal records related to sexual crimes, sexual harassment, prostitution and trafficking in persons will not be hired in order to protect the integrity of the population linked to the work.
- The contractor will try to prioritize the local skilled and unskilled local labor, especially of the beneficiary parties of the works and surrounding localities.
- Nondiscrimination requires that the contractor/EA not make employment-related decisions based on personal characteristics, such as gender, race, ethnic, social and indigenous origin, religion, political opinion, nationality, disability and sexual orientation that are not related to job requirements. They cannot affect equality of opportunity or treatment in employment.
- The contractor shall develop and implement the **code of conduct** and provide training for its knowledge and understanding. See Appendix A for the proposed content of the code of conduct. This Code is aimed at ensuring respectful and harmonious ties in the workplace in which the Program and its projects are developed in such a way as to ensure a work environment free of discrimination and/or violence based on gender, gender identity, sexual orientation, cultural identity, religion, ethnic or national origin, trade union membership, disability or any other discrimination typified in current legislation.

Prevention and mitigation measures in the execution of civil works of infrastructure and equipment of the project:

- Review the environment in which the tasks will be developed. If power poles, hazardous materials tanks or other items are present in adjacent areas, they could catch fire or fall on workers in the event of evacuation.
- Provision of personal protection elements (PPE) and tools and machinery in perfect working order.
- Training and advisory programs for the people employed by the contractor on the inherent risks of their tasks and the mitigation measures, actions and good practices to be implemented to ensure the health, safety and hygiene of the employees, the population, and the protection of the environment.

- Code of conduct.
- Evaluate the state of gas, electricity and water facilities near the intervention area.
- Examine the distribution of workspaces verifying that there are no elements that could interfere with a rapid evacuation.
- Identify safe areas.
- Determine accessibility to fire protection equipment, emergency lights, first aid equipment, etc. (they should always be in place of easy access).
- Define the resources available to avoid and respond to an emergency situation.
- Make an inventory of those security elements that the organization has (fire extinguishers, first aid kit, etc.).
- In the case of works carried out in the vicinity of routes, traffic management measures, signaling and communication program to the community must be extreme.

**Protocols and procedures to address cases of gender-based violence during the life cycle of the project**

The Contractor will establish reporting procedures, protocol for responses to unacceptable conduct and internal accountability measures in situations of gender-based violence within the framework of the operation.

In terms of prevention, in addition to urging the development of actions aimed at dismantling all types of situations of inequality, discrimination and exclusion in the workplace, actions can be implemented to raise awareness and train on gender issues. The training program will be defined according to the demands of the different work teams.

To address cases of gender violence, immediate contact should be made with local authorities who are experts in the field, to ensure adequate treatment of the victim of violence, providing specific advice and accompaniment.

## Grievance Redress Mechanism (GRM) for Project Labor Management

The Program has a Grievance Redress Mechanism (GRM), and at the same time the LMP has a simultaneous mechanism that aims to arbitrate the means and mechanisms to facilitate the reception of concerns exclusively (queries, claims, complaints, suggestions) of workers linked to the Projects of the Program, and respond to them in order to solve them, and to anticipate potential conflicts.

Likewise, workers may appeal directly to the courts, applying the general system in force in the country.

## Principles of the GRM for the Labour Management Procedure

Each project will have a feedback/claims management system that includes input/reception, analysis, monitoring, resolution and return to the people who are working linked to the projects.

The principles that the system will observe are the same as those that govern the general GRM of the Program:

- The interaction/claims management system will have mechanisms in accordance with the local context and the sociocultural characteristics of the people involved in each project, with special consideration and respect for the most vulnerable groups (young people, women, people with disabilities, migrants, among others).
- The complaint procedures, the process that will follow, the deadline and the resolution mechanisms will be widely disseminated for your knowledge by the interested parties, that is, by direct workers, contractors and primary suppliers.
- In all cases, a record will be kept of the reception, analysis and resolution of claims and conflicts.

**GRM Guidelines**

In general, the mechanism will follow the following guidelines:

- **Proportional:** The Mechanism will proportionally take into account the level of risk and possible negative impacts on the affected areas.
- **Culturally appropriate:** The Mechanism will be designed to take into account the local customs of the area.
- **Accessible:** The Mechanism will be designed in a clear and simple way so that it is understandable to all people. There will be no cost related to it.
- **Anonymous:** The complainant may remain anonymous, as long as it does not interfere with the possible solution to the complaint or problem. Anonymity is distinguished from confidentiality in that it is an anonymous complaint, the personal data (name, address) of the complainant are not recorded.
- **Confidential:** The Program will respect the confidentiality of the complaint. Information and details about a confidential report will only be shared internally, and only when it is necessary to report or coordinate with the authorities.
- **Transparent:** The process and operation of the Mechanism will be transparent, predictable, and readily available for use by the population.

**Management of the specific GRM for the Labor Management of the projects of the Program**

The procedure begins with the presentation of the consultation, claim, complaint and / or suggestions (orally or written) by any worker linked to the works. The process ends with the closure and agreement in the resolution of both parties (the claimant and the contractor). The process will be documented by means of a record (in a physical and/or digitized file).

Complaints received by all means of receipt enabled during the implementation of the Project must be attended and classified.

The claims received via the contractors of each work, or agencies of the municipal jurisdiction (if applicable) must be redirected to EA for management.

**Reception and registration of claims for the labor management of the projects of the Program**

- Office of contractors (specific modality for operators and employees)
- Suggestion box / complaints book available in the workshopis (Specific for operators and employees).
- EA offices (via telephone, mail, or other way enabled to make the claim) specific for direct employees, contractors and workers in the main supply chain).
- Offices of the municipalities involved.
- Others (to be defined during the course of the life of the Program).

**Claims Evaluation**

All claims that enter through the various channels must be registered and managed taking into account the criterion of proportionality (level of risk and possible negative impacts).

In the case of a claim related to employees of the contractor, it will be considered and responded to by the Contractor company with supervision of EA.

EA must also resolve all complaints and queries related to the works of the projects of the Program that occur in the labor field of its offices and dependencies.

After receiving a claim, it must be evaluated by EA in terms of severity, safety implications, complexity and impact, among others, to take immediate action as appropriate. Complaints must be answered in a timely manner according to the urgency of the order.

In the event that the claim or complaint is rejected, the worker will be informed of the decision and the reasons for it. To this end, pertinent, relevant and understandable information will be provided according to the sociocultural characteristics of the workers.

When possible, if additional information is required for the correct evaluation of the complaint, the EA team will contact the worker to obtain the necessary information.

The file must include, together with the complaint, a summary of the procedures and steps taken. Registration information will be updated periodically to reflect the current status of the case until the complaint has been finalized.

**Conflict resolution**

In all cases EA must ensure that the attention of claims and the resolution of conflicts are carried out in an adequate and timely manner, and that all workers linked to the projects of the Program have a satisfactory management of their claim.

**Responding to Complaints**

Low-importance claims will be dealt with within a maximum of 30 calendar days, medium-importance claims will be dealt with within 15 calendar days and high-importance claims will be

dealt with within a maximum of 7 calendar days. The established deadlines can be adjusted by EA.

**Monitoring and documentation**

EA will be responsible for maintaining an up-to-date database with all documentation and information related to complaints that are submitted as part of labor management. This team is also responsible for following up on the complaint processing process, in coordination with the areas involved, and for facilitating the participation of the worker in the process.

The complaint registry must demonstrate that all of these actions and processes were carried out in accordance with this document.

It will include:

- Date on which the complaint was registered;
- Person responsible for the complaint;
- Information on the corrective measures proposed/communicated by the complainant (if applicable);
- Date on which the complaint was closed; and
- The date of the reply was sent to the complainant.

**Deadlines**

All complaints must be registered and your proposed solution must be communicated to the interested party within a stipulated period (30 days is suggested). The deadlines set can be adjusted.

**Monitoring**

Any complaint closed with compliance by the complainant must be monitored for a reasonable period of time in order to verify that the reasons for the complaint or claim were effectively resolved. The estimated period for this purpose is 6 (six) months from the response and / or solution to the claim.

As initially indicated, this document is dynamic in nature, therefore the specific procedures for the implementation of the Grievance Mechanism for Labor Management will be strengthened with the implementation of each project.

# Appendix A - Code of Conduct - Model and Suggested Content

**Model Standard Code of Conduct for Workers**

We are the Contractor company [enter the name of the company Contractor]. We have signed a contract with [enter employer name] to [enter job description, consulting, folder preparation contract, construction or site supervision, work as a skilled worker, watchman, construction assistant, other].

These activities will take place at [enter the Site and other places where the work will be carried out]. Our contract obliges us to implement measures to address environmental and social risks related to assigned work activities, including risks of sexual exploitation, sexual abuse and harassment.

This Code of Conduct is part of our measures to address environmental and social risks related to the construction site [..... of the BL-L1048 Program**.** It applies to all our personnel at the managerial, administrative or technical level, workers and other employees at the Construction Site or other places where the Works are being carried out. It also applies to the personnel of each subcontractor and to any other personnel who support us in the execution of the Works and in the administration and management of the Program. All of these individuals are referred to as "Contractor Personnel" and are subject to this Code of Conduct.

This Code of Conduct identifies the behavior we require of all Contractor and executing agency personnel.

Our workplace is an environment where unsafe, offensive, abusive, or violent behavior will not be tolerated and where all people should feel comfortable raising issues or concerns without fear of retaliation.

Contractor/EA personnel shall:

1. Carry out his duties competently and diligently;

2. Comply with this Code of Conduct and all applicable laws, regulations and other requirements, including requirements to protect the health, safety and welfare of other contractor personnel and any other person;

3. Maintain a safe working environment including:

- ensure that workplaces, machinery, equipment and processes under the control of each person are safe and free from health risk;
- use the required personal protective equipment;
- use appropriate measures relating to chemical, physical and biological substances and agents; and
- Follow applicable emergency operating procedures.

4. Bring up work situations that he/she believes are unsafe or healthy and move away from work situations that he/she reasonably believes pose an imminent and serious danger to his/her life or health;

5. Do not use violence and treat others with respect, and do not discriminate against specific groups such as women, migrant workers, children and people with disabilities;

6. Not engaging in sexual harassment, which means unwanted sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature with the contractor's or Employer's other personnel;

7. Not engaging in Sexual Exploitation, which means any actual or attempted abuse of position of vulnerability, differential power or trust, for sexual purposes, including, but not limited to, profiting monetarily, socially or politically from the sexual exploitation of another. In Bank-financed operations/projects, sexual exploitation occurs when access to Bank-financed Goods, Works, Consulting or Non-Consulting services is used to extract sexual gain;

8. Not or engage in sexual abuse, which means actual or threatened physical intrusion of a sexual nature, either by force or under unequal or coercive conditions;

9. Engage in any form of sexual activity with persons under the age of 18, except in the case of a pre-existing marriage;

10. To complete the relevant training courses to be given in relation to the environmental and social aspects of the Contract, including health and safety, sexual exploitation and abuse (SA) and sexual harassment (SA) matters;

11. Not to retaliate against anyone who reports violations of this Code of Conduct, either to us or to the Employer, or anyone who makes use of the Contractor's Staff Grievance Management Mechanism or the Program Grievance Management Mechanism.

12. In special cases such as chance finds, training should be given on the heritage value of places, objects for the country. Avoiding looting by carelessness or lack of vigilance.

RAISE CONCERNS

If any person observes behavior that they believe may represent a violation of this Code of Conduct, or that otherwise concerns them, they should raise the issue promptly. This can be done in any of the following ways:

1.Contact [enter the name of the Contractor/EA's Social Expert with relevant experience in handling cases of sexual exploitation, sexual abuse and harassment, or if such person is not required under the Contract, another person designated by the Contractor to deal with these matters] in writing at this address [write contact address] or by telephone at [insert telephone number] or in person at [place of contact] ;

2.Call [write phone number] to contact the contractor/EA hotline and leave a message.

The identity of the person shall be kept confidential unless the necessary allegations are reported under national law. Anonymous complaints or denunciations may also be filed and given all due and appropriate consideration. We take all reports of potential misconduct seriously and will investigate and take appropriate action. We will provide recommendations to service providers who can help support the person who experienced the alleged incident, as appropriate. There will be no retaliation against any person who raises a good faith concern for any behavior prohibited by this Code of Conduct. Such retaliation would be a violation of this Code of Conduct.

CONSEQUENCES OF VIOLATING THE CODE OF CONDUCT

Any violation of this Code of Conduct by Staff may result in serious consequences, including termination and possible referral to legal authorities.

FOR CONTRACTED PERSONNEL:

I have received a copy of this Code of Conduct written in a language I understand. I understand that, if I have any questions about this Code of Conduct, I may contact [enter contractor/EA contact person(s) with relevant experience (including sexual exploitation, abuse and harassment cases in handling those types of case cases)] requesting an explanation.

Name of staff: [insert name]

Signature:

Date: [day month year]

Countersignature of the authorized representative of the Contractor / EA:

Signature:

Date: [day month year]

# Annex 3. Guidelines for the Procurement of Solar Panels

MOHW must carry out a due diligence process to ensure that solar panels produced under conditions of forced labor are not procured through the Program, and that the working conditions of suppliers comply with current regulations with their personnel.

**Table 40** presents guidelines to orient the evaluation of solar panel suppliers.

**Table 40. Labor Evaluation of Solar Panel Suppliers.**

| Thematic | Key questions | How to verify |
|---|---|---|
| **Traceability protocol** | Does the solar panel supplier have a traceability protocol? | Existing traceability protocol |
| **Policy Supplier Social Responsibility** | Does the supplier have a corporate social responsibility policy? If so, can you share it? | Presentation and analysis of the supplier's environmental and social responsibility policy or other similar document (Human Resources Procedures/Policies), and environmental and social responsibility monitoring reports. |
| | Does the policy address areas covered by International Labour Organization (ILO) labour code standards?<br>Do you communicate your policy to your suppliers? | |
| | Does the supplier's policy have procedures in place to identify cases of forced labor, address them, and report them to authorities? | |
| **Origin** | Can you show where the product is made and where the inputs come from? For example, can you explain where the module, cells, platelets, and polysilicon come from? Are they developed in places where independent audits are allowed? | Documents of origin of parts and supplies of solar panels. Commercial licenses of suppliers. |
| **Independent supplier audit reports** | Can you provide the latest independent audit reports on the traceability of your solar panel supplier?<br>Who conducted the audit? Was it done by a qualified and independent third party?<br>Are audits announced or unannounced?<br>How often are audits performed? | Presentation and analysis of the latest audits on traceability. |
| **Historical** | Are there past or current legal cases against your provider regarding employment issues?<br>Are there any past or current complaints of conditions that may amount to forced labor that have been reported? | Articles from the press or associations for the defense of workers.<br>Information contained in public records, for example, company records and public documents relating to violations of applicable labor laws, including reports from labor inspections and other law enforcement agencies. |

# Annex 4. Affidavit model for the Procurement of Solar Panels

AFFIDAVIT MODEL

Business name: …….

In my capacity as owner/representative/proxy of the firm ……. ……., manifest as an Affidavit that I am not aware of the existence of forced labor in the production of the solar panels that we provide…… …….. .

……

Signature, explanation and type and identification number

of the Owner/Representative/Attorney


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