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Ministry of Education, Guyana
ELIMINATING ILLITERACY, MODERNIZING EDUCATION & STRENGTHENING TOLERANCE

SUPPORT FOR EDUCATION RECOVERY AND TRANSFORMATION PROJECT



Environmental and Social Assessment and Environmental and Social Management Plan

June 2023

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ACRONYMS

CCLIP	Conditional Credit Line for Investment Project
C-ESMP	Contractor Environmental and Social Management Plan
CHPA	Central Housing and Planning Authority
CMIP	Coupled Model Inter-Comparison Project
CRU	Climatic Research Unit
EAMP	Environmental Assessment and Management Plan
EMIS	Education Management Information System
EPA	Environmental Protection Agency
ERP	Emergency Response Plan
ESA	Environmental and Social Assessment
ESHS	Environmental, Social, Health and Safety
ESIC	Environmental and Social Impact Categorization
ESL	English as a Second Language
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESP	Education Sector Plan
ESPF	Environmental and Social Policy Framework
ESPS	Environmental and Social Performance Standards
FPIC	Free Prior and Informed Consent
GBV	Gender Based Violence
GhG	Greenhouse Gas
GNBS	Guyana National Bureau of Standards
GRM	Grievance Redress Mechanism
GSDS	Green State Development Strategy
GWI	Guyana Water Incorporated
ICT	Information and Communication Technology

IDB	Inter-American Development Bank
IPCC	International Panel on Climate Change
ITCZ	Inter Tropical Convergence Zone
LCDS	Low Carbon Development Strategy
MHPRP	Multi-Hazard Disaster Preparedness and Response Plan
MoE	Ministry of Education
NCERD	National Center for Education Resources Development
NDC	Neighbourhood Democratic Council
NDS	National Development Strategy
NIDRMP	National Integrated Disaster Risk Management Plan and Implementation Strategy
PAHO	Pan-American Health Organisation
PPE	Personal Protection Equipment
PTA	Parents Teachers Association
REDO	Regional Education Officer
RDC	Regional Democratic Council
SCA	Socio-cultural Analysis
SEA	Sexual Exploitation and Abuse
SEN	Special Education Needs
SH	Sexual Harassment
SPU	Special Project Unit
SRES	Special Report on Emissions Scenarios
UNCRC	United Nations Convention on the Rights of the Child
USEPA	United States Environmental Protection Agency
WHO	World Health Organisation

EXECUTIVE SUMMARY

The Government of Guyana, with the support of the Inter-American Development Bank (IDB), is planning on increasing the efficiency and effectiveness of the delivery of primary education. This is being done through a project currently being developed by the Ministry of Education (MoE) and the IDB under the Conditional Credit Line for Investment Project (CCLIP) *"Transforming Guyana's Education Sector"* and the first individual operation *"Support for Educational Sector".*

This project is intended to support the transformation of the education sector to ensure that the country has the required human capital to manage and drive economic growth and diversification. The specific objectives of the project are to improve and expand access to safe and improved learning environments in select schools; and to expand and improve educational services for vulnerable students. The Support for Educational Recovery and Transformation project has two components. Component 1 focuses on the creation of improved physical and digital learning spaces and Component 2 focuses on improving the quality of services for vulnerable and special education needs students.

The Support for Educational Recovery and Transformation Project will provide for infrastructure improvement and provision of equipment to support the transformation of the primary education sector to ensure that the country will have the required human capital to manage and drive economic growth and diversification. Improvement in current school's infrastructure will include the construction of six new schools and extension, rehabilitation, or outfitting of at least nineteen schools, most of which are located in the hinterland. The project will provide more qualified staff to design and monitor the construction and rehabilitation of schools and technical assistance to prepare designs for schools that will be included in the second operation for either construction, rehabilitation or expansion. The project will also provide the enabling conditions (connectivity, devices, and capacity building) and pedagogical support to improve the learning environment by integrating digital technologies. The project will also strengthen the Regional Special Needs Education Centre in its work to support the mainstreaming of students with disabilities and learning difficulties and contribute to providing better education services in the schools. The potential schools and communities to benefit from the project are scattered across the country, but mostly in the hinterland regions, i.e., Regions 1, 8 and 9. These regions consist of significant indigenous populations.

The IDB has classified the project as Category B, which means it is likely to cause mostly local and short-term negative environmental and associated social impacts and for which effective mitigation measures are readily available. As such, it was determined that an Environmental and Social Assessment (ESA) and Environmental and Social Management Plan (ESMP) be prepared to assess the potential negative environmental and social impacts associated with the project's interventions and in particular the construction activities, and to identify measures of prevention and mitigation of these impacts.

This ESA and ESMP aims at identifying potential environmental, social, health and safety risks associated with the implementation of the project, and developing recommendations to mitigate and manage such risks.

The project activities are expected to comply with all national policies and plans, legislation and guidelines, especially those relating to the environment, social, health and safety. The project will also have to comply with the IDB's Environmental and Social Management Framework, including the Environmental and Social Performance Standards relevant to the project. The MoE will have direct oversight of the project and is likely to establish a Project Implementation Unit to manage the project implementation. The Environmental Protection Agency is also expected to play a role in ensuring environmental compliance, especially for the new schools' construction which may require Construction Permits. The contractors will be required to have as part of their project team an

Environmental, Social, Health and Safety Personnel who will be required to ensure the environmental measures set out in the Environmental and Social Management Plan are implemented.

During the ESA and ESMP preparation process stakeholders' engagements were conducted with key stakeholders. The general feedback is that the communities which are to benefit from the project interventions are eagerly awaiting the implementation of the project since it will result in improvements in primary education delivery and other benefits. Within these communities students are currently travelling long distances to attend primary schools, and the existing schools are overcrowded. These situations are impacting negatively on the students, teachers and parents within the communities. There was no significant concern raised by stakeholders as it relates to the project. Recommendations provided are included in the ESMP. From the disclosure process and stakeholder consultations on the draft ESA and ESMP, there were no significant concerns raised by stakeholders as it relates to the project.

For the new schools construction, five of the project sites are located within developing housing schemes and are allocated for the establishment of educational facilities. The lands are owned by the Government of Guyana. The other new school construction site is located within an indigenous community and the land was donated by a resident for educational purposes. For the schools to be extended, there are available areas within the schools' compounds to facilitate the extension. The sites for the new schools construction and extension are free from any encumbrances such as buildings and other permanent or semi- permanent structures or use. As such, there will be no displacement or disruption to livelihoods.

This ESA assessed the potential impacts of project activities across the various components of the project. The project is not complex and most of the impacts will occur during the construction phase and are short term, localised, and are low to medium risks. Most of the direct impacts will occur within the school environment itself. Impacts relating to the wider community are mainly relevant to schools located within indigenous communities, or where the new schools construction and extension will be done. Importantly, no Critical Risks were identified to be associated with pre-mitigation impacts of the project. The key environmental, social, health and safety impacts of the proposed project are:

- Dust nuisance
- Noise generation
- Surface water sedimentation/contamination
- Workers' health and safety
- Safety of students and teachers
- Public safety
- Disruption of school activities
- Sexual harassment of students, teachers and community members by construction workers

It should be noted that during the stakeholder engagement, personnel engaged from the schools identified for rehabilitation/extension indicated that they are willing tolerate any construction related noise or dust, and even disruption to school activities, given the benefits the project will have to the schools and the communities. No impact to the biological environment is foreseen since five of the sites for the new schools construction are within developed housing schemes, and the other site is located within an area consisting of secondary forest.

Several potential positive impacts from the implementation of the project were also identified, including:

- Increases in wellbeing and quality of life for students, teachers and parents
- Temporary employment for persons from local communities
- Reduction in transportation cost other transportation challenges to and from school

- Use of renewable energy in the form of solar power
- Improve education delivery in the hinterland areas, thus reducing the gap in education between hinterland and coastal areas

Although the project scope is not yet finalized, a comprehensive ESMP has been prepared outlining the measures which should be implemented during the planning, construction and operational phases of the project to mitigate and manage the ESHS risks.

In addition, measures to maximise the positive impacts of the project were also identified. Further, provisions have been made and guidance provided for detailed management measures to be determined and implemented during the pre-construction and construction phases, and as part of the Contractor Environmental and Social Management Plan (CESMP) which is to be prepared and implemented by contractors working on the various aspects of the project. Measures are included for the mitigation of the following:

- Dust and noise suppression
- Protection of water quality
- Collection and disposal of waste to be generated including construction waste, e-waste, etc.
- Handling and storage of fuel and other hazardous materials
- Measures to address the disruption of school activities
- Health and safety measures for workers
- Measures to ensure the safety of the public, including teachers and students

The measures outlined in the ESMP should be communicated early in the process to the contractors so these can be addressed prior and during construction. The contractors should be required to provide the necessary awareness to workers to ensure they are aware of their responsibilities in ensuring compliance. The work sites should be monitored for non-compliance and corrective actions are to be implemented promptly. Environmental monitoring should also be done by the contractors, and they should be required to implement an Emergency Response Plan.

Prior and during project implementation it is recommended that the communities be kept informed on the project and the progress of works. As such, a Stakeholder Engagement Plan is prepared as a separate document, but as part of the management framework for the project. The relevant stakeholders should be kept informed of the project and allowed the opportunity to provide feedback and recommendations. This is especially important in indigenous communities. In addition, a project Grievance Redress Mechanism is also included so as to enable any stakeholder who may have an issue with the project or project related activities to have it addressed in an understandable, transparent and fair process. The contractors are also expected to prepare and implement a Grievance Redress Mechanism for workers.

Implementation of the recommended management and mitigation measures during pre-construction, construction and operational phases will ensure that potential project impacts are prevented or reduced. The scheduling of the actual works during term breaks, or at least to outside normal school hours will greatly prevent most of the impacts from occurring. Importantly, the contractors should prepare the CESMP and the implementation of this plan should be stringently monitored by the Ministry of Education and the Supervisory Consultants.

Once the recommended measures are implemented during the project execution it is envisaged that any potential adverse impacts will be prevented or reduced, thereby enabling the project to positively benefit the environment and the communities. Implementation of the project will contribute positively to the improvement of primary education in Guyana, especially in the beneficiary communities which are mostly located in the hinterland. As such, the project has been welcomed by all stakeholders engaged during the ESA and ESMP preparation process.

1.0 INTRODUCTION

1.1 Overview

Guyana has progressively moved towards achieving universal primary education in an effort to ensure that children in the country are provided with the necessary skills and literacy in order to matriculate to higher institutions of learning, and to meet its target as outlined in the United Nations Sustainable Development Goal 4: Quality Education.

As a targeted approach, Guyana has prepared an Education Sector Plan (ESP) 2021-2025 focusing on Eliminating Illiteracy, Enhancing Tolerance and Improving Education. The ESP sets five priorities: (a) Improving governance and accountability; (b) Improving performance at all levels; (c) Improving the efficiency of the education system; (d) Reducing inequities in education; and (e) Contributing to lifelong learning and employability.

With the support of the Inter-American Development Bank (IDB), the Government of Guyana is planning on increasing the efficiency and effectiveness of the delivery of primary education by focusing on Accelerated Learning and Skills Development, Support for Students at Risk, Technology Integration into Teaching and Learning, Education Management Information System (EMIS) and School Infrastructure Improvements. This is being done through a project currently being developed by the Ministry of Education and the Education, Social Sector (SCL/EDU) of the IDB under the Conditional Credit Line for Investment Project (CCLIP) “Transforming Guyana’s Education Sector” and the first individual operation “Support for Educational Sector”. This project is intended to support the transformation of the education sector to ensure that the country has the required human capital to manage and drive economic growth and diversification.

The specific objectives of the first operation are to:

i. improve and expand access to safe and improved learning environments in select schools, and; and
ii. expand and improve educational services for vulnerable students.

The Support for Educational Recovery and Transformation project has two components. These are:

- Component 1: Creation of improved physical and digital learning spaces
- Component 2: Improving the quality of services for vulnerable and special education needs students

Improvement in current school’s infrastructure will include the construction of six new schools, extension of and rehabilitation, extension and outfitting of at least nineteen schools, most of which are located in the hinterland. The project will provide more qualified staff to design and monitor the construction and rehabilitation of schools and technical assistance to prepare designs for schools that will be included in the second operation for either construction, rehabilitation or expansion. The project will also provide the enabling conditions (connectivity, devices, and capacity building) and pedagogical support to improve the learning environment by integrating digital technologies. The project will also strengthen the Regional Special Needs Education Center in its work to support the mainstreaming of students with disabilities and learning difficulties and contribute to providing better education services in the schools. The proposed interventions align with the Government’s responsibility of providing adequate facilities to reduce facilities inequality, overcrowding, and other variables that prevent the access of education. The areas identified for new facilities and school infrastructural extensions have been selected based on the needs assessment conducted within each region by the Ministry of Education and was provided to the IDB for consideration. The project is intended to support easier access to primary education to newer communities within Guyana, and

ease the overcrowding of existing primary schools within more established communities in order to mitigate the unequal delivery of education.

1.2 Background to the ESA-ESMP Preparation

Component 1 of the project requires civil works. The project will offer support to the primary education system to construct six new primary schools, and extend, rehabilitate and or outfit at least nineteen existing primary schools located mainly in the hinterland areas. According to the Bank's Environmental and Social Policy Framework (ESPF), the project has been classified as a Category B. Under this classification, the project is not likely to generate any significant environmental or social impact through the application of effective mitigation measures and the application of the Banks's safeguards measures. However, in order to satisfy the requirements of the Banks' Environmental and Social Performance Standards (ESPS), this Environmental and Social Assessment (ESA) is being conducted and an Environmental and Social Management Plan (ESMP) prepared. The ESA and ESMP is required to identify potential social and environmental impacts of the project and ways to mitigate those impact at each phase of the programme.

In addition to the ESA and ESMP a Stakeholder Engagement Plan is to be prepared. The Consultancy was supposed to determine the need for the preparation of a Social-Cultural Analysis (SCA), a Resettlement Plan or Livelihood Restoration Plan and an Indigenous Peoples Framework. Based on the assessment done of the project, it was determined that a Resettlement Plan or Livelihood Restoration Plan and an Indigenous Peoples Framework were not required, and only the SCA is to be prepared. Further, an Environmental and Social Management Framework (ESMF) to address other operations under the project is to be prepared.

The Education, Social Sector (SCL/EDU) of the IDB has engaged a consultant to prepare the ESMS and ESA/ESMP for the project. An initial ESA/ESMP was prepared during the period June to September 2022. Due to adjustments in the project scope, including the addition of schools to benefit under the project, the ESA/ESMP was revised during the period February to May 2023.

1.3 Objectives and Scope of the ESA and ESMP

The project was designated as a Category B under the Bank's impact classification, which suggests that its implementation will cause mostly local and short-term negative environmental or social impacts and for which effective mitigation measures are known and readily available. This ESA and ESMP aims to investigate and provide guidance on the potential impacts of the project's implementation, and advice on mitigation measures. Importantly, the ESA and ESMP intends to satisfy the requirements of the Bank's ESPS.

The ESA and ESMP seeks to:

- Present a description of the project including activities, locations, etc.
- Assess the policy, regulatory and institutional framework for the project, including identifying the relevant national and international policies, legislation, standards and guidelines, including the IDB's ESPS, which define the implementation framework of the project, as well as the responsible institutions.
- Assemble relevant physical and social baseline information on the project areas.
- Identify and engage with key project stakeholders, and present and address their feedback and concerns, including the project beneficiary communities.
- Identify and assess the potential impacts of the project on the physical, biological and socioeconomic environment, distinguishing construction and post construction phases impacts.

- Recommend measures to prevent or reduce adverse impacts to acceptable levels for both the construction and post construction phases of the project.
- Prepare an Implementation Framework for the ESMP, including outlining roles and responsibilities, contractor plans, monitoring and reporting requirements, stakeholders' engagement, grievances mechanism, training, etc.

1.4 Methodology

The ESA and ESMP were prepared in accordance with the Terms of Reference for the consultancy, and in fulfilment of the Bank's Environmental and Social Policy Framework and Environmental and Social Performance Standards. Preparation was also guided by the IDB's guidelines for the conduct of ESA and other environmental and social analysis which were shared along with the Terms of Reference. To ensure the national requirements are satisfied the conduct of the ESA and preparation of the ESMP was also guided by the Environmental Protection Agency (EPA) Guidelines for the preparation of Environmental Assessments and Management Plans.

At the commencement of the ESA and ESMP preparation process meetings were held with key project personnel from the IDB including the environmental and social specialists to gain an understanding of the programme, the key deliverables to be prepared, and the areas to be addressed. A review of the Bank's ESPS and other guidelines was also done to better understand the requirements. Thereafter, a desktop review was conducted on the available literature regarding the education sector in Guyana with specific emphasis on the delivery of primary education. This was aimed at understanding the components of the education sector and its challenges. A review was also conducted on the policies, strategies, legislation and international conventions and obligations of the Government of Guyana. Thereafter, the preparation of the ESMP was undertaken in three principal phases:

- Phase 1 – Establishing the baseline and stakeholder engagement,
- Phase 2 – Review of information and impact analyses, and
- Phase 3 – Mitigation and management planning.

Phase 1: Establishing the Baseline and Stakeholder Engagement

Phase 1 of the methodology involved establishing baseline information on the project. This was collected during the process of the desktop review, site visits, key stakeholder feedback, and the collection of images and GPS coordinates.

Site visits were conducted to all the sites where there will be new schools construction and to a sample (six of the likely nineteen schools) which will be rehabilitated, extended and or outfitted. During the site visits specific information about the project locations were collected, such as the situation of the land earmarked, land size and suitability, flood risk and drainage of the site, competing and surrounding land uses, availability of utility services, etc. In the cases of extensions, the availably of sufficient space in or near the existing schools, alternative access points to the schools' compound, drainage, and physical liabilities were examined.

A stakeholder mapping process was undertaken to identify the stakeholders relevant to the project who should be engaged during the conduct of the ESA. During the site visits, engagements were done with key stakeholders of the project such as Regional Education Officer (REDO), Ministry of Education Officials, head teachers, member of the Local Government administration and members of the community. The stakeholder feedback process was used to introduce the project to the key stakeholders and gauge their initial perception of the project, their expectations, and their concerns. The engagement also provided information on the surrounding communities and their immediate needs as it relates to the implementation of the project.

The project sites were photographed and drone images were collected to establish a clear understanding of the physical characteristics of the proposed sites for new constructions and extensions. In addition, the GPS coordinates were also collected.

Phase 2: Review of information, identification of impact, and impact analysis

Based on feedback from stakeholders, observations during the site visits and review of available secondary sources of information, potential impacts of the project were assessed by establishing the potential interactions between the anticipated project activities and the characteristics of the existing environmental and social settings. Short-term and long-term impacts, positive and negative impacts, localised, local and regional impacts, and direct and indirect impacts were identified. The risks associated with these impacts were also assessed and were based on the significance and likelihood of the impacts occurring.

Phase 3: Mitigation and Management Planning

During the site visits, local representatives provided recommendations on measures which may be implemented to manage and mitigate potential impacts which can arise during the implementation of the project. Mitigation and management planning was then conducted to identify additional feasible and practical measures to reduce and mitigate the potential negative impacts, as well as to maximise the positive impacts. Best practices in keeping with the Bank's safeguards were also incorporated in the mitigation and management plan. In addition, procedures to be undertaken in the event of an emergency situation were examined and documented, and a framework was proposed to monitor and assess the effectiveness of the mitigation measures.

Stakeholder Engagement and Disclosure of Draft ESA/ESMP and SCA and SEP.

The draft ESA and ESMP, along with the SEP and SCA, having been determined to be fit for disclosure by the IDB, was posted on the Ministry of Education website. A stakeholder consultation session was held via the ZOOM platform on September 06, 2022 at 10:00hrs. The ZOOM platform was chosen as the most efficient method of disclosure since it enabled participants from the different project locations and project areas of influence to be engaged and involved at the same time. This was also a measure of ensuring the safety of participants in preventing the spread of COVID 19. The report from the stakeholder consultation session is included as Appendix C.

1.5 Organization of the ESA and ESMP

The document is organized as summarized below:

- **Executive Summary** – This presents a brief description of the ESA and ESMP including the key impacts and the management and mitigation measures recommended.

- **Chapter 1: Introduction -** This Chapter provides an introduction to the project, background information, and the aims and objectives of the ESA and ESMP.

- **Chapter 2: Project Description -** This Chapter provides information on the project, including its components and sub components, as well as the projected outcome of the project.

- **Chapter 3: Policies, Legislative and Institutional Framework** - This Chapter provides a description of the national policies, the various legislation, international and regional policies and agreements, IDB environmental and social safeguards and national institutions which are relevant to the implementation of the project, including the applicability and compliance with each of the 10 IDB ESPS.

- **Chapter 4: Project Environment** – This Chapter identifies the Project's area of influence and provides a description of the baseline conditions, including the physical, biological and socio-economic settings of the project.

- **Chapter 5: Summary of Findings from Site Visits and Stakeholder Engagements –** This Chapter presents a summary of the findings of the field visits to some of the schools identified for project intervention and also summarizes stakeholder engagement. In addition, the public disclosure process for the draft ESA/ESMP, SEP and SCA are described in this Chapter.

- **Chapter 6: Impact Assessment** – This Chapter assesses the potential environmental and social impacts of the project.

- **Chapter 7: Environmental and Social Management Plan** – This Chapter presents measures to manage and mitigate potential impacts of the project as well as measures to respond to any emergencies which may occur during project implementation.

- **Chapter 8: ESMP Implementation Framework** – This Chapter outlines monitoring activities to be undertaken to determine compliance with the environmental and safety requirements as well as to determine the effectiveness of the mitigation and management measures.

- **Conclusion**

- **References**

- **Appendices**

2.0 PROJECT DESCRIPTION

2.1 Project Aim and Objectives

The Transforming Guyana's Education Sector Programme is aimed at supporting the transformation of the primary education sector to ensure that the country will have the required human capital to manage and drive economic growth and diversification. The objective is to contribute to the development of human capital needed to manage and drive economic growth and diversification as outlined in Guyana's National Development Plan. The programme is being implemented through two operations over a period of 10 years, with each operation expected to have an implementation period of 5 years. The two operations complement each other but are independent. The Support for Educational Recovery and Transformation Project is the first of these two operations. It lays the foundation for the transformation of the primary education sector, most importantly addressing the unequal delivery of education across regions. The general objective of the first operation of the CCLIP is to support the transformation of the education sector to meet the requirements of the 21st century. The specific objectives are:

i. improve and expand access to safe and improved learning environments in select schools; and
ii. expand and improve educational services for vulnerable students.

The first operation will:

i. expand quality learning spaces in areas with high demand for education that are sustainable and resilient to climate change and incorporate water and energy efficiency measures; and
ii. improve the learning environment in schools in the Hinterland regions 1,7,8 and 9 by upgrading the physical and digital school infrastructure to meet the standards of the 21st century and providing essential services, such as electricity, water, and connectivity and digital devices to support Ministry of Education's Information and Communication Technology (ICT) strategy and foster digital transformation.

The program will also focus on the Continuous Professional Development of teachers to improve their teaching of 21st century skills and child-centered pedagogies. At the national level, the program will strengthen MOE's capacity to provide better and more services for vulnerable and special education needs (SEN) students including the development of a language policy that will guide interventions for indigenous students in the future. The initiatives will be closely monitored and evaluated prior to scaling up. The first operation is estimated to cost US$90 million and will be implemented by the Ministry of Education (MoE).

The second individual operation will continue to support the transformation of education possibly in early childhood and primary and education, professional development of teachers, and provision of quality education content available in different languages. In addition, it will continue to create quality learning environment by upgrading school infrastructure according to the updated non-academic building standards coupled with climate change resiliency measures and focus on digital transformation by providing more schools with connectivity and devices to access different modalities of educational content.

2.2 Project Components

The Support for Educational Recovery and Transformation project has two components. These are described below:

Component 1: Creation of improved physical and digital learning spaces (US$76.1 million). The component contributes to achieving objective (i) of the operation and will improve the quality and sustainability of the physical and digital infrastructure. It has the following sub-components:

- ***Sub-component 1.1: Institutional Strengthening (US$ 2.5 million).*** This subcomponent will strengthen the Special Project Unit (SPU) by providing more qualified staff (consultants) to design and monitor the construction and rehabilitation of schools. Loan resources will provide additional human resources to the SPU including an engineer, architect, environmental safeguard specialist, social protection specialist, administrative assistant, and procurement officer; and one engineer for each regional office (Regions 1,7,8,9 and 10). The SPU Chief engineer will be coordinating the work of all the additional consultants. Loan resources will be used to provide laptops, training, software licenses for the new members as well as vehicles to ensure that MoE can supervise all civil works. Loan resources will also finance technical assistance to assist the SPU in finishing the update of the non-academic standards and the development of a prototype for primary schools following the 7 principles of Universal Design.

- ***Sub-component 1.2: Expand access to primary education with a focus on resiliency (US$20.1 million).*** This subcomponent will finance the construction of 6 new primary schools following updated non-academic standards, incorporating climate sustainability and resilience criteria (promoting water and energy efficiency, and using building materials with low embodied energy equivalent to an EDGE certification), and connectivity. The schools will be built in the following areas: Recht Door Zee, Tuschen Housing Scheme, Wisroc, Tabatinga, Huradiah/Cabora and Little Diamond. Loan resources will finance:

  (i) design and supervision consulting services;
  (ii) construction works by qualified contractors;
  (iii) materials and equipment for the schools including modular furniture; and
  (iv) the development of maintenance plans and training for headteachers (principals) and teachers about maintenance requirements.

- ***Sub-component 1.3. Rehabilitation, extensions and outfitting of schools (US$41.3 Million).*** This sub-component will finance the upgrading of at least 19 existing primary schools using the following selection criteria: a) enrolment rates, b) deficient infrastructure conditions according to school mapping database, and c) location in Hinterland regions. The projected work includes retrofitting and extension of existing facilities aligned with the updated non-academic standards, including increased comfort in classrooms, accessibility for persons with disability, reduced energy and water consumption equivalent to an EDGE certification, provision of essential services, and connectivity. Loan resources will be used to finance the same goods and services as listed in Sub-component 1.2.

- ***Sub-component 1.4. Designs for Schools in Second Operation (US$0.5million).*** Loan resources will finance technical assistance to prepare technical designs for schools that will be included in the second operation for either construction, rehabilitation, and expansion (if required).

- ***Sub-component 1.5. Upgrading of digital infrastructure (US$11.6 million)*****.** This subcomponent will finance the enabling conditions (connectivity, devices, and capacity building) and pedagogical support to improve the learning environment by integrating digital technologies. These will be provided to 25 schools so that students and teachers can access and use equality education resources for enhancing teaching and learning opportunities. To do so, loan resources will finance: (i) a detailed mapping of schools' basic conditions (infrastructure, electricity, internet and human resources); (ii) provision

of connectivity; (iii) equipment and devices (i.e. a technology kit for classrooms for Grades 2-6 (interactive screen and projector); digital devices for students (Grades 2-6); laptops for teachers and principals; trolleys for the storage of devices) ; (iv) digital skills training for teachers and headteachers (principals); and (v) formative-diagnosis to self-assess teachers' digital competencies and school readiness for digital transformation. To ensure that the devices are maintained properly and schools obtain technical support, loan resources will be used to establish an Information Technology helpdesk in regional offices as well as technical assistance to develop a plan to provide ICT services in schools in the future. The component will also finance: (a) engagement of local communities to better understand the context and needs and plan sustainable change management interventions; (b) design and implementation of pedagogical strategies integrating different technologies (i.e., TV and Radio), and c) digital contents and platforms (both on – and offline) in selected subject areas that are aligned with the renewed curriculum and mindful of local cultural aspects.

Component 2. Improving the quality of services for vulnerable and special education needs students (US$7.0 million). This component supports the specific development objective (ii). It has the following sub-components:

- ***Sub-component 2.1. Inclusive Education (US$2.7 million).*** The aim of this sub-component is to strengthen the Regional Special Needs Education Center in its work to support the mainstreaming of students with disabilities and learning difficulties by (i) technical assistance for the development of an updated inclusive education policy, (ii) instruments and tools for center staff to screen students for disabilities and learning difficulties and improve record keeping; (iii) provision of Pro-D for teachers across regions to screen students using approved and acquired screening instruments; (iv) support for Center staff to further assess and diagnose students for learning difficulties across regions; (v) scholarships for on-line programs in SEN for center staff in specialty occupations and study tours on SEN best practices; (vi) technical assistance for assessing needs for assistive technologies in the system; (vii) provision of assistive technologies for students as needed and production of education content (such as audio-books), and (viii) a diagnostic of services available to SEN students for the transition from school to work.

- ***Sub-component 2.2 Package of services to improve the quality of teaching and learning (US$4.4 million)***. The purpose of this sub-component is to provide better education services in the schools included under Component 1. Loan resources will be used for: (i) the expansion of MoE's existing continuous professional development model to teachers (grades 1-6) in student-centered teaching approaches; (ii) provision of tutoring services for 20% of primary students (Grades 1-6) most in need in Math and English in rehabilitated schools; (iii) piloting of an adaptive learning platform for students in Grades 1- 6 in a select group of schools with existing internet connectivity including teacher training; and (iv) expansion of STEM CLUBS across schools in Guyana (after-school program) with a particular focus on girls. In addition, loan resources will be used to provide: (v) technical assistance for the development of a Policy and Strategy for IBE to better serve its indigenous population, and (vi) revision of the resource allocation mechanisms in the system (including financing, and allocation of teachers).

In addition to the two project components described above, the project will also support project management, monitoring and evaluation and audits at a cost of US$1.9 million. This component will finance: (i) project management expenses, (ii) the annual financial audits, (iii) a mid-term and final evaluation, (iv) project communication activities, and (v) technical assistance related to the evaluations.

2.3 Programme Activities

The project ESA and ESMP focus on interventions to be undertaken under Component 1 of the project. Component 1 will offer support to the primary education system to construct six new primary schools. New schools will be constructed at Recht door Zee (Region 3), Tuschen (Region 3), Tabatinga (Region 9), Wisroc (Region 10), Huradiah/Cabora (Region 1) and Little Diamond (Region 4). The project will also support the rehabilitation, extension and outfitting of existing primary schools. At least nineteen primary schools will benefit from this aspect of the project. Table 2-1 lists the locations of the proposed sites for the new schools construction, and the likely schools to be rehabilitated, extended and or outfitted. The locations of these schools are shown in Figure 2-1.

Table 2-1: Schools and Locations for Project Intervention

Region	Schools/Locations	Current Enrollment
New Construction		
Region 1	Huradiah/Cabora	Not Applicable
Region 3	Tuschen	Not Applicable
Region 3	Recht door Zee	Not Applicable
Region 4	Little Diamond	Not Applicable
Region 9	Tabatinga	Not Applicable
Region 10	Wisroc	Not Applicable
Rehabilitation/Extension/Outfitting		
Region 1	Kariakau Primary School	150
Region 1	Hosororo Primary School	505
Region 1	Wauna Primary School	409
Region 1	White Water Primary School	242
Region 1	Mabaruma Primary School	526
Region 1	Port Kaituma Primary School	909
Region 3	Belle West Primary School	439
Region 3	Patentia Primary School	559
Region 7	St. John-the Baptist Primary School	606
Region 7	Two Miles Primary School	241
Region 7	Two Miles Primary School Annex	256
Region 7	Agatash Primary School	240
Region 8	Monkey Mountain Primary School	225
Region 8	Mahdia Primary School	435
Region 9	Karasabai Primary School	466
Region 9	Annai Primary School	145
Region 9	Kaicumbay Primary School	101
Region 9	Aishalton Primary School	177
Region 9	Awarewanau Primary School	199
Region 9	Maruranau Primary School	243

All construction works will be carried out by contractors under contract to the MoE. The contractors will be procured through a competitive bidding process. Once the contract has been signed and the contractors are given possession of the site, the contractor will be legally responsible for the performance of the works in the manner required by the contract. The works will be overseen by supervisory consultants.

2.4 Project Beneficiaries and Targeting

It is expected that 8,809 students and their communities will benefit from the new school constructions, and rehabilitation and extensions of schools, including 2,610 students from the construction of new schools and 6,199 students from the rehabilitation and extension of existing schools. The selection criteria for new construction included:

1. Existing demand for education and expansion of access to education to allow the incorporation of new students into the education system; and
2. Replacement/retrofitting of schools deemed structurally unsound due to natural disasters or geohazards.

Selection criteria used for capital rehabilitation included:

1. Location in most disadvantaged regions (Region 1, 7, 8, or 9);
2. Availability of essential services (energy, water supply system, connectivity);
3. Extension of existing schools to accommodate more students. Information provided on the % of overcrowding calculated based on the information provided by MoE on current enrollment vs. original enrolment capacity of each school; and
4. General infrastructure conditions as assessed in the school mapping exercise.

At least 7,341 students and 352 teachers from Grades 2-6 will receive digital devices in the schools under Component 1. Tutoring services will target 20% of 1-6 graders with the lowest performance on national assessments. In addition, 26,600 students in a group of randomly selected primary schools with existing internet access will be selected to use the adaptive learning platform.

2.5 Project Implementation

The MoE will serve as the implementing agency for this project. While the Ministry is currently assessing the establishment of a Project Coordinating Unit capable of implementing externally financed projects, given that the project is already being developed, it is envisaged that a Project Implementation Unit (PIU) will be established to oversee the implementation of the project, as has been done for similar projects in the past. The Ministry will have the responsibility of ensuring environmental, social, health and safety compliance, including compliance with the IDB's ESPS.

It is recommended that the PIU be staffed with an Environmental and Social Specialist to assist with the implementation of the Environmental, Social, Health and Safety requirements. This person will oversee the environmental, social and health and safety aspects of the project. The Environmental and Social Specialist is expected to ensure that the IDB's Environmental and Social Policy Framework (ESPF), including the ESPS are adhered to where applicable, that contractors comply with the requirements of the Environmental Authorisations to be issued by the EPA, and prepare and implement the Environmental and Social Management Plan. The Environmental and Social Specialist will report to the Project Coordinator.

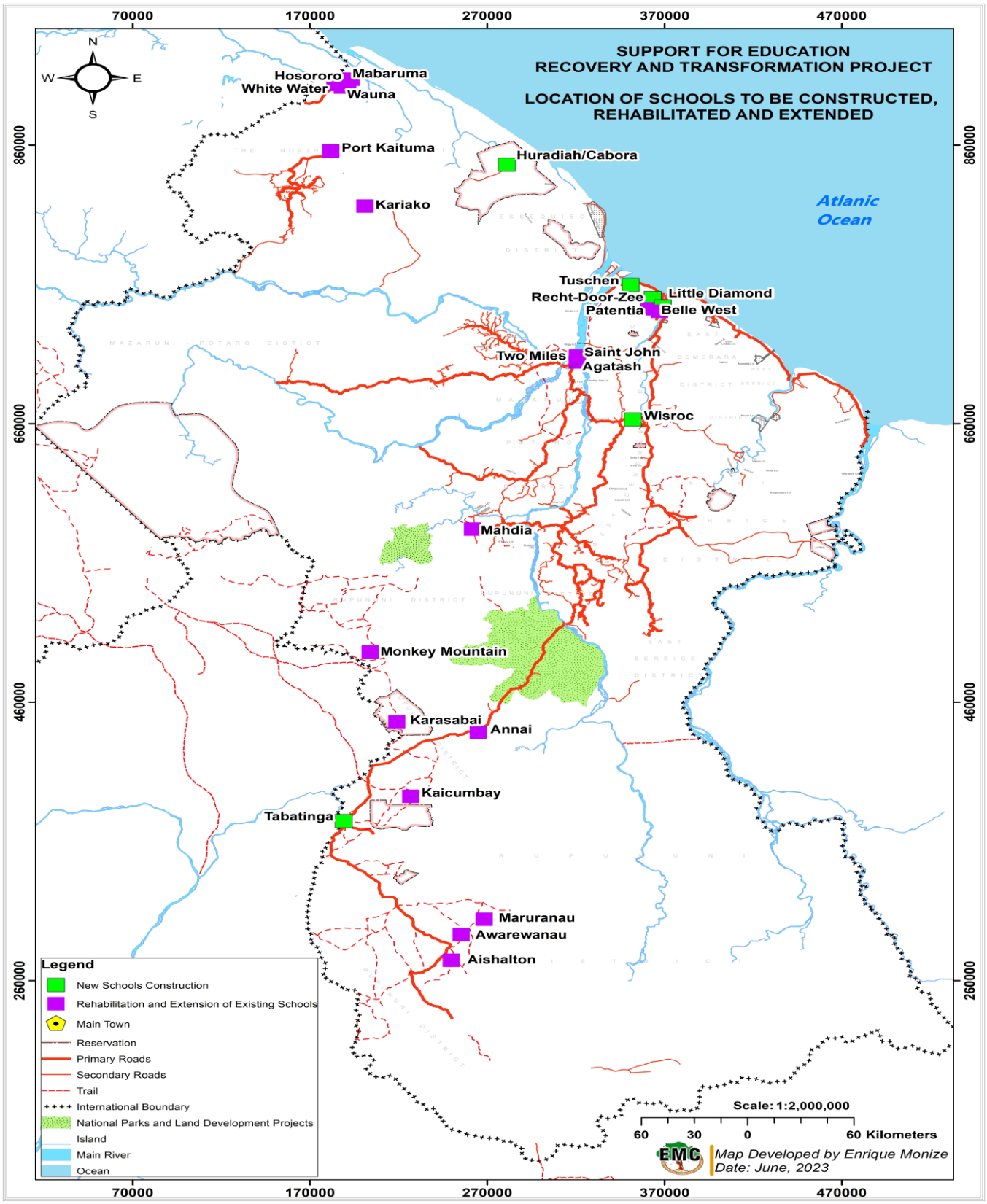


Figure 2-1: Locations of the Schools to Benefit from the Project

3.0 POLICY, LEGISLATIVE AND INSTITUTIONAL FRAMEWORK

The Support for Educational Recovery and Transformation Project will finance the rehabilitation, extension or retrofitting of at least nineteen existing primary schools and construction of six new primary schools. Most of the schools to be rehabilitated, extended or retrofitted are located in the hinterland areas and will benefit indigenous communities. This chapter provides an overview of the policies, legislation and institutions that constitute the enabling environment of the project. The relevant policies, legislative and institutional context within which the project is expected to be implemented are outlined in Table 3-1 below. The chapter also examines the relevant environmental and social safeguards of the IDB.

Table 3-1: Relevant Policies, Legislation and Institutions

National Policies, Strategies, and Plans	The Guyana Education Sector (Strategic) Plan 2021 -2025 – Vision 2030
	Guyana Low Carbon Development Strategy 2030
	National Development Strategy
Legislative Framework	The Constitution of the Cooperative Republic of Guyana
	Environmental Protection Act (1996)
	Environmental Protection Air Quality Regulations (2000)
	Environmental Protection Water Quality Regulations (2000)
	Environmental Protection Noise Management Regulations (2000)
	Environmental Protection Hazardous Wastes Management Regulations (2000)
	Environmental Protection (Litter Enforcement) Regulations (2013)
	EPA Guidelines for Environmental Management Plans
	Education Act (1999)
	Amerindian Act (2006)
	Occupational Health and Safety Act (1997)
	Labour Act (1942) Amended in 1997
	Persons with Disabilities Act 2010
	Prevention of Discrimination Act 1997
	Employment of Young Persons and Children Act 1938 (Amended 1999)
	The Sexual Offences Act 2010 (Amended 2013)
National Guidelines	Non-Academic (Education) Standards (Norms)
	National Building Codes
International Conventions and Agreements	United Nation Rights of the Child
	United Nations Sustainable Development Goal
IDB Guidelines	IDB Environmental and Social Policy Framework
Institutional Framework	Ministry of Education
	Environmental Protection Agency
	Regional Democratic Council
	Town Councils, Neighbourhood Democratic Councils and Village Councils

3.1 National Policies, Strategies, and Plans

3.1.1 The Guyana Education Sector (Strategic) Plan 2021 -2025 – Vision 2030

The Guyana Education Strategic Plan (ESP) 2021 -2030 – Vision 30 was developed and is being implemented as a measure of providing opportunities for equal, equitable education and lifelong learning for all by increasing performance at all levels and reducing the disparity between sub-groups. There are five intermediate outcomes or strategic goals for this plan period and beyond, which are:

- Improving governance and accountability
- Improving performance at all levels
- Improving the efficiency of the Education System
- Reducing inequities in Education
- Contributing to lifelong learning and employability

The intermediate outcomes outlined above seek to address equity, quality and relevance and expand lifelong learning opportunities and strengthen human resources and accountability systems within the sector.

Regarding primary education, some of the key objectives include ensuring learners at the primary level demonstrate functional numeracy and literacy skills and ensuring students complete a full cycle of primary and secondary education programmes in 5-8 years.

Regarding improvement of the school facilities, the Education Sector Plan recognises that good quality facilities raises students' learning test scores. In order to achieve the outcome of good quality facilities, Regional Education Departments are to conduct engineering and condition audits of all schools using the Ministry of Education Manual for Non-Academic Standards. The audit was intended to assess, inter alia: the quality of school walls, roof and floor structural integrity; availability of desks, chairs, tables; availability of clean water; availability and quality of sanitary facilities for teachers and students; availability of power and of non-fossil fuel sources of power; quality of dormitory facilities where present; and presence and quality of teacher houses in remote areas.

3.1.2 Guyana Low Carbon Development Strategy 2030

The Guyana Low Carbon Development Strategy (LCDS) 2030 seeks to create a low carbon economy by establishing incentives which value the world's eco-system services, and promote these are an essential component of a new model of global sustainable development. The LCDS focuses on the development of human capital by stating that access to education by all Guyanese is a priority among its developmental goals and this will be a means of achieving the four objectives of the LCDS[1].

Chapter Four of the LCDS states that "*Of particular importance—when looking at the interplay between climate change, the environment and education—is the way in which schools/educational facilities should be adapted to build resilience and plan to be prepared for and respond to associated risks related to climate change. The National Risk Management Policy for the Education Sector will be key in this regard*."

As it relates to capacity building and human capital development the LCDS will focus on a number of priorities at the policy level looking at initiatives to fulfil the following main outcomes:

1. Train Guyanese to function in a low-carbon economy.
2. Develop capacities for trade in low-carbon services.

[1] The LCDS is currently in the final stages of public review.

3. Align institutions and programmes to low-carbon development including the University of Guyana and Technical and Vocational Institutions.
4. Develop qualification and experience capabilities to function in a low-carbon economy.
5. Improving quality of life.

3.1.3 National Development Strategy (2001-2010)

In 1997, the National Development Strategy (NDS) was launched and outlined objectives and fundamental policy conditions for Guyana's development process over the next decade. In Volume 3 (Chapter 18) an overarching national policy framework and priorities for environmental management were developed. The environmental policies promoted the sustainable management of natural resources and the preservation of a healthy environment as an integral part of Guyana's development agenda. Environmental plans and policies covered the areas of liquid and solid waste management, coastal zone management, forest management, fisheries management, mining policies, Amerindian concerns, urban water supply, pesticide management, and protection of biodiversity, among others, as well as the institutional and legal aspects related to those issues.

In addition, Volume 3, Chapter 20, focuses on the educational sector and outlined three fundamental objectives: raising levels of literacy and numeracy in the population, improving the population's command of life skills and meeting the special education needs of children who are handicapped in one way or another. To facilitate the achievement of these basic objectives, in the context of the current issues and constraints affecting the educational system, seven broad operational objectives were outlined. These were: (1) increasing the effectiveness of instruction at all levels in the system, per unit of resources expended; (2) increasing the relative importance accorded to primary education within the system; (3) mobilising greater amounts of financial resources for all levels and types of education; (4) targeting more effectively the expenditures on the more needy students, thus allowing the available funding to stretch farther; (5) increasing student attendance and making the system more flexible in order to accommodate students who mature academically at different rates; (6) reducing regional inequalities in education and providing better for children with special needs; and (7) increasing the gender sensitivity of the system at all levels.

Further, Volume 3, Chapter 22, outlines policies to improve livelihoods and quality of life of indigenous peoples. This includes measures to improve access to education by establishing more schools in hinterland regions and ensuring that these schools can benefit from staffing by trained teachers and are fully equipped. The NDS views education as one of the main tools to allow indigenous peoples to overcome some of the challenges which contribute to their vulnerability. In this way, improved access to education is expected to enhance business skills, public health concerns, and social welfare of indigenous peoples.

3.2 Legislative Framework

3.2.1 The Constitution of the Cooperative Republic of Guyana

The Constitution of Guyana is the supreme law of the land and all other law and legal framework must be considered with the context of the Constitution. In the Constitution, education is considered for under the following Articles:

- Article 27 (1): "*Every citizen has the right to free education from nursery to university as well as at non-formal places where opportunities are provided for education and training.*"
- Article 38(E): "*Formal education is compulsory up to the age of fifteen years*"
- Article 149J: (1) "*Everyone has the right to an environment that is not harmful to his or her health or wellbeing*."

- Article 149(H): "*Every child is entitled to free primary and secondary education in schools owned or funded by the State"*

3.2.2 Environmental Protection Act (1996)

The Environmental Protection Act, 1996, and the Environmental Protection Amendment Act 2005, establishes the basic institutional and regulatory framework within which all activities that may significantly impact on the natural, social, and cultural environments are assessed. The Act provides for the management, conservation, protection and improvement of the environment, the prevention or control of pollution, the assessment of the impact of economic development on the environment and the sustainable use of natural resources. The Act also provides that the EPA will be the central coordinating agency for environmental management in the relevant sectors in Guyana.

3.2.2.1 Environmental Protection Regulations

The Environmental Protection Act, 1996 comprises several subsidiary Environmental Protection Regulations. These Regulations were developed to regulate and control the activities of development projects during construction and operation. The EPA has the responsibility to ensure the compliance of all new and existing activities to these Regulations by issuing the required authorizations and monitoring their operations.

Environmental Protection Air Quality Regulations (2000)

In accordance with these Regulations anyone who emits any air contaminant in the construction, installation, operation, modification or extension of any facility related to industry, commerce, agriculture or any institution shall apply to the EPA for an environmental authorization at least ninety days before the date on which the emission is to commence. In accordance with the Regulations the EPA shall establish the desirable air pollution limits. Currently, there are no nationally determined or established Air Quality standards. However, the Agency is guided by and utilises air quality guidelines reputable international organisations from the World Health Organisation (WHO) and the United States Environmental Protection Agency (USEPA) among others. Table 3-2 below shows the WHO Air Quality Guidelines.

Table 3-2: WHO Air Quality Standards

Element	Averaging Period	Acceptable Limit
Particulate Matter (PM 10)	24-hour	50 g/m^3
Particulate Matter (PM 2.5)	24-hour	25 g/m^3
Sulphur Dioxide	24-hour	20 g/m^3
Ozone (O_3)	8-hour	100ug/m^3
Nitrogen Dioxide	1-hour	40ug/m^3

Environmental Protection Water Quality Regulations (2000)

These Regulations require an environmental authorization for construction, installation, operation, modification/extension of facilities that discharge effluents. Requirements and guidelines on the discharge of effluents and disposal of sludge are provided. The EPA adopts the WHO and USEPA standards for surface and potable water when applicable. Draft Water Quality Guidelines have also been developed by the EPA in collaboration with the Guyana National Bureau of Standards (GNBS). Limits for key parameters outlined in these guidelines are presented in Table 3-3.

Table 3-3: Industrial Effluent Discharge Limits

Parameter	Acceptable Standard
pH	5.0 – 9.0
Temperature	<40°C
Total Suspended Solids	100 mg/L
Total Dissolved Solids	500 mg/L
Turbidity	25 NTU
Dissolved Oxygen	>4 mg/L
Oil and Grease	25 mg/L
Chemical Oxygen Demand	<250 mg/L
Biochemical Oxygen Demand	<50 mg/L

Environmental Protection Noise Management Regulations 2000

Under these Regulations activities that emit noise such as construction, transport, industry, commerce and any institution are required to apply to the Agency for an environmental authorization. The EPA is responsible for the establishment of standards for permissible noise levels in industry, construction and other areas. The EPA may grant authorization for noise emission unconditionally or subject to conditions and may require environmental audit procedures. The GNBS and the EPA developed standards for noise emissions into the environment as shown in Table 3-4.

Table 3-4: Decibel Limits for Various Activities

Type of Activity	Day Time Limit (dB)	Night Time Limit (dB)
Residential, Institutional, Educational	75	60
Industrial, Transportation	100	80
Commercial	80	65
Construction	90	75
Recreational	100 (18:00 to 01:00hrs)	75 (01:00 to 08:00hrs)

Environmental Protection Hazardous Wastes Management Regulations (2000)

These Regulations outline the rules and procedures for transport, storage, treatment and disposal of hazardous wastes and are intended to ensure that all operations that generate, transport, store and dispose of hazardous wastes are managed in a manner that protects human health and the environment. The Regulations allow for the provision of information on the types of facilities and quantity of hazardous waste generated, treatment standards and efforts to reduce the waste generated.

Environmental Protection (Litter Enforcement) Regulations (2013)

These Regulations provide for the enforcement of litter offences. It is an offence under these regulations to place litter in a public place, permit or cause another person to litter a public place or have litter on private premises that pose a health risk. The fine for an individual found littering in a public place is $50,000, while for body corporate it is $100,000. A fixed penalty of fifteen thousand dollars ($15,000) is offered to offenders who accept liability for the offence committed. Under the Litter Prevention Regulations, the Regional Democratic Councils (RDCs) and Neighbourhood Democratic

Councils (NDCs) are expected to provide receptacles in public places. Further, every Council shall make appropriate provision for the prompt, efficient and regular emptying of the contents of the receptacles and for the removal and disposal of those contents.

3.2.2.2 Environmental Assessment and Management Plan (EAMP) Guidelines

The EPA, in 2021, prepared draft guidelines for the Preparation of Environmental Assessment and Management Plans (EAMP). These guidelines were updated in 2022. An EAMP seeks to identify and assess potential impacts of project and provide methods and procedures for mitigating and monitoring impacts. According to the Guidelines, an EAMP "*provides a description of the methods and procedures for identifying, assessing and analysing existing and potential physical, ecological and socio-economic impacts of projects and identifying actions to prevent and mitigate impacts as well as a framework for monitoring and reporting during project implementation*. *The EAMP should also identify environmental objectives of the developer, detailed description of the project and a robust baseline of the project environment and area of influence of the project. The EAMP should be used throughout the project life cycle and regularly updated in an effort to remain aligned with the project as it progresses from construction to operation and to decommissioning."*

The objectives of the EAMP are to:

- Place the proposed or existing activity in the context of the local and regional environment.
- Adequately describe all components of the proposed/ existing activity, so that the Agency can consider approval of a well-defined project, and prescribe relevant and adequate Permit Conditions for the monitoring of the activity.
- Identify the environmental issues/risks associated with the proposed/existing activity.
- Provide the basis of the developer's environment management program, which shows that the environmental impacts resulting from the proposed/existing activity, including cumulative impacts, can be acceptably managed.
- Provide a document that clearly sets out the reasons why the proposed/existing activity should be considered environmentally acceptable.

3.2.3 Education Act (1999)

The Education Act makes provisions for the promotion of education in Guyana. The Act establishes an Education Department and outlines functions of the Chief Education Officer and subordinate Education Officers who staff the Department. It also provides for the establishment of Government schools, the provision of an education system and the right of access of all children to schools. The Act established a National Council for Education to advise the Minister on matters relating to nursery, primary, secondary or further education and makes recommendations regarding these issues. The Act also empowers the Minister to declare educational districts and to establish regulations to support the provision of education in Guyana.

3.2.4 The Amerindian Act (2006)

The Amerindian Act provides for the recognition and protection of the collective rights of Amerindian Villages and Communities, mechanisms for good governance within Amerindian Villages and Communities and the granting of land to these Villages and Communities. The Act recognizes the rights of indigenous peoples and communities and provides for participatory governance. The Act supports and encourages their right to preserve a traditional culture, cultural landscapes and traditional knowledge and languages as a minority group. Further, The Act makes provision for the self-governance and administration of lands that have been demarcated Amerindian territories, and therefore control the land use and planning within the areas. The Act also established the National Toshaos Council (NTC) and Village Councils, which are the main governing bodies, and are concerned

with the overall well-being and development of the collective and individual indigenous communities. The Act also provides additional guidelines and procedures for Amerindian communities and its interaction with other industries, as well as stipulates measures of offences and redress.

3.2.5 Occupational Safety and Health Act (1997)

The Occupational Safety and Health Act 1997 defines the responsibilities of management and workers with respect to safety and health and applies to every workplace in Guyana. The Act makes provisions for the registration of industrial establishments, the establishment of an Occupational Safety and Health Authority, the establishment of a National Advisory Council on Occupational Safety and Health, the duties of employers, workers and other persons, treatments of accidents and occupational diseases, and occupational safety and health regulations. The Act authorises Occupational Health and Safety (OH&S) inspectors to enter and inspect workplaces.

At a construction site, employers must ensure that the requirements of the Act are implemented and that the safety and health of workers are protected onsite. Employers also have responsibility for providing protective devices for workers, providing instructions and supervision to ensure the safety of workers, maintaining a medicine chest and establishing an occupational health service for workers. Employers have a responsibility to establish a joint workplace safety committee. The provisions of this Act should be implemented throughout the construction phase of the project.

3.2.6 Labour Act of 1942 (Amended 1997)

The Labour Act of 1942 specifies the conditions that an employer must observe in the contracting employees. The Labour Act of 1942 is an Act to provide or the establishment of a Department of Labour, for the regulation of the relationship between employers and employees and for the settlement of differences between them. The Act deals with the Regulation of Wages, the Rights of the Employees and Duties and Obligations of Employees, Payment of Wages and Deductions therefrom. It outlines the Hours of Work of the Employers, Collective Agreements, and Miscellaneous such as information sharing and appointment and powers of Labour Officers.

3.2.7 Persons with Disabilities Act 2010

The Persons with Disabilities Act 2010 provides certain rights to person with disabilities such as the promotion and protection and the full and equal enjoyment of the rights, to eliminate discrimination on the basis of disability, to provide for the welfare and rehabilitation of persons with disabilities, to provide for the registration of persons with disabilities, to establish the National Commission on Disabilities and for connected persons. Section 14 – 19 makes provision for the inclusion persons with disabilities into the general education system, but proving adequate infrastructural and policy framework to allow for the access to education by people with disabilities.

3.2.8 Prevention of Discrimination Act 1997

The Prevention of Discrimination Act Chapter 99:08 of 1997 provides for the elimination of discrimination in employment, training, recruitment and membership of professional bodies and the promotion or equal remuneration to men and women in employment who perform work of equal value, and for matter connected therewith. The Act outlines the prohibited ground for discrimination, which includes race, sex, religion, colour, ethnic origin, indigenous population, national extraction, social origins, economic status, political opinions, disability, family responsibility, pregnancy, marital status, or age, except for purpose of retirement and restriction on work and employment on minors.

The 1997 Act further states that any act or omission, or any practice or policy that directly or indirectly result in discrimination against a person on the grounds stated is an act of discrimination regardless

of whether the person the person responsible for the act or omission or the practice or policy intended to discriminate.

The Prevention of Discrimination Act 1997 advocates for the promotion of equal remuneration by stating that every employer and every person acting on behalf of such employer shall be obligated to pay equal remuneration to men and women performing work of equal value for such employer.

3.2.9 Employment of Young Persons and Children Act 1938 (Amended 1999)

The Employment of Young Persons and Children Act 1938, amended 1999, is an Act relating to the employment of young person and children. It established that no child under the age of fifteen shall be employed, and no young person under the age of sixteen shall be employed at night in any industrial undertakings except to the extent to which and in the circumstances in which such employment is permitted under the International Labour Organisation (ILO) Convention. The Act outlines the offences and regulations as it relates to the employment of young person and children.

3.2.10 Sexual Offences Act 2010 (Amended 2013)

The Sexual Offences Act of 2010 reforms and consolidates the laws relating to sexual offences and to provide for related matters. The Act makes provisions for the prosecution of acts sexual offences, as well as outlining various measures that established a National Plan for the Prevention of Sexual Offences that aims to prevent and bring awareness to sexual offences in Guyana. The Sexual Offences outline the avenues available to the victim to redress by the justice system.

3.3 National Guidelines

The national guidelines relevant to the construction and extension of the schools are described below.

3.3.1 Non-Academic (Education) Standards (Norms)

The Ministry of Education has formally established Non-Academic Standards[2] in recognition of their importance in achieving quality education at all levels. The Non-Academic Standards addresses:

- Selecting locations of schools and basic requisites;
- Sanitary and safety/emergency facilities;
- Classroom size and accessories;
- Class and school enrolment;
- Composition of staff in terms of trained and untrained teachers;
- Teacher qualifications;
- School grades;
- Entitlement for administrative staff;
- Teacher-student ratio;
- Outdoor facilities;
- Laboratories for Science and Information Technology;
- Accessories and facilities for workshops and laboratories for pre-vocation education;
- Accommodation for teachers and students; and
- Requisites and space utilization at Practical Instruction Centers and Departments.

The establishment of the new schools as well as the extension, rehabilitation or retrofitting are expected to conform to the requirements of the Non-Academic Standards. The key focus and considerations pertaining to primary schools outlined in the Non-Academic Standards are outlined in

[2] https://education.gov.gy/web2/index.php/other-resources/other-files/circulars/681-ministry-of-education-non-academic-standards/file

Table 3.5. It should be noted that sub-component 1.1 of the project will see the finalizing of the Non-academic Standards and will develop a prototype for primary schools following the 7 principles of Universal Design.

Table 3-5: Key Focus and Consideration of the Non-Academic Standards

Focus		Considerations
General		
1.	School Site	- Located in a central and most accessible point of catchment area. - Located away from drainage and sewage canals, garbage dumps, noisy and foul smelling area.s - Fenced with concrete, zinc, chain link material and bottom/mud board where appropriate. For Riverain and Hinterland Areas, materials indigenous to that location may be used if traditional materials are inappropriate or unavailable. - Leveled, well drained and kept free of bush, litter and rubbish. - Adequate land space, enough for future expansion of school. - Adequate space set aside for Physical Education and other outdoor activities - Provision made on the leeward side for furnace or other means of litter/rubbish disposal.
2.	Building	- Roof must be closed boarded, zinc sheeted. Troolie may be used in Deep Riverain and Hinterland Area. - Walls must be no less than 10ft from floor to plate. - No less than 2 stairway must be provided, leading into and out of the building, one of which must be 6 ft (182.88cm) wide and the other, no less than 4ft (121.92cm) wide. - Painted in white or cream. - Name of School must be boldly painted/indicated thereon. - Classroom constructed therein for the primary or secondary level, and wall dividers made for nursery. - Provided with an adequate number of windows to facilitate inflow of natural light and ventilation. - Equipped with electricity (solar/hydro/fuel-generated).

Focus		Considerations
General		
		- Provided with fire extinguisher: 1 large extinguisher for each flat; 1 small extinguisher/fire bucket in each classroom. - Security Hut must be provided where guards are in operation. -Housing accommodation must be provided for Head Teacher in Deep Riverain and Hinterland Areas and on the Coast where necessary - Dormitories must be provided where residential schooling is offered.
Primary School		
1.	School Grade	
	▪ Grade A	Enrolment of 750 – 999 pupils
	▪ Grade B	Enrolment of 500 -749 pupils
	▪ Grade C	Enrolment of 250 – 499 pupils
	▪ Grade D	Enrolment of 100 – 249 pupils
	▪ Grade E	Enrolment of 99 pupils and below
2.	Catchment Area	30 Minutes by public transportation
3.	Sanitary Facilities The number of toilets must be divided between the sexes. Sanitary Units must be placed in the toilets used by female teacher and female students. Height of toilet bowls must be suitable for Levels 1 and 2.	Sanitary Block: Students
		4 toilets for 100-150 pupils
		6 toilets for 151-250 pupils
		8 toilets for 251-350 pupils
		10 toilets for 351 - 450 pupils
		12 toilets for 450-600 pupils
		Sanitary Block: Teachers
		2 toilets for 10 Teachers
		4 toilets for 20 Teachers
		6 toilets for 10 Teachers
4.	Drinking Outlet	1 tap for every 20 pupils
		1 tank/reservoir
5.	Safety/Emergency Facilities	1 fire bucket or small fire extinguisher for each classroom
		1 large fire extinguisher for each flat/story
6.	Rooms	1 Reading Room/Library
		1 Staff Room
		1 Store/Storage Room
		1 Sick Bay
		1 Information Technology Laboratory
		1 Kitchenette
		1 Science Laboratory
7.	Teacher/Pupil Ratio	
	▪ Levels 1 and 2	1 Teacher to 25 Pupils
	▪ Levels 3 – 4	1 Teacher to 35 Pupils
8.	Teacher Qualification	
	▪ Minimum	4 CXCs – Including English, Mathematics at Grade 3 or above
	▪ Optimum	Grade 1 – 1 Trained Teacher's Certificate

Focus		Considerations
General		
	▪ Maximum	Grade 1 – 1 Trained Teacher's Certificate Plus Certificate/Diploma/First Degree Plus Second Degree in disciplines approved by the MoE.
9.	Status Composition of Staff	At least 75% Trained Teacher
10.	Age of Pupils	
	▪ Minimum Age of Pupils at beginning of Cycle	5 years 6 months by the first day of the school year **or** 5 years 9 months by December 31 of the year in which first enrolment is sought
	▪ Maximum Age of Pupil at the End of Cycle	11 years plus
11.	Space per Pupil	14ft or 13006.42cm2
12.	Class Enrollment	Number of Pupils
	Minimum	12 pupils – for the Coastal Plain
		10 pupils for Deep Riverain and Hinterland Areas
	Optimum	
	▪ Levels 1 and 2	25 pupils
	▪ Levels 3 and 4	35 pupils
	Maximum	
	▪ Levels 1 and 2	30 pupils
	▪ Levels 3 and 4	40 pupils
13.	School Enrollment	Number of Pupils
	▪ Minimum	20 Pupils. However, for Deep Riverain and Hinterland areas, permission can be sought from the Chief Education Officer to establish a school under 20 pupils but no less than 15 pupils.
	▪ Optimum	600 Pupils
	▪ Maximum	1000 pupils
14.	Repetition	No pupil should repeat levels 1 and 2
15.	Transfer of Students	- Siblings at school to which transfer is sought - Change of Residence - Place of employment of parents and guardians

3.3.2 National Building Codes

The National Building Codes was prepared by the GNBS and launched in 2012 "*to provide an efficient and effective system for granting building permits, administering building matters and resolving building disputes*", as well as to "*facilitate uniformity in the education, training and qualifications of building practitioners and the recognition of qualification.*" The Codes are to provide guidance on how construction should be carried out to ensure safety of not just the potential occupants but builders and as well as the structure itself, and are expected to guide architects and contractors on the design and construction of buildings. As such, it focuses on fire safety, use and occupancy, electrical, plumbing, use of Guyanese hardwoods in construction, concrete and block masonry, structural steel, high-rise buildings, foundations and excavations, and design and construction of septic tanks and associated secondary treatment and disposal systems.

3.4 International Conventions and Agreements

3.4.1 United Nations Convention on Rights of the Child

The UN Convention on Rights of the Child is an international human rights treaty, which sets out the civil, political, economic, social, health and cultural rights of children. In 1991, Guyana signed and ratified the United Nations Convention on the Rights of the Child (UNCRC). Article 19 of the UNCRC states that Parties shall take all appropriate legislative, administrative, social and educational measures to protect the child.

3.4.2 United Nations Sustainable Development Goal

The United Nations Sustainable Development Goals (SDGs) are a set of 17 goals actioning a universal call to provide a better and more sustainable future. Goal 4 ensures inclusive and equitable quality education and promotes lifelong learning opportunities for all. Guyana adopted the 2030 Developmental Agenda on September 2015.

3.5 IDB's Environmental and Social Policy Framework

The IDB's Environmental and Social Policy Framework makes provision for the protection of the environment and groups that may be vulnerable to the potential risk and impacts of IDB supported projects. As such, it has established a strict set of Environmental and Social Standards against infringements of environmental and social rights. These Environmental and Social Performance Standards (ESPS) describe the requirements that must be met in the development and implementation of IDB-financed projects. This project was listed as a Category B under the Bank's screening and environmental and social classification. Category B suggests that the project has the potential to cause mostly local and short-term negative environmental and social impact and for which mitigation measure are known and readily available.

The project falls under the requirement of the IDB's new Environmental and Social Performance Standards which became effective as of November 2021. The objectives of the Bank's Performance Standards are to:

1. Identify and evaluate environmental and social risks and impacts of the project. 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.
2. Promote improved environmental and social performance of Borrowers through the effective use of management systems.
3. Ensure that grievances from projects affected people and external communications from other stakeholders are responded to and managed appropriately.
4. 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.

Table 3-6: IDB's ESPS and Relevancy to the Project

ESPS	Objective	Relevancy to Project
Standard 1 – Assessment and Management of Environmental and Social Risk	Identify and evaluate environmental and social risks and impacts of the project and adopt a mitigation hierarchy and a precautionary approach to anticipate and avoid, minimize, and offset risks and impacts to workers, project-affected people, and the environment.	The environmental and social implications of the project will need to be assessed and relevant mitigation measures and management planning provided. This includes: a) a Project-specific environmental and social framework; b) identification of risks and impacts; c) environmental and social management programs; d) organizational capacity and competence; e) emergency preparedness and response; f) stakeholder engagement; and g) monitoring and evaluation of the project's environmental and social performance.
Standard 2 – Labour and Working Conditions	To identify and protect the fundamental principles and rights of workers and to promote fair treatment, non-discrimination, and equal opportunity for workers.	Since the project is focused on construction, plans need to be prepared to address areas of labour management such as Occupational Health and Safety, Non-Discrimination and Equal Opportunity, Working Condition and Terms of Employment.
Standard 3 - Resources Efficiency and Pollution Prevention	To avoid or minimize adverse impacts on human health and the environment by avoiding or minimizing pollution from project activities and promote more sustainable use of resources, including energy and water.	The direct negative environmental, social, and health and safety (ESHS) impacts are expected to occur mainly during the construction phase. The construction of new schools and extension, rehabilitation and retrofitting for existing schools are likely to cause small to moderate impacts of short duration (mainly dust, noise, localized waste generation, drainage issues, risks of small accidents with, and nuisances to, surrounding community, health and safety risks to workers, among others). New projects and extensions will include energy efficiency measures, as practicable, including solar panels.
Standard 4 - Community, Health, and Safety	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 and ensure that the safeguarding of personnel and property is carried out in accordance with relevant human rights principles and in a	Construction activities, including the transport of heavy or hazardous materials, present minor to moderate risks of accidents and exposure to noise, emissions, and hazardous substances for people in the local communities. The ESMP will include risk analysis and specific actions to ensure the health and safety of people in the local communities during the construction and operation phases of the works. The presence of workers in

ESPS	Objective	Relevancy to Project
	manner that avoids or minimizes risks to the project-affected people.	local communities can increase risks of exposure to disease, adverse interactions with local personnel, and risks of using security personnel. These impacts will be analysed, and mitigation measures identified as part of the ESMP. A Code of Conduct applicable to all project personnel will also be prepared.
Standard 5 - Land Acquisition and Involuntary Resettlement	Identify and avoid, and when avoidance is not possible, minimize displacement by exploring alternative project designs and anticipate and avoid, or minimize adverse social and economic impacts from land acquisition or restrictions on land use.	This Standard is not relevant to the project since the identified lands for the new constructions of schools are located in areas that have been allocated for schools during the planning and development phase of the community. Therefore, there are no other competing land uses. The proposed extensions of existing schools will be done within the existing school's boundaries, and therefore there is no competing land use.
Standard 6 - Biodiversity Conservation and Sustainable Management of Living Natural Resources	Ensure the protection and conservation of terrestrial, freshwater, coastal and marine biodiversity and to maintain the ecosystem functions to ensure the benefits from ecosystem services.	This Standard is not relevant to the project since the proposed land for the construction and extension will not impact biodiversity and natural resources since the school sites are located within developed and developing communities.
Standard 7 – Indigenous Peoples	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 and 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.	Two of the sites identified for project activities are located in an indigenous community and in close proximity to indigenous communities. This required a Social-Cultural Analysis (SCA) and that analysis included procedures for Free, Prior, and Informed Consent (FPIC) and culturally appropriate consultation and stakeholder engagement plans for each impacted community. Culturally appropriate mitigation measures were included in the ESMP.
Standard 8 – Cultural Heritage	To protect cultural heritage from the adverse impacts of project activities and support its preservation. And to promote the equitable sharing of benefits from the use of cultural heritage.	This Standard is not relevant to the project since land identified for the new construction and extension will not have any impact on cultural heritage sites since there is none located in close proximity to the project sites. Secondary cultural impacts are addressed in the SCA.

ESPS	Objective	Relevancy to Project
Standard 9 - Gender Equality	To anticipate and prevent adverse risks and impacts based on gender, sexual orientation, and gender identity, Sexual and Gender Based Violence (SGBV), and when avoidance is not possible, to mitigate and compensate for such impacts and to achieve inclusion from project-derived benefits of people of all genders, sexual orientations, and gender identities.	The program will seek to promote employment opportunities during the construction phase without gender and sexual orientation discrimination. The introduction of workers in rural areas and small communities during construction may increase the incidence of issues related to violence and sexual harassment. The ESA analysed the impacts related to gender-based violence and thus a Code of Conduct will be prepared with clear rules for the dignified and equitable treatment of people of all genders and sexual orientations.
Standard 10 - Stakeholder Engagement and Information Disclosure	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 and 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.	A Stakeholder Engagement and Consultation Plan was developed and included stakeholder mapping and reflected the needs of all the different stakeholders (beneficiaries and affected). The plan included a grievance mechanism and procedures to prevent retaliation against any complainant. The relevance of the face-to-face or virtual consultation process will take into account technological and cultural barriers and local measures to prevent the spread of COVID-19.

3.6 Institutional Framework

3.6.1 Ministry of Education

The Ministry of Education is responsible for the effective and efficient delivery of education in Guyana. As such, the Ministry has undertaken a dedicated approach to ensuring that all citizens of Guyana, regardless of age, race, gender, creed, physical or mental disability, or socio-economic status are given the best possible opportunity to achieve their full potential. This is being achieved through equal access to quality education as defined by the standards and norms outlined by the Ministry. The commitment to quality and equity in education with no barriers in access to anyone is clear in this declaration.

Over the last two decades, the education system in Guyana has undergone significant transformations in response to the emerging socio-cultural, economic and political needs of the society. These have necessitated shifts in the education philosophy and policy of Guyana. In the past a great deal of focus was on expanding access, first through universal compulsory education at the primary level, then on providing at least three additional years of secondary education. In more recent times greater attention has been paid to quality. Continuing the focus on improving literacy and numeracy at the basic level to ensure a good foundation for learners therefore remains important. This is in line with the recognition of the education sector's contribution to both the material development of the country in the form of well-educated and trained human resources and the promotion of harmony, equity and respect among citizens of all races, economic groups, religions and gender.

The Ministry of Education will serve as the implementing agency for this project. While the Ministry is currently assessing the establishment of a Project Coordinating Unit (PCU) capable of implementing externally financed projects, given that the project is already being developed, it is envisaged that a Project Implementation Unit (PIU) will be established to oversee the implementation of the project, as has been done for similar projects in the past. The Ministry will have the responsibility of ensuring environmental, social, health and safety compliance, including compliance with the IDB's ESPS.

As part of the project preparation the IDB conducted analysis of the Ministry's institutional capacity as it relates to the Support for Educational Recovery and Transformation Project through the Bank's Institutional Capacity Analysis Platform (PACI). Based on the assessment conducted the following were determined as it relates to the Ministry's capacity pertaining to Environmental, Social and Health and Safety Impact Management:

- The MoE has a policy establishing its commitment to managing Environmental, Social, and Occupational Health and Safety (ESHS) impacts in its projects. This policy covers the areas of Environmental, Social and Occupational Health and Safety.

- The Disaster Risk Prevention Management Unit will be the department responsible for managing ESHS impacts in the IDB-financed project. This Unit currently reports to the Deputy Chief Education Officer (Admin) and has general authority in the ESHS area through a term of reference and an approved concept note.

- In the last three years, the Disaster Risk Prevention Management Unit has had several experiences in managing ESHS impacts in projects. These are based on National legislation, IDB policies and other lenders' policies such as, the Occupational and Health Safety Act, EPA Act and supporting regulations, and the World Bank's ESHS policies.

- The Disaster Risk Prevention Management Unit supported by a Social Development Specialist (Proposed) will be responsible for performing the following processes in the IDB-financed project:

- Performing environmental, social, and occupational health and safety analyses
- Consulting parties affected by the project in the area of ESHS
- Implementing the environmental management plan
- Implementing the social and occupational health and safety plan
- Implementing the resettlement or compensation plan[3]
- Providing technical ESHS inputs for project procurement
- Processing internal or external complaints in the ESHS area
- Ensuring that contractors comply with ESHS regulations and standards

- The staff of the MoE assigned to ESHS tasks have at least five years' experience in managing ESHS impacts and relatively sufficient time to perform the assigned functions.

- Budget for expenses (implementation and monitoring of mitigation measures, training, communications, etc.) and vehicles are key resources needed to manage the IDB project's ESHS impacts, but are not available in the MoE at this time.

- When there has been a need to hire additional staff for the IDB project, the MoE has not experienced difficulties in finding ESHS impact management specialists. Moreover, ESHS impact management specialists hired in the last five years to support execution of MoE's public investment projects generally stay until the projects are completed, thus suggesting a good level of resource stability.

- The MoE does not have a procedures manual for the management of ESHS impacts. Additionally, the MoE's established procedures are partially adequate for managing ESHS impacts in the IDB-financed project.

- With reference to public investment projects executed by the MoE, in the last three years, the opinions of stakeholders affected by these projects have been incorporated into project design.

- With reference to public investment projects executed by the MoE in the last three years, monitoring reports on ESHS risks and impacts has been generated through semiannual reports and as needed progress reports.

- There has been some degree of challenge in getting contractors to comply with ESHS requirements in public investment projects executed by MoE. This has been a systemic problem that requires attention.

Based on the findings it was determined that the MoE generally has the capacity to undertake the implementation of the project. However, it was noted that several areas of improvements are required. Regarding ESHS it was recommended that the PIU be staffed with an Environmental and Social Specialist to assist with the implementation of the ESHS requirements.

3.6.2 Environmental Protection Agency

The EPA oversees the effective management, conservation, protection and improvement of the environment and takes the necessary measures to ensure the prevention and control of pollution, assesses the impact of economic development on the environment and the sustainable use of natural resources. The Agency is governed by a Board of Directors and falls under the direct supervision of the Office of the President. The Agency was established in 1996 by the Environmental Protection Act and is responsible for the development and enforcement of national environmental legislation and advises the GoG on the development and implementation of environmental policies and standards. It

[3] The project will not require the preparation of a Resettlement or Compensation Plan since all project activities will occur on lands without encumbrances and which are allocated for educational purposes.

also undertakes the inspection and enforcement of matters dealing with the environment, conservation and natural resources and administers the environmental permitting process in Guyana.

In Sec. 4 (1) (a), of the Act, the EPA is given the mandate *to "take such steps as are necessary for the effective management of the natural environment so as to ensure conservation, protection and sustainable use of its natural resources"*. In addition, the Agency is given the overall responsibility to ensure management of the natural environment to ensure conservation, protection and sustainable use of its natural resources; assess any developmental activity which may cause an adverse effect on the natural environment before such activity commences; and coordinate and maintain a programme for the conservation of biological diversity and its sustainable use. The EPA is mandated to ensure that any project that may have a significant impact on the environment must acquire environmental authorisation from the EPA. Projects are considered to have an environmental impact when they threaten the health, safety and natural life supporting systems of humans and other living things.

Usually, the EPA will issue environmental authorisation in the form of Construction Permits for construction projects. The MoE should approach the EPA to determine if Construction Permits will be required for the four new schools to be constructed. If the Permits are required the EPA will include as conditions of the Permits measures to be implemented to ensure compliance with the environmental requirements. The EPA will also monitor the construction activities to ensure compliance, and will request the submission of environmental monitoring reports at least annually during the construction period.

3.6.3 Regional Democratic Councils

The RDC is the body responsible for local government and administration in the Regions and has a mandate to:

- To support administration of all services required within its boundaries (services such as health, education and public works among others). In this regard, relevant duties of RDCs include the maintaining and protecting of public property, protecting and improving the physical environment, and improving living and working conditions.

- To coordinate the activities of the Local Democratic Councils and provide such cooperation and support as required. It should be noted that the RDC has some power delegated to it by the Minister responsible for Local Government.

- To develop regional facilities, as it deems necessary.

- To identify economic (revenue earning) projects and assists the Administration in executing works necessary for the development of the region.

3.6.4 Town Councils, Neighbourhood Democratic Councils and Village Councils

Town Councils, Neighbourhood Democratic Councils and Village Councils are a function of local government and are responsible for the smooth operation of neighbourhood development, including solid waste management, operation of markets, drainage, and road and dam upkeeps. The Town Councils, NDCs and Village Councils for the area where schools where schools will be constructed or extended will have roles to play in approving the works to be done and may provide services such as waste collection and disposal to the project.

4.0 PROJECT ENVIRONMENT

The locations of the schools to be targeted under the project are spread throughout the country, as is shown in Figure 2-1, especially those which are to benefit from rehabilitation, extension and outfitting. These locations vary and differ in the physical, ecological and social settings. Overall, Guyana has abundant natural resources; fertile agricultural lands on the coastal plain and in the riverain areas; vast areas of tropical forests of various ecosystems and with a wide diversity of plant and animal species; abundant fish and shrimping grounds, both in its numerous rivers and in the Atlantic Ocean to its north; and a wide variety of minerals, including gold, diamonds, semi-precious stones, bauxite and manganese.

4.1 Physical Setting

4.1.1 Geology and Natural Regions

Guyana is located in the northern part of South America, between 1 and 9 North latitude and 56 and 62 West longitude and has a total area of 214,970 square kilometers. Guyana is bordered by the Atlantic Ocean to the northeast, Venezuela to the west, Suriname to the east and Brazil to the south and southwest. Guyana is part of the Guiana Shield, a vast Precambrian cratonic area underlying French Guiana, Guyana, Columbia, Brazil and Venezuela. This proterozoic basement in Guyana dips in a northerly direction and extends below the continental shelf (Daniel, 1984)[4]. Structural evolution of the Guiana Basin originated with the breakup of the supercontinent Pangaea leading to the present passive margin basin.

Landforms in Guyana appear to be the surface manifestation of its underlying geology and the country is divided in to four geomorphological regions: the Coastal Plain, the Sandy Rolling Land, the Pakaraima Mountain Region and the Pre-Cambrian Lowlands. The boundaries of these geomorphological regions closely follow the boundaries of its geological formation[5]. Table 4-1 below presents a description of these geomorphological regions.

Table 4-1: Description of the Geomorphological Regions

Geomorphological Region	Description
The Coastal Plain	This region occupies a narrow strip of land lying parallel to the coast and is underlain by the Corentyne group of rocks. Morphologically it may be divided into the old coastal plain and the young coastal plain. This region covers an area of 9,128 square kilometers or 4.3 percent of the country's land area.
The Sandy Rolling Land/Hilly Sand and Clay Region	This region is underlain by the Berbice Formation or White Sands Formation of the Plio-Pleistocene age. It lies inland between the Coastal Plain and the crystalline rock outcrops further south. This region covers an area of 28,995 square kilometers or 13.7 percent of the country's land area.
The Pakaraima Mountain Region	This region is underlain by sandstone interbedded with conglomerates and shales of the Roraima Formation. The region lies in the mid-southwestern part of the country and has a series of elevated plateaus at varying heights of which the

[4] Daniel, J.R.K., 1984. Geomorphology of Guyana. An integrated study of the natural environment. Occasional Paper No.6. Department of Geography, University of Guyana.
[5] Ibid

Geomorphological Region	Description
	highest is Mount Roraima at 2773 meters. This region covers an area of 156,747 square kilometers or 74 percent of the country's land area.
The Pre-Cambrian Lowlands (Description after Daniel, 1984).	This is the largest of the geomorphological regions and it forms a gently undulating territory at a general elevation of 90 to120 meters. The peaks rise to over 300 meters in the north and 900 meters in the south. With the exception of the savannah in the southwest it is mostly under a thick forest. This region covers an area of 16,986 square kilometers or 8 percent of the country's land area.

Guyana is usually considered to consist of four (4) main natural regions; Coastal Plain, Hilly Sand and Clay Region, Interior Savannas and Forested Highlands.

The Coastal Plain is a narrow belt (ranging between 8 and 65km in width with a length of 440km) stretching from the Corentyne River in the east to Waini Point in the west providing most of the agricultural production in the country. It is also where more of the population resides and economic activities conducted. Many areas of the coastal plain are below sea level while other areas are man-made and built-up to raise them above the surrounding land level. East of the Essequibo River the plain consists of recent and old sediments with recent deltaic and fluvio-marine clays and silts occurring on the coast with silty clays and sands inland. The recent plain occurs at elevations of 2m below to 3m above sea level with sandy old beach ridges forming higher ground. The older coastal plain lies at an altitude of about 3-9 m above sea level. The normal tidal range is about 3m with resultant flooding (particularly sea invasion) especially during the wet seasons from April to August and November to January and during high tides. An elaborate system of sea defences, along with irrigation and drainage canals, is required to protect the area from flooding. Four of the new school construction (Recht door Zee, Diamond, Huradiah/Cabora and Tuschen) and two of the extensions (Belle West and Patentia) are located in this region.

The Hilly Sand and Clay Region is found just inland of the coastal zone, although not in the north-west of the country. This region is also known as the 'White Sand Plateau' in the north-east and centre of Guyana. The area is gently undulating with altitudes varying from about 15m above sea level close to the coast to 150m in the south. The White Sands overlie brown sands and the unit also contains deltaic sands and clays, laterite gravels and bauxite, and is deeply dissected in the centre north of the area. In the north-east and corresponding to the greatest extent of white sand the plain has a distinctive vegetation of Wallaba and Dakama forest, Muri scrub and savannah grasslands. The white, sandy soil is permeable and low in nutrients, and forms the most vulnerable ecosystem in Guyana. One of the new school constructions (Wisroc) and four of the schools to be rehabilitated, extended and or outfitted (St. John-the Baptist, Two Miles, Two Miles Annex and Agatash) are located in this region.

The Forested Highlands make up the bulk of the country and are often divided into the Western Highlands and Southern Uplands. The Western Highlands comprise the border of Venezuela and Brazil, and are rugged igneous and metamorphic mountains that are densely forested and virtually inaccessible. Topographically, it is a dissected upland with steep tabular hills and mountains cut by deep gorges. Rivers are fast flowing within deeply dissected terrain, creating deep gorges and waterfalls. The Southern Uplands region is bordered by Brazil and Suriname and consists of four mountain ranges with elevations of 300-1,200m. Access to these forested ranges is very limited. One of the schools to be rehabilitated, extended and or outfitted (Monkey Mountain) is located in this region.

The Crystalline Shield Uplands occur in the north-west and south-east of Guyana and is part of the

larger Guiana Peneplain. The unit is described as a monotonous continually rolling to hilly land, dominantly forested. The Highlands, Mountains and Plateaus unit corresponds primarily to the Pakaraima Mountains but also includes many isolated mountainous areas (inselbergs) within the Crystalline Uplands in the north-west, centre and south of Guyana as well as including the Kanuku and Açarai Mountains. Several of the schools to be rehabilitated, extended and or outfitted are located in this region including Mahdia, Hosororo, Wauna, White Water, Mabaruma, Port Kaituma and Kariako.

The Interior Savannas account for about 8% of the country's area and are vegetated by grasses, scrub and low trees. The Rupununi savanna is divided into the northern and southern savannas by the Kanuku Mountains. The savanna itself is generally flat but in places is more dissected with an undulating topography, particularly to the north and east of the Kanuku range. The northern savannas are characterised by large areas of wetlands caused by the backflow of the Takutu and Ireng Rivers during the Amazonian wet season while the southern savannas are composed of pre-cambrian aged rocks. The northern savannah plain lies at an altitude of about 100-110m and the Pakaraima Mountains rise abruptly from the plain to altitudes of 610m and reach heights of 990m at their highest. The Kanuku Mountains rise to 760-840m. The southern savannahs are characterised by a relatively flat plain at a height of 100-120m with granitic inselbergs rising abruptly from the plain to heights of 760m. One of the new schools construction (Tabitinga) and six of the rehabilitation, extension and or outfitting (Annai, Karasabai, Aishalton, Awarewanau, Kaicumbay, and Maruranau) are located in this region.

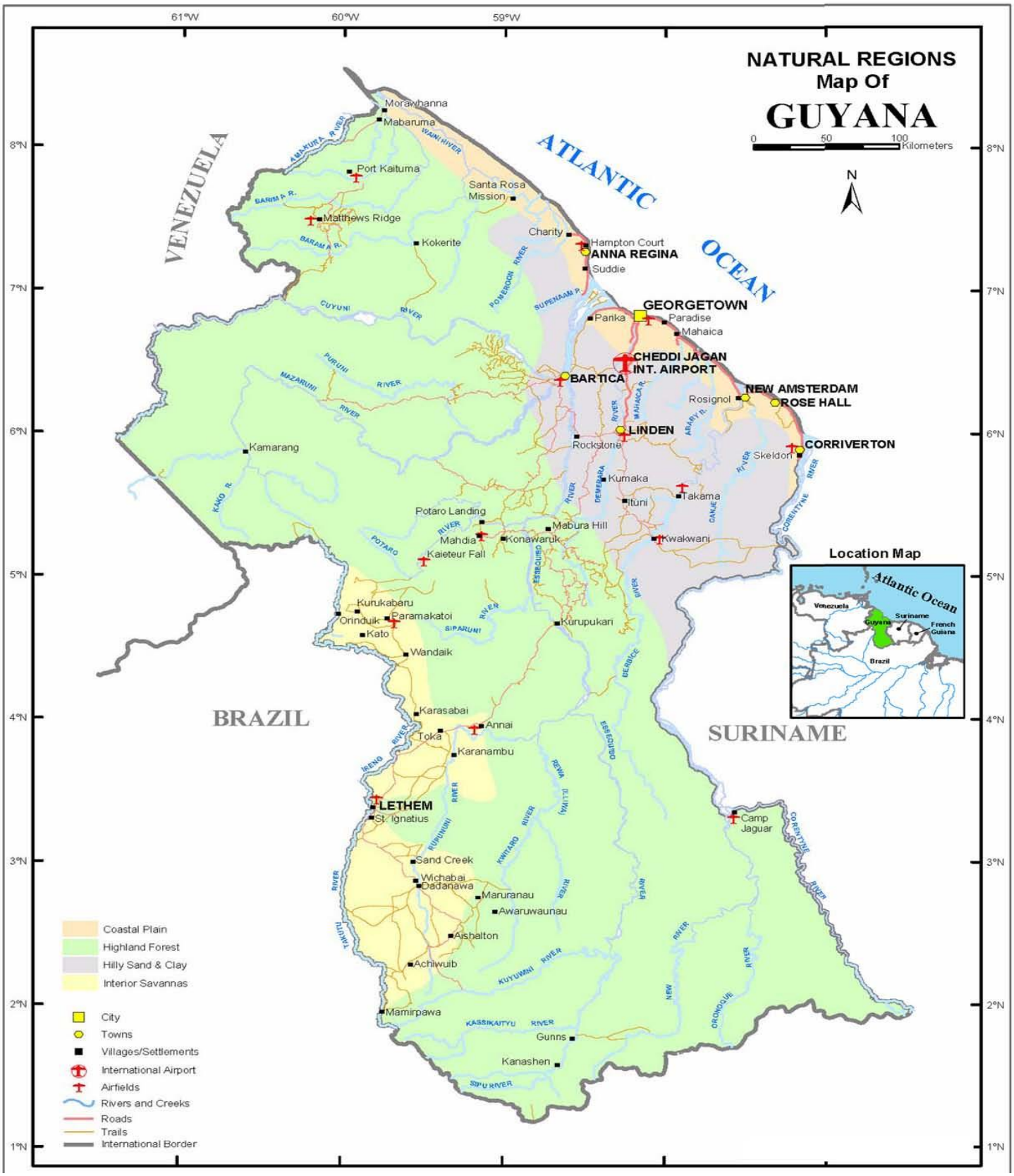


Figure 4-1: Natural Regions of Guyana

4.1.2 Meteorology/Climatology[6]

Guyana's climate is influenced primarily by the seasonal shifts of the Inter Tropical Convergence Zone (ITCZ) and the seasons and climate are determined mainly by the variation in rainfall patterns. Guyana has a tropical climate characterized by a high but variable rainfall, high humidity and a relatively small temperature range with two wet and two dry seasons.

Along the coastal plain rain falls an average of 200 days a year, with 50 percent of the average rainfall occurring from mid-April to mid-August. The second wet season is in December and January. The wet seasons begin in the west of the country and move to the east, ending with their retreat back to the west giving longer wet seasons in the west of the country. In the drier savannas there is only one wet season from April to August and most rainfall occurs from April to May. Annual averages of rainfall are 2,500 millimetres near the Venezuelan border and 2,300 millimetres in Georgetown. The average in the Rupununi Savannahs ranges between 1,400 and 1,800 millimetres. Areas on the northeast sides of mountains that catch the trade winds average as much as 3,500 millimetres of precipitation annually. When the ITCZ is strong (late April to early July), abundant rainfall is experienced but when it is weak rainfall may be absent. El Niño and La Niña events can also affect the rainfall pattern and sometimes result in drought and flood conditions respectively.

Guyana's coast is subject to the north-easterly trade winds with speeds of about 6 meters per second. This moderates the hot and humid conditions. Mean air temperature ranges between 25 to 27.5°C throughout the year in most regions except the upland regions in the interior/west of the country, where mean temperatures are cooler and range between 20 to 23°C.

Average wind speeds for Guyana are typically 6 miles per second. However, between July and August, stronger westerly winds, which influence the prevailing wave climate, are experienced. Wind speeds also vary seasonally. During the dry season, the strongest winds are experienced between January and April when the northeast Trade Winds dominate. Wind speeds range, on average, between 9 (wet season) and 12 kilometers per hour (dry season).

The overall relative humidity in Guyana is generally above 70 percent. Relative humidity is high averaging about 70 percent in the Savannahs, 80 percent on the coast and 88 percent in the rainforest. Morning fog can be widespread and persistent in the hinterland districts.

As a result of Guyana's proximity to the equator there is little variation in the hours of daylight. It varies from a minimum of 11.6 hours per day in December to a maximum of 12.5 hours per day in June. Bright sunshine is influenced by rainfall and during the rainy season the coast can experience an average of 6 hours per day.

The coast is situated in the tradewinds, but tropical storms or cyclones do not occur in this area. Guyana lies south of the path of Caribbean hurricanes and therefore does not experience tropical storms or hurricanes.

The climatic regions of Guyana are shown in Figure 4-2.

[6] This section was compiled using information contained in the National Land Use Plan (2013)

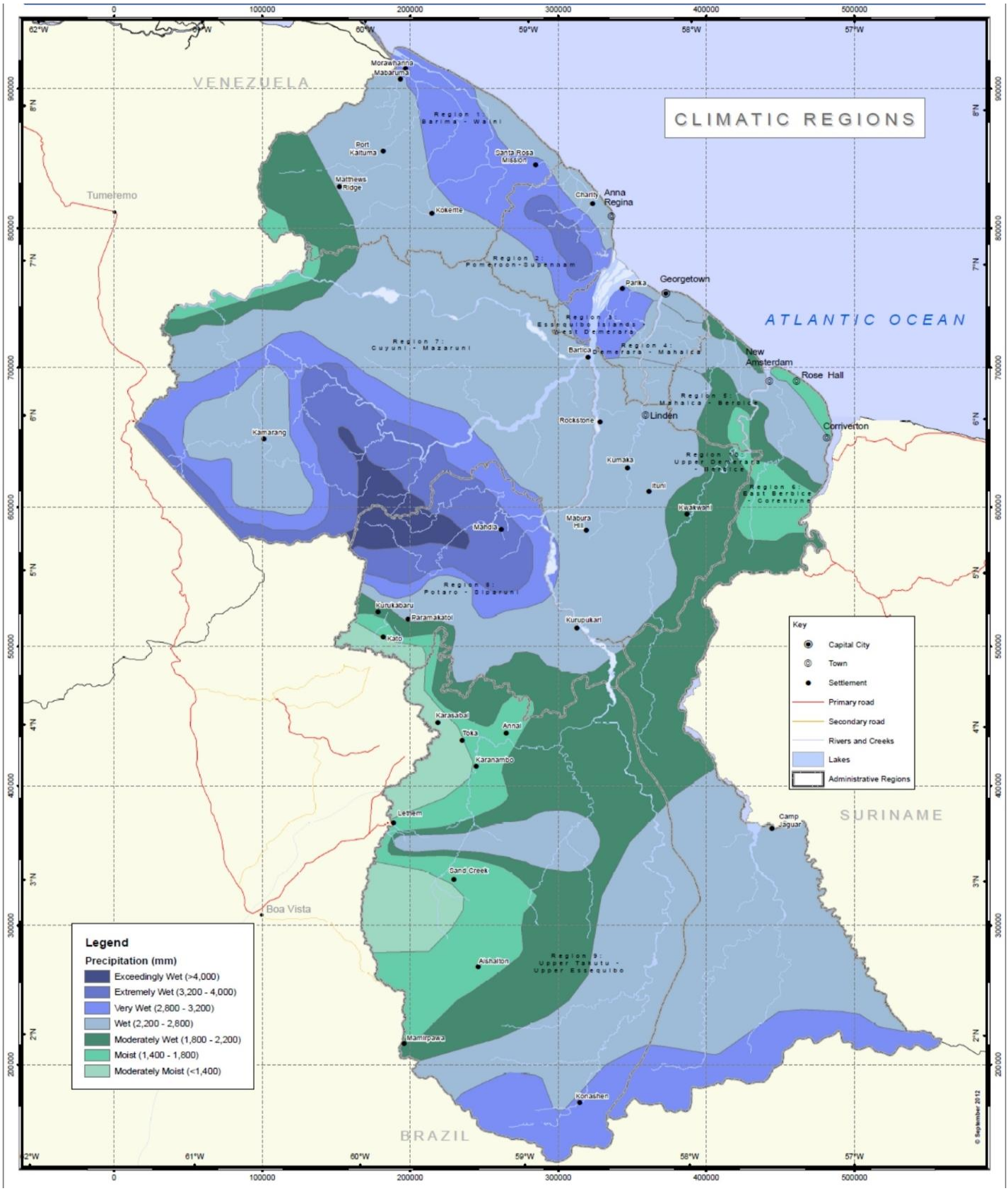


Figure 4-2: Climatic Regions in Guyana

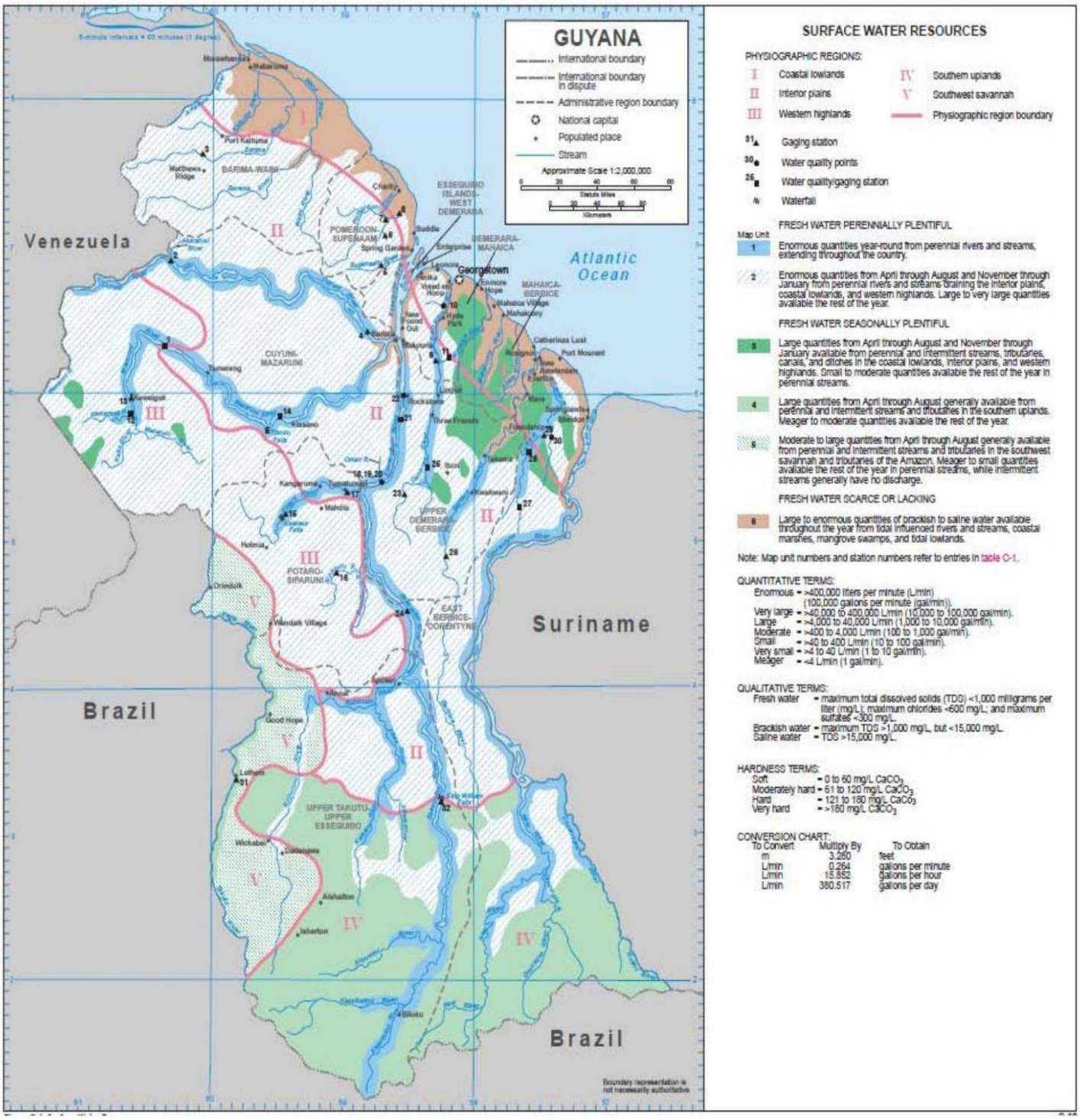
4.1.3 Water Resources[7]

Guyana, meaning 'land of many waters,' is rich in water resources. The most recent study of national water resources was undertaken by the United States Army Corps of Engineers in 1998. The study shows that the majority of the country has perennially plentifully available fresh water with enormous (defined as greater than 400,000 litres per minute) quantities available for 8 months of the year (wet seasons) and large (4,000 to 40,000 litres per minute) to very large (40,000 to 400,000 litres per minute) quantities available for 4 months of the year. Exceptions include the coastal plain backlands, Rupununi Savannas and Pakaraima Mountains and the far south of the country where water is seasonally plentiful. Only in the coastal frontlands is water scarce or lacking with large to enormous quantities of brackish to saline water available. The surface water resources of the country are shown in Figure 4-3. The assessment of groundwater resources showed that fresh groundwater was generally plentiful on the coastal plain, white sands plateau and in the Takutu basin with other inland areas having only pockets of fresh groundwater in largely unexplored aquifers. The ground water resources of the country are shown in Figure 4-4.

A measure of the relative water 'richness' of a country or region is the annual per capita water resource availability. This is a simple indicator of whether an area is in a state of water scarcity or water surplus, based on the total runoff of the area in question. Generally, annual per capita water availability above 2,000 cubic meters is considered relatively safe. Guyana has an annual per capita water availability of 314,963 cubic meters indicating an enormous water surplus. Another way of indicating this is to note that the population of Guyana would have to grow to 142 million before a state of water stress existed.

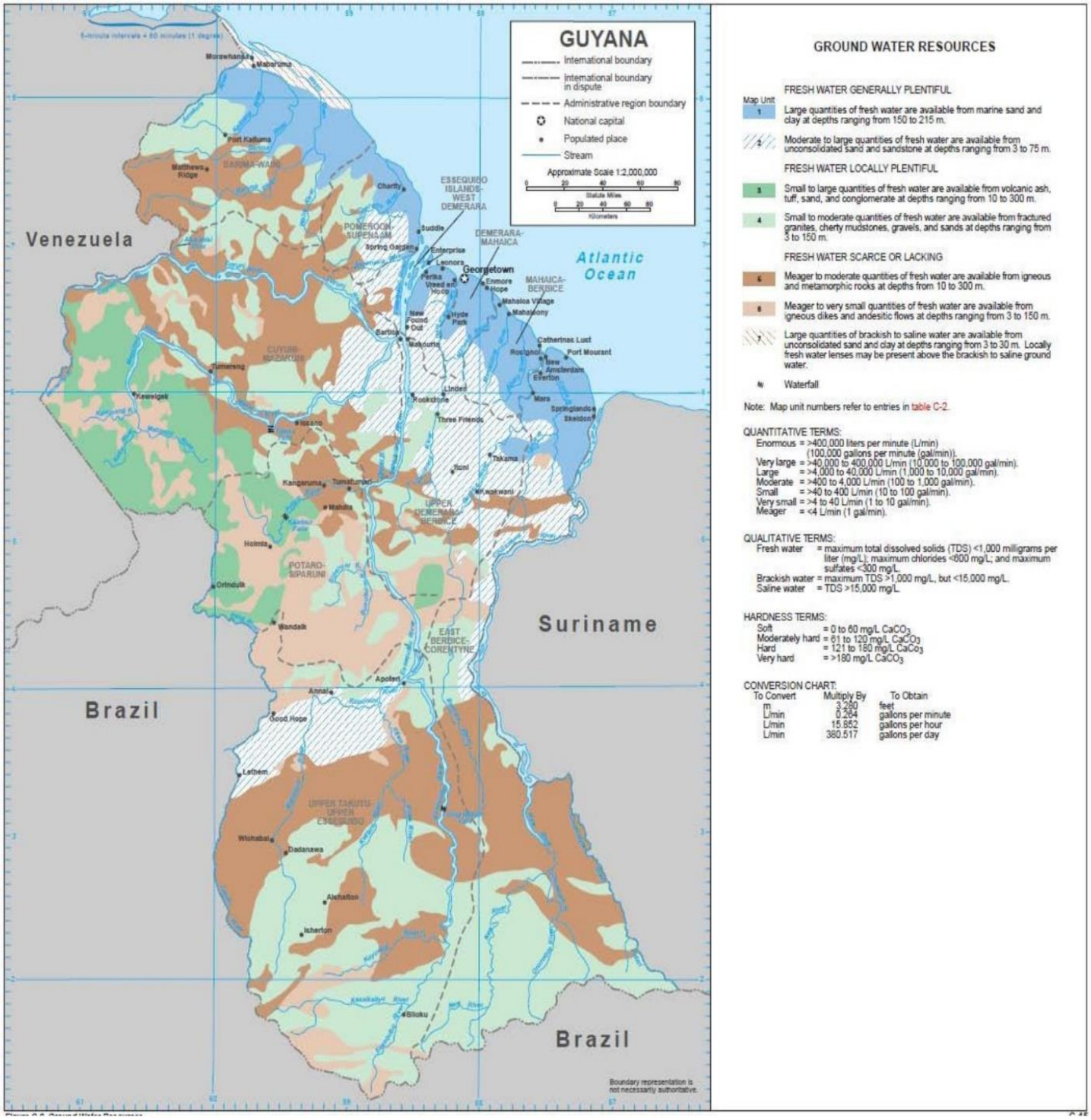
As a result of surface water supply shortages along the coast and in other areas, groundwater has been used to supplement domestic water requirements. Groundwater from the coastal aquifer system which consists of three distinct aquifers, provides about 90 percent of the domestic water for the country. Presently, these aquifers, particularly the 'A Sand' aquifer, provide ample water for the coastal population. However, from approximately 1913 to 1993, dewatering of the "A Sand" aquifer has caused the head to fall almost 20 meters.

[7] Guyana Lands and Surveys Commission, 2013. National Land Use Plan (draft). Pages 22 to 23.



Source: United States Army Corps of Engineers (1998) as cited in the National Land Use Plan (Draft) 2013

Figure 4-3: Guyana Surface Water Resources



Source: United States Army Corps of Engineers (1998) as cited in the National Land Use Plan (Draft) 2013

Figure 4-4: Guyana Ground Water Resources

4.2 Ecological Setting

Guyana is located on the Guiana Shield which is situated in northeastern South America. It includes the large mountain systems that form the watershed between the Amazon and Orinoco Rivers. The Guiana Shield accounts for more than 25 percent of tropical forests remaining in the world. Its diverse landscapes have been recognized for their biological endemism, unique ecosystems, pristine forests, and cultural diversity. Generally, Guyana is considered a country endowed with relatively rich biodiversity and high endemism, due to four main factors: (1) the country's location at the edge of the species rich Amazon Basin; (2) its overlying position on the Guiana Shield[8]; (3) its strategic location on the Atlantic seaboard of South America that accounts for the marine and coastal environment; and (4) the country's history of low incidents and intensity of conversion of natural habitats. However, within the general project area there is limited biodiversity due to human interactions and development activities over the last few centuries.

4.2.1 Ecosystems[9]

The major ecosystems that can be distinguished within the country are (i) forest, (ii) freshwater, (iii) wetland, (iv) savannah, (v) coastal and (vi) marine. These ecosystems support diverse species to the extent that as of 2010 Guyana's species status was estimated as 8,000 plant species; 467 fishes; 130 amphibians; 179 reptiles; 814 birds; and 225 mammals; 1,673 arthropods; over 1,200 fungi; 33 bacteria; 13 nematodes; 44 algae; 17 molluscs; and an estimated 30 viruses.

According to the FAO[10], Guyana has a total of 1,182 native tree species of which 1 species *Vouacapoua Americana* is listed by the IUCN Red List as Critically Endangered. Three species; *Trichilia surumuensis*, *Aniba rosaedora, Virola surinmensis* are listed as Endangered and a total of 18 species are listed as Vulnerable.

No Critically Endangered mammals are known to occur in Guyana. The only Endangered mammal listed by the IUCN for Guyana is the Giant Otter (*Pteronura brasiliensis*). The only Endangered bird species listed in Guyana are the Sun parakeet (*Aratinga solstitialis*); Hoary-throated spinetail (*Synallaxis kollari*); and the Red siskin (*Carduelis cucullata*). Guyana has no listed Critically Endangered or Endangered freshwater vertebrates. Of the species known to occur in Guyana, 4.5 percent of mammals, 0.4 percent of birds, 3 percent of amphibians, 3.3 percent of reptiles and 0.3 percent of freshwater fish are threatened[11].

4.2.2. Flora and Fauna

The sites where the schools are located and adjacent areas are entirely cleared of the original vegetation. In the areas surrounding the schools most of the vegetation was also cleared to facilitate development, which includes housing, agriculture and commercial activities. There may be some secondary vegetation occurring in patches or along roads and trails in the wider area. However, the Huradiah/Cabora site is mostly covered with vegetation.

There are no rare, threatened or endangered species at the project sites and no special habitat or protected area is located in close proximity. Figure 4-5 shows locations of the national protected areas and other areas of important biological value.

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[8] The Guiana Shield region covers 2.5 million square kilometers. It extends from Colombia in the west to the Brazilian state of Amapá in the east, including the Venezuelan states of Delta Amacuro, Bolívar and Amazonas, all of Guyana, Suriname and French Guiana, and continuing into the Brazilian States of Pará, Roraima and Amazonas. The region contains 10 to 15 percent of the world's fresh water reserves and an extremely rich diversity of plants and animals.

[9] Environmental Protection Agency, 2014. National Biodiversity Strategy and Action Plan 2012-2020. Pages 8 to 9.

[10] Food and Agriculture Organization of the United Nations, 2005. Global Forest Resources Assessment.

[11] World Wildlife Fund (WWF) - Guianas, 2012; Wetlands of Guyana – An insight into the ecology of selected wetlands with recommendations from WWF-Guianas.

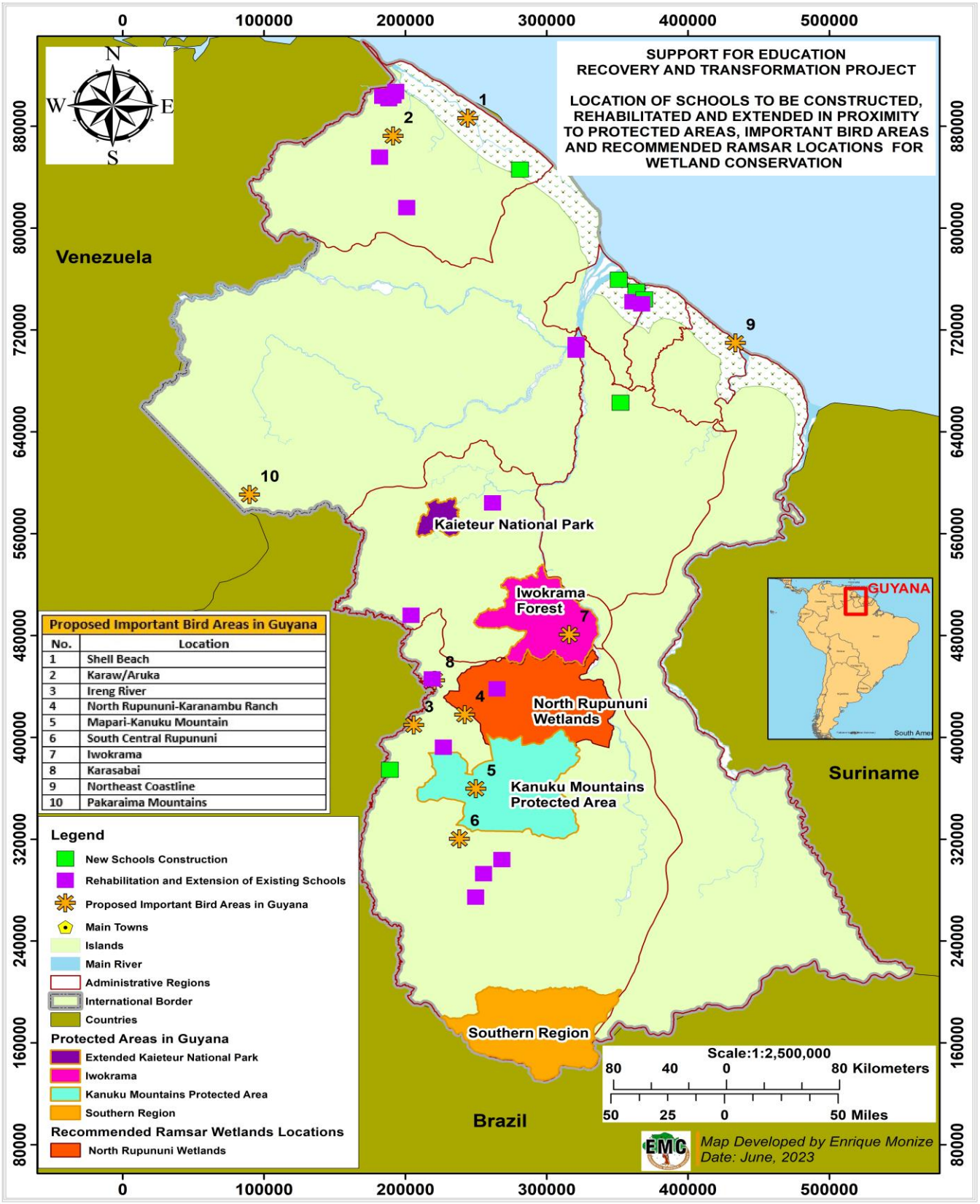


Figure 4-5: The National Protected Areas and other Areas of Important Biological Value in relation to the School Sites

4.3 Social Setting

4.3.1 Population

In 2012, the reported population of Guyana was 746,955, based on the national census. Out of the total population taken in the census 49.8 percent were male and 50.2 percent were female. This situation reversed from the previous census conducted in 2002. As compared to the 2002 census, the population declined, with the rate of decline 0.06 percent per annum. Guyana experiences a high migration rate.

Guyana is divided into 10 administrative regions. Most of Guyana's population is located in the six coastal regions. According to the 2012 national census, nearly half of the country's population lives in Region 4, which includes the capital city of Georgetown. Table 4-2 summarizes the distribution of population within the 10 regions in 2012. The overall population density is very low at 3.5 people per square kilometer, although this varies from a high of 139 in Region 4 to a low of 0.34 in Region 9, with all inland regions having extremely low densities at fewer than 2.5 people per square kilometer and Regions 7, 8 and 9 having less than 1 person per square kilometer. Twenty-nine percent of the population is considered to be urban dwelling with 71 percent rural[12].

Table 4-2 Regional Population Distribution in Guyana

Region		Population 2002	Population 2012	Population Change Since 2002	Percent of Guyana's Total Population
1	Barima-Waini	24,275	27,643	+13.9%	3.7%
2	Pomeroon–Supenaam	49,253	46,810	-5.0%	6.3%
3	Essequibo Islands—West Demerara	103,061	107,785	+4.6%	14.4%
4	Demerara-Mahaica	310,320	311,563	+0.4%	41.7%
5	Mahaica—Berbice	52,428	49,820	-5.0%	6.7%
6	East Berbice—Corentyne	123,695	109,652	-11.4%	14.7%
7	Cuyuni-Mazaruni	17,597	18,375	+4.4%	2.5%
8	Potaro—Siparuni	10,095	11,077	+9.7%	1.5%
9	Upper Takutu—Upper Essequibo	19,387	24,238	+25.0%	3.2%
10	Upper Demerara—Berbice	41,112	39,992	-2.7%	5.3%
	Guyana	748,084	746,955	-0.6%	100.0%

Sources: Bureau of Statistics 2012; Bureau of Statistics 2002

The population within the areas of the schools proposed to be targeted by the project varies with those on the coastal areas and main towns being surrounded by greater number of persons while those in the interior locations having fewer nearby residents, especially those within the indigenous communities.

4.3.2 Land Use

Guyana is sparsely populated and most activities within Guyana is concentrated on the coast where approximately 90 percent of the country's population lives and which comprises only approximately 7.5 percent of the country's total land area. The coastal area serves as the political, administrative and commercial centre of Guyana. The main coastal economic activity is agriculture. The coastlands are

[12] Guyana Lands and Surveys Commission, 2013. National Land Use Plan (draft). Page 75-76.

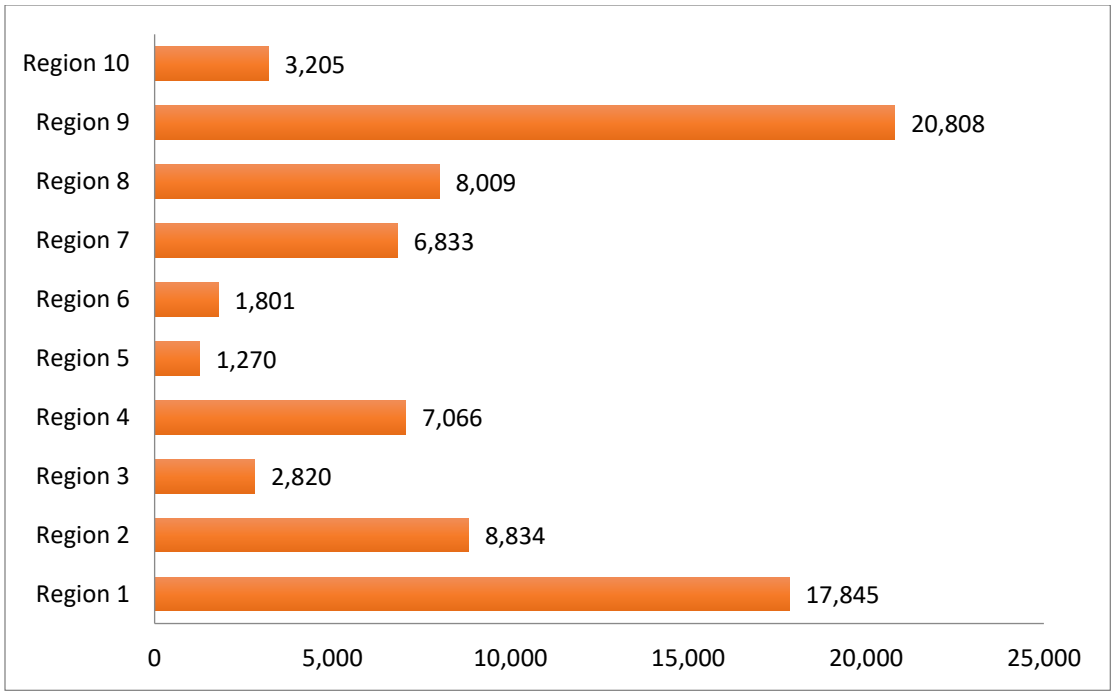
extensively drained for agriculture and irrigated by irrigation systems which provide a supply of freshwater to the agricultural lands. Freshwater is captured and stored in conservancy systems along the coast. The greater portion of the arable land is owned by the State which leases land to various entities and individuals for rice and sugar cultivation. Private land owners are engaged in the planting of traditional crops of sugarcane, rice, citrus, coconuts and cash crops. Housing occupies a relatively small portion of the coastlands owing to the low population density and economic factors. Most persons reside in Georgetown and the other main towns. However, recently there has been a significant increase in housing development across the main populated areas, especially in Regions 2, 3, 4, 5 and 6. Most of the country's transportation infrastructure is found along the coast. Recently industrial type operations have been emerging, especially in the manufacturing and processing sectors.

Efforts are being made to decentralize activities away from the coast. Increasingly persons are engaging in activities in the hinterland and which is based on the exploitation of natural resources, including mining and logging. In the hilly sand region, the predominant land use is forestry and mining. Within the savannahs the main land use is agriculture, ranging from a few commercial ranches to subsistence agriculture practiced by Indigenous communities.

The land use within the areas where the schools proposed to benefit from the project are located varies, with those in coastal areas and main towns being surrounded by mixed land uses such as residential, commercial, administrative and agriculture. Those in the interior locations, especially those within the Indigenous communities are surrounded mainly be sparse residential and agricultural activities.

4.3.3 Indigenous Population

The indigenous peoples or the Amerindians, as they are collectively referred to, are known historically as the first inhabitants of Guyana. Their history is recorded in their unique culture and heritage that have been passed on through generations using tangible and intangible methods. Guyana's key symbols of nationhood have originated from the indigenous culture and emphasizes the importance of the indigenous peoples' contribution to Guyana. The history of the Guyanese indigenous peoples can be traced to 11,000 years ago when the Amerindians hunted, gathered, fished, settled and explored the country. There are nine indigenous nations that remain to this day: Arawaks (Lokonos), Arecunas, Akawaios, Caribs, Macushis, Patomonas, Wai Wais, Wapichan and Warraus. The Warraus, Arecunas, and the Caribs are found in coastal Regions 1 and 2; while the Wapichan, the Arecunas, the Makushis, the Wai Wais, the Akawaios, and the Patamonas inhabit the hinterland areas of Regions of 7, 8, and 9. Figure 4-6 shows the Amerindian Population within each Region.



Source: Bureau of Statistics (2012)

Figure 4-6: Indigenous Population with the Regions of Guyana

According to the Bureau of Statistics[13], the indigenous population accounts for 78,492 or 10.5 percent of the total population of Guyana and is considered the fourth largest ethnic group in Guyana. Further, the Amerindians account for 85.9 percent of the total population in Region 9, 72.3 percent in Region 8, 37.1 percent in Region 7, 64.7 percent in Region 1, and 18.9 percent in Region 2. The Amerindian population accounts for an average of 3.4 percent each of the total population in Regions 3, 4, 5, 6 and 10.

Several Amerindian villages or communities with significant Amerindian population will benefit from the project. For the new schools construction, one of the schools will be constructed at Cabora, Moruca, Region 1, which is an Amerindian community, while another school will be constructed at Tabatinga, Lethem, Region 9, a community and region with significant Amerindian population. For the schools to be rehabilitated, extended and outfitted, most of these are located in Amerindian communities. Figure 4-7 shows the locations of the proposed project interventions in the Regions with significant Indigenous populations. Currently, the following schools from these communities are identified to benefit:

1. Kariakau Primary School
2. Hosororo Primary School
3. Wauna Primary School
4. Monkey Mountain Primary School
5. Mahdia Primary School
6. Karasabai Primary School
7. Annai Primary School
8. White Water Primary School
9. Mabaruma Primary School
10. Port Kaituma Primary School

[13] Guyana National Bureau of Statistics, 2012. Guyana Population and Housing Census.

11. Karasabai Primary School
12. Aishalton Primary School
13. Awarewanau Primary School
14. Maruranau Primary School
15. St. John-the Baptist Primary School
16. Two Miles Primary School
17. Two Miles Primary School Annex
18. Agatash Primary School

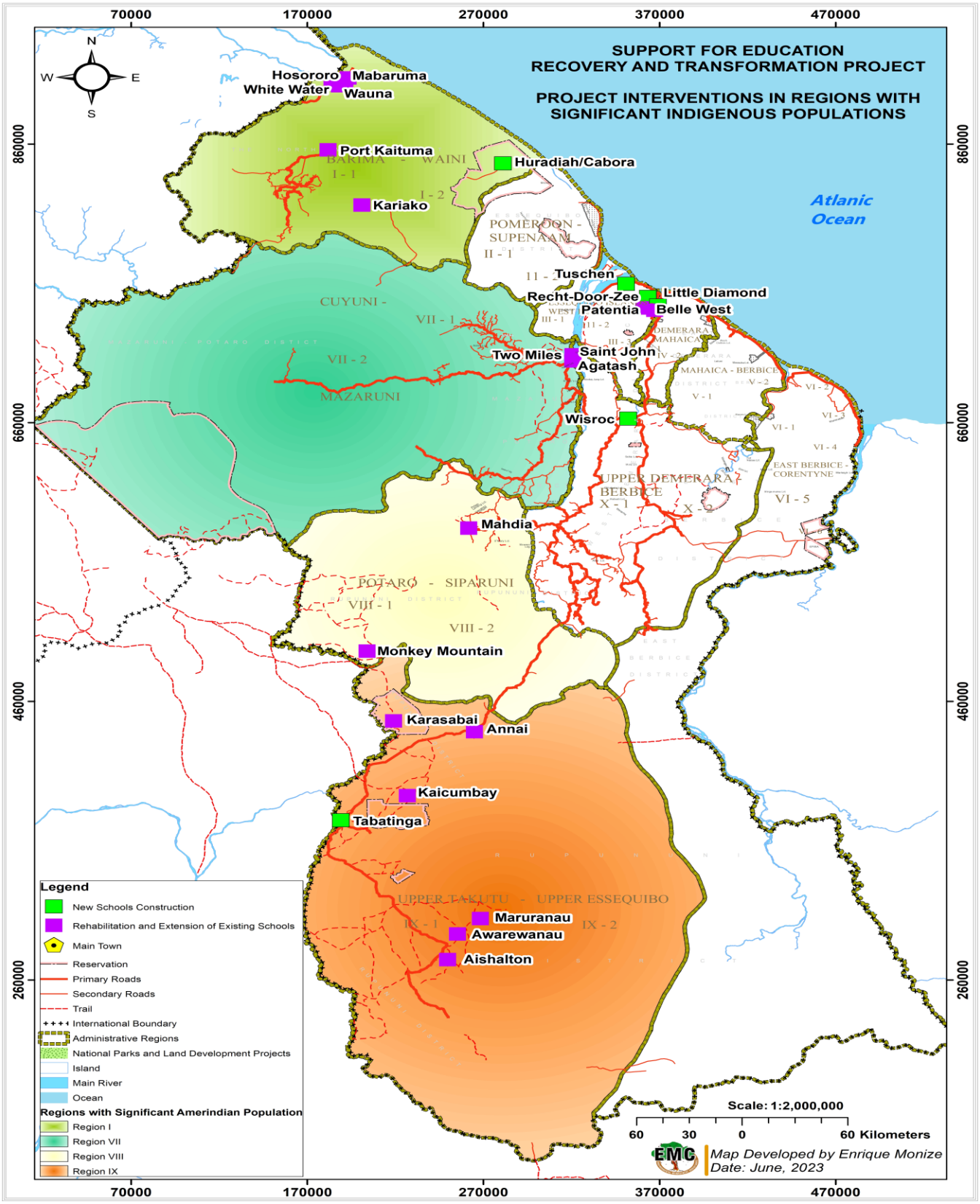


Figure 4-7: Project Interventions within Regions with Significant Indigenous Populations

4.3.4 Provision of Utilities

Within the coastal areas there is adequate provision of utilities including electricity and water. Water is usually provided by Guyana Water Inc. utilizing mostly groundwater sources. In some instances, water is supplied from conservancies and other surface water sources. Electricity is mostly provided by the Guyana Power and Light Company.

In hinterland areas there is water supply in the main towns such as Mabaruma, Mahdia, Bartica, etc. However, water supply may only be available for certain times of the day and can be affected by electricity supply. Water supply in these areas consists of both ground and surface water sources. Surface water supply is usually affected during the dry seasons. Electricity is also provided in these main towns, although the supply may be limited to certain times of the day.

Within indigenous communities the water supply consists of both ground and surface water sources as well as rain water harvesting. However, pumping distribution systems are limited and residents either have their own well or travel to surface water sources such as rivers and creeks to obtain water. Electricity supply is also limited, with person utilizing solar power or small generators.

4.4 Project Environment at the Communities

It was agreed that the locations of the four new schools construction and a sample of three of the thirteen schools to benefit from rehabilitation, extension and or outfitting will be assessed as part of the ESA process. The following sections present the socioeconomic profiles of these communities based on the assessment conducted.

4.4.1 Kariakau, Region 1

Kariakau is a remote indigenous village located in Barima-Waini, Region 1 on the Barama River. This area is within the Forested Highlands natural region.

The village currently has a population of 721 people; most of whom belong to the Kalinago tribe (Caribs). The remainder of the population is considered ‘mixed’. There are currently 112 households in the village.

There are three main means of accessing the village. Kariakau is accessible by air via plane from Georgetown to the Yakishuru airstrip which is privately owned, followed by a 20 minutes boat ride from Yakishuru. Alternatively, Kariakau is accessible by river from Charity, Region Two. This is a 5 hour boat ride from Charity or a 3 hour boat ride from Moruca. This is the more utilized method of transportation by residents, but journeys can take a lot longer during the dry season. Kariakau is also accessible by road from Port Kaituma. However, the road is only traversable in the dry weather and the journey is usually 5 hours, but can be significantly longer based on the road condition.

A Village Council headed by a Toshao and Vice-Toshao manages the village and the day to day activities. The village is run by a set of village rules and regulations that ensure villagers and visitors act in accordance with the norms of the village. While there is no police outpost in the community, the Toshao is a sworn Rural Constable, and is therefore empowered by law to administer law and order in the community.

The village center is mainly used for residential purposes, with some commercial activities like small variety shops. Other facilities include a church, a guesthouse, a health post, and Village Office.
The health post is staffed by two Community Health Workers and one Mid-Wife, and the Regional Health Officer (RHO) visits the village regularly. In cases of emergency persons are usually transferred

to Moruca via boat, or for serious situations, airlifted to Georgetown. Malaria is the main health concern for the community and there have been cases of dengue and typhoid recorded.

The village has access to electricity from a generator and solar panels; villagers access this service by paying a fee to the Village Council. The village has a community well that is located on the primary school's compound. There is no cellular or landline services in the area. There is access to the internet via the Village Council. Villagers can purchase time tokens from the Village Council to have access to the internet.

The main economic activity of the village is mining. Most of the villagers are involved in small to medium scale mining in the area. There are currently no miners from outside of the community operating in the area. Person interested in conducting mining on community lands has to be vetted by the Village Council and then a decision is made based on the information provided. Logging is done for personnel use but is strictly prohibited for commercial use and sale.

Generally, villagers depend on subsistence farming and fishing as their main source of food, however, other food and household items such as chicken are imported to the community via Charity, Port Kaituma, or by air from Georgetown.

The village main potable water source is the well located in the school compound. The water is stored in elevated water tanks, and is supplied through a piping system connected to most residential and commercial buildings. During the dry season or when there is an issue with the well, residents use the Barama River to access water for domestic and other water use.

Villagers utilizes the pit latrine systems for toilet and sanitary needs and other domestic and commercial waste is dumped and burned in a community dumpsite or at individual's home.



Figure 4-8: Aerial View of Kariakau Village



Figure 4-9: Section of the Village in Close Proxmity to the School

4.4.2 Belle West, Region 3

The Belle West Housing Scheme is located on the Coast Plain on the western bank of the Demerara River. The Scheme was established in 2001 and is bordered by the Clay Brick Village to the west, sugarcane fields to the east and south, and the main canal to the north. The housing scheme was developed in two phases. Phase One is already densely populated while Phase Two, which was established in 2011, is undergoing infrastructural upgrades and is currently being occupied at a fast rate. Together, Phase One and Phase Two of Belle West Housing Scheme have 1,800 house lots and currently have a population of approximately 5,000[14] persons occupying formal housing. There is also a significant migrant population (Venezuelans) in the community who are squatting on unoccupied lands and on government reserve.

The village is accessible from Georgetown by road via the Demerara Harbour Bridge. The main access to the Housing Scheme is through the Clay Brick Access Bridge.

The main economic activity of the area was closely tied to the Wales Sugar Estate. However, since its closure, residents have resorted to other means of earning. The community now depends on farming, fishing, small businesses, government and private sector employment, and other domestic and commercial activities.

The community is administered by a Neighbourhood Democratic Council (NDC). The community has public facilities including a nursery school, primary school, a mandir, a mosque, a number of churches, a health centre and a play field. Some residents provide other services to the community such as supermarkets, dry-goods stores, restaurants, taxi services, day care and pre-school centres, etc.

Essential utilities such as electricity and potable water are provided by Guyana Power and Light (GPL) and Guyana Water Inc. (GWI) respectively. Other services such as internet, cable, landline telephone, and mobile phone services are also accessible in the village.

Solid waste is usually collected by a private garbage disposal service, or is burned by residents. Belle West does not have an interconnect sewer system, therefore most of the residents utilize septic tank system or pit latrines.

[14] https://www.stabroeknews.com/2021/02/04/news/guyana/residents-in-belle-west-phase-2-speak-out-about-roads/



Figure 4-10: The Section of the Belle West Community surrounding the School



Figure 4-11: Squatting within the Community



Figure 4-12: Roads, Drains, Shops and Residences in close proximity to the School

4.4.3 Recht door Zee, Region 3

Recht door Zee is located within a much larger housing scheme referred to as La Parfaite – Harmony. The area is situation on the Coast Plain on the western bank of the Demerara River. Recht door Zee was established in 2013 and is a developing community which is divided into Phases One and Two. It is bordered by Lust en Rust to the south and Onderneeming to the north.

Recht door Zee Phase One is a Core Home Pilot, which includes houses that were constructed under the Core Home Programme by the Government of Guyana in collaboration with IDB's Second Low-Income Settlement Programme. Phase Two is also one of the Low-Income Settlement Project, and the Professional Housing Programme under which 206 lots were allocated to teacher, nurses and police officers. It currently has approximately 60% occupancy. According to the 2012 census, the community has a population of approximately 952 people. However, the community is growing at a fast rate especially with the increase in migrant population in the community.

The community can either be accessed from the Canal/Bagotville Junction through the Canal #1 Main Road, or through the Schoonard/Parfaite Harmony access road. Within the community there are community roads which lead to the project site (Figure 4-15). Currently, road upgrades are being done in the area with support from the IDB under the Road Network Upgrade and Expansion Program (GY-L1031). The community has access to electricity from GPL and potable water from the GWI. There is internet and cell service in the area, as well as GTT landline service.

Drainage within the project area is typical to that in communities throughout the coastal plain, whereby a network of interconnected earthen drains and primary canals facilitate the flow of storm waters off

the land. The area is drained by small ditches along the road side which empty into primary drains or canals. The entire project area is drained by small drains which feed into trenches which empty into the Demerara River and is regulated by sluices and pumps.

The project site was once utilized for sugar cane cultivation and is devoid of primary vegetation. The area was returned to the state when the sugar estates abandoned the lands and were subsequently converted to housing lands. Secondary vegetation consisting mainly of grass and shrubs currently covers the site (Figure 4-14).

The scheme was developed as a resettlement programme and as such the majority of the population is employed in the private and public sector. Some of the residents provide services such as taxi and otherwise, and products such as food and home goods in the community.



Figure 4-13: The Proposed Project Site and Surrounding Areas



Figure 4-14: Project Site Covered in Shrubs



Figure 4-15: Access Road and Drains leading to the Project Site

4.4.4 Tuschen, Region 3

Tuschen Housing Scheme is one of the largest housing schemes in Guyana and is located on the East Bank Essequibo in Region 3. Tuschen is made up of mostly internal migrants from the smaller island in the Essequibo River among other riverine and mainland areas. The housing development is divided into two phases; Tuschen North and New Scheme. Tuschen Housing Scheme is bordered by Zeelught to the east, Vergenoegen to the west, the backlands to the south, and the Essequibo River to the north. Tuschen Housing Scheme is accessible by road from Georgetown or Parika. From Georgetown, Tuschen is approximately 1 hour by road.

Tuschen is an extremely large housing scheme with approximately 6000 houses, and a population exceeding 10, 000. The migrant population (Venezuelans) is also growing at a fast rate.

The community is fairly developed and is self-sufficient. It has its own farmers market, car park, and community green spaces. The main economic activity includes small – large commercial business, farming, and employment in the private and public sector. Other essential services such as a Health Post, Police Outpost, churches, mandir, and mosque are available. The Phase One of the scheme has a nursery and a primary school.

Drainage within the project area is typical to that in communities throughout the coastal plain whereby a network of interconnected earthen drains and primary canals facilitate the flow of storm waters off the land. The area is drained by small ditches along the road side which empty into primary drains or canals. The entire project area is drained by small drains which feed into trenches which empty into the Demerara River and is regulated by sluices and pumps.

The project site was once utilized for sugar cane cultivation and is devoid of primary vegetation. The area was returned to the state when the sugar estates abandoned the lands and were subsequently converted to housing lands. Secondary vegetation consisting mainly of grass and shrubs currently covers the site (Figure 4-17).

Essential utilities such as electricity and potable water are provided by GPL and GWI respectively. Other services such as internet, cable, landline telephone, and mobile phone services are also accessible in the community.



Figure 4-16: The Proposed Project Site and Surrounding Areas



Figure 4-17: Project Site Covered in Shrubs



Figure 4-18: Access Road and Drains leading to the Project Site

4.4.5 Tabatinga, Region 9

Tabatinga is located in the Township of Lethem, Region 9 on the eastern bank of the Takutu River which is the geographical division between Guyana and Brazil. The township is in the Savannah natural region. Lethem serves as the main administrative and commercial hub of Region 9. In the national context, Lethem assumes major importance because of its geographical location and the roles and functions it performs relative to other settlements in the region, and across the border in Brazil[15].

Lethem is administered by the Mayor and Town Council. Lethem is considered the hub of Region 9 and the main administrative and commercial zone. Lethem's growth and population were bolstered in the late 1980s by the construction of the Rupununi road through central Guyana, connecting it to Linden and Georgetown. Another significant development occurred in 2009 with the construction of the Takutu River Bridge linking Guyana and Brazil and promoting cross-border commercial activities[16]. Lethem's development was also linked to growth in the mining, tourism, cattle ranching, and agricultural sectors in the region. Lethem was officially designated as a town in October 2017.[17]

The current population according to the Mayor and Town Council is approximately 6,000, with Tabatinga being the largest constituency with 500 households and 2000 people. Lethem is a multi-ethnic and multi-racial town with a mixed population of Amerindians, people of mixed heritage, Coastlanders (migrants from Guyana's coast), and immigrants and descendants from China and Brazil. According to the ational Census (2012), 52 percent of the Lethem population is mixed-race, 28 percent of Amerindian descent, and 10 percent of African descent.

The project site is accessible by the following main routes:

- By air via scheduled flights offered by private carriers for passengers and cargo from the Eugene F. Correia International Airport at Ogle, East Coast Demerara and the Lethem Airstrip. Passenger and cargo flights may also be chartered. Plans are in place for the expansion of the airstrip into a Regional Airport to accommodate larger aircraft for international travel.

- Overland from Georgetown approximately 420 kilometres away via the Linden-Lethem Road. The Linden-Lethem Road is laterite capped and is known to deteriorate significantly during rainy conditions resulting in vehicles transporting passengers and cargo becoming stuck on the road. Work has commenced on paving a significant section of this roadway.

- By river, Lethem is accessible via boat on the Essequibo and its tributaries that run through the Rupununi region. Though access directly to Lethem is not possible, the boat journey stops relatively close to the Town[18].

The Township has essential facilities such as a hospital, Magistrate Court, commercial banks, Post Office, Police and Fire Stations. Lethem is also considered a trading zone and trade is the main economic activity, employing over 30 percent of Lethem's population. The importance of trade to the local economy is expected to increase as Lethem is officially slated to be declared a duty-free hub where no VAT or duty will be levied on products imported from Brazil (Personal Communication 01). The other economic activities include civil services (18 percent), municipality (14 percent), agriculture (12 percent) and financial services (10 percent) among others.

Tourism is also a significant contributor to the local economy with large numbers of Brazilians crossing the border to visit Lethem during weekends. The Lethem Town Week and the Rupununi Rodeo are

[15] Mayor &Town Council. 2018. Lethem Municipal Town Development Plan (2018 – 2023).
[16] Kaieteur News, 2019. Over 1,500 vehicles visit Lethem from Brazil on Weekends. (Article on March 1)
[17] Mayor &Town Council. 2018. Lethem Municipal Town Development Plan (2018 – 2023).
[18] Guyana Tourism Authority, undated. Welcome to Lethem.

the main events that attract visitors from across Guyana, Brazil, and other countries to Lethem. Although most of the food consumed in Lethem is imported from Georgetown and Brazil, some residents practice small-scale domestic and commercial farming

Lethem get its electricity from the Lethem Power Company and potable water from GWI. Internet and cell service is available in the Township and landline services are provided.

The Town Council is responsible for the solid waste management in the township. Garbage is usually collected and taken to a landfill site by the Town Council.

Tabatinga Housing Scheme is located on the outskirts of Lethem, and lies on the western area of the Township, along the border with neighbouring Brazil.



Figure 4-19: The Proposed Project Site and Surrounding Areas



Figure 4-20: Sections of the Project Site Covered in Grasses and Shrubs



Figure 4-21: Play Ground adjacent to the Project Site



Figure 4-22: Access Road leading to the Project Site

4.4.6 Wisroc (Region 10)

The Wisroc community is located in Linden, in Upper Demerara-Upper Berbice. Linden is a town located along the banks of the Demerara River in the Hill Sand and Clay Region and was established due to large scale bauxite mining and processing in the area. The area was previously settled in the 1800s but the discovery of bauxite and commencement of production in the 1960's led to its rapid development and the area was declared a town in 1970.

According to the 2012 census, Linden has a population of approximately 30,000, and accounts for 85%-90% of the Region 10 population. Wisroc had 3,932 persons according to the Nation Census Report (2012). However, this figure is expected to be much higher currently, given the development and occupancy in the housing scheme since the last census. The primary economic and employment activities in Wisroc are agriculture, forestry, fishing, mining, quarrying, manufacturing, construction, trade, transportation, and public administration. The community is 114 kilometres from Georgetown and is accessible via the Linden-Soesdyke Road.

The dominant economic activity in Linden and surrounding areas is bauxite mining, although forestry and agriculture contribute to the regional economy. Linden is dependent on mining company for many community services as well as for employment. Local commercial enterprises and financial institutions also tend to prosper or decline in response to the fluctuations in the mining industry. Wisroc is home to a lot of public servants such as teachers and nurses and skilled workers who have jobs in offices in both the private and public sectors.

GPL provides electricity in Wisroc, and piped water is available from GWI. The area also has access to the internet, cable, landline telephone, and GTT and Digicel mobile phone services. Waste management is outside the parameters of the Linden Town Council. Residents hire private companies to collect and dispose of waste, including sewage.



Figure 4-23: The Proposed Project Site and Surrounding Areas



Figure 4-24: Access Road in Vicinity of the Project Site



Figure 4-25: Recently Constructed Nursery School adjacent to the Project Site



Figure 4-26: Sections of the Project Site Covered in Grasses and Shrubs

4.4.7 Hosororo, Region 1

Hosororo is an indigenous community located in the Mabaruma sub-region of Region One on the left bank of the Aruka River. In 2016, Hosororo was joined with Mabaruma to form a single township, and is now considered as Constituency 6 in the township[19]. Hosororo is administered by the Community Development Council and the Mabaruma Mayor and Town Council.

According to the 2012 census, Hosororo has a population of 723 persons, with a household count of 140[20]. However, the community has seen an increase in population due to the steady migration of Venezuelans refugees into the sub-region. Most of the migrants within the Hosororo community are integrated into the local population, since they consist of persons with ties to Guyana or the community, or are returning Guyanese. Historically, Hosororo was traditionally of a Lokono (Arawak) indigenous population. However, presently, the community consists of mainly a mixed population.

The Mabaruma sub-region can be accessed by boat and airplane. Hosororo is located three miles from the administrative capital of Mabaruma. The waterfront community of Kumaka, which is the business hub of the sub-region, is located less than three miles from Hosororo. Public transportation in the form of either by minibus or hire cars is available from Kumaka to Hosororo. The neighbouing communities of Wauna and Tobago are located three to four miles north of the village.

Hosororo stands approximately 300 feet above sea level and is not prone to flooding from heavy precipitation or flooding of the riverbanks.

Hosororo is considered a self-sufficient community. The main economic activities include farming and fishing, with the community vending their produce at Kumaka or sending it to Georgetown via the ferry. Community residents are also employed in the public and private sectors within the sub-region as teachers, nurses, and police officers.

The community has a nursery and primary school, church and health centre, play field, and ICT Hub that serve Hosororo and its neighbouring communities.

The Mabaruma Power and Light Company Inc. and GWI supply electricity and water to the community respectively. However, during the dry weather, there is sometimes the scarcity of water since the existing well located in Wanaina Village would run low or dry. A dysfunctional micro hydropower plant within the community was recently rehabilitated but is yet to become operational. The community does not have access to landline and internet services; however, cellphone and data connection are available by providers such as Digicel and GTT.

Waste is collected by the Town Council but is generally unreliable, hence wastes is often dumped and burned by individual residents. The community does not have a connected sewer system, each household has a septic tank or uses pit latrines.

[19] https://www.stabroeknews.com/2012/04/22/sunday/beyond-gt/hosororo-hill/
[20] https://statisticsguyana.gov.gy/



Figure 4-27 Showing Sections of the Hosororo Community

4.4.8 Huradiah/Cabora, Region 1

Moruca is located in Region One – Barima Waini and is one of three sub-regions in the North West District of the country. Moruca is made up of eleven (11) titled communities including Santa Rosa, Assakata, Kwebanna, Warapoka, Chinese Landing, Waramuri, Santa Cruz, Kabucalli, Manawarin, Haimarakabra, and Kariako[21].

Moruca can be accessed by boat from Charity (Region 2) to Santa Rosa (Region 1), which the journey is approximately 1.5 – 2 hours long. Alternatively, it can be accessed by a 1-hour flight from the airport at Ogle to the Bemichi airstrip. However, flights are by charter only. Santa Rosa can be accessed by road and boat from the other communities and its satellite islands.

Santa Rosa was established in the 1800s by the Roman Catholic Mission, and is located in the Moruca sub-district. It is located along the Moruca River, approximately 29km from its mouth and is considered the largest Indigenous village in Guyana[22]. Santa Rosa is primarily an indigenous community and is historically a Lokono[23] settlement. However, the village has become home to many other groups after its establishment. Region 1 has a significant indigenous population which comprised 64.7 percent of the Region's population, equating to 17, 845 persons.[24]

Santa Rosa is administered by the Moruca Village Council, which is headed by a Toshao with assistance of the Regional Executive Officer, while the satellite communities are managed by councillors.

According to the 2012 national census, Santa Rosa, including its eleven satellite islands, has a total population of 5,253[25]. However, the Village Council noted that the total population of Moruca is approximately 20,000, with Sana Rosa and its satellite villages accounting for 12,000 persons, including 7,995 adults with 1,696 households[26]. There are approximately 370 births per year.

The main employment for villagers is mining which is conducted outside of the village, followed by subsistence farming and fishing. Persons are also employed in the public sector as nurses, teachers, and other public service positions. There are also several small businesses such as grocery stores, dry goods stores, market vendors, and transportation services.

Facilities such as the hospital, primary and secondary schools, dry goods stores, supermarket, and regional and local administration offices are located in Kumaka, a community within Santa Rosa. Kumaka is the main port into Santa Rosa and most of the import/export are conducted at the Kumaka waterfront. The Santa Rosa Primary School is the main primary school within the village, with a population of 616 students as of January 2023. There is a secondary school in Santa Rosa that accommodated children from most of the Moruca Sub-District of Region 1. The facility has dormitories for males, females, and teachers. The village houses the Region Administrative Office for the Moruca Sub-District, the Education Office, a District Hospital, and regional offices for the National Agriculture Research and Extension Institute and the Guyana Forestry Commission.

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[21] Guyana Chronicle, *Facts about Moruca* (2016)
Accessed at: https://guyanachronicle.com/2016/07/27/facts-about-moruca/
[22] Guyana Chronicle Welcome to Moruca, Gem of Region One (2020)
Accessed at: https://guyanachronicle.com/2020/01/13/welcome-to-moruca-gem-of-region-one/
[23] The Lokonos are one of the nine Amerindian groups residing in Guyana
[24]Bureau of Statistics, Guyana National Population and Housing Census 2012
[25] Bureau of Statistics, Guyana National Population and Housing Census 2012
Accessed at: https://statisticsguyana.gov.gy/census/
[26] Engagement with the Village Council

The village has reliable mobile phone service and data from Digicel. However, there is no landline service. The village also has access to nine Information and Communication Technology (ICT) Hubs which provides internet service to the communities.

The Moruca Power Company supplies electricity for 16-hours each day to Santa Rosa and the remaining 8 hours is substituted by generators or solar power. GWI provides water to Kumaka, Rincon and a section of Mora. Water is supplied twice daily but the water is not treated prior to distribution. There is a separate well that supplies water to the Santa Rosa Secondary School. All other communities rely on the rivers and creeks for bathing, washing, cooking, and drinking. GWI is currently installing wells and a water treatment facility which will see an increase in water distribution to other communities.

There is currently a dump site that residents use to dispose of garbage. However, there is a designated site to be developed as a landfill that is currently undergoing the approval process. Burning and burying methods are also used to manage waste. The development of the landfill site and the impending procurement of a garbage disposal truck will lead to a more effective approach to waste management within the community.

Cabora, where the new primary school will be constructed, is one of the satellite communities located in Santa Rosa and subdivided into three sections – Upper, Central and Lower Cabora. The community has a population of approximately 395 residents. Lower Cabora can be accessed by road and is located approximately 15 – 20 minutes by bus from the Kumaka Water Front.



Figure 4-28: Section of Santa Rosa, Moruca



Figure 4-29: Section of Santa Rosa showing the Primary and Nursery Schools



Figure 4-30: Access Road to Proposed School Site and a Section of the Site



Figure 4-31: Residences in Proximity to the Site

4.4.9 Port Kaituma, Region 1

Port Kaituma is located in Region 1 (Barima Waini) and was developed following the discovery, mining and exporting of manganese ore in Matthew's Ridge in the 1950s and 1960s. As part of the development efforts, the Kaituma Canal was dredged and the dredge spoils were dumped on banks of the Canal. This resulted in several residences and farmsteads being established along the Kaituma Canal. In addition, the Kaituma Canal enhanced the accessibility of Port Kaituma and currently, Port Kaituma is the main port of entry into the mining district of Region 1. The current catchment area under the Port Kaituma Neighbourhood Democratic Council includes Citrus Grove, Canal Bank, and 4 – 5 Miles.

According to the Guyana National Census 2012, Port Kaituma has a total population of 1,152 with a total household count of 236, However, due to the development of the area and the influence of mining, there have been a significant increase in the population. According to the NDC, as of 2023 the total population is 3,602, with a household count of approximately of 972. A breakdown of the population and household count is listed in Table 4-3 below.

Table 4-3: Showing the Population and House Count of Port Kaituma

Community	Population	Households
Citrus Grove	1050	500
Canal Bank	1500	250
4 – 5 Miles	1052	222
Total	**3602**	**972**

Source: Port Kaituma Neighbourhood Democratic Council

Port Kaituma can be accessed by ferry which is a long and harrowing journey which usually takes 24 hours to get from Georgetown to Port Kaituma. Alternatively, the community can be accessed

by a 45 minutes flight from Georgetown. There are several other local routes that can used to access communities located in and out of the sub-region.

The main economic activity of Port Kaituma is small scale and medium scale mining. This includes activities such as pork-knocking, freelance prospecting, and dredging. Port Kaituma is also the main service hub for the local mining industry and provides support services such as mechanic and machinery repairs, transportation, and buying and selling of gold. People who are engaged in mining either work within the boundaries of Port Kaituma or travel outside the community to work with small - and medium scale miners. Residents who work outside of the community are often away for extended periods of time. Other economic activities of the community include public sector employment, small business owners, accommodation, and food services. Persons are also involved in subsistence farming and fishing and would ply their trade at the market.

Port Kaituma is powered by the Port Kaituma Power and Light Company and the power supply is fairly reliable. However, this service reaches only about 70% of the population. Other residents who are not connected to the national grid use generators and solar power as their main source of electricity.

The community depends largely on the Kaituma River and creeks as their main source of water. This is sometimes unsafe since there is a high possibility of water contamination from mining activities. However, some residents within the community are benefitting from potable water from GWI and[27] there are plans on widening the scope of the service to ease the dependency of water from the Kaituma River.

Some areas within Port Kaituma have a reliable internet connection and mobile and data services from Digicel and GTT.

The NDC has established a dumpsite which is located close to the Four Miles Village where all waste in Port Kaituma is intended to be disposed. The NDC has a tractor and trailer which collects garbage for residents with a cost attached. However, this service is not widely used and several dumpsites have developed around the commercial district where waste is routinely burned, usually in proximity to the Kaituma Canal.

Some community facilities available are nursery, primary, and secondary schools, hospital, administrative offices, churches, and recreational grounds.

[27] https://gwiguyana.gy/news/port-kaituma-benefit-new-well



Figure 4-32: Central Port Kaituma



Figure 4-33: Area Surrounding the Port Kaituma Primary School

4.4.10 Patentia, Region 3

Patentia is located on the West Bank of the Demerara River in Region 3, and is made up of an old housing scheme referred to as Patentia West and a new housing scheme called Area L. A squatting area called “Skull City” has recently been regularized in the area and also makes up the community of Patentia. The neighbouring communities include Toevlugt and Sisters.

According to the 2012 Guyana National Census, Patentia has a total of population of 2,307, with a household count of 664. However, due to the expansion of the community, it is expected that the population has grown significantly within the past 10 years. This is inclusive of the large migrant population moving into the community, the regularizing of the squatting area, and increase in occupancy and homeownership[28].

The community can be accessed by road from Georgetown which takes approximately 30 – 40 minutes dependent on traffic. The journey requires crossing the Demerara Harbour Bridge and driving along the West Bank Demerara public road. There are adequate access roads and bridges leading into the community.

The community is administered by the Toevlugt-Patentia Neighbourhood Democratic Council, with support from the Ministry of Local Government and Regional Development. The NDC is responsible for the overall day to day functions of the community which includes but not limited to clearing drains and canals, waste management, collection of rates and taxes.

Patentia is located along one of the longest drainage canals in Guyana, and has three kokers that are used for drainage and irrigation. Generally, the area is not prone to flooding from the overflowing of the river banks or the canals. However, the risk exist should there be negligence or abandonment of post by the koker operators or failure to open or close the koker at the prescribed times. This risk also exists if there is any malfunctioning of the infrastructure that is used to drain and irrigated the lands. Heavy precipitation may cause some discomfort to community members that do not have accesses to proper roads or who may not have adequate infrastructure to drain their lands. Generally, the community is not susceptible to any other natural disasters or natural hazards.

Historically, the main economic activity within the area is sugarcane farming and sugar production centered around the Wales Sugar Estate. However, with the closing of the estate, community members were forced to engage in other economic activities within and outside of the community.

Presently, the main economic activities are cash crop and rice farming. Residents own and cultivate rice fields and other cash crop farmlands within the area and this accounts for a larger part of employment within the community. Other forms of employment include business owners, public and civil servants, and service providers such as mechanics and construction workers. The GoG has also made available part-time employment through their employment initiative to ensure that each citizen is able to earn[29].

The community has a mosque, a mandir, and a few churches within the area. There is also a nursery, primary, and a secondary school withing the community. The closest police station is located at Wales. There are no health centres, health posts, or hospital located within the community. The closest health center to the community is located at La Grange and Canals #1 and #2. The closet hospital is the West Demerara Regional Hospital located at Vreed-en-Hoop.

[28] Guyana Chronicle, *Patentia – A Peaceful, budding Community* (2019). Accessed at: https://guyanachronicle.com/2019/08/25/patentia-a-peaceful-budding-community/
[29] Ibid



Figure 4–34: Patentia Primary School and Surrounding Community



Figure 4–35: Community in Proximity to Patentia Primary School

4.4.11 Little Diamond, Region 4

Little Diamond is located in Region 4, on the East Bank of Demerara between the communities of Prospect and Great Diamond. Little Diamond is located approximately 30 – 40 minutes outside of the city and approximately 10 - 15 minutes from the commercial hub of Grove/Great Diamond. The land was historically used as cane fields. The land was subsequently redesignated for housing development following closure of the sugar estates along the East Bank Demerara.

According to 2012 National Census, Little Diamond has a total population count of 231. However, there has been a significant rise in the occupancy rate in the community due to expansion of housing and land availability in the area. Additionally, there are a number of "Young Professionals" and "Turn Key" housing projects within the area or in neighbouring communities. In 2015, Central Housing and Planning Authority (CH&PA) allocated 52 acres of land in Little Diamond for the housing scheme expansion and 261 acres in the neighbouring community of Prospect[30].

Even though the area has not been handed over by the CHPA to the NDC as yet, the project site falls within the Little Diamond/ Herstelling Neighbourhood Democratic Council. According to the 2002 National Census Report this NDC District comprises six (6) villages: Herstelling, Jardin De Provence/Farm, Vreed en Rust, Covent Garden, Prospect and Little Diamond. A breakdown of the population and number of households in the NDC are presented in Table 4-4 below.

Table 4-4: Population and Number of Households in Little Diamond/ Herstelling NDC

Village	Population	Number of Households
Herstelling	3,255	977
Farm	456	133
Vreen En Rust	253	86
Covent Garden	745	218
Prospect	923	268
Little Diamond	759	231
Total	**6,391**	**1,913**

Source: National Census (2012)

However, since then there has been newer housing development within the NDC it is highly likely that the population and number of households has grown[31].

According to the National Census (2012), the largest population by major industry in the NDC area was in wholesale and retail trade. The other largest population by major industry included construction, manufacturing, transport and storage, and the activities of households as employers. As a result, the largest source of livelihoods within the NDC was self-employment. Many villagers are employed in some type of trade including masonry, carpentry, mechanics or are employed in other privately-owned businesses.

There are public nursery, primary and secondary schools in the NDC. In addition, there is a Health Centre in Herstelling. There are several social gathering areas in the NDC including churches, masjids and mandirs. Farm also has a Community Centre Ground which is utilized by members of the community. The Providence Nursery School and the office of the Little Diamond/ Herstelling NDC are both located within the Community Centre Ground.

[30] CH&PA Annual Report 2015. Accessed at: https://parliament.gov.gy/documents/documents-laid/9577-annual_report_of_the_central_housing_and_planning_authority_for_the_year_2015.pdf.
[31] Contact was made with the NDC for an updated estimate on the population of the area but no results were forthcoming.

Parts of the community has access to power from GPL, mobile and data service from GTT and DIGICEL, and potable water from GWI. However, some parts, especially in the new expansion phases are without electricity and landline telephone service at present.

The section of the community where the school construction site is located is within the new housing development area. The new housing development will cater to persons from both within and outside of the community. Most of the house lots within the community has been allocated to individuals and a few houses within the immediate vicinity of the school site are under construction. However, most of the allocated house lots remain vacant. Occupancy is expected to increase with the improvement of infrastructure and services, which are currently being provided.



Figure 4-36: The Proposed School Site within Little Diamond Facing West



Figure 4-37: The Proposed School Site within Little Diamond Facing North



Figure 4-38: The Proposed School Site within Little Diamond Facing East



Figure 4-39: Construction of New Houses in the Area



Figure 4-40: An Access Road to the Proposed Site

4.4.12 Bartica, Region 7

Bartica is located on the Left Bank of the Essequibo River, Region 7 (Cuyuni-Mazaruni) at the confluence of the Cuyuni and Mazaruni Rivers, and is referred to as the "Gateway to the Interior." Bartica was developed as an Anglican Missionary settlement in 1837 and was formerly known as Bartica Grove. Bartica was gazetted a town in 2016 and is the main commercial and administrative centre of Region 7.

According to 2012 National Census, Bartica has a population count of 8,004. However, there has been an increase in the population to approximately 15,000 – 20,000 owing to the development of the town and large stream of migration[32]. Persons migrate from other parts of Guyana to Bartica for economic opportunities, including to seek employment in the mining or forestry sectors, or establish business which supports these sectors. Persons from riverain communities within Region 7 also move to Bartica given the availability of services there, including healthcare and education. Migrants from Venezuela and Brazil can also be found in Bartica, with the Brazilians heavily involved in the mining sector. The expansion of the mining, quarrying, and logging industry within the region has also aided in the population growth from people seeking opportunities in the extractive industry.

The Town can be accessed by a 1-hour speed boat ride or a 5 hours ferry ride from Parika. Additionally, Bartica can be accessed by alternative routes such as by road from Georgetown via Linden – Soesdyke Highway and the Bartica – Potaro Road, or from the Cuyuni, Mazaruni, and Essequibo Rivers. There are also other internal access points from various communities within the Region.

The Town is administered by the Bartica Mayor and Town Council which is responsible for the smooth functioning of the day-to-day governance that includes but not limited to clearing drains, waste management, collection of rates and taxes, etc.

The main economic activity of Region 7 is mining, quarrying, and logging. Residents of Bartica are either involve in the industry directly by owning and operating in the activity, or indirectly by providing essential products and services such as equipment maintenance, supply of materials and food, transportation and other logistics, buying and selling of gold and other precious minerals. Although a large amount of food is imported from Georgetown, some residents rely on subsistence farming and fishing for their livelihood. Others are employed in the public sector as nurses, doctors, administration staff, teachers, etc.

Recently, there have been significant development in the tourism sector of the town and host events such as regatta which is also supported by Bartica.

The Town has access to internet and landline telephone service provided by GTT. There are other private internet providers such as ENET within Bartica. Mobile and data services are available from Digicel and GTT. GPL is the main source of power in Bartica, and potable water is supplied by GWI to the Town.

The Town has a mosque, mandirs, and a few churches. There are nursery and primary schools, and a secondary school withing the Township. Additionally, there is a hospital located within the Town, as well as other essential services such as a police station, a fire station, an immigration office, and a GRA office.

[32] Source: Bartica Mayor and Town Council



Figure 4-41: Aerial View of Bartica



Figure 4-42: St John-the Baptist Primary School and Surrounding Area

5.0 SUMMARY OF FINDINGS FROM SITE VISITS AND STAKEHOLDER ENGAGEMENTS

Site visits, inclusive of engagements with key stakeholders, were conducted to the proposed sites identified for the construction of new primary schools and to six of existing primary schools to benefit from rehabilitation, extension and or outfitting. The sites are located along the coast and in hinterland communities.

The schedule and locations of visits are presented in Table 5-1.

Table 5-1: Schedule and Locations of Site Visits

Region	Location	Schools	Type of Project Activity	Date Visited
Region 1	Kariakau	Kariakau Primary	Rehabilitation/Extension	June 07, 2022
Region 3	Belle West	Belle West Primary	Rehabilitation/Extension	May 31, 2022
Region 3	Recht door Zee	N/A	New Construction	May 31, 2022
Region 3	Tuschen	N/A	New Construction	May 31, 2022
Region 9	Tabatinga	N/A	New Construction	May 09, 2022
Region 10	Wisroc	N/A	New Construction	June 03, 2022
Region 1	Hosororo	Hosororo Primary	Rehabilitation/Extension	September 02, 2022
Region 1	Huradiah/Cabora	N/A	New Construction	March 03, 2023
Region 1	Port Kaituma	Port Kaituma Primary	Rehabilitation/Extension	March 15, 2023
Region 3	Patentia	Patentia Primary	Rehabilitation/Extension	March 08, 2023
Region 4	Diamond	N/A	New Construction	April 24, May 17 & May 18, 2023
Region 7	Bartica	St John-the-Baptist	Rehabilitation/Extension	March 22, 2023

The site visits included key stakeholder engagement and participation of representative of the local government, regional education officials, teachers, and members of the community. Key MoE officials accompanied team to each of the site visits.

5.1 Site Visit Findings

5.1.1 Kariakau Primary School (Region 1)

The project site is located within the Kariakau Primary School compound. The school was established approximately 20 years ago as the community's only nursery and primary education facility after the Village Council allocated the land for the school construction.

The school is located on the waterfront of the Barama River. The site is located on high grounds and drains via surface runoff directly into the Barama River. As such, the school compound does not flood after high levels of precipitation or the flooding of the riverbanks. Feedback from stakeholders indicated that the area never floods from overflowing of the river bank and it was for that reason it was selected for the construction of the school and other key buildings within the community. The school area and proposed site is free of vegetation, but has a few large fruits and other trees nearby. There are no encumbrances on the project site, as can be observed in Figure 5-2. The land on which the school is constructed, inclusive of the playground and the proposed area for the extension were allocated for the school by the Village Council.

There are currently two school buildings in the school compound, along with a kitchen, a teachers' quarters, and a sanitary/toilet block with pit latrines. North of the school is the school's playground (Figure 5-1).

A chain-link and wooden fence surrounds the perimeter of the compound, but is damaged in some areas. The Village's ICT Hub and Village Council Office are located adjacent to the school and the ICT Hub building is also being used to facilitate classes at the school (Figure 5-1). The community water well is located in the school's compound. The wider project area consists of Government buildings, shops, churches and dwellings.

The catchment area for the school includes Kariakau, Kurutuku and the area referred to as the backdam. Students usually walk from various distances to get to the school, and those that live in the riverine areas of the community use their own boats, or sometimes the Village Council assist with transportation. The kitchen provides hot meals for student and teachers throughout the school term.

The school is provided with electricity from a generator provided by the Village Council and solar panels. Water is accessed from the community well which is located on the primary school's compound. There is no cellular or landline services in the area there is access to the internet via the Village Council.



Figure 5-1: Current School Buildings (right), Village Council Buildings and ICT Hub (left) and School Playground (rear)



Figure 5-2: Proposed Kariakau Primary School Extension Site

The Kariakau Primary School was designed to accommodate approximately 20 to 30 students. However, the school currently has an enrollment of 135 students in Grades 1-6. In addition, the school also houses a nursery school with an enrollment of 44 students, and a Primary Top with an enrollment of 74 students in Grades 7, 8 and 9.

The Primary Top Grades 7, 8, and 9 are an alternative to attending secondary school out of the community such as Santa Rosa or Port Kaituma, or any other on the Coast, since there is no secondary school within the village. Most of the student attend the primary top until Grade 9 and then phase out of the formal education system. It was indicated that female students show more interest in longer term education.

The school currently has a staff compliment of 7 teachers. Three Community Social Officers also assist with teaching. There are efforts being made to process the applications of persons from the community who had applied for jobs as teachers.

Table 5-2: Current Enrollment of Student from Grades 1 – 6

Grades		Boys	Girls	Total
Grade 1		15	17	32
Grade 2		14	14	28
Grade 3		12	9	21
Grade 4		8	11	19
Grade 5		14	8	22
Grade 6		2	11	13
Total		**65**	**70**	**135**

Table 5-3: Breakdown of Students Enrollment for the last Six Years

Year	Students Intake
2017	17
2018	24
2019	24
2020	18
2021	33
2022	32

The overcrowding of the school has resulted in measures being implemented to address the lack of space and resources. Firstly, the classroom activities are being conducted at the ICT Hub and the Teachers' Quarters. Secondly, the school operates on a rotational basis where students of specific grades attend class on a shift system. The school anticipates a growing influx of students owing to growing population and the changing perception of education among parents.

It was noted that there is low percentage of truancy generally. However, it was observed that students that were not required to be in school at the time of the visit were not meaningfully occupied.

5.1.1.1 Recommendation for Project Support and Implementation

During the site visit to Kariakau Primary School, the Teacher in Charge, Village Council Members, and Regional Education Official expressed interest in the project and the following feedback was provided:

1. The construction of a new classroom block or an extension of the existing school building with twelve classrooms to accommodate the current overflow and anticipated influx of new

students. A two-story concrete building is preferred to maximize space and reduce maintenance costs.
2. Construction of new sanitary blocks for students and teachers with accessible toilets and hand washing facilities catering to all body shapes, sizes, and abilities and installation of septic tanks and soak aways.
3. The contractor should consider employing members of the community for jobs in the semi-skilled and unskilled labour.
4. The contractor is expected to follow the rules and regulation of the village and have regular updates meetings with the community.
5. Furniture can be built within the community. The current furniture at the school was donated to the school by the Village Council.

The school administration was made aware of some of the potential impacts from project activities such as noise pollution and other activities associated with general construction works, and a number of mitigation measures were recommended:

1. Generally, noise and dust during construction would not be a significant concern given the necessity of the project and are expected to cause a temporary inconvenience. However, noisy and disruptive works should be conducted during the weekends and after teaching/contact periods.
2. Physical barriers should be installed with clearly marked signs of danger to prevent students from wandering into active construction area.
3. A Code of Conduct should be prepared for the contractor to adhere to the general rules of the school, such as no smoking.
4. Construction waste will have to be transported to a designated area for burning since there is no waste disposal site or facility within the community.

5.1.2 Belle West Primary School (Region 3)

The Belle West Primary School is located in the Belle West Housing Scheme Phase One and was constructed by the Government of Guyana in 2010 with support from the Caribbean Development Bank and Canadian International Development Agency in collaboration with the Basic Need Trust Fund as a means of delivering primary education to the new community. At present, the community has a population of approximately 5,000 and is growing at a fast rate.

Due to the expanding community, the Belle West Primary School has seen an increase in the number of enrollment and is currently operating beyond its capacity. The school was initially constructed as a Grade C school to facilitate 225 students from Phase One. The school was extended to accommodate an additional 100 students in 2016 after the development of Phase Two in 2011. The school now has an enrollment of 447 students, an excess 112 students. The overcrowding has resulted in cramped and uncomfortable teaching and learning conditions. The Table 5-4 illustrate the breakdown of student intake from 2010 -2022 which suggest that there has been a steady rise in the school's population. The school currently has 24 teachers.

Belle West Primary School has a projected intake in the 2022/2023 academic year of 118 new students (40 from New Annglet Nursery School, 48 from Belle West Nursery School, and 30 from transfers and new enrollment). As a result of the overcrowding, the school has not been able receive any transfers or new enrollment, and therefore students are being referred to Kawall Primary School which is a far distance from the Belle West community. The school can currently accommodate 80 intakes only.

Table 5-4: Breakdown of Student Intake from 2010 -2022

Year	Boys	Girls	Total
2010	105	110	215
2011	114	119	233
2012	138	125	263
2013	157	137	294
2014	163	139	302
2015	172	154	326
2016	179	153	332
2017	188	170	358
2018	179	192	371
2019	195	204	399
2020	199	187	386
2021	230	200	430
2022 (May)	236	211	447

The compound is enclosed by a chain link fence and wooden fence around the perimeter. There are two main access points to the compound which are used by the students and teachers, and one secondary access point, which is currently not being used. The compound currently houses two structures; the main school building and a canteen. The structures are made of concrete, with zinc roof and louvers windows. The school has additional ventilation with the use of vent blocks in sections of the building. The school is painted and is generally tidy. The canteen is a separate building from the main school building and has similar physical characteristics as the school building. However, it does not have space for students to dine in a cafeteria setting.

The school currently has 19 classrooms, which were created by dividing the space of one classroom into two using chalkboards as separation walls. Additionally, the building has a Head Teacher's office, a storeroom, janitor's closet, and a kitchen. The classrooms are furnished with two-seater benches and double-sided chalkboards, which are used for two classrooms on either side. The school has a sanitary block containing eight toilets - four toilets designated for girls, two toilets designated for boys, and two designated for teachers. The toilets are connected to a septic tank system. There are hand-washing stations located around the school compound and at the student's entrance as a COVID-19 prevention measure.

The school has an unpaved and unofficial parking area which is used by teachers and visitors and accessed through one of the main entrances. The student entrance is paved from the gate to the main corridor of the building. There is a small play area located on the lawns directly in front of the school building and is surrounding by flowering and non-flowering trees. The surrounding is generally quiet, and has no noise pollution from traffic or neighbouring businesses.

The school site and proposed extension site is not prone to flooding from heavy precipitation or overtopping. There is a network of drains which collects runoff, which is eventually drained into the Demerara River.

The school has access to essential utilities such as electricity from GPL and potable water from GWI. The school does not have an alternate source of electricity such as a fuel generator or solar panels. Internet, landline and cell service is readily accessible in the area. Solid waste is usually collected by a private waste disposal company.

The proposed site for the extension is within the existing school compound. The compound has adequate space to facilitate the extension. There are no encumbrances on the proposed site. The wider area is allocated for educational facilities and a nursery school is already constructed west of

the school. There is also a portion of land reserved for the construction of a secondary school to the south of the school.



Figure 5-3: Belle West Primary School



Figure 5-4: Proposed Site for Extension of Belle West Primary School

5.1.2.1 Recommendation for Project Support and Implementation

During the site visit to Belle West Primary School, the Head Teacher, Officials from the NDC, and the Regional Education Official expressed interest in the project and the following should be considered:

1. Construct a new classroom block or an extension of the existing school building with ten classrooms and facilities to accommodate at least 250 pupils.
2. A science laboratory to provide practical lessons.
3. A smart classroom to teach digital literacy skills.
4. A cafeteria for students to dine in a hygienic environment outside the classroom.
5. A staff room for teachers' personal space that will function as a staff meeting room.
6. Storerooms to securely keep school equipment, food stock, and other valuables
7. An all-weather tarmac surface at the centre field to facilitate sports and other events such as school assemblies as most outdoor activities are hindered due to the weather conditions.
8. Upgrade play area with outdoor equipment/facilities for Grades 1 and 2.
9. Install a shed over the walkway at the second entrance to protect students and teachers from inclement weather.

It was also noted that there is adequate space within the school compound to accommodate all of the support being requested.

The school administration was made aware of some of the potential impacts from project activities such as noise pollution and other activities associated with the general construction works, and a number of mitigation measures were proposed:

1. The third/back entrance should be used by the contractor for the transportation of construction material and the removal of construction waste.
2. Generally, noisy and disruptive works should be conducted during the weekends and after teaching/contact periods. Consideration should be given to conduct a lot of the project works during the vacation periods. However, it is also recognized that the construction works are necessary and the school will adopt measures to deal with the temporary discomfort.
3. Physical barriers should be installed with clearly marked signs of danger to prevent students from wandering in to active construction site.
4. Construction materials should be transported to the site on weekends or in the evenings and there is adequate space onsite for the storage of construction materials.
5. Construction waste which is re-useable should be provided to the community. All other waste should be transported to the landfill by the contractor.
6. Trucks bringing materials to the site can damage community roads. Recommended that the contractor limit the weight of trucks and fix any damage caused.
7. Contractor should not use the school entrance bridge and should construct a temporary bridge to access the site.

5.1.3 Recht door Zee (Region 3)

Recht door Zee is a planned housing scheme developed in two phases, and has been identified for the construction of a new school. The site identified has been allocated for the purpose of a primary and nursery school and therefore there is no competing land use.

The nearest primary school to this community is located in Schoonard, which is about 20 – 25 minutes walking distance from the proposed site for the new construction of the primary school.

The proposed project site consists of 22,177m^3 (5.48 acres). The site is free from any encumbrances such as buildings and other permanent or semi-permanent structures. The site is located across from

another site identified for a community centre ground, and surrounded by mostly unoccupied residential plots. The site is unfenced, and can be accessed by the two cross streets. The area is generally quiet and does not have any visible shops or other places of business. The area drains easily, and is not prone to flooding from heavy precipitation. The school site has access to electricity from GPL and potable water from the GWI. There is internet and cell service in the area, as well as GTT landline service.



Figure 5-5: Proposed Site for Construction of Recht door Zee Primary School

5.1.3.1 Recommendation for Project Support and Implementation

During the site visit to the proposed project site at Recht door Zee the Councillor from the NDC and the Regional Education Official expressed interest in the project and recommended that the school be built to accommodate the significant number of students who are required to travel some distance to access primary education. They have also indicated that there is an increasing need since occupancy within the housing scheme is increasing and there is also a growing population in the surrounding areas, as well as newer housing areas are being developed. As such, it was recommended that the school be built to accommodate at least 500 students.

5.1.4 Tuschen (Region 3)

The land identified for the construction of the new primary school is located within the Phase Two of the Tuschen Housing Scheme and was allocated for the construction of a primary school and a nursery school during the planning and development of the scheme. The project site is 10,943m^3 (2.704 acres).

The site is from any encumbrances such as buildings and other permanent or semi- permanent structures. The site is located adjacent to a site allocated for a nursery school construction, and is surrounded by unoccupied and occupied residential plots. The site is unfenced, and can be accessed by the two cross streets. The area is generally quiet and does not have any visible shops or other places of business. The area drains easily, and is not prone to flooding from heavy precipitation.

Essential utilities such as electricity and potable water are provided by GPL and GWI respectively. Other services such as internet, cable, landline telephone, and mobile phone services are also accessible in the community.



Figure 5-6: Proposed Site for the Construction of the Tuschen Primary School

5.1.4.1 Recommendation for Project Support and Implementation

During the site visit to the proposed project site at Tuschen the representative from the NDC and the Regional Education Official expressed interest in the project and recommended that the school be built to accommodate the significant number of students who are required to travel some distance to access primary education and to ease the overcrowding at the existing primary school located in Phase One of the scheme. They have also indicated that there is an increasing need since occupancy within the housing scheme is increasing and there is also a growing population of migrants within the area. Residents in close proximity to the site also indicated that they are eagerly awaiting the construction of the school.

5.1.5 Tabatinga (Region 9)

Tabatinga is a planned housing scheme developed in two phases, and has been identified for the construction of a new school. The site identified for the school construction has been allocated for the purpose of a primary and nursery school and therefore there is no competing land use. The nursery school is already constructed and is in use. The proposed site is 11,291 m^3 (2.79 acres).

The nearest primary school to this community is the Arapaima Primary School, which is about 20 – 25 minutes walking distance from the proposed school site.

The site is cleared of primary vegetation and free from any encumbrances such as buildings and other permanent or semi-permanent structures. The site is located adjacent to the nursery school and the community playground, and as such, there is a fence in place on two sides of the property. The surrounding area consists of mostly occupied and a few unoccupied residential plots.

Essential utilities such as electricity and potable water are provided by the Lethem Power Company and GWI respectively. Other services such as internet, cable, landline telephone, and mobile phone services are also accessible in the township.

The project site is high and does not flood. In fact, the nursery school located adjacent to the property was used as a shelter for persons affected by flooding in the region. The upgrade of roads leading to the project site to asphaltic surface is imminent.



Figure 5-7: Proposed Site for the Construction of the Tabatinga Primary School

5.1.5.1 Recommendation for Project Support and Implementation

Engagements were held with the key stakeholders including the Mayor and Town Council, the Regional Democratic Council, Regional Education Officials and community members. During this engagement, the following feedback was noted:

1. The officials from the Region and the Town Council are pleased over the prospects of a new primary school being constructed in the Township of Lethem.
2. The addition of a primary school is needed since there is mass overcrowding at the Arapaima Primary School. The proposed Tabatinga Primary will offset some of the overcrowding by bringing the students from the community who are attending Arapaima Primary School to the new school. The overcrowding at Arapaima Primary School has result in classes now also being kept in a building which was used to address Malaria in the past. Arapaima Primary School was built to house 250 students but currently has 515.
3. A new housing scheme is being developed at Tabatinga consisting of 800 lots and this will further increase the student population.
4. Most Guyanese residing in the border town of Bon Fim in Brazil send their children to school in Lethem.
5. There is also the presence of migrants within the community. Twenty-six migrant children are already placed in school.
6. St Ignatius Primary School, which is located in the community next to Lethem, is also now over crowded due to the transfer of students from the Arapaima Primary School to that school. A shed had to be constructed to house four classrooms.
7. There is a school bus service being offered by the Town Council to assist in transporting students from Tabatinga to the Arapaima Primary School but the service is inadequate since only two buses are utilized.
8. In addition to the land allocated for the school construction there is a portion of land close-by which is allocated for the construction of a teachers' housing.
9. The proposed school should cater for 500 students, and should be able to house students from Tabatinga other areas within the Township such as Culvert City and Central Lethem.
10. The school should include a language centre to cater for migrants, and should also include a staff lounge, library, sick bay, storeroom, cycle shed, wash rooms, auditorium, hot meal kitchen and cafeteria.
11. The school should be constructed using materials that are traditional to Region 9, and more specifically Lethem. It was suggested that the red clay bricks be used with a pre-fabricated steel structure. This will avoid high maintenance cost and prevent from termite infestations. The clay bricks will provide for a cooler environment and the use of these bricks will support local livelihood.
12. Given the land size a two-story building should be constructed.
13. There was representation that the construction of the school considers the members of the community to be a viable workforce during the construction of the school as skilled, semi-skilled and unskilled labour.
14. There will be no difficulty in finding teachers for the school since there are several applications already in the system.
15. The washrooms should include toilet facilities suitable for different ages and gender of students and differently abled students.
16. Residents in close proximity to the site indicated that they were aware that the site is reserved for the construction of a school and are looking forward for the school to be constructed since it will reduce the time and cost associated with attending the Arapaima Primary School and will provide a better learning environment for the students.

The stakeholders were made aware of some of the potential impacts from project activities such as noise pollution and other activities associated with the general construction works, and several mitigation measures were proposed:

1. A soakaway should be included in the project design to assist with draining of the site during periods of rainfall.
2. Use of pre-fabricated materials for the school construction can reduce the impacts of noise and dust.
3. During construction install a barrier along the fence line between the proposed site and the nursery school to reduce or prevent dust and noise impacts.
4. The use of local workforce by the contractor during construction should be encouraged.
5. The washrooms should include toilet facilities suitable for different ages and genders of students and differently abled students.
6. Washrooms should be separate from the school building, but should be connected with a sheltered walkway.

5.1.6 Wisroc (Region 10)

Wisroc is a planned housing scheme being developed in three phases, and has been identified for the construction of a new school. The site identified has been allocated for the purpose of a primary and nursery school and therefore there is no competing land use. The land adjacent is allocated for the construction of a playground. The proposed site consists of 13,355m^2 (3.3 acres). The nursery school is already constructed.

The site is cleared of primary vegetation and there are shrubs on some sections of the site. The site is free from any encumbrances such as buildings and other permanent or semi-permanent structures. The site is surrounded by occupied and unoccupied residential plots. The site can be accessed by a loam road, but the RDC indicated that asphaltic roads will be installed in the area shortly. The area drains easily, and is not prone to flooding from heavy precipitation.

Essential utilities such as electricity and potable water is provided by the Linden Power Company and GWI respectively. Other services such as internet, cable, landline telephone, and mobile phone services are also accessible in the community.



Figure 5-8: Proposed Site for the Construction of the Wisroc Primary School

5.1.6.1 Recommendation for Project Support and Implementation

Engagements were held with the key stakeholders, such as the Regional Democratic Council and Regional Education Officials. During this engagement, the following feedback was noted:

1. Students from the area are currently attending primary schools located at One Mile Extension and Wismar Hill, which are about 25 minutes away.
2. Both of these schools are currently over-crowded. One Mile Primary School was built to accommodate 400 students but currently has 900 students enrolled. Wismar Hill Primary School was built for 300 students but currently has 750 students enrolled.
3. The general project area has about 8,000 persons and there are 2,000 house lots in the wider area surrounding the proposed school site. More than half of these lots are occupied and occupancy is increasing.
4. In addition to Wisroc, other communities such as Block 22, Andy Ville and Cross Ville will also benefit from the school.
5. There are two nursery schools within the area, from which the students will require primary education.
6. The estimated primary school population currently is 750 students. As such, the school should be designed to cater for that number of students.
7. Residents from the community are looking forward to the construction of the primary school since the cost of transportation for students to attend school outside of the community is prohibitive. This has resulted in a lot of school dropouts.

The stakeholders were made aware of some of the potential impacts from project activities such as noise pollution and other activities associated with the general construction works, and a number of mitigation measures were proposed:

1. The contractor is required to remove all construction waste in a timely manner. The contractor should consult the Town Council on the disposal of the waste.
2. The contractor should employ an environmental, health and safety personnel during the construction period.
3. The contractor should utilize the local workforce as much as possible. There is an abundance of skilled, semi-skilled and unskilled persons within the community.

5.1.7 Hosororo (Region 1)

The Hosororo Primary School is located in the Hosororo community and was established as Grade C school to accommodate the primary and primary top grades. The school is made of concrete and wood and the compound is fenced. There is only one entrance/exit to the school's compound. The school is located next to a community playground, private residences, and an ITC Hub which is currently non-operational. The school is accessed by road. The school has an agricultural plot located at the side of the school.

The school currently has a total enrollment of 512 students, with 170 in Grades 1–6, 312 in Grades 6–11, and 30 in the transition class. The school has a staff compliment of 24 teachers, 7 of which are responsible for the primary grades and 18 who are responsible for the primary top grades. The school is expecting an intake of 45 for the new academic year at the primary level, and 82 at the primary top level.

The primary Grades 1-6 consists of mainly students from the Hosororo community. However, the primary top and transitional classes of Grades 7-11 consist of students that are from the Hosororo community as well as the other communities in the catchment areas. The primary top students are often unable to access mainstream high schools because of lack of resources or qualifying grades.

The current structure is a two-story building, with a main auditorium and administrative block. The main auditorium space is divided by chalkboards into 5 classroom which accommodates Grades 1-5 and there two grade 6 classes that are located in the space allocated for the science and the information technology labs. The upper flat houses Grades 7-11. The building has a small space which houses the school's library and administrative room. The upper flat of the building is currently without electricity due to the building not being wired.

The current overcrowding is resulting in a daily disruption in classes due to the noise and distraction from all of the primary grades being housed in one space. In addition, there are security concerns surrounding the safety of teaching aids and other resources that are often left unattended during non-contact periods.

The school has a kitchen and provides hot meals to the students. However, the school's kitchen is in need of rehabilitation and there is need for upgrades to the water storage system. There is currently no mess hall, canteen, or cafeteria.

The school has one sanitary block, equipped with a small septic tank, which is used by both teachers and students. Currently, there is no running water to washrooms. Students and teachers fetch water from the school's water tank to the washroom to flush the toilets or wash their hands. A hand washing station is located within the school's compound, however there is not a reliable flow of water available at the station.

Currently there are no arrangements in place to have the waste disposed of by the Town Council or the Community Development Council. Waste is usually disposed of by the students daily into a pit at the back of the school.

The Mabaruma Power and Light Company Inc. provides the school with electricity from the grid. Additionally, the school is equipped with 4 solar panels and 4 batteries. However, this system has never been operational.

GWI provides the school with water. However, this supply is not adequate and is very unreliable. The well often runs low or dry when there is dry weather or when there are maintenance issues with the pump. The school has a water tank that provides water to the kitchen and other areas.

There is no landline or internet service available at the school, cell service is provided by Digicel and GTT. Teachers would access the internet using data service provided by the Digicel or GTT to submit work to the MoE or to access information and teaching aids.

There is no space available for the proposed extension within the current school's compound. The land identified for the extension works is located adjacent to the current school. This land is beyond the boundaries of the current school compound, and is divided by a concrete and steel fence. The land identified for the extension of the school is currently being utilized by the community as a playfield and multi-purpose ground, where activities such as football tournaments as held. The land was identified as a private property, which was handed over to Regional Democratic Council and the community by the owners for educational purposes. It was under this same arrangement that the current school was constructed. It should be noted that an alternative playground was provided for use for residents of the community.





Figure 5-9: Hosororo Primary School



Figure 5-10: Limited Space within the Hosororo Primary School Compound



Figure 5-11: Possible Area for Extension of the Hosororo Primary School

5.1.7.1 Recommendation for Project Support and Implementation

During the site visit to Hosororo Primary School, the Head Teacher and Teachers, Community Councilors, the Regional Education Official, and Parents expressed interest in the project and recommended that the following should be considered:

1. Construct a new classroom block or an extension of the existing school building with ten classrooms and facilities to accommodate at least 250 - 300 new students.
2. Construct a new sanitary block or an extension of the existing sanitary block with separate toilets for students and teachers.
3. Rehabilitate the water supply and storage system.
4. Construct a cafeteria for students to dine in a hygienic environment outside the classrooms.
5. Construct a staff room for teachers' personal space that will function as a staff meeting room.
6. Rehabilitate the hot meal kitchen,

The school administration was made aware of some of the potential impacts from project activities such as noise pollution and other activities associated with the general construction works, and a number of mitigation measures were proposed:

1. Heavy construction should take place during the main holiday/vacation periods of the school year.
2. There should be adequate warning signs around the construction site to sensitize the public, students and teachers of the risk and hazards.
3. There should be physical barriers that prevents the public and students from wandering into the active construction sites.
4. Noisy construction should not happen during contact/teaching periods.
5. Contractors should provide their own washrooms and water supply so that there is not a mixing and overuse of the school's resources.

5.1.8 Huradiah/Cabora

The community of Huradiah was earmarked for the construction of a new primary school based on the findings of the primary school mapping exercise. The exercise found that the area is suitable for the construction of a primary school based on the location of the community, its catchment area, population count, and its proximity to the nearest primary school. However, based on the availability of and access to land, it was decided that the school will be constructed in the neighbouring community of Cabora.

Cabora is one of the communities within Santa Rosa and subdivided into three sections – Upper, Central and Lower Cabora. The community has a population of approximately 395 residents. Cabora can be access by road and is located approximately 15 – 20 minutes by bus from the Kumaka Water Front.

At present, there are no primary schools located within the immediate surrounding of Cabora, and as such students from within these communities are required to attend the Santa Rosa Primary School. The Santa Rosa Primary School is located on the opposite side of the Moruca River and can be accessed by road and by boat from the Kumaka Water Front. The school is located 4-5 miles from the furthest community in the current catchment area. As a result, it is difficult and expensive for children in communities like Cabora and Huradiah to access the school.

The school was built to accommodate 450 students; however, the current student population is 610 and is steadily growing due to the population growth and the lack of other alternative primary schools within Santa Rosa. The school has at least 28 migrant students as well. This has resulted

in the overcrowding of classrooms and the lack of resources to promote a comfortable and effective learning environment.

Santa Rosa Primary School accommodates students from Grades 1 – 6 and has a total class count of 27. A breakdown of the current student population per class for the academic year ending in 2023 is shown in Table 5-4 below.

Table 5-4: Breakdown of the Current Grades and Number of Classes for Academic Year 2023

Grades	No. of Class
Grade One	5
Grade Two	6
Grade Three	4
Grade Four	4
Grade Five	4
Grade Six	4
Total	**27**

As a result of the challenges faced by students to access Santa Rosa Primary School and the current overcrowding, the MoE along with the Santa Rosa Village Council have identified a portion of land in Central Cabora for the construction of a new primary school. The catchment area of the new primary school includes Huradiah, Acquero, Lower, Central, and Upper Cabora, Rincon, and Ko-Ko Road. These communities have a total population of 1,764. A breakdown of the current population of the communities within the catchment area is listed in Table 5-5.

Table 5-5: Breakdown of Community and Population in Catchment Area

Community	Population
Huradiah/Acquero	402
Cabora	398
Rincon	599
Ko-Ko	365
Total	**1,764**

There has been a donation of 10 acres of land by a private family located within the community for educational purposes including the construction of a nursery school, a primary school, and a playground/community centre. The land has been formally handed over to the Village Council by the family and there is no competing land use. The land identified was previously used as farmland, but was not being utilized in the recent past and, as such, the site is mostly covered in secondary vegetation., There are no encumbrances such as permanent or semi-permanent structures or squatters located on the land. The land is surrounded by private residence and other farmlands.

The land can be accessed by a dirt road from the main road and is approximately a 15 minutes' walk from the main junction to the proposed school site.

The site does not currently have access to water. However, there was an undertaking from GWI to have water provided to the community in 2023. Households in the community utilise solar power since the area is not currently served by the power company. It was recommended that solar power be provided for the school. There is also no landline service or internet connectivity within the area. However, there is mobile telephone and mobile data service. There is an ICT Hub in Lower Cabora, but the range does not extend to the households in Central Cabora.

The site is not prone to flooding from heavy precipitation, and usually drains into a nearby swamp.



Figure 5-12: Proposed Land for Construction of the Cabora Primary School



Figure 5-13: Secondary Vegetation at the Project Site

5.1.8.1 Recommendation for Project Support and Implementation

During the site visit to the community of Huradiah, the Head Teacher of the Santa Rosa Primary School, the Parent Teachers Association members, the Village Council, and residents expressed their interest in the construction of a new school and recommended that the following should be considered:

1. The construction of a new school to accommodate 350 students and 25 discrete classrooms to facilitate Grades 1 – 6.
2. The school should be equipped with the following:
   - Library
   - Teachers' room
   - Music Room
   - Canteen
   - An appropriate number of washrooms according to the Non – Academic Standards
   - Special Education Room
   - Kitchen to facilitate the MoE Hot Meal Programme
   - Smart classroom with IT support
   - Sick Bay
   - Guard Hut
   - Fencing, multiple entrances, and adequate drainage
   - Auditorium and Stage
   - Tarmac
3. There is an adequate number of teachers and other young professionals who are willing to be trained as teachers within the communities, and as such there will not be a lack of staff for the new school.
4. The building should be constructed with disability access and facilities so that students with physical disability can access the same quality of education.
5. The building should be a two-story concrete building with adequate natural ventilation and lighting.
6. The school should be equipped with adequate solar power generation to meet the needs of the school and school facilities, such as the smart classroom, especially since the area is not currently served by the power company.
7. The school should have an incinerator for proper waste disposal.
8. The RDC has committed to infrastructure upgrades (road) and provision of utility service to the school.
9. The site is ideal for the construction of the school since parents and students from the catchment area find it difficult to access Santa Rosa Primary School every day because of the far distance and the cost of transportation. Students and parents are required sometimes to walk long distances as well as traverse in boats to access the school. This is more challenging during rainy conditions.
10. The construction of the school is needed within the catchment area to ease the burden of parents. The school is also critical for the future development, since there is a lot of available lands for housing in the catchment area.

The stakeholders were made aware of some of the potential impacts from project activities such as noise pollution and other activities associated with the general construction works, and a number of mitigation measures were proposed. These are:

1. There are local contractors within the communities who are capable of constructing the school or providing support to the contractors. Other services such as building of furniture can also be done by capable community members.

2. The contractor should engage and employ the local labour force for the construction of the school. It is expected that the contractor will pay the local labour force a fair wage and in keeping with the current labour cost in the community. It was noted that the labour cost in Santa Rosa is higher that the labour cost on the coastland because of the remote location and the high cost of living.
3. The contractor should utilise local materials such as hardwood and sand for the construction of the school. Hardwood can be supplied by logging activities at Kwebana and there is a sand pit within the community which can provide the sand required. The contractor should pay a fair price for the materials from the communities. They should also source food supplies from local farmers and grocery shops.
4. The MoE should engage the Village Council on the design and other details of the project before the construction of the school so that they can provide feedback and recommendations.
5. The Contractor should engage with the Village Council prior to the commencement of construction to discuss the community's rules and expectations and identify areas for support and collaboration.

5.1.9 Port Kaituma Primary School

The Port Kaituma Primary School is located centrally within the Port Kaituma community and was constructed to deliver primary education to students within the Port Kaituma catchment area. The school is located close to the Waterfront and Canal Bank of the Kaituma River and is approximately a 15-20 minutes' walk from the landing. Additionally, the school can be accessed by road from the land and other communities. The school is located in close proximity to the Port Kaituma Nursery School and the Port Kaituma Secondary School. The school is neighboured by the Guyana Forestry Commission on the left, the Amerindian Hostel to the right, and a church and a resident on the opposite side of the access road. The school building was previously the females' dormitory for the secondary school, but was converted to the primary school in 2005. Some renovations were done in 2007 and 2019.

The school is a two-story wooden building with zinc roof which is rested on raised concrete pillars and is located within a fenced compound. There is one main entrance/exit into the compound and additional makeshift entrances and exits. The building houses classrooms, administrative offices and other auxiliary facilities. The kitchen is located in a separate wing in the compound and is connected to the main building by a corridor. The sanitary block, a wooden guard hut, and handwashing facility are also located within the compound of the school. The school does not have a canteen, and vending is done outside of the compound through the fence and within the general surrounding outside of the school. There is no designated parking area within the school compound, as such, parking is done on the road shoulders. The compound does not have a designated playground, however there are open areas within the compound that students used as the playground/area.

Port Kaituma Primary School is largest primary school within the sub-region and was constructed as a Grade A school to facilitate 400 students. However, the current student population is currently 885, including 65 migrant students within Grades 2, 4, 5 and 6. A breakdown of the school enrolment for the last 5 years is shown in Table 5-6 below.

Table 5-6: Breakdown of Student Enrollment from 2019 -2023

Year	Males	Females	Enrollment per Year
2019	414	388	802
2020	431	401	832
2021	393	399	792
2022	440	443	883
2023	448	437	885

The increase in the student population is due in large part to the increase in population within the current catchment area due to migration and increase birth rate. The current catchment area includes Citrus Grove, Canal Bank, Four Miles, Five Miles and Oronoque. However, a new primary school is currently being built at Oronoque. Students also come from other areas depending on their situation and their parents' employment.

Table 5-7: Showing the Catchment Area and Population Count

Community	Population	Households
Citrus Grove	1,050	500
Canal Bank	1,500	250
Four and Five Miles	1,052	222
Total	**3,602**	**972**

The school currently houses Grades 1 – 6, with a total class count of 30 and a staff complement of 34 teachers. There are currently 23 actual classrooms and 7 makeshift classrooms, with each classroom having approximately 30 students. A breakdown of the number of classes per grade is listed in the Table 5-8 below. The lower flat consists of physical classrooms and a dining hall which is being used as makeshift classrooms. The upper flat also consist of physical classrooms, an auditorium which is currently divided into makeshift classrooms, and other auxiliary services. The school was previously used as a dormitory/hostel and as such was designed with a number of small rooms which are being used as classrooms at present. As such, the space allocated to each classroom is small and lacks the required space as per the Non-Academic Standard for each student. The makeshift classrooms that are being housed in the dining hall and auditorium does not have physical barriers or are blocked out to separate the classes. This results in the disturbance of learning and teaching due to noise and other distractions. Additionally, Grade 6 students were housed at a private property from June 2019 to January 2023 due to classroom overcrowding and lack of space. However, because the property was severely dilapidated and lacks basic infrastructure, the students were returned to the primary school. End of term test are usually written on rotation owing to the lack of space for the required exam setting.

Table 5-8: Breakdown of the Current Grades and Number of Classes for Academic Year 2023

Grade	No. of Class
Grade One	7
Grade Two	8
Grade Three	7
Grade Four	6
Grade Five	7
Grade Six	6
Total	**41**

**While some physical classes have been merged, the student registers remain separate.*

The classrooms are overcrowded and lacks the space for the adequate teaching aids and other classroom facility such as a reading corner, teacher's cupboard, and comfortable furniture. Learning and teaching is often disrupted especially in the makeshift classrooms where there is no physical separation. There are also challenges in the physical classrooms since they are located close to each other and they are not fully enclosed. Some classrooms are equipped with televisions that are mounted on the walls for the screening of educational materials. However, the placement of the television is extremely high and often hinders the view of the students. The makeshift classrooms do not have the facilities for a television.

The school currently lacks adequate space for auxiliary service that are essential to the smooth functioning of the day-to-day activities. The school has a kitchen and is currently offering the hot meal programme. However, the general setting of the kitchen is clustered and lack basic facilities such as stove and proper cold storage. Cooking is done outside on a coal-pot or fireside. Students are required to eat in their classroom or available space in the school compound since the dining hall is currently being used as makeshift classrooms. There are two sick bays, one is located on the upper flat of the building and the second one is a make-shift sick bay which is located close to the entrance of the lower flat. Both sick bays do not adequately meet the needs of sick students. The school has a library and reading area, however, there is need for an upgrade of the facility and an increase in space.

There are currently 2 sanitary blocks with a total of 16 washrooms facilities. 12 are designated for students and 4 are designated for staff. Some of the washrooms are not functioning adequately and are in need of maintenance. The washrooms designated for staff use are inadequate for the staff complement currently employed at the school.

Garbage is collected and stored in barrels around the school compound. There is a skip bin located within the school compound which is usually emptied by the NDC once per week. However, there has been prolonged issues with the regular collection of garbage which results in the build-up of garbage. When collection is not regular the waste is placed and burnt in a burn pit located at the back of the school

Landline and internet services are not available at the school. However, data service is available via mobile carriers. Teachers use their mobile data connection to complete task as required by the MoE, aid lesson plans, and download materials that are required for learning.

The main water source to the school is from GWI and is fairly reliable. Additionally, there are 12 water storage tanks located within the school compound which store water from GWI, as well as from rain water harvesting for drinking and cooking. The water storage capacity may last 2 days if the water is used conservatively. The water storage capacity is inadequate given the needs of the school and requires upgrading.

The school is powered by Port Kaituma Power and Light Co. Inc. which provides the community and school with 23 hours of electricity per day. There is a blackout period between 07:00hrs and 08:00hrs daily. There are no other power sources such as solar power or back-up generators available at the school. The current single power source is not reliable and an alternative source of power is needed at the school. Additionally, the internal wiring system of the school needs maintenance and upgrade to avoid damage to equipment and load-shedding. Several electrical outlets, light fixtures, and switches are not working and needs to be replaced.

There is no formal fire prevention plan, however, fire drills are conducted regularly at the school. There is one fire extinguishers at the school. The school compound sometimes experiences minor flooding due to heavy precipitation and clogging of the drainage of the compound. However, recent improvement to the drainage system has addressed this concern.

There is general grievance redress mechanism where parents, students and teacher may bring complaints and recommendations to the Head Teacher or the Parent Teacher Association.

There is adequate space within the compound for the extension of the school. The size of the school compound is 93,840 feet^2. The extension can utilize the area where the old female dormitory was situated.



Figure 5-14: Aerial View of Port Kaituma Primary School Compound



Figure 5-15: Port Kaituma Primary School



Figure 5-16: Cramped Classroom at Port Kaituma Primary School



Figure 5-17: Inadequate Library and Reading Space



Figure 5-18: One of Two Makeshift Sickbay



Figure 5-19: Available Space within the School's Compound for Expansion

5.1.9.1 Recommendation for Project Support and Implementation

During the site visit to the Port Kaituma Primary School, the Head Teacher, Teachers, Auxiliary Staff and Parent Teachers Association members expressed interest in the extension of the school and the following should be considered:

1. The construction of a new concrete two – story wing for the school to accommodate 15 additional classrooms.
2. The rehabilitation and maintenance of the existing building which should include but not limited to:
   - Electrical maintenance
   - Internal plumbing
   - Washing and painting of the building
   - Roof maintenance
   - Library
   - Sick Bay with at least 5 beds
   - Kitchen
   - Drainage system
3. The other facilities the extension should be equipped with are:
   - Teachers' meeting room
   - Administrative/Reception Area
   - Canteen and dining hall (dining hall for hot meals programme)
   - Additional sanitary block for students and teachers. At least another 12 washrooms are needed for students.
   - Special Education Room
   - Smart classroom with IT support
   - Auditorium and Stage
   - Tarmac
   - Storage room
   - Alternative source of power such as solar or back-up generator
4. Adequate furniture and other teaching supplies such as chalkboards.
5. The expansion of classrooms within the existing building since the classrooms were actually rooms from the old boys' dormitory.
6. Classrooms should be adequately lit and ventilated.
7. The school to be made accessible to students with physical disabilities, since many students with physical disability within the community are not enrolled at the school currently because it is not accessible to them. The lack of disability access should not be deterrent for students with disability who are able to learn in a conventional setting. There are approximately 20 students at the school with some form of disability, and many more who may not be attending because of the situation.
8. Adequate classroom to facilitate learning. Children will be encouraged to go to school when they are in a comfortable environment.

The school administration and the Parents Teachers Association were made aware of some of the potential impacts from the works to be carried out such as noise pollution and other activities associated with the general construction works, and a number of mitigation measures were proposed:

1. The school will implement a shift system during the rehabilitation of the existing building.
2. The teachers will have to be vigilant to ensure that students are kept safe and away from the active construction site and work areas.
3. There should be physical barricades and proper signage around active worksites.

4. Noisy activities should occur before and after contact period so that the students may not be disturbed to a large extent.
5. Students will be monitored during the entering and exiting of the school compound by teachers.
6. Contractors should use an alternative entrance to the compound. There are currently two access; one can be made available to the contractor.
7. Stockpiles of construction materials should be kept in the open area close to the school and not in the school compound.
8. The contractor should seek accommodation elsewhere and not within the school's compound.
9. The contractor should make available their own washroom facilities.
10. There should be ongoing consultation and communication with the school's administration to coordinate activities.
11. The school's design should consider the unique environment of the community such as weather, dust factor, drainage, etc.
12. There are existing contractors within the region that are capable of undertaking the construction works and should be hired. There are both skilled and unskilled persons from within the community who are willing to work.
13. Construction waste should be disposed of by the contractor and the construction site must be kept clean and clear of any avoidable hazards and safety risks.
14. Sand to be used in the construction should be brought to the area since the available sand is not of good construction quality.
15. Alternative hardwood such as bullet wood are available within the community and should be utilized.

5.1.10 Patentia Primary School

The Patentia Primary School is located within the community of Patentia and was constructed in 1997 to deliver primary education to children within the community. The school can be accessed from the main public road leading into the community. Patentia Primary School is located within a fenced compound and has one entrance and exit. The Patentia Secondary School is located south of the primary school and there is a private residence located north of the school and the main public road is located west of the school. To the west there is a drainage canal and a dam, followed by vegetation and eventually the Demerara River.

The school is a two-story L shaped concrete building with a zinc roof which is located centrally within the compound. The building houses classrooms, an administrative office, IT Laboratory, Library, Reading Room, Sick Bay, and a Kitchen area. There is a sanitary block and a janitor's room located close to the front of the building. The school does not have a canteen, however there are 7 vending stalls located within the compound with 5 vending currently. Vendors are required to pay a fee for vending within the schools' compound. There is no parking area located within the school compound. Visitors and teachers are required to park on the shoulder of the roadway. The compound has a large open play ground/area located adjacent to the building.

The school was constructed as a Grade C school to facilitate 250 – 300 students and was subsequently upgraded to Grade B school. The expansion of the community to include a new phase of the housing scheme and the regularising of the squatting area within the community are contributing to the overcrowding at the Patentia Primary School. The current catchment area of the school includes Patentia, as well as some parts of neighbouring communities like Toevlugt and Sisters. It was noted that transfers and new student from the community seeking enrollment are sometimes referred to other schools because there is not enough space to facilitate them.

The Patentia Primary School has a current student population of 516 and is steadily increasing due to the growing occupancy rate and migration within the community. There are approximately more than 10 migrant students enrolled at the school. A breakdown of the school enrollment for the last 9 years is shown in the Table 5-8 below. There are currently 28 teachers on staff and a complement of auxiliary staff which includes janitors, handyman and security guards.

Table 5-9: Breakdown of Student Enrollment from 2015 -2023

Year	Enrollment per Year
2015	516
2016	524
2017	530
2018	558
2019	564
2020	Not Available
2021	Not Available
2022	517
2023	516

The school currently has Grades 1 – 6 and a total class count of 19. The lower flat which was built to accommodate 4 classrooms has been subdivided using chalkboards and curtains to facilitate 9 classes, and the auditorium and stage are also divided with chalkboards to form makeshift classrooms to facilitate 10 classes. Additionally, open areas such as under the stairs to the upper flat has been enclosed to facilitate additional classrooms. Each classroom has approximately 30 students which is more than the recommended class size as per the Non-Academic Standards. A breakdown of the current student population per class for the academic year ending in 2023 is shown in Table 5-9 below.

Table 5-10: Breakdown of Current Student Population for Academic Year 2023

Grade	No. of Class	Boys	Girls	Total
Grade One	3	31	40	71
Grade Two	4	45	41	86
Grade Three	3	35	40	75
Grade Four	3	53	35	88
Grade Five	3	56	38	94
Grade Six	3	53	49	102
Total	**19**	**273**	**243**	**516**

The classrooms are generally clustered and there is not enough space for students to be seated comfortably as per the Non-Academic Standards. There is also inadequate space in the classrooms for learning materials such as a library corner and other teaching aids, teacher's cupboard and desk, and comfortable furniture. Teaching and learning in this environment are generally a challenge to teachers and students respectively, since it is often noisy and distracting causing the students' comprehension and concentration to be limited during contact periods.

The building is not properly ventilated and as such there is minimal natural lighting and natural ventilation. As a result, the classrooms are generally hot and dimly lit leading to student's discomfort and agitation.

The school currently lacks adequate space for auxiliary service that are essential to the smooth functioning of the day-to-day activities. The school currently has an area designated for a kitchen; however, this area is not equipped as a kitchen and is currently being used as janitorial quarters and store room. The Head Teacher's office is also currently being used as a storage room and space for staff meeting. The library is also being used as a storage room and as a result, there is not enough space for effective functioning of the library. The sick bay is cramped and can only accommodate one student at a time and is also being used as a storage room.

The school does not have a canteen, however there are 7 stalls located within the school compound that vend to the students. The stalls operate with approval from the schools' administration and pays a monthly fee to the school. The fee is used to pay for garbage collection and other upkeep the school may need. There is no dining hall or eating area located within the school. Students and teachers would usually have lunch in their classrooms or around the compound.

There are currently 2 sanitary blocks with a total of 24 stalls for students use. The first sanitary block is located at the back of the school building and has a total of 16 stalls, with 8 female and 8 male stalls. The second sanitary bock is located in the front of the building and has a total of 8 stalls, 4 female and 4 male stalls. Some of the students' washrooms are not functioning and are in disrepair. There is 1 female teacher washroom, 1 male teacher washroom, and 1 washroom designated for the Head Teacher. The female teacher's washroom is currently in disrepair and is not being used by the female teachers. Female teachers (27 teachers) currently use the Head Teacher's washroom or female student washrooms. There are two septic tanks that are attached to the two sanitary blocks.

The waste is collected in bins and are stored in 2 drums in the compound until the garbage collection day. The garbage is collected once per week by a private garbage collector service and is taken to the dumpsite. There are no menstrual waste sanitary facilities in the female washroom or female teacher washroom. Female students and teachers use domestic waste baskets for disposal of sanitary waste. The garbage drums are not adequate to collect and store a week's garbage, and the private garbage collector only services the area once per week.

Landline telephone service is available at the school and mobile and data service is also available. There is access to the internet via the GoG's free Wi-Fi prgramme. However, the connection is not reliable and is not available throughout the school building. To access the internet connection, teachers and students have to go to the front of the building to secure a reliable connection.

The main water source is from GWI; however, the water pressure is low and is not reliable. There are 2 storage tanks and a reservoir, however the reservoir is currently not in use as is was not properly maintained. Rainwater is not being harvested by the school since the water tanks are located a far distance from the building and the roof gutters are not in a proper condition.

The main source of electricity is from GPL and while this service is reliable, there are problems with the electrical wiring of the building which causes some disturbance to the distribution of electricity within the school. Additionally, there are many faulty electrical outlets, switches, exposed electrical wiring, and blown light fixtures throughout the school building. This is a hazard especially to younger students in Grades 1 and 2. The school does not have solar power or a back-up generator.

There is a fire prevention plan in place and fire drills are being done frequently at the school. Additionally, there are 2 fire extinguishers in working condition. There were a few more but these were destroyed by students.

The school compound sometimes floods from heavy precipitation due to internal drainage problems and poor design and upkeep of the drains and drainage systems. The school also experiences leaking of the roof during mild-heavy rainfall.

There is additional space within the compound for the expansion of the school, however some facilities that are currently located in close proximity to the designated space may require relocation to other parts of the compound. There is adequate space within other areas of the compound to facilitate the relocation.



Figure 5-20: Arial View of Patentia Primary School and Proposed Extension Site



Figure 5-21: Makeshift Classroom in the School's Auditorium



Figure 5-22: Sick Bay being used as a Storeroom



Figure 5-23: Available Space within School Compound for School Extension

5.1.10.1 Recommendation for Project Support and Implementation

During the site visit to Patentia Primary School, the Head Teacher, Teachers, Auxiliary Staff and Parent Teachers Association members expressed interest in the extension of the school and the following recommendations were provided:

1. The construction of 10 additional classrooms to offset the overcrowding the school is currently experiencing and to accommodate additional new students. A new wing or building should be constructed consisting of 2 floors and made of concrete.
2. The sanitary block located at the front of the building should be relocated to the back of the building, and the area currently being used as the sanitary block should be redesignated and retrofitted as the administrative office and reception area.
3. Construction of and additional sanitary block for teachers.
4. Construction of an all-weather tarmac.
5. The current concrete walkways should be raised and shaded so that when there is heavy rainfall, students and teacher will not be forced to walk in the water and the rainfall.
6. Construction of a conference room/meeting room.
7. Construction of a storeroom to accommodate and store supplies and other materials and equipment.
8. Construction of a janitors' quarters so that they can be relocated to a designed space in order for the kitchen area to be used as a kitchen.
9. An additional access to the school should be provided so that there is designated access for different purposes.

10. There is space within the compound to accommodate the expansion of the school. The space designated is currently being used as a playground, however the playground can be relocated to another area of the compound.
11. Vendors can also be relocated to the northern side of the compound to facilitate the expansion of the school.
12. The current state of the building is deplorable and in need of rehabilitation and repairs to address the existing deficiencies such as painting, electrical repairs and maintenance, repairs to the roof, water supply system upgrades, drainage and gutter system.

The school administration and PTA were made aware of some of the potential impacts from project activities such as noise pollution and other activities associated with the general construction works, and a number of mitigation measures were proposed, as outlined below:

1. Barricade the construction site so that students would not wander off to active construction zones.
2. Heavy construction and renovation of the existing building can be done during the holidays period and on weekends.
3. Create a separate entrance for the contractor so that there would be minimum interaction with students and construction workers, equipment, and materials.
4. Vendors should be relocated prior to the commencement of construction so that students visiting the stalls would not have to come in contact with workers, equipment, and materials.
5. Construction workers should not live or dwell in the school compound.
6. Noisy construction activities should occur after contact periods and on the weekends.

5.1.11 Little Diamond Primary School

The New Diamond Grove Primary School is located in the community of Great Diamond on the East Bank Demerara, approximately 45 minutes from the Capital City. The school is located in the housing scheme, which is approximated 5-10 minutes' drive from the main public road and was constructed in 2012 to delivery primary education to the community of Great Diamond. The annex to the school was built in 2020 to remedy the overcrowding at the school.

The school is located within a fenced compound and has two buildings in which teaching is done in the main building and the annex. There are two main entrances into the compound and one pedestrian entrance which is connected to the guard hut. The main building is a concrete and wooden two – story L shaped building with zinc roof and houses classrooms, a library, a meeting room, a canteen, a kitchen space, a staff room, and the administrative office. The annex building is a two-story concrete building located in close proximity to the main budling, however they are not connected. The annex only houses classrooms. There is parking facility within the compound.

The school was constructed as a Grade A school to facilitate 900 students. However, due to the overcrowding of the school as a result of the growing population and expansion of the housing scheme, an annex was built to offset the overcrowding. The current student population of the school is 1,099. The main building currently houses 800 students and the annex houses 250 students. There are approximately 10 migrant students enrolled at the school. There are currently 52 teachers at the school and a complement of auxiliary staff.

The school currently has Grades 1– 6 and a total class count of 48. There 17 physical classrooms, with 10 in the main building and 7 in the annex. There are three auditoriums in the main building which houses a total of 27 makeshift classrooms, the library facilitates 1 classroom, the kitchen facilitates 2 classrooms, and the staffroom facilitates 1 classroom. Classrooms in the auditoriums

are subdivided by chalkboards to create physical classrooms. A breakdown of the current student population per grade for the academic year ending in 2023 is shown in Table 5-11 below.

Table 5-11: Current Student Population per Grade

Grade	No. of Class	Total
Grade One	9	187
Grade Two	9	182
Grade Three	7	176
Grade Four	8	198
Grade Five	7	163
Grade Six	8	193
Total	**48**	**1099**

The official catchment area of the school is 3rd Avenue Diamond to 19th Avenue Diamond. However, the school has students from other communities, including Farm, Herstelling, Prospect, and Providence. This is due to the overcrowding of other primary schools within the area such as Grove Primary School, Diamond Primary School and the Providence Primary School which are also experiencing issues with overcrowding and availability of space.

The site identified for the construction of the new primary school is in the 2nd Phase of the new housing development in Little Diamond. The site is located approximately a 5 minutes' drive off of the main East Bank Demerara public road. Additional accesses are currently being constructed within the housing scheme. The area is being developed as a new section of the housing scheme and the CH&PA has allocated 6.1968 acres for the construction of educational facilities within the scheme. There is enough space to accommodate construction of a primary school to accommodate 900 -1000 students and the accompanying amenities that are required as per the Non-Academic standards. There are no encumbrances on the land, nor is there any other competing land use.

The area identified for the construction of the primary school does not currently have access to electricity or landline and internet service. These are currently being installed. There is access to potable water from GWI and mobile and data services are available in the area. The area is undergoing significant development in the areas of occupancy and other infrastructure such as roads and essential utilities. Additionally, it is located in close proximity to other populated communities such as Prospect, Farm, and Herstelling and will provide a more convenient alternative to the Great Diamond Primary School for students living within those communities. These are all developing communities with new housing schemes which are seeing increasing occupancy.

The area was used for sugar cane cultivation in the past. When the sugar estate closed the area was allocated for housing development. The project site is covered in shrubs. Drainage and access around the site are already in place. While occupancy for housing is low around the site, there were construction of houses ongoing.



Figure 5-24: Proposed Site for the New Primary School and Immediate Surrounding Development



Figure 5-25: The Proposed School Site

5.1.11.1 Recommendation for Project Support and Implementation

During the site visit to New Diamond Primary School, the Head Teacher, Teachers, Auxiliary Staff and Parent Teachers Association members expressed interest in the project and the following should be considered:

1. There should be a new building or school constructed either within the compound or at another location to offset the overcrowding currently taking place at the school. The new school or expansion should have the capacity to accommodate at least 25 classroom or 900 students to accommodate students that are being disadvantaged due to the overcrowding.
2. Additionally, there should be:
   - Separate physical classroom for effective instructional periods
   - A canteen
   - Administrative and reception areas
   - Conference rooms
   - Tarmac
   - Sanitary blocks according to the Non- Academic Standards
   - The building should be designed according to the environment
   - Playground
3. The new school should include all the facilities and amenities of a modern primary school.
4. The new school with serve the new housing development in Little Diamond, Prospect, Herstelling, etc. while contributing to easing the overcrowding at the existing primary schools.

5.1.12 St. John-the-Baptist Primary School

St. John-the-Baptist Primary School is located in Bartica, Region 7, and is 1 of 2 primary schools in Bartica. The school is located in 2nd Avenue of Bartica. The land was previously owned by the Anglican Church and was donated to the school for the purpose of education many years ago.

The primary school is located within a chain link and concrete fenced compound. There is a nursery school to the north, the community centre ground to the south and a church to the east. The school is located within close proximity to the Bartica Regional Hospital, the Police Station, and the Ferry Stelling. There are 3 main entrances to the school compound and two additional entrances. One of the additional entrances is located between the nursery school and the primary school, and the other is located between the primary school and the community centre ground. The additional entrances are kept locked so that the students' whereabouts can be managed properly.

The school is a two- story L shaped concrete and wooden building with zinc roof and is located towards the front of the compound. The building houses classrooms, an administrative office and staff meeting room, kitchen, a canteen, library/reading room, and other auxiliary services. There are two guard huts located in the compound, one at the entrance and one at the back of the school. The sanitary blocks are located north of the school building, and the kitchen is located to the south, next to the school building in a connected annex. There is canteen located in the building across from the library/reading room. There is no parking facility located within the school compound. The compound has a large open area at the back of the school which is used as the playground and assembly area.

The school was constructed as a Grade C school for 400 students. However, the school has been upgraded to a Grade B School, since there have been various expansions of the building to accommodate additional students owing to the growing population of the Township. The school is the largest primary school and captures students from central Bartica, as well as from some riverine areas and inland communities. However, transfer students or new enrolments are being turned aways since there is not adequate space and furniture to accommodate the additional students. The other primary school is also overcrowded.

The current student population of St. John-the-Baptist Primary School is 560, with 7 migrant students currently enrolled and increasing due to high migration rate and opening up of new housing schemes along the Potaro Road. A breakdown of the school enrollment for the last 5 years is shown in the Table 5-12 below. There are currently 28 teachers on staff and a complement of auxiliary staff which includes janitors, handyman, and security guards.

Table 5-12: Breakdown of Student Enrolment from 2019 -2023

Year	Enrollment per Year
2019	558
2020	606
2021	596
2022	603
2023	560

The school currently has Grades 1 – 6, with a total class count of 27 classes. A breakdown of the current class count for each grade is shown in the Table 5-13 below.

The building has 3 large auditoriums and 2 physical classrooms. The auditoriums are divided by chalkboards and cloth into a total of 25 makeshift classrooms. The two physical classrooms are small and can only accommodate 1 class each. Additionally, the school hosts community activities such as meetings, consultations, and other events in the auditoriums which would require the dismantling of each classroom to utilise the open concept of the auditoriums. This would leave the auditorium in a disarray and the school staff and students would be required to set the classrooms back as per normal for teacher/student contact hours the following day. This process is exhausting and takes away from the instructional hours during the school day.

Table 5-13: Breakdown of the Current Grades and Number of Classes for Academic Year 2023

Grade	No. of Class
Grade One	4
Grade Two	4
Grade Three	5
Grade Four	5
Grade Five	5
Grade Six	4
Total	**27**

The classrooms are generally cramped and clustered, and while the registration suggest a class size of approximately 21 students per class, there is simply not enough space to accommodate the students comfortably as per the Non-Academic Standards. Students are often required to sit 3-4 in a bench depending on the size of the bench. The makeshift classrooms in the auditorium allows for the minimum application of teaching aids such as posters and pictures since there is no wall space and the constant disruption of the physical makeshift classrooms. There is also no space for individual seaters, cupboards, reading corners, or teacher's desk and bookshelf.

Students often have to walk through other classes to access the entrance and exit of the building which is a general inconvenience of the students and teachers. The current classroom environment is not conducive to teaching and learning because of the frequent disturbance from noise and other factors that cause distractions.

The building is not properly ventilated and dimly lit since the classroom are boxed in using chalkboard and natural air and light is prevented from entering the classroom. This leads to the discomfort and agitation of the students. Some of the power outlets are located a far distance from the classrooms, and as such, the use fans or supplemented lightening is challenging.

The current facilities allocated for the auxiliary services are inadequate and is in need of rehabilitation and upgrades. The storeroom and janitorial room are cramped and need additional space. The Library/Reading Room is also indeed of rehabilitation since it is poorly lit and lacks adequate ventilation. The school's sick bay is also located in the library and is inadequate to meet the needs of the students. The school has a small canteen area which only allows a few students at time.

The school has a kitchen to aid the hot meal programme currently ongoing at the school. However, the kitchen partly enclosed and activities conducted in the kitchen is noticeable from the front of the building. Additionally, there are no proper drainage facility for the kitchen and food particles, oil, fat endings, and other kitchen waste were noticeable in the drains and the compound of the school. There is no dining hall or eating space in the school. There is a benab located at the back of the school, however it is small and cannot accommodate all of the student.

The school has 1 sanitary block with 14 washrooms, with 6 designated for male students use and 6 for female students use, and 2 for teachers. The number of washrooms is not adequate given the student and teacher population of the school. Additionally, the current washroom facilities are in disrepair and in need of upgrade.

Waste is collected in bins and are disposed of at the dumpsite 3 times per week by a private contractor. There is an incinerator located in the compound, however it is currently not functioning.

Landline telephone service is available at the school and mobile and data service is also available. There is access to the internet via the government free Wi-Fi programme. However, the connection is not reliable and is not available throughout the school building.

The main source of water is from GWI, which provides treated water from the river. The school has 20 storage tanks which are used to store water from GWI and to harvest rainwater for cooking and drinking.

The main source of electricity is from GPL and while this service is sometimes reliable, there are power outages experienced during the school days. The school has access to solar power as a backup source of electricity. However, there are some electrical issues experienced due to the faulty wiring of the building. Additionally, a larger number of lights bulbs are not working or are working poorly, which results in dimly lit classrooms which can cause discomfort to the students. This situation presents a hazard especially to younger students in Grades 1 and 2.

The school compound experiences some flooding from heavy precipitation from time to time due to the blockage of surrounding drains and other internal drainage factors. There is fire prevention plan in place at the school and fire drills are conducted once per month where students assemble at the community centre ground. Additionally, there are 5 fire points located around the school building.

There is general grievance redress mechanism where parents, students and teacher may bring complaints and recommendations to the Head Teacher or the Parent Teacher Association.

The school building is generally in need of rehabilitation and maintenance of essential existing facilities and other areas such as internal and external washing and painting of the building.

There is additional space within the compound for the expansion of the school, however some facilities that are currently located in close proximity to the designated space may require relocation to other parts of the compound.



Figure 5-26: St John-the Baptise Primary School Compound



Figure 5-27: Front View of St. John-the-Baptist Primary School



Figure 5-28: Another Section of the St. John-the-Baptist Primary School



Figure 5-29: Makeshift Classrooms in the Auditorium



Figure 5-30: Makeshift Sick Bay



Figure 5-31: Available Space within the School's Compound to Facilitate Extension

5.1.12.1 Recommendation for Project Support and Implementation

During the site visit to the St John-the-Baptist Primary School, the Head Teacher, Teachers, Auxiliary Staff, Parent Teachers Association members and Regional Administration representatives expressed interest in the expansion of the school and the following recommendations were provided:

1. Two of the three auditoriums be converted to substantial physical classrooms to accommodate 1 classroom each. One auditorium with a stage should be left as an open concept to facilitate meetings, graduations, PTA events, and other activities of the school.
2. An additional two – story concrete wing should be constructed to facilitate 12 additional class rooms. The new building should utilise designs that would ensure proper ventilation and natural light. The building should have windows rather than vent blocks.
3. All classroom should be within the framework of a closed concept to avoid distractions.
4. Some of the auxiliary services in the present building, such as the kitchen, should be relocated to a space within or next to the new wing and the space currently being used by the axillary services be converted to classrooms.
5. There should be a designated sick bay and dining area.
6. There should be additional sanitary blocks for students and teachers in accordance with the Non-Academic Standards. There should also be at least 2 bathrooms included in the sanitary blocks.
7. There should be an electronic and integrated bell system in all of the buildings.
8. There should be an overall rehabilitation and maintenance of the current building to address the areas that are in disrepair and to correct the shortcomings of the facilities.
9. The building design should cater for students with disabilities.
10. The Regional Democratic Council is committed to provide any support necessary to ensure that the project is properly implemented.

The school's administration and PTA were made aware of some of the potential impacts from project activities such as noise pollution and other activities associated with the general construction works, and a number of mitigation measures were proposed:

1. Noisy construction activates can be conducted before or after contact hours.
2. Active construction areas can be corded off to restrict students wandering off into these areas.
3. The community centre can also be utilized for classes during the construction period.
4. The contractor should use a separate access point from the students and teachers.
5. There is adequate space available for stockpiling of construction materials in the compound and in the community centre ground.
6. The contractor should not be housed within the school compound and should make separate arrangements for washroom facilities.
7. The contractor should be responsible for discarding their construction waste and should not utilize the school's garbage receptacles.
8. Construction materials should be transported to the site during weekends.
9. There should be adequate consultation with the school's administration and PTA to address any issue prior to the commencement of construction and during the construction phase.
10. Rehabilitation and maintenance of the existing building should be done during the holiday periods.
11. There are contractors who are capable of undertaking the project within the community and these should be considered.
12. Building material such as sand, stone, and timber should be sourced from within the region.

5.2 ESA and ESMP Framework Consultation and Disclosure

Once a draft fit-for-disclosure version of ESA/ESMP, Stakeholder Engagement Plan and Sociocultural Analysis were prepared the Ministry of Education embarked on a process of consultation and engagement with stakeholders. The disclosure process aimed at allowing stakeholders to understand the project's risks, impacts, potential opportunities and development benefits. The approach to the disclosure process included two methods to ensure stakeholders relevant to the project were engaged. Firstly, the documents were disclosed on the Ministry of Education website. Secondly, the documents were shared with key stakeholders via email prior to the convening of a stakeholder consultation forum to present the ESA/ESMP, Stakeholder Engagement Plan and Sociocultural Analysis to stakeholders and solicit their feedback. The disclosure process was guided by the Stakeholder Engagement Plan prepared for the project.

Stakeholders were provided with an opportunity to share relevant feedback on the project. However, although there were no questions from the stakeholders who participated in the session, the information presented was quite valuable to the stakeholder engagement and information disclosure process. It allowed for a clearer understanding of the project components, the environmental and social requirements, and the project's potential impacts and recommended mitigation and management measures.

The consultation process will continue, including maintaining the document on the Ministry of Education's website and allow for review by the general public and end beneficiaries and providing an opportunity to lodge comments, and to receive feedbacks and recommendations. In addition, the consultation process with stakeholders will continue as the project details are finalized. The Disclosure and Consultation Report is attached as Appendix C.

6.0 IMPACT ASSESSMENT

6.1 Impact Assessment Methodology

The Support for Educational Recovery and Transformation project, according to the IDB's classification, is Category B and likely to cause mostly local and short-term negative environmental and associated social impacts and for which effective mitigation measures are readily available. As such, it has been determined that an ESA and ESMP be done to assess the potential negative environmental and social impacts associated with the project's interventions and in particular the construction activities and to identify measures of prevention and mitigation.

The ESA and ESMP are essentially safeguard instruments with the principal objectives to:

- Prevent or minimise potential adverse environmental and social impacts due to the project activities and components;
- Minimize human risk during the construction and rehabilitation works;
- Ensure environmental, health and safety measures are implemented throughout the project's construction activities; and
- Enhance environmental management at the health facilities.

At this stage, final determinations on the scope of the project are still to be made. However, for the purposes of the ESA and ESMP, the project's activities relating to infrastructure improvement and equipment are considered as follows:

- Construction of six new primary schools at Huradiah/Cabora (Region 1), Recht door Zee (Region 3), Tuschen (Region 3), Little Diamond (Region 4), Tabatinga (Region 9) and Wisroc (Region 10).
- Rehabilitation, extension and or outfitting of at least nineteen existing primary schools in Regions 1, 3, 7, 8 and 9.
- Provision of devices for students (grades 2-6) and their teachers at 25 schools.

The aim of this chapter is to identify and evaluate the potential impacts that the project may have on environmental and social receptors. However, the project scope is not yet finalized and the design of the targeted interventions are not yet available. As a consequence, this impact assessment adopted a high-level approach to impact identification and analysis. To the extent possible, the impact assessment is also informed by the findings from the site visits and feedback from stakeholder engagements as discussed in Chapter 5.

The impact assessment was done by identifying and rating potential impacts which could occur as a result of the proposed project activities. The analysis included two aspects. The first was having a clear understanding of the activities of the project and the Area of Influence (AoI) of the project. The primary AoI (area of direct influence) comprises the physical boundaries of the sites for the new schools construction and the existing boundaries for those to be rehabilitated, extended and or outfitted, and the immediately surrounding area. The secondary AoI (area of indirect influence) comprises the wider community within which the schools are located and which will benefit directly from the project interventions.

The second aspect was to predict potential impacts that might reasonably be expected to occur during the construction and operational phases and their significance. Significant impacts will need to be managed, mitigated and/or monitored to reduce potential adverse impacts and enhance positive impacts. The approach to the ESA involves a standard impact assessment methodology as outlined below:

- **Stage 1 – Impact Identification:** To determine the potential impacts associated with project activities. This was achieved through professional judgment, site visits to new schools sites and those to be extended, desk top analysis and review of relevant literature, and consultations with project stakeholders.
- **Stage 2 – Impact Assessment:** To identify the importance of the issues identified by rating their significance and likelihood to occur.
- **Stage 3 – Mitigation and Management:** To recommend appropriate mitigation measures and management or monitoring controls to address potential significant negative impacts.

6.1.1 Stage 1 - Impact Identification

The potential impacts of the project are those that change existing environmental and social conditions within the AoI in a negative or positive way. Identifying potential impacts attributable to the project requires an understanding of the baseline environmental and social conditions in which the schools to be constructed and those which are identified for intervention are located. This understanding was achieved by visiting all of the sites for the schools to be constructed and extended and from the gathering and analysing of information on baseline conditions as described in Chapter 4. Further, an understanding of the project related activities was required, as is outlined in Chapter 2. Potential impacts are considered as positive or negative, direct or indirect, short-term or long-term, localized or local, regional and cumulative. Table 6-1 provides definitions for each type of impact considered.

Table 6-1: Definitions of Types of Impacts

Impact Type	Definition
Positive	An impact that results in a positive effect on the receiving environment or resource from activities performed at or by the project.
Negative	An impact that results in a negative effect on the receiving environment or resource from activities performed at or by the project.
Direct	An impact created as a direct result of the project.
Indirect	An impact which may be caused by the project, but will occur in the future or outside the project's AoI.
Short-term	An impact or activity that is expected to dissipate shortly after the cause ceases
Long-term	An impact or activity that is expected to continue for a significant time after the cause ceases
Cumulative	The total impact to a particular resource anticipated to occur as a result of a combination of effects produced together with neighboring projects.
Localized	Impact which is limited to the project's direct AoI.
Local	Impact which extends outside the project's immediate AoI, but is contained within the general vicinity of the project.
Regional	Impact which has extended beyond the vicinity of the project's AoI.

6.1.2 Stage 2 - Impact Assessment

The approach to assessing impacts can be either qualitative or quantitative, depending on available information and historical site-specific experience. Both are important in normal impact analyses. However, considering that the project is not complex, the project scope not fully defined, and will involve mainly construction activities, the impact assessment will adopt more of a qualitative approach.

The importance of an impact has been assessed by combining two impact elements:

- The **significance** of the impact on the resources should the impact occur; and

- The **likelihood** of that impact occurring.

In determining **the significance level**, consideration was given to the types of impacts from each project activity relative to existing baseline environmental and social conditions. This is described in Table 6-2.

Table 6-2: Impact Significance Level Descriptors

Significance Level to Potentially Impacted Environmental or Social Resources				
Negligible	**Minor**	**Moderate**	**Major**	**Extreme**
Minimal impact in a localized area of little or no consequence.	Low impact in a localized or regional area with a functional recovery within one year.	Medium impact in a localized or regional area with a functional recovery of 1 to 5 years.	High impact in a localized or regional area with a functional recovery within 5 to 10 years.	Very high impact in a broad regional area or area of national significance with functional recovery in greater than 10 years, if at all.

In determining the **likelihood levels,** consideration was given to the probability of an identified environmental or social resource to be impacted by the project. The anticipated likelihood of occurrence of an impact was identified to range from Rare to Certain (Table 6-3).

Table 6-3: Impact Likelihood Levels

Likelihood of Impact to Environmental or Social Resources				
Rare	**Unlikely**	**Likely**	**Almost Certain**	**Certain**
Highly unlikely to occur but theoretically possible.	May occur within the life of the Project or activity.	Likely to occur more than once during the life of the Project or activity.	Very likely to occur during the life of the Project or activity.	Expected to occur as a result of the Project or activity.

Utilizing the outcomes of both the impact significance ranking and the identified likelihood of impact, the effect of each impact causing action on the receiving environment is evaluated. The risk level (or importance) is assessed by combining the significance column and the probability row in the following Risk Assessment Matrix (Table 6-4).

Table 6-4: Risk Assessment Matrix

		Significance				
		Negligible	**Minor**	**Moderate**	**Major**	**Extreme**
Likelihood	**Rare**	Low	Low	Low	Medium	Medium
	Unlikely	Low	Low	Medium	Medium	High
	Likely	Low	Medium	Medium	High	High
	Almost certain	Low	Medium	High	High	Critical
	Certain	Low	Medium	High	Critical	Critical

Note: Where the Significance of an impact is indicated to be positive, the importance will also be positive.

6.2 Environmental Resources

This section discusses potential impacts to environmental resources including soils, water resources, ambient noise levels and ambient air quality. Generally, potential environmental impacts are expected to occur during the construction phase of the project although negligible to minor impacts may also be associated with operations.

6.2.1 Soils

Potential impacts of planned project activities include soil disturbance and erosion, compaction and pollution.

6.2.1.1 Soil Disturbance and Erosion

Project construction activities may require soil disturbing activities including the clearing of topsoil to facilitate the construction and extension of new schools. Soil disturbing activities, including topsoil clearing, may increase risks of erosion particularly in regions where the prevailing soil types have high erosion potential. However, all of the sites identified for the construction of the new schools and extension of existing schools are located in flat areas which are not highly susceptible to erosion. In addition, given the interventions planned under the project, the disturbed area is expected to be small, restricted to within the existing school compounds or proposed school construction sites. In addition, soils on existing schools' premises are all previously disturbed and may be subject to frequent landscaping activities.

Erosion may also occur as a result of the project activities which may clear vegetation and minimally disturb topsoil on slopes. This may only occur for the interventions targeting the improvement of essential services in schools, since the new schools sites and those to be extended/rehabilitated are all located on flat areas. Given the nature of the works to be undertaken, erosion is expected to be minimal.

These potential impacts may be well managed if appropriate measures are in place such as spreading cleared soils around the premises or providing soils, particularly topsoils, to agricultural departments of the schools, where appropriate. As a result, potential impacts of soil disturbance, including topsoil clearing, and erosion are **negative, direct, short-term** and **localized** and of **negligible significance**. However, these activities are **almost certain** to occur in several of the schools identified for intervention. As such, soil disturbance and erosion are **Low Risks** from project activities.

6.2.1.2 Soil Contamination

Soils may be accidentally or intentionally contaminated by the dumping of wastes during project construction. Wastes generated by construction activities will comprise primarily general solid wastes including food wastes, empty packaging from construction materials, plastics, paper, cardboards and construction waste. To a limited extent, soils may be contaminated by small quantities of hazardous materials and waste such as fuels used for construction machinery like cement mixers as well as waste oils from planned or unplanned maintenance of construction machinery. Construction may also contribute to increases in sewage generated on-site by construction workers. The implementation of good environmental management measures during the construction can mitigate these risks entirely, including implementing appropriate environmental management practices for the proper collection and disposal of wastes. In addition, plans to manage waste should be outlined in the contractors' Environmental and Social Management Plan (CESMP) and implemented by the contractor to manage wastes generated by the construction process, including construction waste. Potential impacts of soil pollution are **negative, direct, short-** to **long-term** and **localized** and of **minor significance** but are

unlikely to occur if appropriate management measures are implemented. As such, this is a **Low Risk** from project activities.

6.2.1.3 Compaction

The nature of the soils in the vicinity of some schools may make them susceptible to compaction and subsidence beyond the permeable limits of the soil. Potential risks of compaction are likely to be greatest at material stockpile areas. Soil compaction may contribute to ponding of water on the surface of soils which may contribute to soil subsidence and erosion at the surface. However, project construction activities are expected to have limited use of heavy machinery and vehicles. In addition, material stockpiles will be established temporarily and as a result the anticipated footprint of compaction is a relatively small area. Potential impacts of compaction are **negative, direct, short-term** and **localized,** of **negligible significance** and are **likely** to occur at some of the schools to be intervened. As such, this is a **Low Risk** from project activities.

6.2.2 Water Resources

Potential impacts to surface water and groundwater resources includes sedimentation and pollution from construction activities. However, as discussed further below, pollution of water resources may also potentially occur during the operational phase of the project.

6.2.2.1 Sedimentation

Project activities some of the schools to be targeted can temporarily increase sedimentation of water bodies. Construction activities will result in soil disturbance which may result in an increase of sediments being transported to the stream from erosion by surface runoff, especially during the rainy season. Moreover, for the provision of potable water, works in the vicinity of the surface water body to install a platform for the pump may also result in erosion and temporary increases in turbidity. For the new school construction none of the sites are located in close proximity to any stream and for those to be extended, only the Kariakau Primary School site is located in close proximity to a stream.

The project is not expected to impact ground water resources.

Potential impacts of changes in physical parameters of surface water bodies and groundwater resources are **negative, direct, short-term** and **localized,** of **negligible significance** and are **unlikely** to occur if appropriate management measures are implemented. As such, this is a **Low Risk** from project activities.

6.2.2.2 Pollution

Surface waters or groundwater resources may be accidentally or intentionally contaminated by the discharge of fuels and waste oils or other hazardous wastes during the construction phase of the project. However, project construction activities are expected to have limited use of heavy machinery and vehicles. There will also be the risk of pollution of waterways from improper dumping of general solid waste. During project operations there are also risks of contamination from fuel and waste oils if any of the planned interventions install diesel powered water pumps in the vicinity of surface water bodies. Similarly, wastewater from any project interventions that install washing stations or sewage facilities such as septic tanks can potentially contaminate water resources if the discharge streams are not properly designed and managed.

The implementation of good environmental management measures during construction can mitigate these risks. Plans to manage waste should be outlined in the contractors' CESMP and implemented by the contractor to manage wastes generated by the construction process. In addition, utilizing only

electrical pumps or solar powered pumps to provide potable water may also mitigate risks of pollution during operations. In addition, discharges from septic tanks can be treated and channeled to a soak away. Potential impacts of pollution of surface waters are **negative, direct, short-** to **long-term** and **localized,** of **minor significance** but are **unlikely** to occur if appropriate management measures are implemented. As such, this is a **Low Risk** from project activities.

6.2.3 Ambient Noise Levels

Baseline ambient noise levels are expected to increase during the construction phase of the project as a result of use of construction equipment and machinery. Ambient noise levels may also be influenced by cultural behaviours of some contractors' workers, for example, playing of music on loudspeakers or speak loudly when on-site. Most of the schools to which site visits were conducted were located proximate to residential areas. Sensitive receptors also include student populations of the schools to be targeted, teachers, as well as the construction workers.

Given the range of sensitive receptors in proximity to most of the schools sites, noise levels during construction would have to remain within the decibel limits established by the GNBS for construction activities which are a day-time limit of 90 dB and a night-time limit of 75dB. According to the standard from the US Department of Labour, Occupational Safety and Health Administration, workers are at risk of adverse effects of noise exposure, including hearing loss, when noise exposure is at or above 85 decibels averaged over 8 working hours, or an 8-hour time-weighted average[33].

Noise activities can be of a concern for the schools to be rehabilitated, extended or retrofitted since works may occur during school hours. School administrations, with support from regional authorities and the MoE, have in the past implemented measures to ensure that student populations are not adversely impacted by construction noise either by scheduling works to be completed during term breaks or outside normal school hours. Further, during the stakeholder engagement, personnel from both schools identified for extension have indicated that they are willing tolerate any construction related noise, given the benefits the project will have to the schools and the community. For the schools to benefit from the provision of essential services, with only a few of the construction activities being noise generating, environmental and occupational exposure to noise generating activities is expected to be short-lived. Risks of occupational exposure to high noise levels may be mitigated with the use of appropriate hearing protection. In addition, risks of environmental exposure may be managed by engaging with proximate stakeholders to inform them of project activities and to make special provisions per site, as necessary. These special provisions may include no noise generating activities being conducting on Sundays or at nights. In light of these circumstances, potential impacts associated with environmental and occupational exposure to noise are **negative, direct, short-term** and **localized,** of **negligible significance** and are **likely** to occur at some of the schools to be intervened. As such, this is a **Low Risk** from project activities.

6.2.4 Ambient Air Quality

During the construction phase of the project there is likely to be an increase of particulate matter from soil disturbing activities particularly if these activities are conducted during the dry seasons. Dust emissions from soil disturbing activities may also be amplified if sandy soils are prevalent at some of the schools to be intervened. Increased particulate matter loads may be associated with stockpiling dry materials, such as sand, during the cement mixing process, and cutting of concrete walls, floors and blocks. In addition, during the construction phase pollutants associated with combustion of fuel used by construction machinery and vehicles may be increased. Sensitive receptors to increased emissions of particulate matter and gases from fuel combustion include student populations, construction workers and community receptors.

[33] US Department of Labour, Occupational Safety and Health Department, undated. Occupational Noise Exposure.

Particulate matter and gases from fuel combustion are likely to disperse rapidly given the open areas in which construction works will be located and community receptors are not expected to be adversely impacted. In addition, management and mitigation measures may significantly reduce environmental and occupational exposure to these emissions. For example, the approach of scheduling works to be completed during term breaks or outside normal school hours will manage exposure of students to dust levels. At some schools measures can also be put in place to cover sand stockpiles to prevent particulate matter emissions during windy conditions. In addition, according to the standard from the US Department of Labour, Occupational Safety and Health Administration, workers are at risk of adverse effects of exposure to particulate matter (dust) with maximum exposure limits of 15 mg/m^3[34]. Given that for most of the schools only small-scale interventions will be undertaken, it is not expected that occupational levels will rise above this threshold. However, these levels can be exceeded at the new schools construction sites. Risks to workers may be mitigated by use of protective masks and goggles. Therefore, potential impacts of environmental and occupational exposure to high dust levels and gases from fuel combustion are **negative, direct, short-term** and **localized,** of **minor significance** but will **rarely** occur if management and mitigation measures are followed. As such, these are **Low Risks** from project activities.

6.2.7 Greenhouse Gas Emissions

The primary direct sources of greenhouse gas emissions from the project will be emitted during the construction phase from clearing of project sites and the combustion of fuel by construction machinery and vehicles to be used by the contractor. These emissions are not expected to be significant. Although vegetation clearing will be required at the new schools sites, the project sites are considerably disturbed and is not considered to be forested areas based on the definition of forests which has been adopted by the Guyana Forestry Commission (GFC) of crown cover of 30 percent, mature stand height of 5 meters and coverage of 1 hectare. The sites for the new schools construction consist of secondary vegetation of mainly shrubs and grasses, excepting for the Cabora site which has more vegetative coverage, but also consisting of mainly secondary vegetation. Greenhouse gas emissions for clearing secondary vegetation cannot be estimated as there are no emissions factors for clearing of secondary vegetation. Based on these factors, the potential impacts to climate change from greenhouse gas emissions from this project is **negative**, **direct, long-term** and **localised** in extent. The significance of these impacts is **negligible** and their likelihood is **certain**. As a result, greenhouse gas emissions contributing to climate change are considered to present a **Low Risk** of contributing to increased greenhouse gas emissions at the national level.

6.2.8 Climate Change Mitigation

The installation of the solar power at the schools to benefit from the improvement in essential services will offset the use of fossil fuel that would have been required to provide power to the schools. This will prevent the release of carbon dioxide as compared with power generation from diesel. The potential impact of offsetting carbon emissions is **positive, direct, long-term** and **regional**. This impact is one of **moderate significance** and is **certain** to occur. As such, the project has a **High Likelihood** of contributing to a **Beneficial Impact** for climate change mitigation.

6.3 Biological Resources

The project will not impact biological resources. The interventions at the nineteen schools to benefit from rehabilitation, extension and outfitting will occur mostly within the existing schools compound. Five of the six sites identified for the construction of the new schools are located within existing housing schemes and are reserved for the construction of educational facilities. These lands were all cleared of primary vegetation, and therefore holds no ecological value. The other site is within the indigenous

[34] US Department of Labour, Occupational Safety and Health Department, undated. Permissible Exposure Limits. OSHA Annotated Table Z-1.

community of Cabora and while it is mostly covered in vegetation, this comprise mainly of secondary vegetation as it was is the past utilized for farming. There is no species of importance (Rare, Endangered, and Endemic) inhabiting these locations, and there is no area which can be considered a critical habitat, as is discussed in Section 4.2.

6.4 Social Resources

The project is expected to have both positive and negative impacts to social resources through the different phases. Benefits expected to be derived include improved learning conditions for students, improved work environment for teachers, savings to parents and employment of people from local communities. Negative impacts, if not properly managed or mitigated, can affect communities in the immediate surrounding environment.

6.4.1 Land Take and Land Use

Five of the six sites identified for new schools construction are located within recently established housing schemes, while the other site (Cabora) is located within an indigenous community and was donated to the Government by a resident for the establishment of educational facilities. The other lands are owned by the Government of Guyana and are allocated for the construction of educational facilities. Lands are also allocated for the construction of other educational facilities such as nursery and secondary schools adjacent to the sites.

For the schools to be rehabilitated, extended and or outfitted, there are available areas within the schools' compounds to facilitate the extension. For example, at Belle West the school site is owned by the Government and is allocated for the construction of a primary school while at Kariakau the land used for the school compound was allocated by the Village Council for the construction of the school and playground. There are lands available within the existing schools' compound at Bartica (St John-the-Baptise Primary School), Patentia, and Port Kaituma for the any required extension. At Hosororo there is no land space within the existing school compound to facilitate the expansion required. However, adjacent to the compound is land which was donated by the previous owners for educational purposes. It is under this same agreement that the current school was constructed. This land is currently utilized for recreation purposes, but mainly by persons residing in the surrounding area. An alternative playground was provided for the community, which is being utilized by members of the community.

It is expected that the other schools to benefit from rehabilitation, extension and outfitting will also have adequate land space to facilitate the improvements to be made. If available lands within the school boundaries is a challenge at any of the other schools to be targeted, alternatives or additional land space will need to be identified but encroaching on existing neighbouring land uses should be avoided. Given that only minor works will be supported at these school, expanding land take for installation of project interventions is not expected to be a challenge.

Within the Amerindian communities, if any of the schools to be extended require additional lands for expansion of the schools' compound the Ministry has an established system which is utilized when land is required for the construction of educational facilities. The Ministry follows the Free, Prior and Informed Consent (FPIC) principle during the process. The Village Council, through the Toshao, is informed of the project and the request to utilize the land for the construction of an educational facility. The Toshao will then call a meeting with the Councilors and the wider community to share information on the project and discuss the request. The decision to grant the land for use is made collectively and is recorded in the Minutes of the Meeting. Subsequently, the Village Council will send a letter to the MoE communicating its decision.

The sites for the new schools construction and extension are free from any encumbrances such as buildings and other permanent or semi- permanent structures or use. As such, there will be no displacement or disruption to livelihoods.

Potential impacts of expanding schools' land take for implementation of project interventions with associated land use conflicts from neighbouring activities are expected to be **negative, direct, long-term** and **localized,** of **minor significance** but **unlikely** to occur in most of the schools to be intervened. As such, this is a **Low Risk** from the project.

6.4.2 Improved Facilities and Services

Based on stakeholder feedback during the site visits and engagements, student populations, teaching staff and parents encounter several challenges in the areas being targeted. Based on the findings of the field visits, below are examples of some of the key challenges:

- At Kariakau the Primary School was designed to accommodate approximately 20 to 30 students. However, the school currently has an enrollment of 135 students in Grades 1-6. In addition, the school also houses a nursery school with an enrollment of 44 students, and a Primary Top with an enrollment of 74 students in Grades 7, 8 and 9. The overcrowding of the school has resulted in classroom activities being conducted at the ICT Hub and the Teachers' Quarters, and the school having to operate on a rotational basis where students of specific grades attend class on a shift system.

- At Belle West the Primary School has a capacity of 325 students. However, the school now has an enrollment of 447 students, an excess 112 students. The overcrowding has resulted in cramped and uncomfortable teaching and learning conditions. In addition, as a result of the overcrowding, the school has not been able receive any transfers or new enrollment, and therefore students are being referred to Kawall Primary School which is a far distance from the Belle West community. Transportation costs have to be provided by the parents.

- At Recht door Zee and Tuschen a significant number of students are required to travel some distance to access primary education.

- At Tabatinga students are required to travel 20-25 minutes by walking to attend the Arapaima Primary School, where there is mass overcrowding. Arapaima Primary School was built to house 250 students but currently has 515.

- At Wisroc students from the area are currently attending primary schools located at One Mile Extension and Wismar Hill, which are about 25 minutes away. Both of these schools are currently over crowded. One Mile Primary School was built to accommodate 400 students but currently has 900 students enrolled. Wismar Hill Primary School was built for 300 students but currently has 750 students enrolled.

- The Port Kaituma Primary School was constructed as a Grade A school to facilitate 400 students. However, the current student population is currently 885. The school currently has a total class count of 30 with 23 actual classrooms and 7 makeshift classrooms, with each classroom having approximately 30 students, which is above the required standard. In addition, the space allocated to each classroom is small and lacks the required space as per the Non-Academic Standard for each student. Makeshift classrooms that are being housed in the dining hall and auditorium does not have physical barriers or are blocked out to separate the classes. This results in the disturbance of learning and teaching due to noise and other distractions. Additionally, Grade 6 students were housed at a private property from June 2019 to January 2023 due to classroom overcrowding and lack of

space. However, because the property was severely dilapidated and lacks basic infrastructure, the students were returned to the primary school. End of term test are usually written on rotation owing to the lack of space for the required exam setting.

In hinterland areas, which is populated by mainly Amerindians, while the availability of services is seen as a major improvement in the villages in recent years, the available services do not always match the quality of services that are available to the coast landers. This creates a gap in the quality of life that is available to indigenous people. The gap between the hinterland and the coastland where education is concerned has widened, indicating that improvements are more significant on the coast than in the hinterlands. While the gap is noticeable in most of the sectors, it is especially prominent in the education sector. The gap accounts for the inability to access resources such as adequate schools and classrooms facilities, access to essential services such as water, internet and electricity, and deficiencies in the delivery of education such as adequate amount of qualified teachers to student's ratio[35]. The gap is widened in communities that are located in remote locations such as Kariaku, Region 1 where it expensive to access and where there are no alternative options to the public school system. This results in over-crowding of classroom and students competing for limited resources. Primary schools in communities like Kariaku and Hosororo are expected to provide resources to educate nursery levels and primary-top levels where no nursery or secondary schools are available. As such, students that have completed a primary education are forced to continue their education at a primary top, migrate to another area where there is a secondary school, or are forced to leave school and seek employment. The gap creates unequal opportunities, which have marginalized some indigenous communities, and therefore have provided fewer indigenous students with the opportunity to complete a secondary education[36]. In Kariaku, the primary top stops at Grade 9, and students are often left with only two options; to migrate to an area with a secondary school, which is often expensive, or to end school at that point. Other contributing factors that aid the vulnerability of indigenous population include the curriculum being centered on topics that are not part of the reality of indigenous children living in the hinterland and language barriers where indigenous students struggle with how to properly write and speak in English.[37]

It is expected that 8,809 students and their communities will benefit from the new schools constructions, and rehabilitation and extensions of schools including 2,610 students from the construction of new schools and 6,199 students from the rehabilitation and extension of existing schools. Most of the schools to be rehabilitated, retrofitted or extended are located in the hinterland regions within Amerindian communities. As such, these communities will benefit directly from the project. In these areas the project will benefit mainly students of Amerindian descent, and students with migration background It is expected that 7,341 students and 352 teachers from Grades 2-6 will receive digital devices. Tutoring services will target 20% of 1-6 graders with the lowest performance on national assessments. In addition, 26,600 students in a group of randomly selected primary schools with existing internet access will be selected to use the adaptive learning platform. Parents will also benefit through savings as a result of reduced transportation costs. The project will certainly reduce the gap between coastal and hinterland areas access to proper education. These impacts are **positive, direct, long-term** and **localized,** of **moderate significance** but are **almost certain** to occur at all of the project sites. As a consequence, these impacts have **High Likelihood** of producing a beneficial impact.

[35] UNICEF *Guyana – Study on Indigenous Women and Children* (2017) pp. XV
Accessed at: https://www.unicef.org/guyanasuriname/media/451/file/SitAn-Indigenous-women-children-in-Guyana.pdf
[36] UNESCO *Listening to the voices of indigenous peoples is the only way to protect people and planet –Spotlight on Guyana* (2021)
Accessed at: https://www.unesco.org/en/articles/listening-voices-indigenous-peoples-only-way-protect-people-and-planet-spotlight-guyana
[37] Stabroek News *Reflections on conventional Education and Indigenous people in Guyana* (2019)
Accessed at: https://www.stabroeknews.com/2019/09/02/features/in-the-diaspora/reflection-on-conventional-education-and-indigenous-people-in-guyana/

6.4.3 Local Employment

Positive socio-economic impacts can occur whenever construction projects are undertaken in communities, especially in coastal rural and hinterland communities, where employment opportunities are limited. Based on feedback provided by stakeholders, both skilled and unskilled labour are available within the communities. Employment opportunities could thereby provide a temporary form of income generation for members of all of the local communities in which new schools will be constructed or the schools to be intervened are located. This will also mitigate potential social impacts associated with having outsiders brought into the communities to work on the project. These impacts are **positive, direct, short-term** and **localized,** of **minor significance** but are **almost certain** to occur at all of the project sites. As a consequence, these impacts have **Medium Likelihood** of producing a beneficial impact.

6.4.4 Community Conflicts

Several of the schools proposed to be targetted under the project are located in rural and indigenous communities. The presence of non-local project workers during the construction could have a negative impact on these local communities if not properly managed. Non-local workers could also lead to bad relations particularly between the male workers when the females are shown increased attention that is perhaps unwanted. Interpersonal relationships with married persons could lead to the breakup of families thereby disrupting the community dynamic. There could also be cases of unwanted pregnancies particularly affecting the younger women of the community. The abuse of alcohol and other drugs can be detrimental to the community when introduced and encouraged by non-local workers. There could be an increase in the risk of transmission of sexual diseases with the migration of workers into the communities who will have purchasing power and can use that power to influence persons to engage in unsafe sexual practices. In addition, the presence of a non-local construction crew to the area can create security fears among local residents. Further, non-local workforce may be reluctant to comply with communities' rules and norms. Given that works under the project will be conducted in communities with significant Indigenous population, such as those in Regions 1, 7, 8 and 9, a Socio-cultural Analysis of the project is required to be conducted. Potential impacts of conflicts between locals and non-local project workers are **negative, direct, short-** to **long-term** and **localized,** of **moderate significance** and l**ikely** to occur. As such, these are **Medium Risks** of project activities.

6.4.5 Traffic

For the construction sites, both in the hinterland and coastal areas, construction materials, equipment and personnel will have to be transported to work sites resulting in increases in traffic. Given that only minor works will be done at most locations, traffic increases are expected to be minimal. However, for the new schools construction it is expected that traffic to and from the sites will be much greater, which can result in minor traffic congestion and contribute to deteriorating roads and increasing dust generation. However, if the transport of materials is done outside of the peak hours then this impact can be significantly reduced. During the operation phase, there will be some level of traffic congestion in the areas around the schools to be constructed in the existing housing schemes, which are Tabatinga, Recht door Zee, Little Diamond and Tuschen. However, congestion will be limited to the student drop off and pick up periods. In addition, the current vehicular traffic in these areas is low and none of the sites are along the main roads or public roads. As such, potential impacts of traffic congestion during the construction and operation phases are **negative, direct, long-term-term, local,** of **moderate significance** and will **likely** occur during the operation phase. As such, this presents **Medium Risks**.

6.4.6 Archaeological Resources

Even though the school sites are not associated with any known archaeological findings there is still the possibility of finds that may be of historical value to Guyana, especially at the new school construction sites and extensions of schools within indigenous communities. Therefore, if present within the areas, artefacts can become damaged or lost as a result of certain activities, especially land clearing. As a consequence, historical and cultural information on Guyana's early period could be permanently lost. However, the impacts could be entirely mitigated if appropriate chance find measures are implemented during the construction phase of the project. Potential impacts of loss or damage to archaeological resources during the construction phase are **negative, direct, long-term, regional,** of **moderate significance** but may **rarely** occur given the small footprint of the project and that no other archaeological resources are known to have been found in the area even though it is disturbed. As such, this presents **Low Risks**.

6.5 Health and Safety

6.5.1 Occupational Health and Safety

Health and safety are key concerns at any construction site. Workers are usually exposed to situations which can result in serious accidents, some of which can be fatal, if established guidelines and practices are not properly communicated or complied with. Risks can result from the improper use of construction machines and equipment or accidents on the work sites. Given the nature of this particular project, the possible occurrence of such risks could be multiplied. The health and safety of workers are therefore major concerns during the construction period.

The following are therefore possible health and safety risks which are likely to be encountered at the construction site:

- Sickness caused by the consumption of untreated water.
- Injuries or death caused by the falling from working at heights.
- Injuries or death from vehicular collisions.
- Injuries from slips, trips and falls.
- Ill health caused by insect bites/stings from hostile fauna.
- Injuries or death caused by snake bites.
- Injuries or ill health caused by heat-related illnesses such as sunburn, heat stress, heat exhaustion or heat stroke as a result of working under extremely hot conditions.
- Illness caused by malaria or other diseases.

While training and monitoring should be conducted and can reduce the risk of any serious incidents, accidents can still occur. Risks may include accidents during site preparations, transporting and offloading of construction materials, improper use of equipment, improper use of harness and lanyard, slip or trip while traversing the work sites, etc. In such cases, these exposures can result in physical injuries such as cuts, bruises, loss of limbs or can even be fatal. Construction workers in some hinterland locations may face increased risks of vector borne diseases such as malaria. Health and safety impacts could be exacerbated taking into consideration the access to immediate emergency health care for serious injuries in some of the hinterland locations. Potential impacts to workers health and safety are **negative, direct, short-** to **long-term** and **localized**. These potential impacts are of **major significance** but can be largely avoided if appropriate mitigation measures are put in place and are therefore are **unlikely** to occur. This presents **Medium Risks** from project activities.

6.5.2 Public Health and Safety

For the construction sites, both in the hinterland and coastal areas, construction materials, equipment and personnel will have to be transported to work sites resulting in increases in traffic. Given that only minor works will be done at most locations, traffic increases are expected to be minimal. However, for the new schools construction it is expected that traffic to and from the sites will be much greater, posing a safety risk to the community and contribute to deteriorating roads and increasing dust generation. Potential impacts of traffic increases in local communities are **negative, direct, short-term** and **localised,** of **negligible significance** and but are **unlikely** to occur as a result of project activities. These potential impacts are therefore **Low Risks** from project activities**.**

6.5.3 Health, Safety and Security of Students and Teachers

For works to be done on the existing schools there are potential impacts to the health, safety and security of students and teachers of construction works occurring on school premises. These potential impacts include noise and dust nuisance to students and teachers, unsafe work conditions in material stockpile areas and construction zones where students may play if unsupervised, and sexual harassment of student and teachers by some construction crews. Construction works can also disrupt school activities by affecting the conduct of classes. As previously discussed, to the extent possible, construction works can be deferred to term breaks so as to minimize disturbances to school activities and to limit interactions between construction workers and the school populations. However, restrictions and other measures can be implemented if construction works are urgent and cannot be deferred to term breaks which will help to manage these risks. In addition, the MoE discourages contractors from establishing living facilities for staff on school premises. For some schools, including those with dormitories located in hinterland villages where there are no or few alternative options for accommodation, workers may have to stay at the schools and in these instances, all work should be deferred to term breaks. Given that only minor interventions will be financed at most of the existing schools, term breaks should provide sufficient time to complete all project activities. The exception would be the two schools to be extended. For both of these school it is envisaged that the extension will be new buildings constructed within the schools' compounds. As such, measures can be implemented to minimise disruption to classes and reduce risks, such as fencing of the construction site, installing dust screens and noise barriers, use of alternative access, etc. It should be noted that during the stakeholder engagement, personnel from both schools identified for extension indicated that they are willing tolerate any construction related disruption, given the benefits the project will have to the schools and the communities. Potential impacts to the health, safety and security of students and teachers are **negative, direct, short-term** and **localised**. However, given the management measures in place by the MoE, regional and school administrations these potential impacts are of **minor significance** and are **likely** to occur. As such, these are **Medium Risks** from the project activities.

6.6 Disaster Risk Assessment

According to the IDB, the project's disaster risk (Type 1 and 2) is moderate due primarily to natural hazards, primarily flooding which can also be caused/exacerbated by climate change (e.g., increased precipitation events) which are likely to occur or already exist. These may moderately impact the project, and increase/or exacerbate risk during construction and rehabilitation activities linked to existing issues at the schools site as poor drainage and proximity to the coast/rivers.

Guyana is spared of the natural disasters which usually affect the Southern Caribbean and Western South America regions as the country is not exposed to hurricanes, volcanoes, or earthquakes. The main natural disaster in the country is flooding. This section examines Guyana's risks to disasters which may occur within the wider region.

6.6.1 Climate Change Related Risks

Guyana climate profile is presented in Section 4.1.2. The country is at risk from acute and chronic climate hazard. Changes in climate hazards (such as increasing temperatures and changing precipitation variability and intensity) are already being experienced[38]. Climate change projections indicate that temperatures will continue to increase across Guyana. Furthermore, it is likely that average annual precipitation will decrease, however the proportion of precipitation that occurs in heavy rainfall events will increase. This in turn is expected to exacerbate adverse social, economic and environmental impacts and act as an additional stress factor on exposure which will exist even in the absence of climate change. Responding effectively to the challenges presented by climate change require an understanding of the impacts of climate change and implementing appropriate measures to address the risks and adapt to the impacts.

Trends

Mean annual temperatures in Guyana have increased by 0.3˚C since 1960, an average rate of 0.07˚C per decade. This rate of warming is less rapid than the global average, however, it is in line with projections for equatorial regions. Further, the rate of increase is similar (~0.1˚C per decade) in all seasons, except during the secondary dry season (the February-March-April period), when there is no apparent trend in temperature. Although the rate of increase in mean temperature is moderate relative to the increase in the global average, the frequency of particularly hot days and nights,[39] has shown a significantly increasing trend since 1960 in every season (where data is available). The average number of 'hot' days per year in Guyana has increased by 93 (an additional 25% of days) between 1960 and 2003. The rate of increase is seen most strongly in the primary dry season (the June-July-August period), when the average number of hot summer days has increased by 9 days per month, an additional 30% over this period. Further, the average number of 'hot' nights per year increased by 87 (an additional 24% of nights) between 1960 and 2003.

Since the 1960s, observed climate data shows increases in mean annual precipitation, with an average rate of increase across Guyana of 4.8mm per month, an increase of 2.7% per decade. However, this includes consideration of heavy precipitation events in 2005 and 2008. As a consequence, trends in seasonal precipitation are not statistically significant. Further, where data are available, there is also no evidence of any significant trends in heavy one-day or five-day precipitation events.

Predictions

Research undertaken by the Climatic Research Unit (CRU) of the University of East Anglia used the pattern-scaling technique to emulate climate change projections from an ensemble of Global Climate Models.

Figure75-1 shows changes in national average temperature (x-axis) and precipitation (y-axis) for fixed amounts of global warming (of 1, 2, 3, 4°C, etc.). The projections considered changes for 21 Coupled Model Inter-Comparison Project (CMIP) 3 models, 21 CMIP5 climate models and 18 (Quantifying Uncertainty in Model Predictions) QUMP climate models thereby giving a full range of available projections. However, the models are not intended to provide probabilistic projections of future climate change.

[38] Government of Guyana, 2012. Second National Communication to the United Nations Framework Convention to Climate Change.
[39] A hot day or hot night is defined by the temperature exceeded on 10 percent of days and nights in the current climate of the specific region and season.

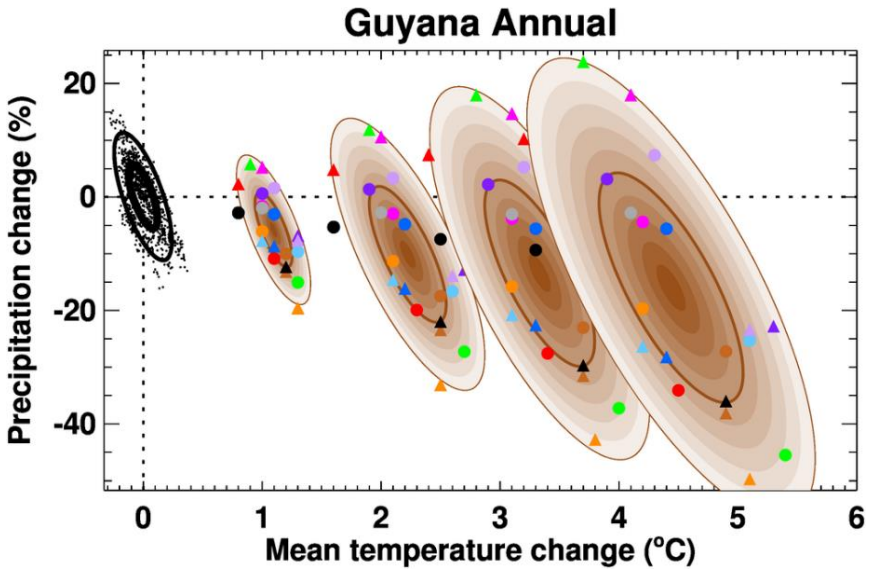


Figure 6-1: Annual Uncertainty in Climate Change Projections for Guyana[40]

In addition to the CRU models, the national-level projections for climate change in Guyana were prepared in 2010 using the outputs from several General Circulation Models (GCMs) following the A2, A1B and B1 Special Report on Emissions Scenarios (SRES) scenarios. The findings of the projections are consistent with the findings of the CRU models. The projections shows that average annual precipitation is expected to decrease but there is not clear direction of the trend. There is uncertainty about the values as both positive and negative projections of precipitation change are generated when minimum and maximum values are considered in particular for change in annual precipitation[41]. Projections vary between -34% to +20%, by the 2090s with ensemble median values of -18 to -4%. The largest decreases in total rainfall are projected for the primary wet season although some positive change is also projected (-68 to +21mm per month). Further, relative changes in rainfall projected show the strongest decreasing signal in the primary dry season and the secondary wet season (-82 to +68%).

In addition, the 2010 projections indicated that average annual temperatures will continue to increase. At the national level, the mean annual temperature is projected to increase by up to 2.0 ˚C by the 2030s, up to 3.3˚C by the 2060s, and up to 6.0˚C by the 2090s.The projected rate of warming is similar in all seasons, but more rapid in the southern, interior regions of the country than in the northern, coastal regions. Table 6-5 shows the range, direction and extent of change in average annual temperature and precipitation for the 2030s, 2040s-2060s and 2070s-2100 according to the 2010 projections.

Table 6-5: Projected Average Annual Temperature and Precipitation for Selected Periods

Climate Variable	2030s	2040s – 2060s	2070s – 2100
Average annual temperature (°C)	+ 0.4°C to 2.0°C	+ 0.9°C to 3.8°C	+ 1.4°C to 6.0°C
Average annual precipitation (% change)	-29% to +14%	-41% to +13%	-63% to +20%

Source: Adapted from the draft Climate Resilience Strategy and Action Plan (GoG, 2014) based on GCM projections by McSweeney et al. (2010)

[40] Osborne et al. 2016. Climate Information for Guyana
[41] McSweeney,C; New, M; Lizcano, G, 2010. UNDP Climate Change Country Profiles Guyana.

In addition, projections for changes in annual average temperature and precipitation for the South American region in the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report indicate that warming is projected to increase by 1.7°C to 6.7°C for Representative Concentration Pathway (RCP) 4.5 and 8.5 respectively. Changes in precipitation vary geographically but increases in average annual precipitation is expected primarily in south-eastern South America while decreases are projected to occur in the northern regions of South America[42].

In summary, based on the projections from the CRU models, Guyana's national scaled modelling in 2010, and IPCC regional models it is:

- ***almost certain*** that average annual temperatures will increase and,
- ***likely*** that average annual precipitation will decrease.

Projections for Temperature Extremes

All projections conducted in 2010 using the SRES scenarios indicate substantial increases in the frequency of hot days and nights. Hot days are projected to occur on 18-56% of days by the 2060s, and 19-79% of days by the 2090s with the greatest increases occurring during the dry seasons[43]. Consecutively occurring hot days can result in a heatwave. According to the IPCC's Fifth Assessment Report, warm days and nights will increase as well as increased occurrences of temperature extremes in the South American Region[44].

Days and nights considered cold in the current climate are projected to decrease and become exceedingly rare, occurring on maximum of 4% of days in the year, and potentially not at all, by the 2090s[45].

Projections for Precipitation Extremes

According to the projections conducted in 2010 using the SRES Scenarios, the proportion of total precipitation that falls in heavy events does not show a consistent direction of change as both positive and negative projections of change are generated indicating a future that includes risks of both flooding and drought. However, the trend tends toward positive change, particularly in the southern parts of the country. Further, maximum one-day and five-day rainfall does not show significant consistent change but also tends towards positive changes in the secondary wet and dry seasons particularly in the southern parts of the country[46]. In the IPCC Fifth Assessment Report, both extremes of precipitation intensity are expected and drought conditions are associated with El Niño years[47].

[42] Intergovernmental Panel on Climate Change. 2014. AR5 Climate Change 2014: Impacts, Adaptation and Vulnerability, Chapter 27.
[43] McSweeney,C; New, M; Lizcano, G, 2010.
[44] Intergovernmental Panel on Climate Change. 2014.
[45] McSweeney,C; New, M; Lizcano, G, 2010.
[46] McSweeney,C; New, M; Lizcano, G, 2010.
[47] Intergovernmental Panel on Climate Change. 2014

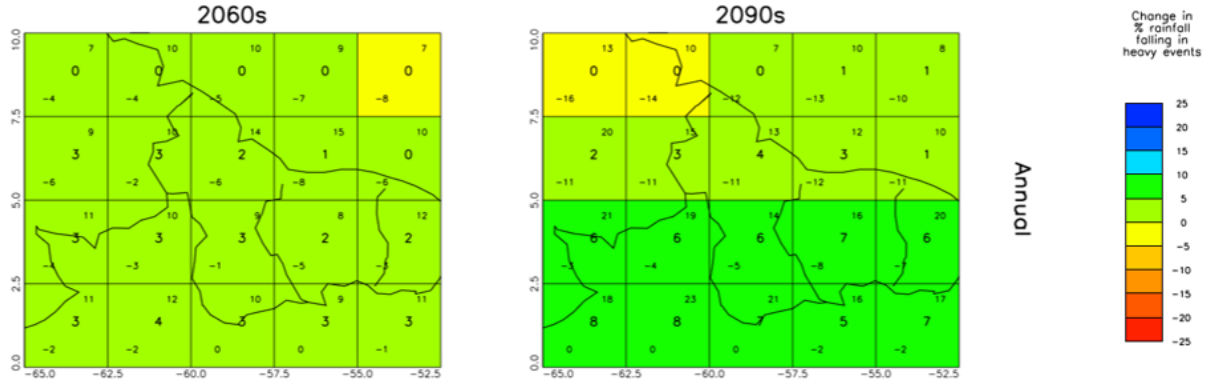


Figure 6-2: Projections for Changes in Average Annual Precipitation[48]

More frequent and/or intense heavy precipitation events are expected to occur over most mid-latitude land masses and over wet tropical regions (IPCC, 2013). In addition, according to the IPCC's Special Report on Global Warming of 1.5°C, at a global scale, trends in intensity and frequency of some climate and weather extremes have been detected over the time spans during which about 0.5°C of global warming occurred. In particular, risks from heavy precipitation events are projected to be higher at 2°C than at 1.5°C of global warming[49]. It should be noted that the Special Report did not include risks associated by global warming greater than 2°C.

According to Lenderink and Meijgaard (2008), the Clausius–Clapeyron relation is a good predictor for changes in daily precipitation extremes in General Circulation Model as higher temperatures are expected to increase the amount of water vapour stored in the air. The Clausius-Clapeyron relation gives an approximate 7% increase in daily precipitation extremes per 1°C of global warming. In their analysis of a 99-year record of hourly precipitation observations from De Bilt, the Netherlands, one-hour precipitation extremes increase twice as rapidly as expected from the Clausius-Clapeyron relation (that is by 14%) when daily mean temperatures are higher than 12°C. This enhanced effect of the Clausius-Clapeyron on precipitation extremes when temperatures exceeded 12°C was also found in four observation records from Western Europe (Lenderink and Meijgaard, 2010) and Hong Kong (Lenderink et al., 2011). In the Hong Kong study, there was no connection between variations on humidity and precipitation intensity for the wet season which lasts from May to September. Outside of this wet season, there are positive trends between changes in humidity and hourly precipitation extremes that approximates to twice the Clausius-Clapeyron relation. However, in the Hong Study, the enhanced Clausius-Clapeyron relation was not observed in dew-point temperatures that exceeded 23 °C.

Data is not available for Guyana on the relationship between increased temperatures and heavy precipitation events. However, based on the foregoing discussion, conservative estimates of increased heavy precipitation events may be considered to follow the Clausius-Clapeyron relation. There may be an enhanced Clausius-Clapeyron relation during the dry season, consistent with trends expected under the 2010 projections. Table296-6 below shows expected increases in precipitation intensity based on projected maximum temperatures by the 2030s, 2040s and 2060s following the Clausius-Clapeyron relation.

[48] McSweeney,C; New, M; Lizcano, G, 2010.
[49] Intergovernmental Panel on Climate Change, 2018. Summary for Policy Makers of the Special Report on 1.5°C of Global Warming.

Table 6-6: Projected Percent Increase in Precipitation Intensity

	2030s	2040s – 2060s	2070s – 2100
Projected Maximum Temperature Increases	2.0°C	3.8°C	6.0°C
Increase in Precipitation Intensity	14%	27%	42%

As a consequence, it is recommended that the designs consider a precautionary increase of 30 percent for intensity of heavy precipitation events when developing design return options up to mid-century. Further, it is recommended that end-century design options consider return periods of 40 to 45 percent. These recommendations provide a conservative approach, and it will be more representative to use values obtained from the latest CMIP5 model outputs specific to the project areas when carrying out design.

Sea Level Rise

Guyana is at risk from sea level rise and coastal flooding. Rates of sea level rise in Guyana exceed 10 mm per year, while the global average is 2 to 4 mm per year. Subsidence due to groundwater extraction, soil compaction, and the wetlands drainage exacerbates sea level rise. Sea level rise poses a threat not only to the built environment and urban centers located along the coast, but also to agriculture and the natural environment such as mangrove ecosystems. Rising sea levels also threaten freshwater resources; saltwater intrusion was already observed in the two main aquifers providing water to coastal residents[50].

Overall Climate Change Impacts

Observed and projected climate change in Guyana increases the vulnerability of Guyana's infrastructure including health facilities. Projections of future climate change include increasing annual average temperatures, increasing frequency of hot days and nights, decreasing average annual precipitation, and increasing precipitation extremes particularly heavy precipitation events. There are several uncertainties associated with these projections, but trends are consistent with the direction of climate change observed regionally. These hazards are expected to increase flood risk and exacerbate current flood vulnerabilities in the project sites, especially the project sites located at Belle West, Patentia, Recht door Zee, Little Diamond and Tuschen, which are on the coastal areas.

The adverse and potentially catastrophic impacts of climate change are already being experienced in Guyana. Since the 1960s, the country has observed marked increases in temperature, sea level, and the frequency and intensity of extreme rainfall events. The impacts on Guyanese people, the economy and the environment during flooding and droughts are examples of the devastation climate change may cause. The GoG has responded by developing a Climate Resilience and Adaptation Strategy to set out a comprehensive and overarching framework for adapting and building resilience to climate change impacts. Key areas targeted for intervention are outlined in the LCDS 2030 and include:

1. Sea defence enhancement and maintenance;
2. Strengthening of drainage and irrigation systems;
3. Building climate resilient agricultural systems; and
4. Public health adaptation to climate change.

As it relates to the education sector, the LCDS, recognized that of particular importance, when looking at the interplay between climate change, the environment and education, is the way in which schools/educational facilities should be adapted to build resilience and plan to be prepared for and

[50] US AID. 2021. Guyana Resilience Profile

respond to associated risks related to climate change. It stated that the National Risk Management Policy for the education sector will be key in this regard. The LCDS will focus on a number of priorities at the policy level looking at initiatives to fulfil the following main outcomes:

1. Train Guyanese to function in a low-carbon economy
2. Develop capacities for trade in low-carbon services
3. Align institutions and programmes to low-carbon development including the University of Guyana and Technical and Vocational Institutions
4. Develop qualification and experience capabilities to function in a low-carbon economy
5. Improving quality of life

6.6.2 Flooding

Flooding is the main disaster faced by Guyana and is a significant hazard along the coastal zone of Guyana, particularly since the majority of the population (around 90%), much of the country's infrastructure and major parts of its economy, such as agriculture, are located in this narrow coastal strip. Flood hazard along the coastal zone arises from a number of sources:

- High intensity rainfall combined with insufficient surface drainage capacity and restricted outfall capacity, which is often tide-locked, leading to pluvial flooding
- Low lying coastal land, often below high tide level and protected with sea defences liable to flooding from overtopping of seawalls and breaches in sea defences, and to a lesser extent from wave overtopping. Coastal flood hazard is increasing as a consequence of sea level rise
- Flooding from rivers and creeks in the hinterland behind the coastal strip is controlled by conservancies, such as the East Demerara Water Conservancy protecting Region 4 and Georgetown. These are large, shallow-depth flood storage reservoirs (which also have water supply and irrigation functions). However there remains the risk that the conservancy embankments are overtopped or breached in extreme events
- River flooding to communities along some of the major rivers (Pomeroon, Essequibo, Demerara, Mahaica, Berbice, etc.).

Flooding is also a hazard in the flat savannah areas of the interior around the Rupununi, where the lack of relief means that water only drains back into watercourses slowly and can remain on land for weeks.

Heavy precipitation experienced throughout Guyana during the period May to July 2021 resulted in widespread and significant flooding throughout the country. This heavy rainfall event occurred via an increase in the number of consecutive wet days (days with more than 10 millimeters of rainfall) and 7-day extreme wet spells. According to Guyana's CDC, the total rainfall in May 2021 was the second highest rainfall total for May since 1981.[51] The flooding impacted large parts of the population. Over 74,000 acres (43,473 acres of cash crops and 30,684 acres of rice) of farmlands and over 20,000 farmers were affected. The 2021 flood is likely to be comparable to the 2005 flood which affected close to 37% of the population and caused economic damage equivalent to 60% of GDP. Some areas experienced 120-150 centimetres of standing water, which remained for several days. A socio-economic assessment of the damage and loss caused by the 2005 flood revealed major impacts to the agriculture sector, particularly in the regions of West Demerara/Essequibo Islands, Demerara/Mahaica and Mahaica/West Berbice. Region Four was most severely affected in the 2005 flood (though less affected in the 2021 flood), experiencing close to 55% of the total damage, followed by Regions Two (23%) and Five (19%).[52]

[51] Trinidad and Tobago Weather Center. 2021. Guyana's Billion-Dollar National Disaster. The May-June 2021 Floods. Article on June 13.
[52] GoG. 2021. LCDS 2030 – Draft for Consultation

According to the stakeholders engaged, none of the targeted school sites experienced significant flooding during these extreme rainfall events but conditions on-site were slushy and slippery and there was water accumulation within some sections of the compounds for short periods. However, the risk of flooding in Guyana remains high due to current trends of extreme weather events and significant precipitation levels in short periods of time.

The control of water along the Coastal Plain, where five of the sites are located, is critical for both agriculture and residential activities. Coastal lands need to be protected from flooding by the sea during high tides, as well as flooding caused by water streaming down from the inland areas during the heavy rainy seasons. At the same time a supply of freshwater is required for agricultural lands. In an effort to maintain these characteristics a system known as empoldering was introduced by the early Dutch Colonist, during the 17th Century as a means for utilizing the rich and fertile coastal soils for agriculture, particularly the sugar cane industry. This system of drainage comprises several constructed polders. These polders played a major role in the land reclamation process, settlement pattern and Guyana's agriculture patterns and practices. This system has since provided the foundation for the existing drainage and irrigation infrastructure and facilities along the project area and throughout Guyana's inhabited coastal areas. Drainage and irrigation along the project areas are therefore consistent and exhibit an integrated system of man-made structures and natural occurrences, through the development of polders, hence the empoldering process. Masonry walls called 'seawalls' are built facing the sea, so as to protect the land from flooding during high tides and raised water levels. At the rear end is a long facade dam called the 'backdam' which holds back freshwater coming down to the coast from inland areas during the rainy seasons.

The Guyana Lands and Surveys Commission (GL&SC) has produced a national-scale vulnerability map (Figure 6-3), which shows that flood vulnerability is focused in the coastal area and the savannah areas in the interior near Lethem and the border with Brazil. The hospital locations at Linden, New Amsterdam and Georgetown are shown on the map (Figure 6-3) which indicates locations that are subject to occasional flash floods and periodic flooding during the wet season.

The IDB commissioned a Disaster Risk and Climate Change Vulnerability Assessment in 2019. The key findings of this assessment indicate that most stakeholders consider flooding as the highest priority hazards and the expected annual damage from flooding is around GYD 1.3 billion (USD 6 million) across the wider Georgetown area with a further GYD 0.625 billion (USD 3 million) of disruption and repair to critical infrastructure; this equates to approximately 1% of economic activity. The expected annual (average) number of people exposed to flooding exceeding 0.5m is around 10,200. Forty-six critical infrastructure sites (including hospitals, bus station, health clinics, fire stations, hospital, military barracks, police station, school and both airports) experience flooding during major storms (exceeding a 1in100 year return period). Assuming a business-as-usual adaptation approach, the expected annual damage from flooding is projected to reach between USD 10-12 million by 2040s in response to climate change and projected urban growth. The expected annual number of people exposed to flooding is also likely to increase significantly.

The assessment further indicates that clear and decisive action now could dramatically reduce economic damages from flooding and improve Georgetown's resilience. This will be most effective if it includes:

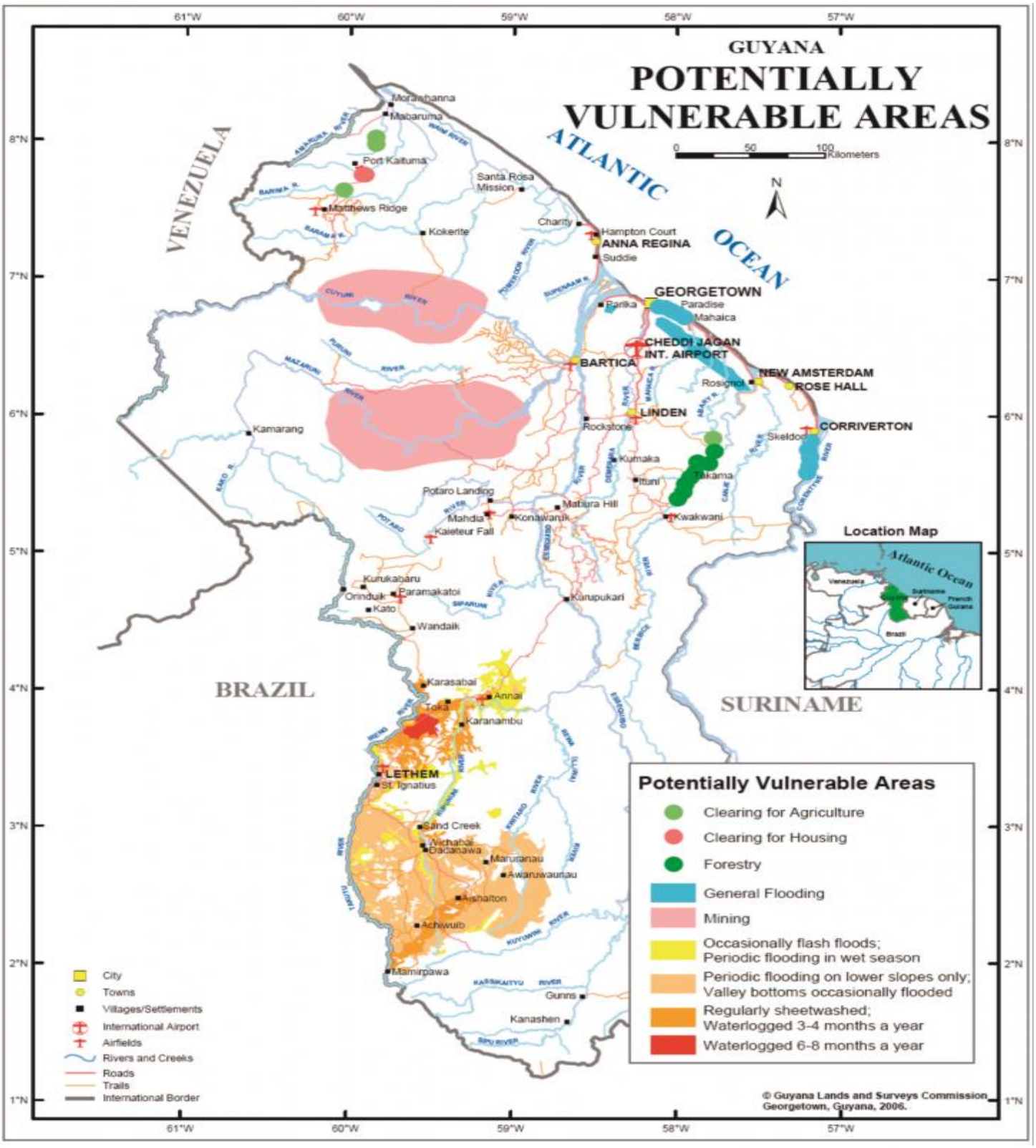
- spatial planning and building regulation that embrace flood risk management related issues
- realign the coast and maintain green space where possible to make space for a natural response to sea level rise and surface water by adopting a 'living with water' approach.
- selectively implement hard measures to hold the line by constructing and rehabilitation of hard sea and flood defences such as sea walls and embankments where necessary.
- promote a 'naturally resilient coastline' with soft measures (ecosystem-based adaptation) to restore and expand mangroves and sediment management.

- strategic management of land drainage, through improved channel management and
- rehabilitation/replacement of control structure and pumps.

Since the major floods of 2005, significant investment has been targeted towards improving sea and river defences as well as upgrading the extensive network of canals and drainage infrastructure; but a significant adaptation deficit persists.

With support from the IDB the GoG prepared a National Integrated Disaster Risk Management Plan and Implementation Strategy for Guyana. The GoG has realized that without further action, flood events will continue to undermine economic development and as sea levels rise and rainfall patterns change, risks are likely to increase. The measures set out for adapting and building resilience to climate change impacts will also contribute to the prevention and reducing of impacts to flooding.

In this regard, the risks of flooding to the project, and to the school sites, can be considered as medium/moderate, considering the country's weather and climate scenario, current trends and experiences, and localized circumstances which influence risks (such as location, elevation, proximity to large water bodies, existing infrastructure, drainage, water management systems etc.). This is consistent with the IDB's disaster risk rating of (Type 1 and 2).



Source : GL&SC 2013

Figure 6-3: Potentially Vulnerable Areas – National Scale

6.6.3 Drought

Guyana is also at risk from drought, which is heavily influenced by the El-Niño Southern Oscillation. Droughts are expected to see an increase in consecutive dry days due to climate change contributing to the increases in temperature and reduction in rainfall. Recent droughts in 1998, 2009 to 2010 and 2014 t0 2015 resulted in water rationing and extensive crop and livestock losses. Climate change will threaten agriculture production through increased competition for water resources, loss of agricultural lands due to flooding, heat stress, and increased incidence of pests and disease

There are concerns that the country as a whole, and the agricultural sector in particular, will suffer. Following an extended period of dry weather in late 2014 and early 2015, the hinterland was facing drought conditions by April 2015. Region Nine (Upper Takutu-Upper Essequibo) and parts of Region One (Barima-Waini) were particularly affected, resulting in reduction in the agricultural output in the Regions, reduction in available water supply and increased dust pollution, among other issues. The lack of rainfall caused decreased water levels in the wells, lakes, ponds, rivers, creeks and other water sources. Frequent bush fires destroyed several farms at Aranaputa. Local communities experienced limited access to potable water for domestic and agriculture use. Residents were forced to go to local rivers, including the Rupununi River, for untreated water for domestic use. There were reports of an increase in the number of people suffering from vomiting and diarrhea. The drought conditions were also linked to a resurgence of pests, including acushi ants and caterpillars, which attacked the few remaining crops. Dasheen, cassava, eddo and other cash crops were particularly severely impacted by the drought. With increases in the number of dry spells, drought conditions and changing rainfall patterns, stress on Guyana's internal water resources, aquifers and rivers is increasing[53].

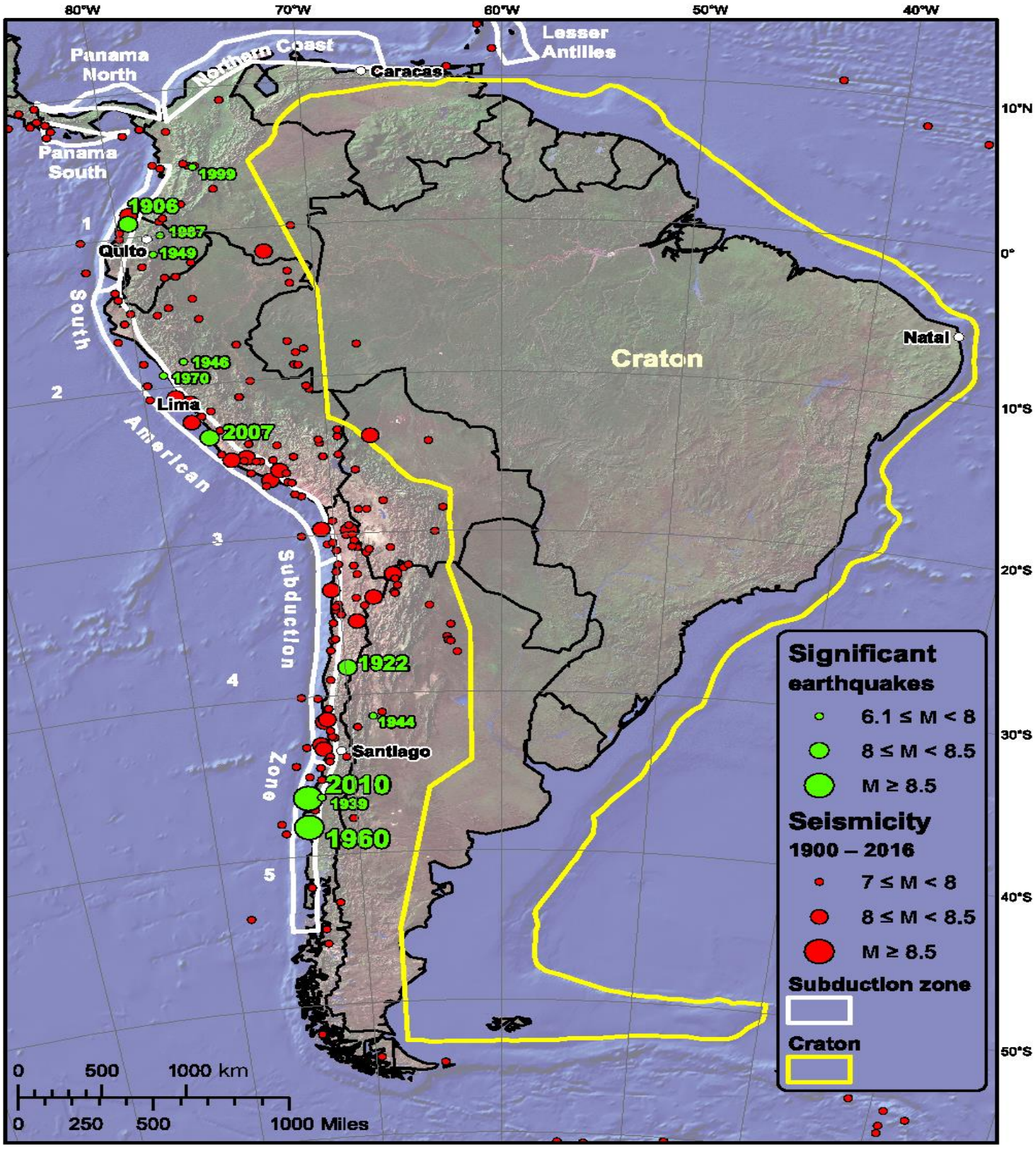
6.6.4 Seismic Activities

The entire Guyana is low in seismicity primarily because of the lack of active tectonism. There are no significant geological anomalies of note. Any volcanic activity which occurred in the Guyana Basin most certainly occurred during the rifting period only. No evidence of volcanism after the Jurassic is recorded.

Figure 6-4 summarizes the seismic history of South America and the extent of the hazard presented by these activities. The largest and highest concentration of seismic events is in the western margin of South America where the Nazca Plate plunges beneath the South American Plate. Because of the lack of an active tectonism, i.e. volcanism, subduction or hotspots, the entire eastern coastline of South America is very quiet seismically. There are no recorded events in or around Guyana with the closest events being shallow to medium deep magnitude 5-6 earthquakes on the northwestern edge of Venezuela. The risk from a seismic event in the near future either onshore or offshore is minimal. This is illustrated from the historical data by the United States Geological Survey (USGS) on seismicity. Tremors have been felt in Guyana but these originate in areas quite remote. Modelling by the USGS has shown that Guyana will not be affected by a moderate or greater damaging earthquake shaking in 100 years[54].

Based on these considerations, the risk to Guyana from seismic activities and associated volcanoes is minimal. As such, the schools are not expected to be impacted from seismic activities.

[53] GoG. 2021. LCDS 2030 – Draft for Consultation
[54] USGS. 2018. Report on Seismic Hazard, Risk and Design for South America

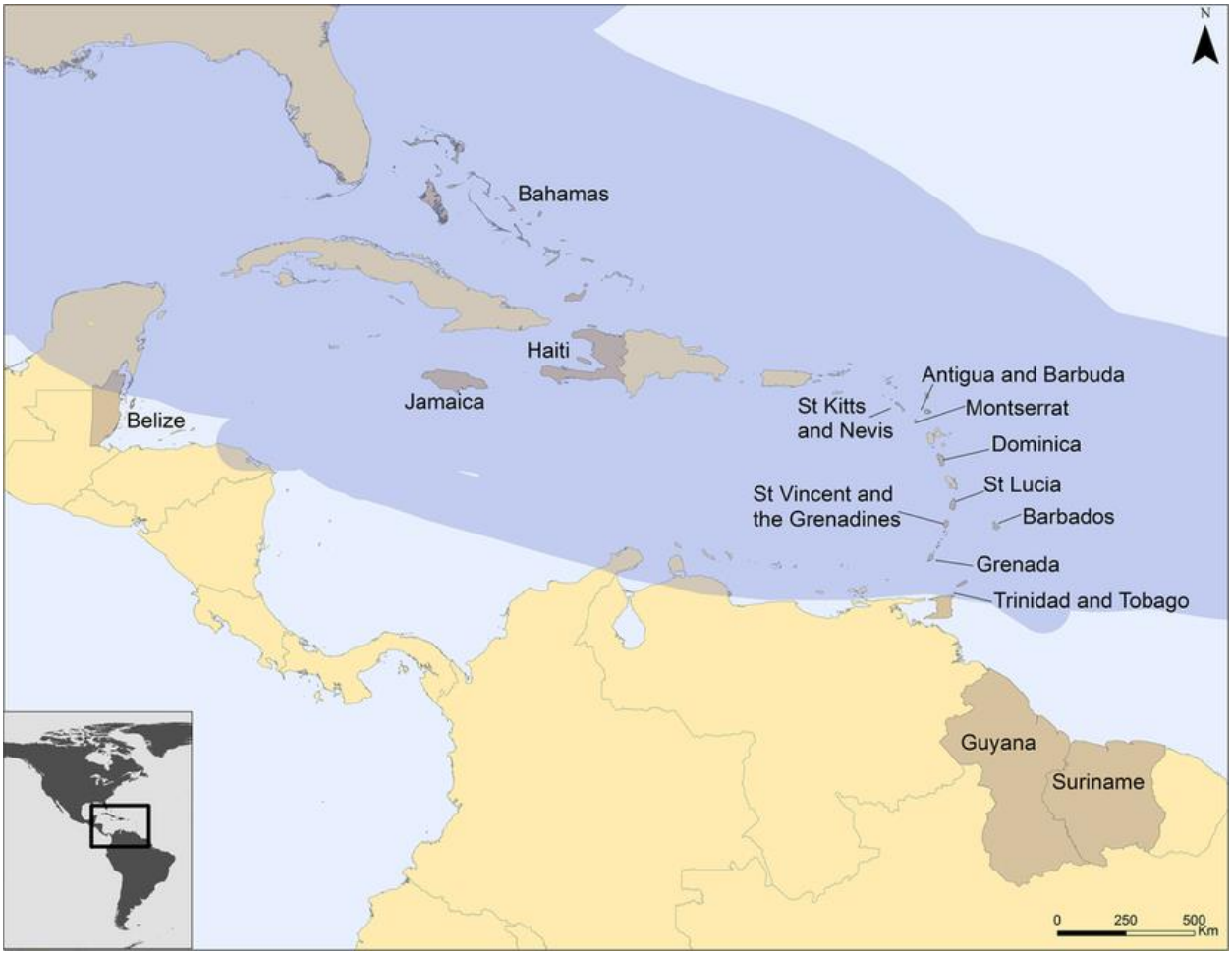


Source: USGUS 2018

Figure 6-4: Guyana's Location in relation to Seismic Active Areas within the Region

6.6.5 Hurricanes

Given the country's location on the South American continent Guyana sits outside of the Caribbean Hurricane Belt. As such, the country is not directly affected by the impacts of hurricanes as is experienced by the Caribbean islands. Guyana's location in relation to the hurricane belt is shown in Figure 6-5. Guyana lies south of the path of Caribbean hurricanes and none is known to have hit the country. Guyana's risk from hurricanes is very low. However, it is sometimes affected by tropical waves moving through the Atlantic Ocean and heavy rainfall during the hurricane season.



Source: Scientific Reports 2015[55]

Figure 6-5: Caribbean Hurricane Belt

[55] Sourced from Article Determinants of the lethality of climate-related disasters in the Caribbean Community (CARICOM): a cross-country analysis by Aisha N. Andrewin1 , Jose M. Rodriguez-Llanes2 & Debarati Guha-Sapir contained in Scientific Reports

Table 6-7: Impact Summary Table

Phases of the Project	Potential Impact from Project Activities	Impact Assessment			Impact Risk
		Type	Significance	Likelihood	
Environmental Resources					
Soils					
Project construction activities	Minimal clearing of vegetation, soil disturbing activities and erosion	Negative, Direct, Short-Term, Localised	Negligible	Almost Certain	Low
Project construction activities	Soil contamination from improper disposal of general solid wastes and hazardous wastes	Negative, Direct, Short-Term, Localised	Minor	Unlikely	Low
Project construction activities	Minimal compaction from material stockpiles and heavy vehicles	Negative, Direct, Short-Term, Localised	Negligible	Likely	Low
Water Resources					
Project construction activities	Sedimentation of surface bodies	Negative, Direct, Short-Term, Localised	Negligible	Unlikely	Low
Project construction and operation activities	Contamination of surface and ground water bodies	Negative, Direct, Short- to Long-Term, Localised	Minor	Unlikely	Low
Project operations	Contamination of surface and ground water bodies for sewage discharges	Negative, Direct, Long-Term, Localised	Moderate	Rare	Low
Ambient Noise Level					
Project construction activities	Noise nuisance to sensitive receptors	Negative, Direct, Short-Term, Localised	Negligible	Likely	Low
Ambient Air Quality					
Project construction activities	Adverse impacts to ambient air quality affecting sensitive receptors	Negative, Direct, Short-Term, Localised	Minor	Rare	Low
Greenhouse Gas Emissions					
Project construction activities	Gases emissions from clearing of sites and combustion of fuel by machinery	Negative, Direct, Short-Term, Localised	Minor	Unlikely	Low

Phases of the Project	Potential Impact from Project Activities	Impact Assessment			Impact Risk
		Type	Significance	Likelihood	
Climate Change Mitigation					
Operation phase	Use of solar energy	Positive, Direct, Long-Term, Localised	Minor	Almost Certain	N/A
Social Resources					
Employment					
Project construction activities	Temporary employment for persons from local communities	Positive, Direct, Short-Term, Localised	Minor	Almost Certain	N/A
Improved Facilities					
Project operations	Increases in wellbeing and quality of life for students, teachers and parents	Positive, Direct, Long-Term, Localised	Moderate	Almost Certain	N/A
Traffic					
Project operations	Traffic congestion during drop off and pick up periods	Negative, Direct, Long-Term, Local	Moderate	Likely	Medium
Land Take and Land Use					
Project construction activities	Inadequate space in school boundaries to install project interventions	Negative, Direct, Long-Term, Localised	Minor	Unlikely	Low
Archaeological Resources					
Project construction activities	Damage to archaeological resources	Negative, Direct, Long-Term, Regional	Moderate	Rarely	Low
Community Conflicts					
Presence of non-local workforce	Community conflict due to not complying with community norms, use of alcohol and drugs, and sexual relations/exploitation with local women	Negative, Direct, Short- to Long-Term, Localised	Moderate	Likely	Medium

Phases of the Project	Potential Impact from Project Activities	Impact Assessment			Impact Risk
		Type	Significance	Likelihood	
Health and Safety					
Occupational Health and Safety of Project Workforce					
Project construction activities	Accidents at worksites result in injuries or fatalities	Negative, Direct, Short- to Long-Term, Localised	Major	Unlikely	Medium
Public Health and Safety					
Project construction activities	Marginal increases in traffic and increased security risk in local communities	Negative, Direct, Short-Term, Localised	Negligible	Unlikely	Low
Health, Safety and Security of Students and Teachers					
Project construction activities	Noise and dust nuisance, unsafe conditions around material stockpiles and construction zones, sexual harassment of students and teachers	Negative, Direct, Short-Term, Localised	Minor	Likely	Medium
Flooding					
Construction and operation phases	Flooding to school sites due to heavy and increasing rainfall and from the Ocean	Negative, Direct, Short-Term, Localised	Minor	Unlikely	Low

7.0 ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

The activities to be conducted for the implementation of the project must be carried out in a manner which is in compliance with the legislation and guidelines outlined in Chapter 4, and in accordance with the requirements of the MoE and IDB. Further, measures should be implemented to mitigate the potential impacts of project activities discussed in Chapter 6 and outlined in Table 6-5.

In this regard, this chapter has been prepared to guide the project's activities by setting out measures and strategies to address the environmental and social issues related to the implementation of the project. It recommends activities to be undertaken in an effort to mitigate those impacts which are significant, likely and have medium to high risk. It also recommends mitigation measures that should be adopted by the contractors during the construction phase of the project as well as measures to be applied after construction.

A framework to ensure that the management and mitigation measures are effectively implemented is outlined in Chapter 8, including the roles and responsibilities of the various parties, plans to be developed by the contractors, monitoring to ensure compliance, etc. It is recommended that the contractors be required to prepare a brief CESMP using the guidance provided in this ESMP to outline how they intend to manage the impacts identified and implement the mitigation measures recommended. It is recommended that environmental and social audits be carried out prior to the start of any civil works for the schools which were not visited as part of this ESA process.

Mitigation measures identified to prevent, minimize and manage the potential adverse impacts discussed in Chapter 6 are outlined.

7.1 Design Phase Considerations

The following are recommendations which should be taken into consideration on the project design, including in the design of the schools to be constructed and extended. Recommendations provided by the stakeholders during the stakeholder engagement process are also included.

- The design of the schools should incorporate the recommendations outlined in the National Building Codes and the guidelines for primary schools included in the Ministry of Education Non-Academic Standards.

- Since most of the new schools to be constructed are located in housing schemes where the occupancy of the residential lots is increasing and the population is growing the schools should be designed and built with a capacity greater than the existing demand, to cater for the increase in the student population in the near future.

- Consideration should be given to incorporating an area for the drop off and pick up of students so as to avoid traffic congestion and allow for a smooth flow of traffic during these periods. A designated parking area should be provided for teachers.

- The ground floor of the schools to be constructed should be above ground level to minimize any risk of flooding and overall, there should be improvement in drainage designs.

- Construction of new sanitary blocks for students should be detached from the main building, but connected by a walkway which should be covered. Toilet facilities to be provided should cater for students of different age groups and sizes.

- Sewage waste should be collected by septic tanks which should be treated prior to discharge. Waste water from kitchens should be discharged through a grease trap.

- Design of the facilities should take into consideration provisions for water harvesting, universal access, landscaping features which could offset flood risk, drainage improvements, and energy saving infrastructure features.

- To the extent feasible, natural ventilation should be considered.

- The designs of the specific interventions for each school should be shared with the management of the respective schools for their review and input before finalization.

- For the school construction and extension where the size of land available is restrictive such as at Tabatinga and Kariakau, two-story buildings should be constructed.

- Schools should be built using concrete since this will reduce maintenance costs and prevent termite infestation and damage. The use of steel for the structure should also be considered.

- The use of renewable energy source should be considered, especially solar energy. This will be beneficial for the schools in the hinterland areas where limited or no access to the electricity grid.

- Local alternative species of hardwood available within the communities should be considered in the design of schools instead of the traditional species, for example the use of bullet wood.

- At Kariakau the furniture can be built within the community. The current furniture at the school was donated to the school by the Village Council. This will be beneficial since it will contribute to local employment, reduce transportation cost given the location of the community and difficulty in access, and will also reduce the risk of damage during transport.

- At Tabatinga consideration should be given to the use of materials which are traditional to Region 9, and more specifically Lethem. It was suggested that the red clay bricks be used with a pre-fabricated steel structure. This will avoid high maintenance cost and prevent from termite infestations. The clay bricks will provide for a cooler environment and the use of these bricks will support local livelihood.

7.2 Physical Environment

7.2.1 Erosion, Sedimentation and Compaction

During project implementation there will be some activities which may affect the soil, as was discussed in Chapter 6. These activities can contribute to soil erosion, compaction and sedimentation and which can be prevented or minimised. The following measures should be implemented to reduce these impacts:

<u>Erosion</u>

- Soil disturbance should be limited to areas only where it is absolutely necessary;
- The gradient of the routes to be traversed by project equipment/vehicles should be reduced where possible;
- Adequate temporary drainage should be provided at temporary work areas;
- Areas of exposed soil should be monitored during periods of heavy rainfall and proper control of stormwater flow over exposed soil surfaces should be practiced;
- Weather patterns should be considered before initiating major earthworks. Earthworks should be avoided during periods of heavy rainfall;

- Material stockpiles and waste debris should be located at least 10 meters away from the drainage system;
- Material stockpiles should be kept to a minimum. Stockpiles may require berming to collect sediments from runoff during periods of heavy rainfall. Wooden or other material may be used to contain stockpiled material to prevent erosion;
- Excavated materials should be reused, where possible. In general, excavated materials should not remain onsite for more than two weeks and be disposed of at sites approved by the local authorities; and
- Re-vegetation of any cleared areas with native species should be encouraged to the extent possible.

Compaction

- Traffic and movement of heavy-duty equipment over open areas should be restricted and controlled and damage to these areas should be repaired as soon as possible;
- Soils that have been compacted by heavy-duty equipment during transport of materials and also during site works should be scarified;
- Appropriate heavy-duty equipment should be utilised for all works; and
- Designated routes for heavy-duty vehicles should be established and used to limit soil compaction.

Sedimentation

- Cleared soils, where possible, should be distributed around the premises or provided, particularly topsoils, to agricultural departments of the schools, where appropriate.
- Weather patterns should be considered during construction as heavy rainfall would increase sedimentation rates in areas where vegetation has been cleared; and
- Where possible, storm water runoff should not be directly discharged into the drainage system or streams. This can be channelled through a vegetated area or sedimentation basins, when applicable. Vegetated lands acts as a filter, trapping any large solid particles before the water enters the stream, thus can contribute to reducing the level of sedimentation.

7.2.2 Air Quality

Dust and gaseous emissions can affect school activities, surrounding land uses and project workers. The following measures should be implemented to reduce the impacts of dust:

- Schedule major construction works to during term breaks or outside normal school hours;
- Erect dust screens around work areas if required;
- Visual monitoring of dust generation/accumulation should be done;
- Workers should be equipped with the necessary personal protective equipment (PPE) to combat dust nuisance. Personnel working within dusty environments should be required to use dust masks and respirators if needed;
- During dry periods it may be necessary to soak some areas of the construction zone and routes where vehicles and equipment traverse;
- Dry materials for construction such as sand should not be stockpiled in close proximity to receptors such as classrooms, offices and neighbouring properties;
- Sand stockpiles should be covered to minimize dust emissions;
- All vehicles transporting loose materials should be covered to minimize dust emissions;
- All mechanical equipment should be adequately maintained to reduce gaseous emissions; and
- Utilize only electrical pumps or solar powered pumps for the operational phase.

7.2.3 Noise

Noise can be a significant impact if works are conducted during school hours. The limit prescribed in the GNBS Standard for construction projects are 90dB during the day and 75dB during the night. Compliance with these limits is necessary to ensure the impacts on the environment and human health, particularly for workers, are reduced. Therefore, the following measures should be implemented to reduce the impacts of noise:

- Schedule construction works to during term breaks or outside normal school hours;
- Inform the schools' management in advance of any construction activity that will result in significant noise and likely to affect classes;
- Workers should be equipped with the necessary PPE to mitigate noise pollution. Hearing protection for employees exposed to high noise levels: ear muffs and earplugs for employees who operate heavy-duty machines/equipment;
- Noisy activities should not occur in close proximity to proximate receptors during the night, on Sundays and on Holidays. Works should not be conducted after 18:00hrs and prior to 06:00hrs, unless in exceptional circumstances and when agreed with the neighbours and the authorities;
- Noise levels should be controlled at the source through installation of muffles on exhaust system;
- Noisy equipment such as generator should be sited away from receptors;
- The contractor should ensure that machinery and equipment are working efficiently; and
- Periodic monitoring of noise levels should be conducted.

7.2.4 Waste Management

Construction Phase

During the constructions phase waste likely to be generated from this project includes domestic garbage and construction waste. Liquid waste will also be generated including sewage waste and waste water from sanitary facilities and work camp if these are utilised. Hazardous waste which may be generated includes waste oil, filters, and oil and chemical containers. If not managed properly, waste can result in soil and water contamination, contribute to ill health, and affect environmental aesthetics. The improper disposal of waste can result in mal-odours and attract vermin and other pests. Proper waste management is important especially since project activities are mainly within the school environment. For each category of waste, the handling, storage and disposal measures will vary. The disposal frequency of each waste type will also vary, depending on rates of generation. It is recommended that no significant amount of waste be allowed to accumulate onsite. Outlined below are various measures that should be implemented to properly collect and dispose of waste associated with the project. The contractors should include a plan to manage waste in the CESMP and take into consideration the guidance provided below:

Liquid Waste

- Sewage will be generated from work sites associated with the construction phase of the project. It is recommended that portable toilets be utilized by the contractors. However, if works are being done during term breaks the MoE can designate specific washrooms which can be utilized by the contractors.
- If temporary camps are established at the worksites, waste water from kitchen and bathing areas should be channeled to a soak away.

Solid Waste

- Waste such as paper and cardboard, empty plastic bottles, cans, etc. should be collected via bins placed at strategic points around the construction zone and work areas. The bins should be emptied on a regular basis, or once filled. Garbage should not be allowed to accumulate onsite and should be collected and disposed of at an area and in a manner approved by the local authorities;
- All construction waste should be consolidated and reused as much as possible. If it cannot be reused then it should be properly disposed of. Consideration should be given to making the materials available to the local communities if requested. Waste should not be left in the open to litter the work areas and should be disposed of within two weeks;
- All workers should be made aware of the proper waste handling and disposal requirements and practices. This ensures that all are aware of how to dispose of the different types of wastes generated, therefore minimizing the impacts that may occur from improper disposal;
- No burning of any type of waste should occur. If burial of waste is to be conducted these pits should be located at least 100 meters from waterways and be covered regularly.

Hazardous Waste

- Waste oil from servicing of machinery and vehicles should be collected and reused/disposed in a safe and acceptable manner. Waste oil drained from vehicles and machinery should be collected by pans and transferred to storage containers;
- Empty hazardous material containers should be disposed of as is recommended by the manufacturer; and
- Hazardous wastes should not be stored at the construction site for extended periods. As such, timely removal is recommended.

Operation Phase

During the operation phase solid waste likely to be generated will be limited to domestic garbage. Liquid waste will also be generated including sewage waste and waste water from sanitary facilities. Electronic waste may be generated including non-working tablets and accompanying accessories. Waste associated with the provision of solar energy such as used lithium-ion batteries, hazardous inverter components, as well as solar PV panels that have been damaged or broken may also be generated. Outlined below are various measures that should be implemented to properly collect and dispose of waste associated with the operational aspect of the schools:

Liquid Waste

- Sewage should be collected via septic tanks since there are no sewage systems in the project areas. Septic tanks should be well maintained and emptied regularly. Discharge from septic tanks should be treated prior to discharge.
- Grey water from kitchens and sinks should be channeled through a grease trap and then a soak-away.

Solid Waste

- Waste such as paper and cardboard, empty plastic bottles, cans, etc. should be collected via bins placed at strategic points around the compound. This waste should be kept in covered bins until disposal. The bins should be emptied on a regular basis, or once filled. Garbage should not be allowed to accumulate onsite and should be collected and disposed of at an area and in a manner approved by the local authorities;

- No burning of any type of waste should occur. If burial of waste is to be conducted these pits should be located at least 100 meters from waterways. These pits should be covered by a layer of soil regularly to prevent odour and the attraction of vermins. When pits are filled these should be completed covered by soil and closed out.
- Any organic waste can be separated and composted. Compost can be used to support the schools' agricultural initiatives.

E-Waste

- In Guyana there is no facility for the disposal of e-waste. The Solid Waste Management Authority, which falls under the Ministry of Local Government and Regional Development and which has the responsibility for waste management, has indicated that currently e-waste is collected and stored at the Haags Bosch Landfill until a suitable method for disposal is determined. As such, all e-waste generated, including those from the outlying regions, will have to be transported to the landfill.
- E-waste should be managed in accordance with the EPA Guidelines on E-waste Management (2014). The Guidelines suggest three options to address e-waste in Guyana. These are reuse of e-waste, collect and store, or export since there are very limited disposal options existing in Guyana.
- The MoE should prepare guidelines for the management of e-waste. The guideline should address the collection, storage, transport, and disposal of e-waste in accordance with national requirements and best practices.

Solar Energy Related Waste

- Special provisions should be put in place to facilitate the disposal of used lithium-ion batteries, hazardous inverter components, as well as solar PV panels that have been damaged or broken.
- Any hazardous components stored temporarily on-site should be kept in an enclosed and covered area on an impermeable surface pending off-site disposal.
- MoE should include considerations in the bidding documents for a supplier who has a proven track record of supporting and facilitating disposal or recycling of these components.
- MoE should explore opportunities for contracting a company operating in Guyana to support disposal or recycling of these panels.
- The bidding documents for the purchase/installation of solar panels should require the contractors to include in his CESMP a labour risk analysis and respective mitigation measures that will be adopted.

7.2.5 Water Resources

Measures should be implemented to ensure water resources are not negatively impacted by the project activities. The following are recommended:

- Implement measures outlined in Section 7.1.1 to ensure the drainage system and nearby waterways are not impacted by sedimentation;
- Implement measures outlined in Section 7.1.4 to ensure the drainage system or nearby waterways are not affected by improper waste disposal;
- Implement measures outlined in Section 7.1.6 to ensure the drainage system or nearby waterways are not contaminated by hazardous materials;
- Conduct baseline water quality analyses of all water sources, particularly surface water flows, to be used by the project;
- Designing interventions for schools should be done in consultation with the immediate surrounding communities with whom the schools share water sources or supply;

- Liaise with GWI, or other relevant utilities, to design water supply interventions; and
- Maximize opportunities for rainwater harvesting and through the pilot of the atmospheric water generator.

7.2.6 Fuel, Lubricants and other Hazardous Materials

During the construction phase of the project, special consideration for the transportation, handling and storage of fuel, lubricants and chemicals must be given as these are classified as hazardous substances. To reduce the risks on the environment and human health, and to avoid contamination of the environment, preventative actions should be taken and/or mitigation measures implemented. It is necessary to implement the following measures to prevent and or reduce the impacts on the environment, in particular, contamination of soil and water from leaks and spills:

- Fuel storage onsite should be placed at a safe distance from the drainage system, waterways, accommodation, work areas, and classrooms and offices;
- Fuel should be transported to the work areas as needed or in small quantities. Small quantities of fuel onsite will minimize the possibility of spillages to occur and also minimize the impacts if spillages do occur, especially since the construction activities would be temporary and it would not be feasible to construct a facility for the long-term storage of fuel. Any fuel storage at these areas should be placed higher than ground level to easily detect any leaks;
- Any storage of significant amount of fuel should be done within a contained impervious area and covered from the elements.
- Fuel storage containers should be regularly monitored for leaks;
- When handling fuel, care should be taken to prevent spillage and leaks, especially during off-loading and refueling;
- Regular maintenance should be conducted to ensure the proper functioning of machines, equipment and vehicles to avoid unnecessary leaks; and
- Spill kits should be made available in the event of spillages. The kits should be placed in strategic locations that are accessible to key personnel who should be trained in the proper use of these kits through the executions of drills. Spill kits should contain sorbents with high absorbing capacity. The absorbent material should be in the form of booms, pillows and pads and the kits should include a pair of PVC gloves, a disposal bag and operating instructions.

7.3 Socioeconomic Environment

7.3.1 Conflict Prevention

To prevent any conflicts during construction the following should be implemented:

- If any of the schools to be extended require additional lands/expansion of the school compound the established system used by the MoE in the past should be utilised. This Ministry should ensure the Free, Prior and Informed Consent (FPIC) principle is followed during the process and that approval is granted by the Village Council prior to the use of the land;
- All potential affected parties should be informed of the details of the project and project activities and schedule, and be engaged in discussions on possible measures to reduce the negative impacts;
- Local stakeholders should be engaged prior to the commencement of construction and periodically during the construction phase.
- The relevant authorities should be notified of any emerging problems and the MoE and school administration should work with the local authorities to address any issues;
- If possible, local contractors should be contracted to conduct the works. If this is not possible then workers from local communities should be employed by the contractors;

- The use of shared water sources should be assessed to determine if any party will be affected as a result of the implementation of the project.
- Any use of community resources, including water sources, raw materials and land to be used by the contractor during construction and the disposal of waste should be approved by the local authorities;
- Within indigenous communities the village leadership should be invited, prior to the commencement of works, to share information with workers of the contractors on the community rules, norms, practices and expectations.

7.3.2 Code of Conduct for Workers

A Code of Conduct for workers should be prepared to guide the behaviour of workers onsite during project construction. The Code of Conduct for workers are a set of guidelines that are aimed at ensuring care and caution are taken by the employers and employees when undertaking works in communities, especially hinterland and indigenous communities. As such the contractors undertaking the works under the project will be required to enlist the services of a qualified Environmental, Social Health and Safety (ESHS) specialist to design and prepare the Code of Conduct as per the ESHS provisions of the contract and the programme's Environmental and Social Management Systems (ESMS). Project workers compliance with the measures outlined in the Code of Conduct can significantly reduce the potential for conflicts between project workers and the communities within which the works are being conducted.

The Code of Conduct should address prevention and management measures for environmental, labour, and social risks of the project, including health and safety risks, sexual and gender-based violence, discrimination, and sexual abuse and exploitation of children and other individuals or vulnerable groups and should be applicable to the contractors and subcontractors' employees.

The Code of Conduct should be written in plain language and in a manner that is clear, accessible, and understandable, and should be properly communicated to the employees. Some measures that ensure that the communication is effective include the employees:

- Affix their signature to the Code of Conduct after reading it
- Receive a copy of the Code
- Had the Code explained to them
- Understand that the Code of Contract is a condition of employment, and violations can result in consequences including fines and dismissals.

To ensure the effective communication of the Code of Conduct to the employees, community, and affected people throughout the project implementation, a copy of the Code should be displayed at an accessible location and in a language that is comprehensible and free from jargons.

The Code of Conduct should be prepared with reference to the issues, impacts, and mitigation measures identified in:

- The project's Environmental and Social Assessment (ESA) and Environmental and Social Management Plan (ESMP).
- Consent/permit conditions such as any Permit to be issued by the Environmental Protection Agency, Ministry of Amerindian Affairs and the Village Councils.

- Required standards of the IDB Environmental and Social Policy Framework (ESPF)

- Relevant international conventions, standards or treaties, including International Labour Organisation conventions.

- Relevant national, legal and/or regulatory requirements and standards such as the Labour Act and the Occupational Safety and Health Act.
- Workforce grievance redress mechanisms.

- Stakeholder grievance redress mechanism.

- Relevant guidelines determined by the Ministry of Amerindian Affairs and Indigenous communities in which works will be conducted.

Some of the specific issues to be addressed by the Code of Conduct are:

- Compliance with applicable laws, rules, and regulations and IDB ESPS.
- Compliance with applicable health and safety requirements to protect the local community (including vulnerable and disadvantaged groups), (including wearing prescribed personal protective equipment, preventing avoidable accidents and a duty to report conditions or practices that pose a safety hazard or threaten the environment).
- The prohibition of the use of illegal substances.
- Sexual harassment (for example to prohibit use of language or behaviour, in particular towards women or children, that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate).
- Violence or exploitation (for example the prohibition of the exchange of money, employment, goods, or services for sex, including sexual favours or other forms of humiliating, degrading or exploitative behaviour).
- Protection of children (including prohibitions against abuse, defilement, or otherwise unacceptable behaviour with children, limiting interactions with children, and ensuring their safety in the project area).
- Sanitation requirements (for example, to ensure workers use specified sanitary facilities provided by the contractor and not open areas).
- Avoidance of conflicts of interest (such that benefits, contracts, or employment, or any sort of preferential treatment or favours, are not provided to any person with whom there is a financial, family, or personal connection).
- Respecting reasonable work instructions (including regarding environmental and social norms).
- Protection and proper use of property (for example, to prohibit theft, carelessness or waste).
- Duty to report violations of the Code.
- Non retaliation against workers who report violations of the Code.
- Respecting the rules, norms, customs and practices of the nearby indigenous community.
- Non-discrimination in dealing with the local communities (including vulnerable and disadvantaged groups), the Employer's Personnel, and the Contractor's Personnel (for example on the basis of family status, ethnicity, race, gender, religion, language, marital status, age, disability (physical and mental), sexual orientation, gender identity, political conviction or social, civic, or health status)

For works within indigenous communities the Code of Conduct for workers should address:

- Respect of the village rules, customs and practices.
- Respect for the Amerindian culture.
- Clear understanding that it is illegal to bring alcohol into an Amerindian village for the purposed of offering it to a resident.
- Hunting/trapping of wildlife is not allowed.

7.3.3 Grievances and Stakeholder Engagement

Stakeholder engagement is essential to ensure all stakeholders are aware of the project and to provide feedback and recommendations. As such, measures to ensure stakeholder engagement are outlined in Section 8.6. A separate Stakeholder Engagement Plan is also prepared for the project.

Persons affected by project activities should also be provided with a forum to be heard and have their grievance addressed. A grievance mechanism should be implemented for the project outlining a clear set of opportunities for affected people or any other interested stakeholder to post a claim, request information and have a formal mechanism to communicate. As such, measures to address grievances are outlined in Section 8.7, which would allow for a process for receiving, evaluating, and addressing project-related grievances.

In addition, a separate grievance mechanism should be established to address workers grievances. This should form part of the contractors' ESMP and is addressed in Section 8.3, which addresses contractors' requirements.

7.3.4 Employment and Community Development

Although the project is anticipated to contribute positively to employment and community development, some measures can be implemented to enhance the positive effect of all phases of the project. These measures include:

- The contractors should prioritise employment opportunities for persons residing in project communities.
- The possibilities of employing women should also be explored so as to ensure that there are opportunities for both genders.
- The contractors should support local content through local procurement. This may include purchasing of agricultural products, poultry, other meats, and fish from the surrounding communities. This may also include rentals of required equipment and machinery, if in good working condition and available locally.
- Wages offered to local staff should be in keeping with Guyana's labour laws or higher set standards which should be competitive in all categories of workers.
- Local workers should work for standard working hours (an eight-hour work day) and be fairly and equitably remunerated.

7.3.6 Labour Management Procedures

Guyana is in the process of conducting national labour assessments. Considering the upsurge in construction and based on historical trends, labour for construction is expected to be predominantly unskilled, semi-skilled and skilled personnel, and likely to come from contractors' crew who may be from outside of the immediate communities or regions in which the schools are located and also could possibly include migrants. As part of the project, the contractors would be encouraged to hire labour from the local communities in the vicinity of the schools.

The contractors are required to comply with the national law and best practices in employing the workforce to work on the project related interventions. The following should be complied with:

- The selection and employment of project workers should be conducted in a fair and transparent manner, and according to the requirements of the project. This process should be free of any personal preference and biases, inclusive of persona characteristics, gender, location, or ethnicity. The employment program should instead be based on the principle of equal opportunity and fair treatment, with no discrimination with respect to any aspects of the

employment relationship, such as recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, job assignment, promotion, termination of employment or retirement, or disciplinary practices.

- Recruitment procedures should be transparent, public and non-discriminatory, and open with respect to ethnicity, religion, sexuality, disability or gender.
- Applications for employment should only be considered if submitted via the official application procedures established.
- Clear job descriptions should be provided in advance of recruitment and should explain the expertise required for each post.
- Women and other vulnerable groups should be encouraged to apply for jobs.
- All workers should have written contracts describing terms and conditions of work.
- In accordance with the Employment of Young Persons and Children Act 1938 (Amended 1999), no child under the age of fifteen should be employed, and no young person under the age of sixteen should be employed at night.
- According to the Leave with Pay Act, the project and contractors are required to grant and regulate annual leave with pay for all categories of workers. Granting and method of computing holiday with pay, periods of holiday with pay, remuneration for holiday with pay, and payment of holiday with pay upon termination of employment should be computed in accordance with the formula outlined in the Act.
- Every person employed by the project is expected to contribute to the National Insurance Scheme. As such, salary and wages computation are expected to take this into consideration.
- Each project worker should be responsible to paying their individual income tax in accordance with the laws. As such, salary and wages computation are expected to take this into consideration. The contractors can also deduct the tax due and remit to the Guyana Revenue Authority. Remittances are to be made within fourteen days of the end of every month.
- Termination of services are required to be in compliance with the Termination of Employment and Severance Pay Act of 1997 which stipulates measures governing the termination of employment and grant of redundancy or severance payment to employees in conjunction with the offence or cause for the termination.
- Workers' health and safety should be protected. Measures outlined in Section 7.4.1 should be implemented.

In addition, in sourcing solar panels and other equipment, the contractors should ensure that these are sourced from suppliers who are compliant with labour procedures. It should be ensured that suppliers have not been reported on cases of forced labour. As such, the bidding documents for the purchase/installation of solar panels should require the contractors to include in the CESMP a labour risk analysis and respective mitigation measures that will be adopted. This should also apply to the procurement of medical and other equipment under the project.

7.3.7 Traffic

The following measures should be implemented to manage the risks associated with project traffic particularly during the construction phase:

- All drivers and operators from the contractors must be licensed in accordance with the Laws of Guyana and have the requisite experience and training.
- Drivers should be instructed to observe and respect all traffic and warning signs along the various roadways and to maintain all required speed limits.
- Appropriate safety signage should be posted leading up to the entrance of the construction sites.
- All light and heavy-duty equipment and vehicles should be properly maintained and in good working condition so as to comply with the national road fitness/safety requirements and manufacturer's safety recommendation.

- Passengers should not be permitted on mobile equipment unless they are being trained to operate the machine or are required to ride on it as an unavoidable part of their duties, provided it is safe to do so.
- Construction materials should not be placed or discharged on the roadways.
- Trucks and other construction related vehicles and machinery should not be parked along the roadway for extended periods.

For the operation phase the following should be considered:

- Consideration should be given to incorporating an area for the drop off and pick up of students so as to avoid traffic congestion and allow for a smooth flow of traffic during these periods.
- A designated parking area should be provided for teachers and other staff of the schools.
- Parking along the road shoulders should be avoided.
- During peak hours a traffic warden should be engaged to assist in controlling/directing traffic.

7.3.8 Archaeological Finds

The following procedure should be followed during project construction in the event that archaeological materials or site is discovered within the construction sites:

- All activities in the immediate vicinity of the remains should cease immediately.
- The find location should be recorded, and all remains left in place.
- The contractor should inform the MoE who should then inform and the National Trust of Guyana of the find.
- The National Trust of Guyana should coordinate with the relevant personnel to determine the significance of the findings and assess appropriate mitigative options.
- If the significance of the remains is judged to be sufficient enough to warrant further actions which cannot be avoided, MoE, in collaboration with the National Trust of Guyana, should determine the appropriate course of such action.
- Relocation of the artefacts for preservation and security reasons may be determined as an appropriate action.
- In the case of human remains, the appropriate authority should be contacted. In addition, a coroner and/or physical anthropologist may be involved if the remains are classified as an artefact. Options for removal and burial should be considered if the location must be disturbed.
- The National Trust of Guyana should inform the MoE of when work may recommence in the specific area.

In addition, to effectively safeguard potential archaeological finds, it should also be ensured that the contractor provides training to employees on identifying and protecting finds by causing limited disruption and damage to archaeological materials, if found.

7.4 Health and Safety

7.4.1 Workers Health and Safety

The health and safety of workers involved in activities during the construction phase can be compromised. As such, it is necessary to implement measures to prevent these situations from occurring. The contractors should, as part of the CESMP, outline measures to ensure that the health and safety of workers is preserved. The following measures should be implemented to reduce the risk to workers:

- The requirements of the Occupation Safety and Health Act should be complied with;

- The contractors should designate someone with the responsibility of ensuring occupational safety and health;
- Workers should be properly oriented to the safety and health rules and guidelines;
- Adequate training should be provided to workers in the execution of their tasks;
- Machinery/equipment should be operated by competent, licensed and authorized personnel only, and in a manner that does not endanger other employees or the contractors' equipment;
- An Emergency Response Plan should be prepared and made available to all relevant personnel and the necessary training and resources required should be provided;
- Well-equipped first aid kits should be provided at all work sites;
- At least one personnel trained in first aid should be present at the construction site;
- Arrangements should be in place to medivac personnel if required when works are being conducted in remote areas;
- Potable water for employees should be provided;
- Protective gear should be provided to employees and should be worn at all times during operation. Gear to be provided should include safety vests, hard hats, dust mask, ear plugs, gloves and safety boots where necessary. Rain coats should also be provided;
- Employees should be required to wear safety equipment provided by the contractors in all working areas. Monitoring should be done to ensure workers utilise the gears provided;
- Safety rules and guidelines should be posted at strategic locations;
- Adequate signage should be erected, especially in hazardous areas; and
- The contractors will perform a Job Hazard Analysis (JHA) and will develop Standard Operating Procedures (SOP) or method statement for the activities that present most risks, such as clearing vegetation, excavation and trenching, working on heights, preparing cement, electric works, working in confined spaces, etc.

7.4.2 Public Safety

It is anticipated that during construction works the public, including teachers and students, can be exposed to certain activities which can present a risk to their safety. The contractor should, as part of the CESMP, outline measures to ensure that the safety of the public is not compromised, especially if works are to be done during the school term. Specific areas that should be considered and incorporated in the Plan and implemented include:

- The contractors will develop and implement an Access Plan to ensure that only authorized personnel can access the worksite, including appropriate barriers and signage (day and night).
- All hazardous areas should be secured to prevent access to unauthorized personnel, especially students.
- All hazardous areas should be demarcated and the construction area cordoned off. Construction of physical barriers should be considered.
- Warning signs should be installed in areas which present a risk for incidents to occur.
- The school administration, teachers and students should be engaged prior to the commencement of works and made aware of the risks presented by the works and the precautionary measures that they should abide with.
- Construction materials and construction waste should be kept in an organized and orderly manner.
- If possible, a separate access from what is being used by teachers and students should be used by the contractors.
- The schools' management should be informed prior of any high-risk activities.

7.5 Emergency Preparedness and Response

The contractors should prepare an Emergency Response Plan (ERP) as part of the CESMP. The ERP should outline protocols for responding to environmental emergencies that may occur as a result of

unforeseeable circumstances such as a spill of hazardous materials, accidents or medical emergencies. The ERP should describe the general types of emergency and actions to be followed should an emergency occur during the mobilization and operational phases of the project and should include:

- Emergency Contact Details;
- Emergency Procedures;
- Authority of Control;
- Emergency Response Equipment;
- Scenario Description and Response; and
- Incident Reporting.

All personnel should be aware of potential risks and take steps to cope with hazards in their work area. In addition, all personnel are expected to alert the correct personnel if they discover an accident, medical emergency, fire, spill or natural disaster. As such, the ERP should also outline the role of the various personnel in emergency response. The types of emergencies to be covered by the ERP should include fuel and other hazardous material spills, accidents to workers or members of the public, fire, etc.

For works to be done in remote areas the ERP should consider the remoteness of the project site and the limitations in terms of access and services available and should outline practical measures to respond to the various types of emergencies occurring at these locations.

8.0 ESMP IMPLEMENTATION FRAMEWORK

To ensure environmental and social compliance with the national requirements and those of the IDB's ESMF it is recommended that an Environmental and Social Management System (ESMS) be prepared to guide the implementation of the project. The ESMS ensures that the different dimensions of environmental and social management are interrelated and consistent with each other and in compliance with the ESMF and the Bank's ten ESPS. As such, the ESMS should address the requirements of all of the ESPS.

In addition, measures are outlined in this section to guide the implementation of the ESMP. These measures are consistent with the requirements of the IDB's ESMS.

8.1 Environmental Management Organisational Framework

The environmental and social management framework will have roles and responsibilities at the level of the PIU, Supervisory Consultants and the Contractors.

PIU

The MoE will serve as the implementing agency for this project. While the Ministry is currently assessing the establishment of a Project Coordinating Unit capable of implementing externally financed projects, given that the project is already being developed, it is envisaged that a Project Implementation Unit (PIU) will be established to oversee the implementation of the project, as has been done for similar projects in the past. The Ministry will have the responsibility of ensuring environmental, social, health and safety compliance, including compliance with the IDB's ESPS.

It is recommended that the PIU be staffed with an Environmental and Social Specialist to assist with the implementation of the ESHS requirements. This person will oversee the environmental, social and health and safety aspects of the project. The Environmental and Social Specialist will ensure that the IDB's ESMF, including the ESPS are adhered to where applicable, that the contractors comply with the requirements of the Environmental Authorisations to be issued by the EPA, and that the contractors prepare and implement the Environmental and Social Management Plan. The Environmental and Social Specialist will be required ensure the ESHS requirements are included in the bidding documents and contracts, communicate all ESHS requirements to the supervisory consultants, review the ESHS reports from the supervisory consultants for each school construction, conduct periodic visits to the project site to verify the level of ESHS compliance, prepare semi-annual ESHS reports, as part of the project's Progress Reports submitted to the Bank by the PIU, or as a stand-alone report, and implement and maintain records of the GRM. The Environmental and Social Specialist will report to the Project Coordinator.

Supervisory Consultants

It is expected that Supervisory Consultants will be engaged to oversee the implementation of the project. The Supervisory Consultants should have as a member of their team an ESHS Personnel who will have the responsibility of ensuring compliance with the environmental, social, health and safety requirements relating to the project. This person should be responsible to provide direction as may be required to the contractors (and the PIU as may be required) to ensure the project meets its ESHS objectives and complies with the project ESMP. The Supervisory Consultants will be required to monitor the contractors' ESHS performance against the national requirements and that of the MoE, as well as the contractors C-ESMP. They will also be required to ensure that the Contractor's ESHS performance is in accordance with the requirements of the Occupational Safety and Health Act and meets the requirements of all state agencies tasked with the monitoring, regulation and promotion of safety at work.

The ESHS related services to be provided by the Supervisory Consultants should include but not limited to:

- Review and approval of the contractors' C-ESMP, including all updates and revisions (not less than once every 6 months);
- Review and approve the contractors' method statements, implementation plans, prevention and response action plan, drawings, proposals, schedules and all relevant documents;
- Review and consider the ESHS risks and impacts of any design and/or methodology change proposals and advise if there are implications for compliance with the project environmental requirements, consent/permits and other related project matters;
- Undertake audits and inspections of contractors' accident logs, community liaison records, monitoring findings and other ESHS related documentation, as necessary, to confirm the contractors' compliance with the ESHS requirements;
- Agree on remedial action/s and their timeframe for implementation in the event of a non-compliance with the contractors ESHS obligations;
- Ensure appropriate representation at relevant meetings including site meetings, and progress meetings to discuss and agree on appropriate actions to ensure compliance with ESHS obligations;
- Check that the contractors actual reporting (content and timeliness) is in accordance with the contractors' contractual obligations;
- Review, critique and consult in a timely manner with the contractors and the supervisory consultants on the contractors; ESHS documentation (including regular reports and incident reports) regarding the accuracy and efficacy of the documentation;
- Undertake liaison, from time to time and as necessary, with project stakeholders to identify and discuss any actual or potential ESHS issues;
- Establish, communicate, maintain and implement a grievance redress mechanism including types of grievances to be recorded and how to protect confidentiality;
- Provide appropriate training to contractor's workers when necessary or required by the PIU; and
- Undertake field inspections of the construction sites to verify the contractors' compliance with the C-ESMP and promptly communicate to the PIU any serious deviations.

Contractors

The contractors for the new schools construction and schools extension should also be required to employ a suitable qualified and experienced personnel as an Environmental, Social, Health and Safety Officer, with the responsibility of ensuring compliance with the environmental, social, health and safety requirements. The responsibilities of this individual should include but not limited to the following:

- Prepare the Contractors Environmental and Social Management Plan;
- Conduct training of workers in health, safety and environmental requirements, including health and safety induction prior to commencement of work onsite and regular tool box sessions;
- Ensure compliance with the EPA's Environmental Authorisation;
- Liaise with the PIU Environmental and Social Specialist and Supervisory Consultants' ESHS Personnel on compliance;
- Implement the contractors' Environmental and Social Management Plan;
- Conduct site inspections, audits and permanent supervision at the construction site to ensure adequate and timely implementation of, and compliance with, the C-ESMP;
- Address any grievances of stakeholders;
- Report on environmental, social, health and safety compliance; and
- Oversee the clean-up and decommissioning of the site on the completion of works.

8.2 Roles and Responsibilities

To ensure the environmental and social management measures are implemented several players will have major roles to play. The recommended roles and responsibilities are discussed in Table 8-1 below.

Table 8-1: Summary of Environmental and Social Related Responsibilities

Pre-Construction Phase	
MoE	Establish the PIU and hire Environmental and Social Specialist
	Hire Supervisory Consultants
	Engage the EPA on obtaining Construction Permits for new schools
Supervisory Consultants	Assign ESHS Personnel as part of the Supervision Team
	Prepare construction bidding documents to include environmental and social requirements
	Ensure that the contractor's CESMP is prepared and approved.
Contractors	Assign responsibilities for environmental and social compliance to a competent team member
	Prepare the CESMP
	Conduct workers orientation and training on health and safety practices to be followed at the construction site
Construction Phase	
MoE	General oversight of the project's environmental and social compliance
Supervisory Consultants	General oversight of the contractors environmental and social performance
	Monitor project activities to ensure health, safety, environmental and social compliance
	Identify non-conformances and recommend corrective actions
	Participate in stakeholder engagements and take the lead in addressing/responding to stakeholder grievances
	Convene meetings and discuss status of contractors' compliance with environmental requirements
Contractor	Implementation of the CESMP, and environmental, social, health and safety mitigation and management measures and corrective actions
	Participate in the project's progress meetings to discuss environmental, social, health and safety compliance
	Monitor for non-compliances and effectiveness of mitigation measures
	Engaging with stakeholders and addressing any grievances which might arise
	Conducting regular refresher training for workers on environmental, social and health and safety requirements
Operation Phase	
MoE and Regional Education Departments	Prepare guidelines for the management of e-waste.
	Ensure e-waste and waste generated from the solar energy installation are managed in accordance with the guidelines.
	Ensure proper management of solid and liquid waste.

8.3 Contractors Requirements

The contractors should prepare a CESMP to address environmental, social, health and safety issues pertinent to the construction phase of the project. This CESMP is to be submitted to the PIU (through the Supervisory Consultants) for approval prior to the commencement of works. The CESMP should be reviewed at the regional level (with input from the REDO, the RDC's Works Department and, if necessary, the RDC's Environmental Health Department). Once approved, the CESMP is expected to be fully implemented during the construction period. Preparation of the CESMP should be guided by this ESMP, relevant national standards and guidelines including those of the MoE and IDB. The following should be addressed/included in the CESMP:

- **HSSE Policy** – The contractors' Health Safety, Social and Environmental Policy should be included in the Plan. The policy should also address alcohol and drug use, and interactions with local communities and stakeholders.

- **Management Structure** – The CESMP should describe the contractors' staffing structure for the project, clearly highlighting the responsibilities for health, safety, and the environment.

- **Work Programme** – An overview of the contractors' proposed Work Programme, including information on the duration of works, number of workers to be onsite, potential areas for material stockpiles, living arrangements for workers and if applicable, the type and quantity of heavy vehicles that will visit the site. This information will be essential in the review process of the CESMP.

- **Solid Waste Management** – Measures to manage solid waste generated during construction should be described. It should be noted that the Contractor is expected to implement a system to ensure solid waste is management properly. Solid waste expected to be generated includes; cleared vegetation, garbage such as plastic bottles and food boxes, and construction waste such as packaging materials, wood, formwork, etc. Adequate collection receptacles are to be provided onsite and waste should be taken to an approved disposal site. Waste should not be allowed to accumulate in significant quantity onsite for extended period (not more than 30 days) and should be consolidated in a designated area. Reusable construction waste should be separated for reuse. No burning of any type of the wastes generated will be allowed onsite. Workers are to be made aware of the waste management procedures.

- **Liquid Waste/Wastewater Management** - The contractors are expected to provide adequate toilet facilities onsite based on the number of workers. The contractors are also expected to provide toilets facilities for the Supervisory Consultants. The number and type of toilets to be provided, whether portable or toilets equipped with septic tanks should be indicated. Provision of water for the toilets and maintenance of the toilets should also be described, since toilets are expected to be well maintained. Treatment system for wastewater from these facilities should be described such as draining into a soak away system. If portable toilets are to be utilized these will have to be maintained and emptied on a regular basis.

- **Hazardous Waste Management** - The construction works are not expected to generate significant hazardous waste. Hazardous waste generation may be limited to the servicing of heavy equipment onsite and should include waste oil, oil filters and oily rags. If hazardous waste is generated onsite, the waste should be carefully collected and removed from site and disposed of in an approved manner. A register of hazardous waste generated should be kept onsite by the contractors.

- **Hazardous Materials Management** – The Plan should state if hazardous materials will be kept onsite or taken to the site as required. This would include fuel and lubricants. If hazardous

materials are to be kept onsite then the C-ESMP should describe how this will be done. Significant quantity of fuel should be stored within a contained impervious area with all the safety systems in place and workers should be made aware of the handling practices to avoid spills.

- **Erosion and Sedimentation Control** – The C-ESMP should describe measures to be implemented by the contractors to prevent erosion onsite, and sedimentation of nearby drains. Stockpiles of construction materials should be placed away from the drainage systems. Nearby drains should also be regularly checked for accumulation of construction materials and if found to be present the materials should be immediately removed.

- **Dust Control** - There is the potential for dust nuisance to occur which can affect workers and nearby receptors, including students and teachers. Dust can be generated from material transport and stockpiles, as well as construction works such as concrete mixing, cutting of tiles and concrete, etc. As such, the contractors must include in the C-ESMP measures to prevent dust nuisance from occurring. Measures such minimizing the height of sand stockpiles, covering of stockpiles, covering of trucks transporting materials to the sites and providing dust mask to workers should be considered.

- **Noise Prevention** – Construction activities can generate noise at levels which can affect workers and nearby receptors including students and teachers, and in this regard, measures should be outlined to keep noise levels within the prescribed limit. Noise levels should not exceed 90 dB during the day and 75 dB at nights. Night works should be avoided and should be approved in advance by the Supervisory Consultants. The Contractor shall ensure that equipment is in good working order with manufacturer supplied noise suppression (mufflers etc.) systems functioning. Where noise is likely to pose an impact to the teachers and students and nearby residents they should be informed. Workers operating in areas where decibel levels reach more than 85 decibels should use hearing protection.

- **Workers Health and Safety** – Construction activities pose several risks to workers health and safety. It is therefore essential that the contractors develop and implement a system to ensure workers health and safety are not compromised. This should be detailed in the C-ESMP. It should describe management commitment to safety and employees' involvement. An analysis of the worksite in terms of safety, and the potential hazards/risks should be included. Prevention and control measures should be included. Measures which should be considered by the contractors should include the provision and enforcing the use of safety gears by workers, training of workers, identify hazardous areas, use of scaffoldings, etc. Standard Operating Procedures (SOPs) for construction activities such as working on heights, erecting and using scaffolds, using ladders and others identified through the Job Hazard Analysis (JHA) should be prepared. Workers should be trained on SOPs prepared. All safety activities must be documented and all illness/injury and exposure should be documented on an Incident Form. Near misses should also be documented. All incidents /accidents should be investigated and Root Cause Analysis (RCA) done. Precautionary measures to address the COVID 19 pandemic onsite should also be included.

- **Community Safety** – Measures should be implemented to ensure that the safety of the nearby community is not compromised. These measures should also be documented in the C-ESMP. Measures which should be considered by the contractors include restricting access to the construction zone by securing/barricading area, installing the necessary warning signs, ensuring the free flow of traffic around the work site, and at no time should there be trucks or other construction equipment left standing on the road way or shoulders. Traffic management should also be addressed, including access to the site and careful planning when large trucks are accessing the site to allow for minimal disruption.

- **School Safety** – For contractors working on the existing schools, measures should be implemented to ensure that the safety of the school population, including students and teachers, are not compromised. Measures should also be included to ensure minimal disruption of classes.

- **Emergency Preparedness and Response Plan** – An Emergency Preparedness and Response Plan must be included in the C-ESMP to address emergencies relevant to the project. The possible emergencies are:
    - Accidents – can occur which can result in injuries to workers. At least one well stocked First Aid Kit should be provided onsite and arrangements should be in place to transfer serious cases to medical institutions.
    - Fires - Fire extinguishers and/or other response measures must be placed at the working sites and training should be provided on usage.
    - Fuel/Chemical Spills - If there is a large spill or release of solvents, fuels, or other kind of hazardous material, then the EPA should be notified and other measures taken. A spill response kit should be provided and kept onsite and workers should be trained to respond to spills through mock spills exercises.

  The Emergency Preparedness and Response Plan should also address training of employees, assembly point in case of emergency, emergency contacts, communications, responsible personnel, response procedures and incident reporting.

- **Chance Find Procedure** – While the possibility of a discovery of an artifact during construction is extremely low, a Chance Find Procedure should still be in effect and should be implemented if there is a discovery. This should be included to cater for if during excavations archaeological pieces are found. The procedures to be followed should be outlined. The works must be stopped and the National Trust of Guyana should be informed.

- **Training** - Prior to the commencement of works the contractors should conduct an Induction Training for all workers. The training should be conducted by the contractors' ESHS Personnel and covers the environmental and social requirements of the project, including the role of workers in pollution control, health and safety and emergency response. Thereafter, all new workers should be adequately briefed on the requirements prior to commencing work onsite. If necessary, refresher training may be conducted, and supplemented by regular Tool Box sessions. Training should also be provided in any SOPs prepared. Training to be conducted should be described in the C-ESMP.

- **Site Closure, Decommissioning and Restoration** - At the conclusion of works the sites should to be cleaned up and all waste removed and all temporary structures belonging to the contractors dismantled and also removed. The measures to be employed by the contractors during this process should be described in the C-ESMP.

- **Grievances** – A Grievance Mechanism is included in the ESMP (Section 8.6). However, since the Contractor will be responsible for addressing grievances, including implementation of corrective actions, measures to be employed by the Contractor in dealing with grievances should be outlined in the C-ESMP. A separate mechanism to address grievances of construction workers should also be included in the C-ESMP.

- **Monitoring and Reporting** – The C-ESMP should outlined how monitoring will be done by the contractors' ESHS Personnel, including frequency, areas to be monitored, etc.

- **Budget** – A budget for ensuring environmental, social, health and safety compliance, including the implementation of management and mitigation measures, should be presented in the C-ESMP.

8.4 Environmental and Social Monitoring

Monitoring of project activities should be conducted to ensure that the recommended mitigation measures and management practices identified in this ESMP are implemented and effective. This should take place for both the construction and operation phases of the project. The MoE, through the PIU Environmental and Social Specialist, should conduct periodic monitoring during the construction phase of the project. This will require frequent visits to the project sites to conduct monitoring to determine compliance with the environmental, social, health and safety requirements. Monitoring is also expected to be conducted by the Supervisory Consultants to determine the contractors' compliance with the environmental and social requirements of the project. The contractors should also conduct monitoring onsite to ensure their level of compliance. Table 8-2 identifies the recommended criteria to be monitored as well as the frequency and location of monitoring activities.

Table 8-2: Environmental and Social Monitoring During Project Construction

Environmental and Social Criteria	Frequency	Locations
Air Quality ▪ Evidence of dust accumulation and suspended particles through visible observation ▪ Period checks with receptors	Continuous	▪ Around active construction zones ▪ School buildings or facilities most proximate to active construction zones ▪ School boundaries to immediately adjacent land uses
Noise ▪ Decibel levels	Periodically	▪ Around active construction zones ▪ School buildings or facilities most proximate to active construction zones ▪ School boundaries to immediately adjacent land uses
Water Quality ▪ Visual observation for sedimentation and oil and grease	As needed	After periods of heavy rainfall
Waste Management ▪ Compliance with CESMP and waste management practices ▪ Littering and waste accumulation	Weekly	Waste receptacles, disposal sites and active construction sites.
Health and Safety ▪ Use of protective gear by workers	Weekly	Active construction work areas

Environmental and Social Criteria	Frequency	Locations
▪ Adequate and appropriate signage ▪ Location of Emergency Procedures ▪ Availability of emergency response equipment ▪ Health conditions of staff. ▪ Stocked First Aid Kit ▪ Demarcation of construction site ▪ COVID-19 Preventative Measures		
Community Wellbeing/Concerns ▪ Employment ▪ Grievances which may arise ▪ Any emerging issue	Weekly	Communities in which the schools will be constructed, extended, or those to benefit from other interventions

Monitoring activities are not expected to be required intensely after the completion of construction with only monitoring of waste generation. Table 8-3 below identifies the parameters recommended to be monitored as well as the frequency and location of monitoring activities.

Table 8-3: Environmental and Social Monitoring During Project Operations

Environmental and Social Criteria	Frequency	Locations
Solid Waste ▪ Adequate bins are provided ▪ Bins are emptied in a timely manner ▪ Signs of littering and accumulation of waste	Weekly	Within and around school compounds
Waste Water ▪ Septic tanks and grease traps installed and are functioning ▪ Septic tanks and grease traps are cleaned/emptied regularly ▪ Black and grey water are treated and discharged via soak away	Monthly	Waste water discharge areas
E-waste ▪ E-waste is managed in accordance with E-waste guidelines ▪ Damaged components of solar energy systems are disposed of in accordance with best practices.	Annually	All schools

8.5 Reporting

To ensure that the level of ESHS compliance is documented a reporting mechanism should be implemented. Monthly progress meetings are expected to be held at which ESHS matters will be reported on and discussed. In addition, reporting should be done by the PIU, Supervisory Consultants and the contractors.

PIU

An Environmental and Social Compliance Report should be prepared by the Environmental and Social Specialist, documenting the status of compliance, areas of non-compliances, corrective actions recommended and other improvements required. This report should be submitted to the IDB. This report should be prepared at least quarterly, if not monthly.

Supervisor Consultants

The Supervisory Consultants should prepare a monthly report detailing the ESHS performance by the contractors.

Contractor

The contractors should report on environmental compliance at the Monthly Progress Meetings and in the Monthly Progress Reports. The contractors should also report on any environmental or health and safety incidents which might occur. Further, the contractors should be responsible to prepare and submit any report requested by the EPA in the Environmental Authorisation. The contractors are expected to submit a report to the Supervisory Consultants on environmental, social, health and safety performance at least on a monthly basis. The report should include but not limited to the following:

- Environmental incidents or non-compliances observed and corrective actions taken with regards to contract requirements, including waste management, contamination, noise and dust control, traffic management, etc.;
- Health and safety incidents, accidents, injuries and all fatalities that require treatment and actions taken to improve conditions. Information on number of workers, work hours, PPE provided and usage, and worker violations and follow-up actions taken (if any);
- C-ESMP implementation progress, including implementation of the management and mitigation measures outlined in the plan, effectiveness of the measures being implemented, any emerging ESHS issue and any adjustments required (if any); and
- Grievances by workers and community, including grievances received, how resolved, those unresolved and plan for resolving these.

In addition to the monthly report, the contractors should also provide immediate notification to the Supervisory Consultants of incidents in the following categories:

- confirmed or likely violation of any Environmental Authorisation conditions or any relevant legislation;
- any fatality or serious (lost time) injury;
- significant adverse effects or damage to private property, e.g. vehicle accident;
- damage to public utilities; or
- any allegation of sexual harassment or sexual misbehaviour, child abuse, defilement, or other violations involving children.

Full details of such incidents shall be provided to the Project Manager within the timeframe agreed with the Project Manager.

8.6 Stakeholder Engagement

Stakeholder engagements will familiarize local stakeholders with the project's activities, the measures being undertaken to protect the environment, provide a platform for concerns to be raised and to lay the foundation for a positive relationship between the project and the community. The main group of stakeholders to be engaged would be the residents in closest proximity to the school construction site. Stakeholder engagements are critical for projects and or activities which may occur within indigenous territories. The unique political, economic, social and cultural structures of indigenous peoples should be taken into consideration when developing stakeholder engagement activities. It is essential to inform leaders in indigenous villages of the works to be undertaken under the project so that they may meaningfully contribute to project activities. Stakeholder engagement with Village Councils should be to initiate and open dialogue on project activities, to foster involvement and identify issues and possible solutions face by stakeholders; and to provide stakeholders with a platform to make recommendations about possible water supply improvement solutions which may be financed under the project. These engagements will also allow village leaders to communicate to the contractor the community rules, norms, practices and expectations. Stakeholders should be engaged prior and during construction at the schools. A Stakeholder Engagement Plan is prepared as a separate document for the project.

8.7 Grievance Redress Mechanism

The main objective of the Grievance Mechanism (GRM) is to assist the project to resolve complaints and grievances in a timely, effective and efficient manner that satisfies all parties involved. Specifically, it provides a transparent and credible process for fair, effective and lasting outcomes. It also builds trust and cooperation as an integral component of broader community consultation that facilitates corrective actions.

Specifically, the GRM:

- Provides affected people with avenues for making a complaint or resolving any dispute that may arise during the course of the implementation of projects; and
- Ensures that appropriate and mutually acceptable redress actions are identified and implemented to the satisfaction of complainants.

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Considering the multiple stakeholders, the project activities could lead to complaints, misunderstandings, conflicts and disputes. As such, the project needs to develop a grievance mechanism that would provide all direct and indirect beneficiaries, service providers and other stakeholders the opportunity to raise their concerns. Stakeholders should be informed of the grievance mechanism in place, as well as the measures put in place to protect them against any reprisal for its use. This should be done during interactions with stakeholders.

8.7.1 GRM Process

The PIU/MoE should be responsible for taking the following steps once a grievance/complaint has been registered:

I. Receiving and registering grievances and complaints

In the absence of the PIU, the Assistant Chief Education Officer – Primary should be responsible for receiving and registering grievances and complaints via the methods provided. Once the PIU is established the Environmental and Social Personnel should oversee the GRM, including receiving and registering grievances and complaints. All grievances and complaints should be recorded in a register maintained by the PIU. The register should also record other information on the grievance received, such as name, affiliation, and contact information if available (see Annex II). Grievances received at public consultations should be reflected in the minutes and as well as in the register. Grievances received during public consultations, meetings, and outreaches should be acknowledged in the minutes. Grievances received via the PIU telephone line, designated GRM email address, and written correspondence should be acknowledge by written reply to complainant where contact information is provided. Anonymous grievances should be received and recorded by the PIU through the dedicated email address or telephone line and follow the standard grievance redress process thereafter. For the purpose of recording the grievances, anonymous can be allocated an identification number to help the PIU track and record the grievance to ensure it is processed effectively.

II. Identifying, and outlining of grievances

The PIU should be responsible for identifying and outlying the grievance or complaint within the scope of the project. This exercise will ensure that the grievance is properly understood and presented for assessment and redress. Establishing the validity of grievances (i.e. is it a project-related grievance) is a necessary step in the GRM process, so that valuable project resources are not wasted or misappropriated. Once that validity of the grievance has been established, it should be moved to the next step of the GRM. However, if the PIU finds that the registered grievance has no relevance to the project, it should be filed away for future reference (with justification and supporting evidence) as a

grievance that is not related to the project and no further follow up will be required by the PIU. This process should occur within the first two days of receiving the initial complaints, including the initial acknowledgement of grievances.

III. Analysis and assign responsibility of the grievance/complaints

Once the grievance has been identified and outlined within the scope of the project, it should then be analysed to address the concerns of the grievance. Once the main issue has been identified, and analysed, there should be a general consensus on how to move forward with the project, and the possible method of implementation of the recommendations. This process should occur within five to seven days to ensure that there is a prompt response and action on the grievances. This would allow for grievances that require the urgent action by the project be addressed in a timely manner, so there is no delay in the implementation of feedback if such course of action that is required.

IV. Proposed Response

The Environmental and Social personnel should review the grievance, discuss with the complainant, and a proposed possible response to the grievance should be put forward. This should be done within the scope of the project, while maintaining the aims and objectives of the project components identified. The proposed response should also be done within a reasonable time to ensure that any changes are made efficiently.

V. Agreement On Response

The aim is for there to be a general consensus with the complainant on the response and actions to be taken. If an agreement is reached, the agreement should be implemented. If no agreement is reached, then the case should be reviewed.

VI. Update on the grievances/complaint resolution is effectively communicated to the complainant in fourteen days after the initial acknowledgement of grievance or timely manner that is deemed reasonable,

Grievances received from indigenous persons should be addressed using the project's standard operating procedures and timeline. Some of the hinterland locations are without access to internet and telephone services. In these situations, grievances should be received through the Village Council, either in writing or orally. The grievances can then be passed to the PIU via an open communication line with the Village Council or during site visits by the PIU Environmental and Social Personnel.

Monthly case/ grievance reports should be generated from the system by PIU's Environmental and Social personnel and reported to the Project Coordinator to inform management decisions as part of the reporting system. Periodic reports should also be generated within a reasonable time frame for stakeholders upon request irrespective of the period.

To aid the effectiveness of the grievance mechanism, the Environmental and Social Personnel should be the designated person responsible for overseeing the implementation of the GRM. There should also be a telephone number and email address to receive and document the concerns of the stakeholders. The personnel and contact information of the personnel to be involved in managing the GRM will be determined once the PIU is established.

In addition to the project's GRM, subprojects such as the schools' construction will be required to prepare and implement a site level GRM. This GRM should be included in the contractor's Environmental and Social Management Plan.

The GRM process is activated upon the receipt of a grievance. Grievances are to be received either in writing (printed), or through e-mails/telephone calls/text messages. Each grievance should then be recorded in the grievance log, citing the name of the complainant, date of submission, and particulars of the grievance. However, the complainant can also request confidentiality or to remain anonymous. The Assistant Chief Education Officer (Primary)/Environmental and Social personnel should review the grievance to determine its merit and proceed to investigate. After submission of the grievance, the complainant should be notified in writing on the status of the grievance and the next steps. Once a grievance is satisfactorily settled this should be indicated in the logbook and the grievance should be considered addressed. If no amicable solution is reached, or the affected person does not receive a response, the affected person should be able appeal to the MoE directly. A recommended procedure for resolving a grievance is further detailed in Table 8-4. This can be adopted by the MoE and adjusted once project implementation commences.

Table 8-4: Grievance Redress Procedures

GRIEVANCE PROCEDURES	TIMELINE
Receiving and registering the complaint.	1 day
Determine merit of the complaint and acknowledgement of complaint	2 days
Investigation of complaint	5 days
Determination (and approval) of appropriate solution/response	1 day
Communication on the resolution back to the complainant	1 day
Receive and acknowledgement of appeals by aggrieved party (where solutions are not satisfactory)	2 days
Activate arbitration mechanisms where necessary	1 week
Resolution of Issue	1 week
Updating of Grievance Log	1 day

8.7.2 Site Level GRM

It is envisaged that any potential grievances arising from the construction activities will be localized. As such, to ensure that the process is effective, a site level mechanism to address such grievances should be put in place.

The grievance redress mechanism should be coordinated by the contractors who should act as a point of contact to receive complaints and work to address all grievances in a timely, effective and satisfactory manner, and to foster positive engagement when issues arise. Information on the grievance mechanism, including contact person and contact information should be shared with stakeholders, including the schools' administration, in particular the nearby community through notices. These can be posted at the site and at public places within the community.

The following is an outline of actions that should be taken once grievances resulting from the execution of works is received:

- The Supervisory Consultants Project Manager, along with the Contractor's Project Manager/ESHS Personnel, should investigate the reported grievances to determine the validity of a complaint and cause for the grievance;
- It should then be determined whether grievance can be resolved by the Project Team or whether outside authorities with regulatory or other responsibilities and relevant skills are to be consulted;
- Or it should be determined if corrective actions are to be taken by the Contractor and what those actions are;

- The Supervisory Consultants Project Manager should prepare a grievance report, including supporting materials such as photographs. If necessary, a clear list of tasks and outcomes expected shall be developed;
- If grievance is the fault of the Contractor, then the Contractor is to implement corrective action immediately.
- The Supervisory Consultant Project Manager, along with the Contractor's Project Manager/HSSE Personnel should conduct follow-up inspection to monitor the situation and determine whether problem is likely to recur and put measures in place to prevent recurrence.

A register of grievances received should be maintained by the contractors and should include information such as date of complaint, by whom, nature of grievance, date investigated and by whom, validity and corrective action required, timeline for implementation of corrective action, and if the grievance was satisfactorily addressed or not. A monthly review on the status of grievances received/addressed should be conducted by the Supervisory Consultants

8.7.3 Addressing GBV/SEA/SH related Grievances

In addition to the project level GRM, a safe and ethical process for reporting, investigating, and addressing allegations of Gender Based Violence, Sexual Exploitation and Abuse and Sexual Harassment (GBV/SEA/SH) should be established. The PIU Environmental and Social Specialist should be responsible for dealing with any GBV/SEA/SH. GBV/SEA/SH cases should be logged by the PIU Environmental and Social Personnel and survivor's/victims information should be protected by using codes to maintain confidentiality. Specifically, the GRM should only record the following information related to the GBV/SEA/SH complaint:

- The nature of the complaint (what the complainant says in her/his own words without direct questioning).
- If, to the best of their knowledge, the perpetrator was associated with the project; and, if possible, the age and sex of the survivor.
- Any cases of GBV/SEA/SH brought through the GRM should be documented but remain closed/sealed to maintain the confidentiality of the survivor. Here, the GRM should primarily serve to:
    - Refer complainants to the GBV/SEA/SH services provider; and
    - Record the resolution of the complaint
- The PIU should also immediately notify both the MoE and the IDB of any GBV/SEA/SH complaints with the consent of the survivor/victim. If there is an anonymous compliant, the PIU should share information on the case with the IDB providing a code number to the case and avoiding disclosing any information that could help to identify the survivor. Notifications should be made to the Bank in line with the confidentiality approach.
- Assistance should be provided to GBV/SEA/SH survivors/victims by referring them to GBV/SEA/SH services provider for support immediately after receiving a complaint directly from a survivor/victim, prior to the survivor consent, and in case they are interested in them.

8.7.4 Grievances relating to Indigenous Peoples

Indigenous communities within Guyana will also benefit from the project. These communities are mainly located in Regions 1, 7, 8, and 9. To address any grievances relating to Indigenous communities the established system for these communities should be utilized to ensure the process is culturally appropriate and accessible to affected Indigenous population, and takes into account the customary dispute settlement mechanisms within these communities. The Ministry of Amerindian Affairs has identified the avenues outlined below for dealing with complaints from Indigenous communities. Based on the nature and level of the grievance, the appropriate mechanism should be utilised.

- District Council, composed of all Toshaos from the district along with one representative from each Village Council in the district;
- Community Development Officer: located at a district level and responsible for intermediating between Amerindian communities and the Ministry of Amerindian Affairs;
- The National Toshaos Council: comprising all elected Toshaos in the country; or
- Complaints can also be filed directly with the Ministry of Amerindian Affairs.

8.7.5 Workers Grievance Mechanism

For project workers, a separate GRM should be established to facilitate the complaints and concern for all project staff. This should be prepared by the contractor and should form part of the contractors' ESMP.

CONCLUSION

The Support for Educational Recovery and Transformation Project will provide for infrastructure improvement and provision of equipment to support the transformation of the primary education sector to ensure that the country has the required human capital to manage and drive economic growth and diversification. The project will finance the construction of six new primary schools at Huradiah/Cabora (Region 1), Recht door Zee (Region 3), Tuschen (Region 3), Little Diamond (Region 4), Tabatinga (Region 9) and Wisroc (Region 10, and the extension, rehabilitation or retrofitting of at least nineteen existing primary schools mainly in the hinterland regions. The project will provide more qualified staff to design and monitor the construction and rehabilitation of schools and technical assistance to prepare designs for schools that will be included in the second operation for either construction, rehabilitation or expansion. The project will also provide the enabling conditions (connectivity, devices, and capacity building) and pedagogical support to improve the learning environment by integrating digital technologies. The project will also strengthen the Regional Special Needs Education Center in its work to support the mainstreaming of students with disabilities and learning difficulties and contribute to providing better education services in the schools. However, final determinations on the scope of the project are still to be made. The potential schools and communities to benefit from the project are scattered across the country, but mostly in the hinterland regions, i.e., Regions 1, 3, 7, 8 and 9. Regions 1, 7, 8 and 9. consist of significant indigenous populations.

According to the IDB's classification, the project is classified as Category B, which means it is likely to cause mostly local and short-term negative environmental and associated social impacts and for which effective mitigation measures are readily available. As such, it was determined that an ESA and ESMP be prepared to assess the potential negative environmental and social impacts associated with the project's interventions and in particular the construction activities and to identify measures of prevention and mitigation.

This ESA assessed the potential impacts of project activities across the various components of the project. The project is not complex and most of the impacts will occur during the construction phase and are short term, localised, and are low to medium risks. Most of the direct impacts can occur within the school environment itself. Impacts relating to the wider community are mainly relevant to schools located within indigenous communities, or where the new schools construction and extension will be done. Importantly, no Critical Risks were identified to be associated with pre-mitigation impacts of the project.

Although the project scope is not yet finalized, a comprehensive ESMP was prepared and outlines measures which should be implemented during the planning, construction and operational phases of the project to mitigate and manage the ESHS risks.

In addition, measures to maximise the positive impacts of the project were also identified. Further, provisions have been made and guidance provided for detailed management measures to be determined and implemented during the pre-construction and construction phases, and as part of the CESMP.

Implementation of the recommended management and mitigation measures during pre-construction, construction and operational phases will ensure that potential project impacts are prevented or reduced. The scheduling of the actual works during term breaks, or at least outside normal school hours will greatly prevent most of the impacts from occurring. Importantly, the contractors should prepare the CESMP and the implementation of this plan should be stringently monitored by the MoE. The relevant stakeholders should be kept informed of the project and allowed the opportunity to provide feedback and recommendations. This is especially important in indigenous communities. The mechanism to address grievances should also be implemented.

Once the recommended measures are implemented during the project execution it is envisaged that any potential adverse impacts will be prevented or reduced, thereby enabling the project to positively benefit the environment and the community. Implementation of the project will contribute positively to the improvement of primary education in Guyana, especially in the beneficiary communities. As such, the project has been welcomed by all stakeholders engaged during the ESA and ESMP preparation process.

REFERENCES

Bhaleka Seulall. 2013. Presentation on Drought Monitoring in Guyana.
Available at: http://drought.unl.edu/archive/Documents/NDMC/Workshops/13/Pres/Seulall.pdf

Bureau of Statistics, 2012. Population and Household Census 2012 Report

Central Housing and Planning Authority. 2015. Annual Report. Accessed at: https://parliament.gov.gy/documents/documents-laid/9577-annual_report_of_the_central_housing_and_planning_authority_for_the_year_2015.pdf.

Civil Defence Commission. 2013. Multi-Hazard Disaster Preparedness and Response Plan

Civil Defence Commission. 2013. National Integrated Disaster Risk Management Plan and Implementation Strategy for Guyana

Daniel, J.R.K., 1984. Geomorphology of Guyana. An integrated study of the natural environment. Occasional Paper No.6. Department of Geography, University of Guyana

Department of Public Information. 2020. Kariako Residents Enjoy Improved Water Access. Accessed at: https://dpi.gov.gy/kariako-residents-enjoy-improved-water-access/

Environmental Protection Agency. 2014. National Biodiversity Strategy and Action Plan 2012-2020.

Environmental Protection Agency. 2022. Guidelines for the Preparation of Environmental Assessment and Management Plans

Food and Agriculture Organization of the United Nations, 2005. Global Forest Resources Assessment.

Government of Guyana. 1980. Constitution of the Co-operative Republic of Guyana 1980, as amended to 2016 (English).

Government of Guyana, 1997. National Development Strategy. Volume 3: Chapters 18, 20 and 22.

Government of Guyana. 2012. Second National Communication to the United Nations Framework Convention to Climate Change. Available at: https://climatechange.gov.gy/en/index.php/resources/documents/18-second-national-communication-to-the-unfccc/file

Government of Guyana, 2013. National Land Use Plan (Draft).

Government of Guyana. 2014. Draft Climate Resilience Strategy and Action Plan. Available at: https://www.lcds.gov.gy/index.php/documents/reports/national/self-assessment-and-action-plan/262-climate-resilience-strategy-and-action-plan-for-guyana/file

Government of Guyana. 2016 Guyana Country Cooperation Strategy 2016 – 2020
Retrieved from:
https://www.paho.org/guy/dmdocuments/FINAL%20CCS%20December%20%2031%2001%202017%20-%20Final-15%20Feb%202017.pdf

Government of Guyana. 2021. Guyana's Low Carbon Development Strategy 2030. Draft for Consultation

Accessed at:
https://lcds.gov.gy/wp-content/uploads/2021/10/LCDS-2030-Final-DRAFT-for-consultation-min.pdf

Guyana Chronicle. Facts about Moruca (2016)
Accessed at: https://guyanachronicle.com/2016/07/27/facts-about-moruca/

Guyana Chronicle, Patentia – A Peaceful, budding Community (2019). Accessed at: https://guyanachronicle.com/2019/08/25/patentia-a-peaceful-budding-community/

Guyana Chronicle. Welcome to Moruca, Gem of Region One (2020)
Accessed at: https://guyanachronicle.com/2020/01/13/welcome-to-moruca-gem-of-region-one/

Guyana Chronicle. Wisroc Village. March 2021.
Accessed at: https://guyanachronicle.com/2021/03/28/wisroc-village/

IDB. 2019. Disaster Risk and Climate Change Vulnerability Assessment for Georgetown

IDB. 2020. Environmental and Social Policy Framework
Accessed at: https://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=EZSHARE-110529158-160

IDB. 2020. Environmental and Social Performance Standards and Guidelines.
Accessed at: https://www.iadb.org/en/mpas/guidelines

Intergovernmental Panel on Climate Change. 2014. AR5 Climate Change 2014: Impacts, Adaptation and Vulnerability, Chapter 27. Available at: https://www.ipcc.ch/report/ar5/wg2/

Intergovernmental Panel on Climate Change. 2018. Summary for Policy Makers of the Special Report on 1.5°C of Global Warming. Available at:
http://www.climatechange2013.org/images/report/WG1AR5_SPM_FINAL.pdf

Khan, Dr. Joseph Ishmael, 2022. Institutional Capacity Assessment – Ministry of Education Guyana, Support for Educational Recovery and Transformation (GY-L1079)

Lenderink, G and Meijgaard, E. 2010. Linking Increases in Hourly Precipitation Extremes to Atmospheric Temperature and Moisture Changes. Available at:
https://iopscience.iop.org/article/10.1088/1748-9326/5/2/025208/pdf

Mayor &Town Council. 2018. Lethem Municipal Town Development Plan (2018 – 2023).

McSweeney,C; New, M; Lizcano, G, 2010. UNDP Climate Change Country Profiles Guyana.

Ministry of Education, 2021. Education Sector Plan 2021 – 2025

Ministry of Education, undated. Non-Academic Education Standards

Stabroek News. Belle West. June 17, 2018.
Accessed at: https://www.stabroeknews.com/2018/06/17/sunday/beyond-gt/belle-west/

Stabroek News. Tabatinga. May 08, 2011.
Accessed at: https://www.stabroeknews.com/2011/05/08/features/tabatinga/

Stabroek News Reflections on conventional Education and Indigenous people in Guyana. September 02, 2019.
Accessed at: https://www.stabroeknews.com/2019/09/02/features/in-the-diaspora/reflection-on-conventional-education-and-indigenous-people-in-guyana/

UNESCO. 2021. Listening to the voices of indigenous peoples is the only way to protect people and planet –Spotlight on Guyana
Accessed at: https://www.unesco.org/en/articles/listening-voices-indigenous-peoples-only-way-protect-people-and-planet-spotlight-guyana

UNICEF Guyana. 2017. Study on Indigenous Women and Children
Accessed at: https://www.unicef.org/guyanasuriname/media/451/file/SitAn-Indigenous-women-children-in-Guyana.pdf

United Nations Sustainable Development Goal.
Accessed at: https://sdgs.un.org/goals

UN General Assembly. 2007. United Nations Declaration on the Rights of Indigenous Peoples A/RES/61/295.
Availabel at: https://www.un.org/development/desa/indigenouspeoples/declaration-on-the-rights-of-indigenous-peoples.html

US Army Corp of Engineers. 1998. Water Resources Assessment of Guyana

US Department of Labour, Occupational Safety and Health Department, undated. Occupational Noise Exposure.
Available at: https://www.osha.gov/noise

US Department of Labour, Occupational Safety and Health Department, undated. Permissible Exposure Limits. OSHA Annotated Table Z-1.6.
Available at: https://www.osha.gov/annotated-pels

USGS. 2018. Report on Seismic Hazard, Risk and Design for South America
Accessed at: https://www.usgs.gov/news/featured-story/usgs-authors-new-report-seismic-hazard-risk-and-design-south-america

World Wildlife Fund (WWF) - Guianas, 2012; Wetlands of Guyana – An insight into the ecology of selected wetlands with recommendations from WWF-Guianas.

APPENDICES

Appendix A – Terms of Reference for the Consultancy

IDB Inter-American Development Bank

Single Source Selection *Selection process #::::::::*

TERMS OF REFERENCE

Consulting Services for the Preparation of Environmental and Social Documents for Support for Educational Recovery and Transformation for Guyana project GY-L1079

1. **Background and Justification**

The Government of Guyana is preparing a program to support the transformation of the education sector to ensure that the country has the required human capital to manage and drive economic growth and diversification. This will be done under a Conditional Line of Credit for Investment Projects known as a CCLIP. The first operation under that CCLIP has the following objectives:(i) to contribute to educational recovery by reducing drop-out and learning losses caused by the COVID-19 pandemic; and (ii) to lay the foundations for a transformation of the educational sector in the medium to long term; ensuring that all students develop the skills needed for success.

The program is comprised of 4 components: Component 1: Accelerated Learning, Skill Development, and Support for Students at Risk (US$6 million, Component 2: Digital Transformation (US$8million), Component 3: School infrastructure improvements (US$8million), Component 4: Improved Sector Management (US$2million).

Component 3 is the only component that will include infrastructure construction. The objective of this component is to ensure a positive learning environment in primary schools, incorporating climate sustainability and resilience criteria (promoting energy and water efficiency, the usage of building materials with low embodied energy, and retrofitting infrastructure to be climate-resilient). The component will finance a) an audit of existing water and energy availability and usage in primary schools; b) the installation and upgrading of potable water systems and power sources following energy and water efficiency criteria in a first group of primary schools; and c) upgrading of school infrastructure to include safe storage spaces for technology.

These terms of reference refer to the tasks that the environmental and social consultants will perform to prepare the instruments for identifying and managing potential negative socio-environmental impacts and socio-environmental risks that could arise from the works of the Program.

The Social Sector (SCL) is a multidisciplinary team convinced that investing in people is the way to improve lives and overcome the development challenges in Latin America and the Caribbean. Jointly with the countries in the region, the Social Sector formulates public policy solutions to reduce poverty and improve the delivery of education, work, social protection, and health services. The objective is to advance a more productive region, with equal opportunities for men and women, and greater inclusion of the most vulnerable groups.
The IDB Group helps Latin American and Caribbean countries promote skills development and lifelong learning as a strategy to ensure that citizens can contribute productively to

society, improve their well-being, and be good citizens. To this end, it works with the countries of the region in five lines of action:

(i) ensure that people have equitable access to relevant, high-quality learning opportunities throughout their lives;
(ii) strengthen quality and relevance assurance mechanisms;
(iii) consolidate and develop better financing and co-financing mechanisms to improve the efficiency, effectiveness, and coverage of skills development opportunities;
(iv) take advantage of the use of technology to increase equity and access to skills development opportunities and improve the efficiency of skills development systems; and
(v) actively promote the generation and use of evidence to inform decisions about skills development.

2. Objectives

The objective of this consultancy is to prepare, in conjunction with the Borrower, the Environmental and Social Management System (ESMS) and appropriate social and environmental management tools for compliance with the requirements set forth in the Bank's Environmental and Social Policy Framework (ESPF) and Environmental and Social Performance Standards (ESPS) 1 to 10, including the Environmental and Social Assessment (ESA), and Environmental and Social Management Plan required for the identification of environmental and social risks and impacts of the Project. The consultancy should determine the need for a Socio-Cultural Analysis and Resettlement Plan or Livelihood Restoration Plan.

3. Scope of Services

a) Conduct a gap identification analysis in relation to compliance with SDGs 1 to 10 to serve as input for the Bank, together with the Borrower, to define the Environmental and Social Action Plan (ESAP) for the Bank and the Borrower.
b) Prepare an ESA and ESMP for the Program, based on the documents to be provided by the Executing Agency, along with a Social-Cultural Analysis, Indigenous Peoples Framework, Consultation, and Stakeholder Communication Plan.
c) Prepare the Environmental and Social Management Framework (ESMF) for the other operations.
d) Conduct meetings with the Executing Agencies to learn about the works to be carried out, as well as the beneficiary populations of the program.

4. Key Activities

For a full description of needed activities per type of documentation to be developed under this consultancy please refer to all Annexes of the present TORs.

5. Expected Outcome and Deliverables

This consultancy required the consulting firm to work to the following items not limited to:

a) Environmental and Social Analysis with its respective Environmental and Social Management Plan and Consultation Plan.

b) Socio-Cultural Analysis, an advanced draft of the Indigenous Peoples Framework and Stakeholder Communication Plan/Framework.
c) Environmental and Social Management Framework.

6. Project Schedule and Milestones

The consultancy duration is 4 months.
Estimated begin date of May 15, 2022, up to December 15, 2022

7. Reporting Requirements

Deliverable	Timeline
Workplan	1 weeks after signature of contract
Draft ESA, ESMP, and consultation plan	4 weeks after signature of contract
Draft Report Indigenous People Framework, social cultural analysis, stakeholder engagement plan, and ESMF.	8 weeks after signature of contract
Final report of the ESA, ESMP, and Consultation Plan and accompanying documents with a presentation to MOE and IDB	12 weeks after signature of contract
Final report of Indigenous people Framework, social cultural analysis, stakeholder engagement plan, and ESMF accompanied by a presentation to MOE and IDB.	14 weeks after signature of contract

- All reports are to be submitted in English
- All reports are submitted in electronic format (both word and PDF for final reports)

8. Acceptance Criteria

The reports will be reviewed and accepted by the IDB team according to the guidelines outlined in the annexes.

9. Other Requirements

This consultancy requires the consulting firm to assign personnel according to the following criteria:

- Academic background and Years of Professional Experience: Environmental Engineer /Anthropologist/ Social Specialist with experience in infrastructure, or related branches, with a minimum of 10 years of professional experience.
- Languages: English (knowledge of indigenous languages in Guyana would be an asset).

- Areas of Expertise in civil engineering, environment, water resources, risk management, sociology, indigenous peoples, biology, industrial hygiene and safety, climate change.
- Skills:
    - Previous experience with the IDB or other multilateral agency in infrastructure operations.
    - Experience preferably in road sector infrastructure, and solid knowledge in managing the implementation of the IDB Environment and Safeguards Compliance Policy, and international good practices and standards that apply to this type of operations highly desired.
    - The ability to identify and manage the social aspects of infrastructure projects (including indigenous peoples' issues) will also be an asset.

10. Supervision and Reporting

Division Leader or Coordinator: This consultancy is under the supervision and coordination of Sabine Rieble-Aubourg, *Sector Principal Specialist in Education* (SCL/EDU) (sabinea@iadb.org); with support and other coordination with Soraya Senosier, *Social Specialist* (VPS/ESG) (sorayas@iadb.org) in technical and ESPF related matters.

11. Schedule of Payments

This consultancy will present invoices according to the following payment structure:

- 20% upon submission of the work plan, and schedule of activities.
- 20% upon delivery and acceptance of the draft ESA, ESMP, and Consultation Plan.
- 20% upon delivery and acceptance of the draft Indigenous people Framework, Social Cultural Analysis, Stakeholder Engagement Plan, and ESMF.
- 20% upon delivery and acceptance of the final versions of the ESA, ESMP, and Consultation Plan and accompanying documents
- 20% upon delivery and acceptance of the final versions of Indigenous people Framework, Social Cultural Analysis, Stakeholder Engagement Plan, and ESMF.

Appendix B – Additional Information on Stakeholders Engagement

Kariakau Primary School

The following persons were engaged on June 07, 2022 during the conduct of the ESA:

1. Mr. Rabindra Singh – Assistant Chief Education Officer (Primary), Ministry of Education
2. Mr. Martin De Souza – Deputy Chief (Amerindian and Hinterland Education Development), Ministry of Education
3. Mr. Gewan Dookie – Education Officer, Ministry of Education
4. Mr. Collis Saouls – Toshao, Kariakau Village Council
5. Mr. Wayne Wilson – Vice Toshao, Kariakau Village Council
6. Mr. Michael Fredericks – Chairperson, Parents Teachers Association
7. Mr. Mark Boyal – Teacher in Charge, Kariakau Primary School
8. Mr. Devon Frederick – Community Social Officer



Engagement with Kariakau Village Council and School Representatives





Assessment of the Proposed Site for School Extension

Belle West Primary School

The following persons were engaged on May 31, 2022 during the conduct of the ESA:

1. Mr. Rabindra Singh – Assistant Chief Education Officer (Primary), Ministry of Education
2. Mr. Akbar Chindu – Regional Education Officer (Region 3), Ministry of Education
3. Ms. Parbatie Allie – Head Mistress, Belle West Primary School
4. Ms. Omalara Blenman – Senior Mistress, Belle West Primary School
5. Mr. Yogieraj Das – Chairman, Neighbourhood Democratic Council (NDC)
6. Mr. Trevor Lawrie – Superintendent of Works, NDC



Engagement with Key Stakeholders at Belle West Primary School





Assessment of the Proposed Site for School Extension

Recht door Zee

The following persons were engaged on May 31, 2022 during the conduct of the ESA:

1. Mr. Rabindra Singh – Assistant Chief Education Officer (Primary), Ministry of Education
2. Mr. Akbar Chindu – Regional Education Officer (Region 3), Ministry of Education
3. Mr. Mitrum Muhan – NDC Councillor



Engagement with Key Stakeholders and Assessment of the Proposed Site for School



Engagement with Key Stakeholders and Assessment of the Proposed Site for School

Tuschen

The following persons were engaged May 31, 2022 during the conduct of the ESA:

1. Mr. Rabindra Singh – Assistant Chief Education Officer (Primary), Ministry of Education
2. Mr. Akbar Chindu – Regional Education Officer (Region 3), Ministry of Education
3. Mr. Shivnarine Sarjoo – Superintendent of Works, NDC





Engagement with Key Stakeholders and Assessment of the Proposed Site for School

Tabatinga

The following persons were engaged on June 09, 2022 during the conduct of the ESA:

1. Mr. Rabindra Singh – Assistant Chief Education Officer (Primary), Ministry of Education
2. Mr. Sherwyn Blackman – Regional Education Officer (Region 9), Ministry of Education
3. Mr. Bryan Allicock – Regional Chairperson, Region 9
4. Mr. Bertie Xavier- Regional Vice Chairperson, Region 9
5. Ms. Althea Fitzpatrick – Assistant Regional Executive Officer
6. Mr. Noel August – Superintendent of Works, Regional Democratic Council, Region 9
7. Mr. John Macedo – Mayor of Lethem
8. Ms. Megan Thomas – Councillor, Lethem Town Council
9. Mr. Fitzgerald Singh – Councillor, Lethem Town Council
10. Ms. Indira Singh – Councillor, Lethem Town Council
11. Ms. Keisha Vincent – Town Clerk
12. Amzad Khan - Resident
13. Leroy Ignacio - Resident
14. Erin Earl - Resident



Engaging with Government Officials and other Stakeholers





Engaging with Stakeholders at the Project Site





Engaging with the Residents Neighbouring the Project Site

Wisroc

The following persons were engaged on June 03, 2022 during the conduct of the ESA:

1. Mr. Rabindra Singh – Assistant Chief Education Officer (Primary), Ministry of Education
2. Mr. Nichola Matthews – Regional Education Officer (Region 10), Ministry of Education
3. Ms. Shivon Greene Brewster – Education Officer, Ministry of Education
4. Mr. Deron Adams – Regional Chairman, Region 10
5. Mr. Dwight John – Regional Executive Officer, Region 10
6. Mr. Mark Gowing - Councillor Responsible for Wisroc, Regional Democratic Council
7. Ms. Carol Benjamin – Chairperson, Education Committee, Regional Democratic Council
8. Mr. Gavin Clarke – Civil Engineer, Regional Democratic Council



Engaging with Government Officials and other Stakeholders



Engaging with Government Officials and other Stakeholders





Engaging with Stakeholders and Conducting Site Assessment at the Project Site

Hosororo Primary School

The following persons were engaged on September 02, 2022 during the conduct of the ESA:

1. Mr. Rabindra Singh – Assistant Chief Education Officer (Primary), Ministry of Education
2. Sharlene Jeffery - Headmistress
3. Seretse Caraington - Cadet Officer/Regional Education Official
4. Lawerance Beharry – CDC Councillor
5. Diana Samuels - Teacher/CDC Councillor
6. Gabriela Govalla - Teacher
7. Gertrude David - Teacher
8. Melanie Torres - Teacher
9. Trovona Flores - Teacher
10. Shanlani Romasindo - Teacher/Parent
11. Joyclyn Gouvaia - Teacher/Parent
12. Jeanette Thomas - Teacher/Parent
13. Shaneeza Spencer-Flores - Parent
14. Heidi Samuels - Parent
15. Norelyn Wells - Parent
16. Celeste Cedino - Security Guard



Engagement with Key Stakeholders at Hosororo

Huradiah/Cabora

The following persons were engaged on March 03, 2023 during the conduct of the ESA:

1. Hon. Priya Manickchand - Minister of Education
2. Anasha Peters - Regional Vice Chairman, Regional Democratic Council
3. Devindra Bissoon - IDB Officer
4. Marti DeSouza - Deputy Chief Education Officer - Hinterland, Ministry of Education
5. Rabindra Singh - Assistant Chief Education Officer - Primary, Ministry of Education
6. Elly Pztertin - Regional Education District Officer, Ministry of Education, Region 1
7. Basil Gorueluis - Assistant Regional Education Officer, Regional Democratic Council
8. Charlene Ramhama - Education Officer, Ministry of Education, Region 1
9. Tricia Rodrigues - Village Councillor, Santa Rosa Village
10. Deanna Savory - Community Support Officer
11. Herminia Relieceico - Head Teacher, Santa Rosa Primary School
12. Mark Puranran – Manager, IECS
13. Ralph Correia – Resident, Acquero
14. Maxim Campbell– Resident, Acquero
15. Susan Thomas – Resident, Acquero
16. Roy Atkinson – Resident, Acquero
17. Jheda Rodrigues – Resident, Acquero
18. Susan Rodrigues – Resident, Acquero
19. Jeanette Fredricks – Resident, Acquero
20. Pamella Watson – Resident, Cabora
21. Patsy Gonyers – Resident, Cabora
22. Shemise Boyers – Resident, Cabora
23. Kimberley Domingo – Resident, Cabora
24. Kate Joseph – Resident, Cabora
25. Janice Anthony – Resident, Cabora
26. Romoria John – Resident, Cabora
27. Galena Emyliah – Resident, Cabora
28. Leamma Campbell – Resident, Cabora
29. Analisa France – Resident, Cabora
30. Zelina Abraham – Resident, Cabora
31. Magdeeden Jose – Resident, Cabora
32. Donna Francis – Resident, Upper Cabora
33. Lindy Domingo – Resident, Upper Cabora
34. Garvin Domingo – Resident, Upper Cabora
35. Margrate Sawou – Resident, Huradiah
36. Delina Chappelle– Resident, Huradiah
37. Farina John – Resident - Huradiah
38. Garina La Rose – Resident, Huradiah
39. Evelyn Roberts – Resident, Huradiah
40. Guanite Phillips – Resident, Huradiah
41. Veronica Mooney – Resident, Huradiah
42. Natashia La Rose – Resident, Huradiah
43. Pamella La Rose – Resident, Huradiah
44. Francine Domingo – Resident, Huradiah
45. Sharon Harris – Resident, Huradiah
46. Norma Jacob – Resident, Huradiah
47. Derizel La Rose – Resident, Huradiah
48. Mark La Rose – Resident, Huradiah
49. MacPherson Stoll – Resident, Huradiah

50. Camtley Edmorchan – Resident, Huradiah
51. M. Vansluyter – Resident, Huradiah
52. Gwendolyn Abrams – Resident, Huradiah
53. Pamela Mendonca – Resident, Huradiah
54. Thyaumih Joseph – Resident, Huradiah
55. Deckel Castella – Resident, Huradiah
56. Wendy Viverios – Resident, Huradiah
57. Mariela James – Resident, Huradiah
58. Camille Campbell – Resident, Huradiah
59. Naomi Viverios – Resident, Koko
60. Vurno Viveiros – Resident, Koko
61. Wanda Abraham Henry – Resident, Koko
62. Jude Peters
63. Renaldo Francis
64. Dharan Campbell
65. Gwylili La Rose
66. Tricia Domingo
67. Roxanne Stoll
68. Anguies L. Savory



Minister of Education Addressing Stakeholders at Huradiah



EMC Personnel Addressing Stakeholders



IDB Official Addressing Stakeholders



Engaging Stakeholders at the Project Site in Cabora

Port Kaituma

The following persons were engaged on March 15, 2023 during the conduct of the ESA:

1. Shem Cuffy - Deputy Regional Education Officer, Region 1
2. Margaret Lambert - Prime Minister Representative, Region 1
3. Marti De Souza - Deputy Chief Education Officer – Hinterland, Ministry of Education
4. Rabindra Singh - Assistant Chief Education Officer - Primary, Ministry of Education
5. Orlando Thorn – Chairman - Port Kaituma, Neighbourhood Democratic Council
6. Pamella James - Overseer (ag.) - Port Kaituma, Neighbourhood Democratic Council
7. Maureen Reben - Deputy Education Officer, Department of Education, Region 1
8. Leon Smartt - Head Master (ag.), Port Kaituma Primary
9. Marcy Chan- Jeffrey - Senior Mistress, Port Kaituma Primary
10. Lurlene Hercules - Senior Assistant Mistress, Port Kaituma Primary
11. Abigail Rasheed - Senior Assistant Mistress, Port Kaituma Primary
12. Althea Forde - Graduate Senior Assistant Mistress, Port Kaituma Primary
13. Anzell Daniels – Chairman - Parent Teacher Association, Port Kaituma Primary
14. Lorraine Wong - Resident, Bus Park
15. Janice Antonio - Resident, Canal Bank
16. Maydine Doliveira - Resident, Canal Bank
17. Stephani Miguel - Resident, Canal Bank
18. Pauletta James - Resident, Canal Bank
19. Michelle Seecharan - Resident, Canal Bank
20. Naimi Seecharan - Resident, Canal Bank
21. Narisha Poliah - Resident, Canal Bank
22. Barbara Adams - Resident, Canal Bank
23. Romona Rodrigues - Resident, Canal Bank
24. Anita Prine - Resident, Canal Bank
25. Devika Domingo – Resident, Citrus Grove
26. B. Doliveira – Resident, Citrus Grove
27. Vallita William – Resident, Citrus Grove
28. Seabrena Miguel – Resident, Citrus Grove
29. Nekita Henry – Resident, Citrus Grove
30. Della Calistro – Resident, Citrus Grove
31. Pamela Calistro – Resident, Citrus Grove
32. Coreen Gomes – Resident, Citrus Grove
33. Lynetta France – Resident, Citrus Grove
34. Nadira Gounga – Resident, Citrus Grove
35. Ishram Sam – Resident, Citrus Grove
36. Roland Thorne – Resident, Citrus Grove
37. Lea Jocintho – Resident, Citrus Grove
38. Melissa Rodrigues – Resident, Citrus Grove
39. Janica Phillips – Resident, Citrus Grove
40. E. Ramroop – Resident, Citrus Grove
41. Nicola Seecharan – Resident, Citrus Grove
42. Tressa O'selmo – Resident, Citrus Grove
43. Jonice Smythe – Resident, Citrus Grove
44. Meline James – Resident, Citrus Grove
45. Kolianna Henry – Resident, Citrus Grove
46. Lynette Lance – Resident, Citrus Grove
47. Nadira Gounga – Resident, Citrus Grove
48. Rosann Oselmo – Resident, Citrus Grove
49. Vanessa Gill – Resident, Citrus Grove
50. Esahel Jeffery – Resident, Citrus Grove

51. JuneAnn Henry – Resident, Citrus Grove
52. Desiree Wison – Resident, Citrus Grove
53. Naline Nazier – Resident, Citrus Grove
54. Rosa Ramalho - Resident, Estate
55. Renea Lewis – Resident, Fitzburg
56. Disuze Williams – Resident, Fitzburg
57. Kurtine Mendonca – Resident, Fitzburg
58. Stacy Conway – Resident, Fitzburg
59. Shallonda Baud – Resident, Fitzburg
60. Sylvia Benjamin – Resident, Fitzburg
61. Danielle Peters – Resident, Fitzburg
62. Onika Henry – Resident, Fitzburg
63. Agar Blair – Resident, Fitzburg
64. Aneta Blair – Resident, Fitzburg
65. Northlyn Benjamin – Resident, Fitzburg
66. Abigail Boyce – Resident, Fitzburg
67. Mary Nunel – Resident, Fitzburg
68. Elizabeth Roberts – Resident, Fitzburg
69. Onilla Williams – Resident, Fitzburg
70. Janice Prescott – Resident, Fitzburg
71. Celina Mendonca – Resident, Fitzburg
72. Shenesa Abrams – Resident, Fitzburg
73. Elaine Nazier – Resident, Fitzburg
74. Henrietta Ashby – Resident, Fitzburg
75. Keshanna Wilson – Resident, Fitzburg
76. Jennifer Reynolds – Resident, Fitzburg
77. Charmain Harry – Resident, Fitzburg
78. Sharlene Francis – Resident, Four Miles
79. Esther Moses – Resident, Four Miles
80. Arisa Bhagwandat – Resident, Four Miles
81. Maylene George – Resident, Four Miles
82. Loreena David – Resident, Four Miles
83. Leonard Rajab – Resident, Four Miles
84. Abigail Bumbury – Resident, Four Miles
85. Andrew Trotman – Resident, Four Miles
86. Althea Millington – Resident, Four Miles
87. Ann Sealy – Resident, Four Miles
88. Susan Romascindo – Resident, Four Miles
89. Naomi Rodrigues – Resident, Four Miles
90. Shoma Balkaran – Resident, Four Miles
91. Angelina Martin – Resident, Four Miles
92. Carton Miguel – Resident, Four Miles
93. Ernest Charter – Resident, Four Miles
94. Alirio Arjoon – Resident, Four Miles
95. Neandra Gonsalves – Resident, Log Pond
96. Kacia Thomas - Resident, Main Road
97. Sharmine David – Resident, McDoom
98. Lovern Sam - RN/RM (NIC), Nurses Hostel
99. Mariana Gonsalves – Resident, One mile
100. Kishore Etwaroo - Minister of Religion, One Mile
101. Racquel Baptiste – Resident, One Mile
102. Elory Pauline – Resident, One Mile
103. Theresa Noons – Resident, One mile

104. Ion Chacoon – Resident, One mile
105. Lureen Larose – Resident, Oronoque
106. Sheneza Joseph – Resident, Oronoque
107. Glona Doliveira – Resident, Oronoque
108. Navika Caravoio – Resident, Oronoque
109. Vornkia James – Resident, Oronoque
110. Allison Blair – Resident, Oronoque
111. Iona Antonio – Resident, Oronoque
112. Marlene Williams - SPSSO/CPO-Reg 1, Oronoque
113. Sherene Sandy - C.F. S, Oronoque
114. Elain Daniels - Community Development Committee, Oronoque
115. Kacy Thomas – Resident, Oronoque
116. Jayanna France – Resident, Oronoque
117. Malena Domingo – Resident, Oronoque
118. Osema Leo – Resident, Oronoque
119. Joyann Gomes – Resident, Oronoque
120. Hilda Campbell – Resident, Oronoque
121. Jova Adams – Resident, Oronoque
122. Brendley – Resident, Oronoque
123. Nicole Williams – Resident, Oronoque
124. Shelma Boyer – Resident, Oronoque
125. Shondell Jeffery – Resident, Oronoque
126. Kim Domingo – Resident, Oronoque
127. Susan L'cruz – Resident, Oronoque
128. Natellis Harry – Resident, Oronoque
129. Alicia Govalla – Resident, Oronoque
130. Elizabeth Daniels – Resident, Oronoque
131. Julian Adams – Resident, Port Kaituma
132. Ruth Henry – Resident, Quarry Top
133. Samantha Benjamin – Resident, Quarry Top
134. Maliney Jones – Resident, Quarry Top
135. Maliu Benjamin – Resident, Quarry Top
136. Alicia Moses – Resident, Quarry Top
137. Abigail Mendonca – Resident, School Road
138. Melanie Albert – Resident, Teacher's Quarters
139. Susan Daniels – Resident, Three Miles
140. Venita Jeffery – Resident, Train Line
141. Elsa Roberts – Resident, Turn Basin
142. Vanessa Lall – Resident, Turn Basin
143. Vanessa Henry – Resident, Turn Basin
144. Selina Shepherd – Resident, Turn Basin
145. Coleen Marshall – Resident, Turn Basin
146. Norville Benn – Resident, Turn Basin
147. Clarita Glen – Resident, Water Front
148. Indrani Debidin - Resident, Water Front
149. Odinga Semple – Resident, Water Front
150. Lovern George
151. Marline James
152. Denise Williams
153. Errol Prince
154. Eson Alberts
155. Roxanne Gomez
156. Amanda

157. Adrinellis Gonzalez
158. AnaMaria Gonzalez



Stakeholder Engagement at Port Kaituma



EMC Personnel Engaging Stakeholers at Port KaitumPatentia Primary School

The following persons were engaged on March 08, 2023 during the conduct of the ESA:

1. Mr. Rabindra Singh – Assistant Chief Education Officer (Primary), Ministry of Education
2. Mr. Akbar Chindu – Regional Education Officer (Region 3), Ministry of Education
3. Onika Osborne - Graduate Head Mistress, Patentia Primary School
4. Candale Vandeyar - Graduate Deputy Head Mistress, Patentia Primary School
5. Olga Ashly - Senior Mistress, Patentia Primary School
6. Seeranie Rameshwar - Senior Assistant Mistress, Patentia Primary School
7. Ameila Charles - Senior Assistant Mistress, Patentia Primary School
8. Sonia Joseph - Senior Assistant Mistress, Patentia Primary School
9. Stacey Thomas - Senior Assistant Mistress, Patentia Primary School
10. Andrea Douglas - Temporary Qualified Mistress, Patentia Primary School
11. Twylesha Sealey - Temporary Qualified Mistress, Patentia Primary School
12. Bibi Shafena Khan - Temporary Qualified Mistress, Patentia Primary School
13. Nneka Klelch - Temporary Qualified Mistress, Patentia Primary School
14. Renita Joseph - Temporary Graduate Mistress, Patentia Primary School
15. Abidah Ally - Graduate Senior Assistant Mistress, Patentia Primary School
16. Joyann Blair Coates - Graduate Senior Assistant Mistress, Patentia Primary School
17. Allana Thompson-Sparman - Graduate Senior Assistant Mistress, Patentia Primary School
18. Fiona Nials - Graduate Senior Assistant Mistress, Patentia Primary School
19. Aneshia Daniels - Graduate Senior Assistant Mistress, Patentia Primary School
20. Ronwick Lopez - Graduate Senior Assistant Mistress, Patentia Primary School
21. Samantha A. Gouveia - Graduate Senior Assistant Mistress, Patentia Primary School
22. Alicia Persaud - Graduate Senior Assistant Mistress, Patentia Primary School
23. Olivia Springer - Assistant Mistress, Patentia Primary School
24. Alicia Hinds - Assistant Mistress, Patentia Primary School
25. Danellia Harprashad - Assistant Mistress, Patentia Primary School
26. Poolmattee Persaud - Assistant Mistress, Patentia Primary School
27. Nafeeza Raheemullah - Assistant Mistress, Patentia Primary School
28. Deneka Alves - Assistant Mistress, Patentia Primary School
29. Bonita Primo - Chairman - Parent Teacher Association, Patentia Primary School
30. Herma Alla - Parent, Patentia Primary School
31. Shelly Goodheart
32. Fazila Mohamed
33. Rosleen Williams



Stakeholders at Patentia Primary School



Engaging with Stakeholders at Patentia Primary School

Diamond

The following persons were engaged on April 24 and May 17, 2023 during the conduct of the ESA:

1. Rabindra Singh - Assistant Chief Education Officer - Primary, Ministry of Education
2. Adrian Elgin - Education Officer II, Department of Education, Region 4
3. Hanzel P. Lewis – Chairperson, RDC Region 4, Education Committee
4. Padmani Persuad - Overseer - Grove/ Diamond NDC
5. Boolram Persaud – Ranger, Grove/ Diamond NDC
6. Tessa Fernandes - Head Mistress, New Diamond/Grove Primary School
7. Nicole Andrewa Frances - Deputy Head Mistress, Ministry of Education
8. Rushell Neblette – Teacher, New Diamond/Grove Primary School
9. Colis Dublin – Teacher, New Diamond/Grove Primary School
10. Carla Griffith – Teacher, New Diamond/Grove Primary School
11. Anita Prashad - PTA Member, New Diamond/Grove Primary School
12. Fanizal Jamal - PTA Member, New Diamond/Grove Primary School
13. Clancy Smith - Surveyor, Central Housing and Planning Authority
14. Kellyon Phillips - GIS Technician, Central Housing and Planning Authority



Consultation with Stakeholders at the New Diamond/Grove Primary School



Consultation with Stakeholders at the New Diamond/Grove Primary School



Engaging with Stakeholders at the Proposed Site



Engaging with Stakeholders at the Proposed Site

St John-the- Baptise Primary School

The following persons were engaged on March 22, 2023 during the conduct of the ESA:

1. Rabindra Singh - Assistant Chief Education Officer - Primary, Ministry of Education
2. Kenneth Willems - Regional Chairman, Regional Democratic Council – Region 7
3. Carmel Williams - Chairman - Education & Training, Regional Democratic Council
4. Lionel Jacobus - Education Officer 1, Department of education, Region 7
5. Duane Frederick - Cadet Officer (EOP), Department of Education, Region 7
6. Norma Herneisha - Head Mistress, St. John-the-Baptise Primary School
7. Nicola Daniels – Garraway - Deputy Head Mistress (ag) & PTA Secretary, St. John-the-Baptise Primary School
8. Menina Fitz Alleyne - Senior Mistress (ag), St. John-the-Baptise Primary School
9. Shelly Bishoon- Samaroo - Senior Assistant Mistress, St. John the Baptise Primary School
10. Ivor Melville - PTA Chairman, Hope Foundation (NGO)



Stakeholder Engagement at St John-the Baptise Primary School



Stakeholder Engagement at St John-the Baptise Primary School



Engaging with Teachers at St John-the Baptise Primary School

Appendix C – ESA/ESM, SEP and SCA Disclosure and Consultation Report

IDB
Improving lives

Ministry of Education, Guyana
ELIMINATING ILLITERACY, MODERNIZING EDUCATION & STRENGTHENING TOLERANCE

SUPPORT FOR EDUCATION RECOVERY AND TRANSFORMATION PROJECT



Disclosure and Stakeholder Consultation Report

September 6, 2022

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1.0 Introduction

The Government of Guyana, with the support of the Inter-American Development Bank (IDB), is planning on increasing the efficiency and effectiveness of the delivery of primary education. This is being done through a project currently being developed by the Ministry of Education (MoE) and the IDB under the Conditional Credit Line for Investment Project (CCLIP) *"Transforming Guyana's Education Sector"* and the first individual operation *"Support for Educational Sector".*

This project is intended to support the transformation of the education sector to ensure that the country has the required human capital to manage and drive economic growth and diversification.

The project has three components as outlined below:

1. Component 1: Building 21st century schools (US$33 million).
2. Component 2. Digital Infrastructure (US$4.6million).
3. Component 3: Enhance MOE's mechanisms and services to better identify and serve students at risk (US$1.4 million).

The project will see the construction of four new primary schools and the rehabilitation and/or extension of thirteen existing primary schools.

The IDB has classified the project as Category B, which means it is likely to cause mostly local and short-term negative environmental and associated social impacts and for which effective mitigation measures are readily available.

As such, it was determined that an Environmental and Social Assessment (ESA) and Environmental and Social Management Plan (ESMP) be prepared to assess the potential negative environmental and social impacts associated with the project's interventions and in particular the construction activities, and to identify measures of prevention and mitigation of these impacts.

The IDB requires that the documents relating the to the environmental and social due diligence documents be disclosed prior to the finalization and therefore a process to ensure meaningful consultation is to be implemented.

A draft fit-for-disclosure version of the ESA and ESMP, along with a Stakeholder Engagement Plan and a Socio-Cultural Analysis, has been published in preparation for consultations with project key stakeholders, interested parties, vulnerable groups, and the public.

This report describes the disclosure and engagement process and presents the feedback derived.

2.0 Information Disclosure Process

The disclosure process is aimed at informing stakeholders of the project and its associated risk, impacts, potential opportunities, and development benefits. Two methods were used to ensure that the relevant stakeholders to the project were informed and engaged. First, prior to the disclosure meeting, the ESA and ESMP, along with the Stakeholder Engagement Plan and Socio-Cultural Analysis, was disclosed on the Ministry of Education website so that it can be accessed by the key stakeholders and any other interested party.

Secondly, the Executive Summary of the document was shared with the key stakeholders and invitees of the disclosure meeting via email prior to the convening of a stakeholder consultation forum to present the ESA and ESMP, the Stakeholder Engagement Plan and the Socio-Cultural Analysis to stakeholders to solicit their feedback and recommendations. The disclosure process was guided by the Stakeholder Engagement Plan prepared for the project.

2.1 Online Disclosure

Once the ESA and ESMP, Stakeholder Engagement Plan and Socio-Cultural Analysis were fit for disclosure, the documents were published on the Ministry of Education's website and can be accessed via the following links:

1. ESA/ESMP: https://education.gov.gy/web2/index.php/or/publications/6783-esa-and-esmp-support-for-education-recovery-and-transformation-project-july-2022/file
2. SCA: https://education.gov.gy/web2/index.php/or/publications/6784-socio-cultural-analysis-support-for-education-recovery-and-transformation-project/file
3. SEP: https://education.gov.gy/web2/index.php/or/publications/6785-stakeholder-engagement-plan-education-recovery-and-transformation-project-july-2022/file

2.2 Stakeholder Consultation Session

The stakeholder consultation session was held via the Microsoft Teams platform on September 06, 2022 at 10:00hrs. The online platform was determined to be the best consultation method since it allowed for participants from the different project locations such as the hinterland areas to be engaged and involved at the same time. This was also a measure of ensuring the safety of participants in preventing the spread of COVID 19.

The Microsoft Teams meeting, inclusive of the project's presentation and question and answer segment lasted approximately 2 hours, starting at 10:00hrs and concluding at 12:00hrs. Photos of the meeting are included in Annex D.

2.2.1 Planning

The meeting was planned in accordance with the Project's Stakeholder Engagement Plan which was used as guide for the consultation session. The invited stakeholders were considered based on their mandate and proximity to the project, interest in the project, and any other interested party based on end-users and long term beneficiaries. Stakeholders were invited in advance of the meeting and after the documents were published on the Ministry of Education's website. The invitation to the meeting, the Executive Summary of the ESA and ESMP, and the meeting login credential were sent to the stakeholders via email on August 31, 2022. The meeting login credentials are presented below.

Microsoft Teams Meeting ID: 274 599 331 53
Passcode: H94997

The list of stakeholders invited is presented in Table 1, while a copy of the invitation email is included as Appendix A. Along with the invitation, the Executive Summary of the draft ESA and ESMP document, and meeting agenda were shared with the stakeholders

Table 1: Invitees to the Stakeholder Consultation Session

No.	Stakeholder	Email Address
1.	Regional Chairman – Region 1	bpsa.rc1@gmail.com
2.	Regional Chairman – Region 3	regionalchairmanreg.3@gmail.com
3.	Regional Chairman – Region 9	rofficeregion9@gmail.com
4.	Regional Democratic Council – Region 3	
5.	Regional Democratic Council – Region 8	pereirakurt26@gmail.com
6.	Regional Democratic Council – Region 9	Simone.pearl@yahoo.com
7.	Neighbourhood Democratic Council – Canal Polder - Region 3	
8.	Regional Education Officer – Region 1	eddep01@gmail.com
9.	Regional Education Officer – Region 3	eddep03@moe.gov.gy
10.	Regional Education Officer – Region 8	eddep08@moe.gov.gy
11.	Regional Education Officer – Region 9	eddep09@moe.gov.gy
12.	Regional Education Officer – Region 10	eddep10@moe.gov.gy
13.	Deputy Education Officer – Region 1 (Mouca)	clivajoseph2015@gmail.com
14.	Deputy Education Officer – Region 1 (Mabaruma)	kayejo.kj@gmail.com
15.	Deputy Education Officer – Region 1 (Matarkai)	nfomoruca@gmail.com
16.	Deputy Education Officer – Region 8 (Paramakatoi)	nigel.naughton@yahoo.com
17.	Deputy Education Officer – Region 8 (Mahdia)	cliftondavid@gmail.com
18.	Deputy Education Officer – Region 10	lashanna.and2015@gmail.com
19.	Mayor – Linden, Region 10	lindenmayor@gmail.com
20.	Town Clerk – Linden, Region 10	lindentownclerk5@gmail.com
21.	Mahdia Town Council – Region 8	kdouglas281985@gmail.com
22.	Lethem Town Council – Region 9	lindentownclerk5@gmail.com
23.	National Toshao's Council	ntoshaos@yahoo.com
24.	Toshao - Hosororo	renattosrikumar7@gmail.com
25.	Toshao - Wauna	thomammon86@gmail.com
26.	Head Teacher – Arakaka Primary School	melesawilson123@gmail.com
27.	Head Teacher – Hosororo Primary School	sharlenejeffrey281@gmail.com
28.	Head Teacher – Wauna Primary School	ohadwilburg@yahoo.com
29.	Ministry of Amerindian Affairs	arobertsz@yahoo.com
30.	Indigenous People's Commission	neilbacchus@yahoo.com

2.2.2 Consultation Session

The consultation with the project's stakeholders was held via Microsoft Teams on September 06, 2022 at 10:00hrs. The session followed the agenda outlined below.

1. Welcome – Mr. Marty DeSouza
2. Overview of Project – Ms. Nicola M. Johnson
3. Introduction of ESA/ESMF Process – Mr. Shyam Nokta
4. Findings of the ESA and ESMP – Mr. Khalid Alladin
5. Questions/Feedback
6. Closing Remarks – Mr. Shyam Nokta
7. Closing Remarks –Mr. Marty DeSouza

The session was chaired by the Ministry of Education. The Ministry of Education was represented by:

1. Ms. Nicola M. Johnson – Chief Planning Officer
2. Mr. Marty DeSouza – Deputy CEO (Hinterland)

The Ministry of Education introduced the aims and objectives of the stakeholder engagement session, and presented an overview of the project to the stakeholders, along with the various aspects of the project components and activities.

The Consultant team presented a brief description of the ESA and ESMP process and its importance to the project. The findings and recommendations of the ESA and ESMP were then presented. The Socio-Cultural Analysis and the Stakeholder Engagement Plan, inclusive of the Grievance Redress Mechanism, were also included in the presentation. The presentation was done by the following representative of the Consultant Team:

1. Mr. Shyam Nokta
2. Mr. Khalid Alladin

A Microsoft PowerPoint presentation was used to present the information, which covered the following areas:

a. A description of the area of influence and physical and technical characteristics of the proposed project activity.
b. Feedback provided by stakeholders during the ESA and ESMP preparation process.
c. Potential risks and impacts of the project on the local communities and the environment, and proposals for mitigation and management of impacts.
d. Potential opportunities and development benefits from the project for local communities.

The Presentation is included in Appendix E.

Participants, totalling approximately 20 persons from the following institution attended the stakeholder consultation session:

1. Ministry of Education
2. Department of Education – Region 1
3. Department of Education – Region 3
4. Department of Education – Region 7
5. Department of Education – Region 9
6. Department of Education – Region 10
7. Regional Democratic Council – Region 3
8. Linden Mayor and Town Council
9. Neighbourhood Democratic Council – Canal Polder, Region 3
10. Cyril Potter Collage of Education (CPCE)

11. Indigenous People's Commission
12. Wauna Primary School

The Details of the participants is presented in Appendix C.

3.0 Feedback

The participants were provided with an opportunity to share feedback on the project. However, there were questions from the stakeholders following the presentations. The participants indicated that the presentation was quite clear and they were pleased with the information presented. The meeting was reminded of the various avenues available to the stakeholders to submit feedback and recommendation at a later date and at their convenience.

4.0 Conclusion

Although there were no questions from the stakeholders who participated in the session the information presented was quite valuable to the stakeholder engagement and information disclosure process. It allowed for a clearer understanding of the project components, the environmental and social requirements, and the project's potential impacts and recommended mitigation and management measures.

The ESA and ESMP, Socio-Cultural Analysis and the Stakeholder Engagement Plan will now be updated to include the disclosure process and stakeholder consultation.

The consultation process will continue, including maintaining the document on the Ministry of Education's website and allow for review by the general public and end beneficiaries and providing an opportunity to lodge comments, and to receive feedbacks and recommendations. In addition, the consultation process with stakeholders will continue as the project details are finalized.

Appendices

Appendix A – Meeting Invitation

From: **Chief Planning Officer** <chief.planner@moe.gov.gy>
Date: Wed, Aug 31, 2022 at 11:44 AM
Subject: Invitation to Consultation on the Support for Educational Recovery and Transformation Project
To: bpsa.rc1@gmail.com <bpsa.rc1@gmail.com>, eddep01@gmail.com <eddep01@gmail.com>, clivajoseph2015@gmail.com <clivajoseph2015@gmail.com>, kayejo.kj@gmail.com <kayejo.kj@gmail.com>, renattosrikumar7@gmail.com <renattosrikumar7@gmail.com>, thomammon86@gmail.com <thomammon86@gmail.com>, melesawilson123@gmail.com <melesawilson123@gmail.com>, sharlenejeffrey281@gmail.com <sharlenejeffrey281@gmail.com>, ohadwilburg@yahoo.com <ohadwilburg@yahoo.com>, nfomoruca@gmail.com <nfomoruca@gmail.com>, Department of Education Region 3 <eddep03@moe.gov.gy>, regionalchairmanreg.3@gmail.com <regionalchairmanreg.3@gmail.com>, Department of Education Region 8 <eddep08@moe.gov.gy>, nigel.naughton@yahoo.com <nigel.naughton@yahoo.com>, cliftondavid@gmail.com <cliftondavid@gmail.com>, pereirakurt26@gmail.com <pereirakurt26@gmail.com>, kdouglas281985@gmail.com <kdouglas281985@gmail.com>, Department of Education Region 9 <eddep09@moe.gov.gy>, simone.pearl@yahoo.com <simone.pearl@yahoo.com>, rcofficeregion9@gmail.com <rcofficeregion9@gmail.com>, lethemtowncouncil.gy@gmail.com <lethemtowncouncil.gy@gmail.com>, Department of Education Region 10 <eddep10@moe.gov.gy>, lindenmayor@gmail.com <lindenmayor@gmail.com>, lindentownclerk5@gmail.com <lindentownclerk5@gmail.com>, lashanna.and2015@gmail.com <lashanna.and2015@gmail.com>, ntoshaos@yahoo.com <ntoshaos@yahoo.com>, neilbacchus@yahoo.com <neilbacchus@yahoo.com>, arobertsz@yahoo.com <arobertsz@yahoo.com>
Cc: DCEO AHED <dceo.ahed@moe.gov.gy>, DCEO Development <dceo.development@moe.gov.gy>, Chief Education Officer <ceooffice@moe.gov.gy>, ACEO Primary <aceoprimary@moe.gov.gy>, principal@cpce.gy <principal@cpce.gy>, Director NCERD <director.ncerd@moe.gov.gy>, Khalid Alladin <khalidalladin@gmail.com>, Dahvis Caldeira <dahvis.caldeira@moe.gov.gy>, Fazal Ali <fazal.ali@moe.gov.gy>, Laleta Murphy <mandeofficer@moe.gov.gy>, Planning Officer <planning.officer@moe.gov.gy>, Statistical Section 5678 <statisticalsection5678@moe.gov.gy>

Dear Stakeholders in Education,

As some may know, the Ministry of Education recently concluded the conceptualization process of the Inter-American Development Bank (IDB) funded project at the Primary level to support Primary Education Transformation, aptly named The Support for Educational Recovery and Transformation Project. As such, we would like to consult with all our stakeholders on the impact of the project on you, your school, your community and education delivery in Guyana. We will present a presentation on the environment and social impact of this project, done by Environment and Social Impact Specialists, after which we will solicit your thoughts and ideas. Please make every effort to attend, as this process is essential for the start of the successful implementation of this project.

Please see attached the *executive summary* of the Environmental and Risk Management Plan (ERMP) for your review before the meeting. Please see below the TEAMS link below to the meeting, scheduled for **Tuesday, September 6, at 10:00 am.** All for your information and guidance.

Best regards

Nicola M. Johnson (Mrs)
Chief Planning Officer
Phone 592-226-0264 Mobile 592-687-1680
Web www.education.gov.gy Email chief.planner@moe.gov.gy
26 Brickdam, Stabroek, Georgetown, Guyana.

Microsoft Teams meeting

Join on your computer or mobile app
Click here to join the meeting

Meeting ID: 274 599 331 53
Passcode: H9499L
Download Teams | Join on the web

Appendix B – Meeting Invitation and Agenda

SUPPORT FOR EDUCATIONAL RECOVERY AND TRANSFORAMTION

INVITATION

VIRTUAL PUBLIC CONSULTATION ON THE DRAFT ENVIRONMENTAL AND SOCIAL ASSESSMENT/ ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESA/ESMP)

Tuesday, September 06, 2022
10:00 AM
Microsoft Teams:
Meeting ID: 274 599 331 53
Passcode: H94997

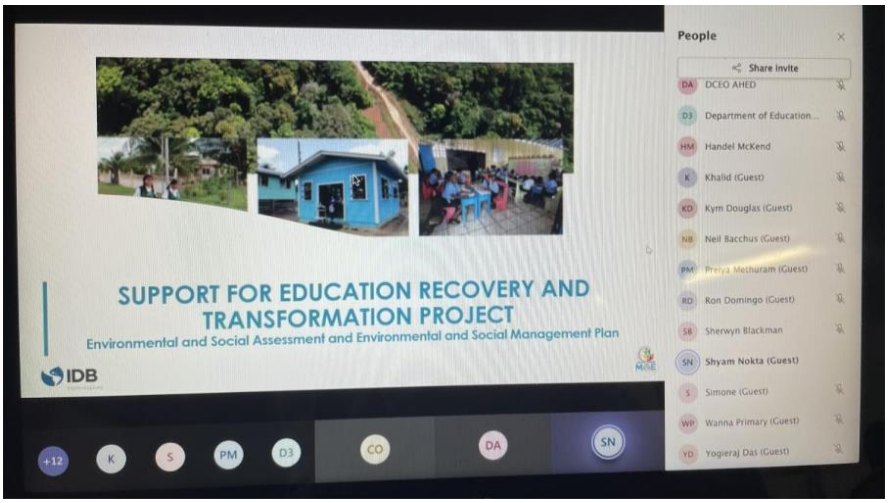
AGENDA

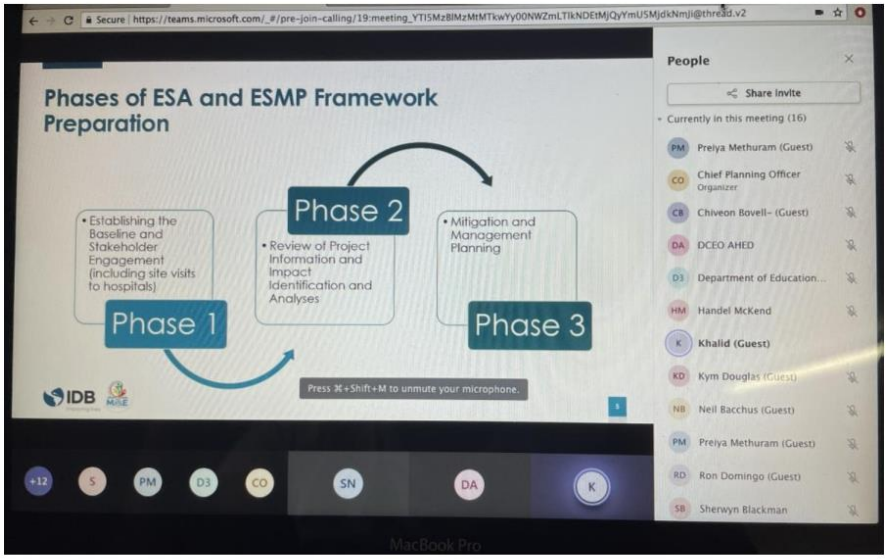
1. Welcome
2. Overview of Project
3. Introduction of ESA/ESMF Process
4. Project Presentation
5. Questions/Feedback
6. Closing Remarks

Appendix C – List of Participants

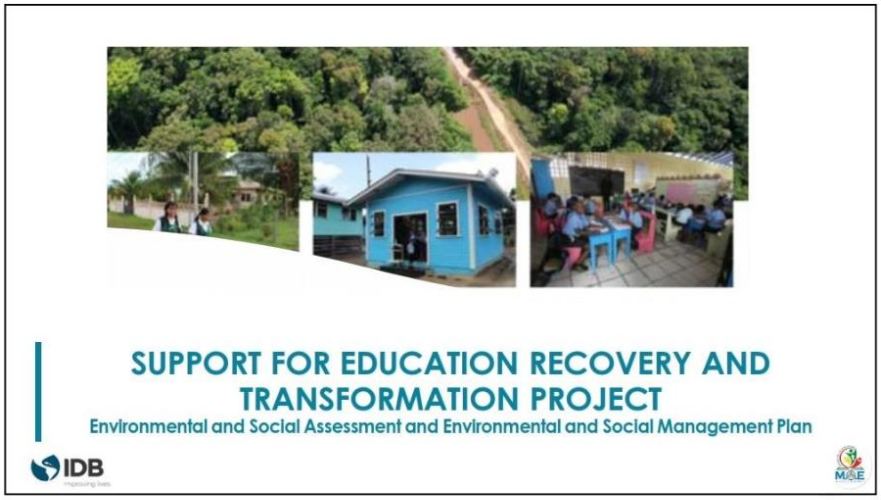
No.	Name	Institution	Stakeholder Identification
1.	N. Johnson	Ministry of Education	Key Stakeholder
2.	M. DeSuza	Ministry of Education	Key Stakeholder
3.	A. Andrews	Ministry of Education	Key Stakeholder
4.	C. Bovell	Department of Education – Region 1	Affected Parties
5.	R. Domingo	Department of Education – Region 1	Affected Parties
6.	A. Chindu	Department of Education – Region 3	Affected Parties
7.	B. Shewram	Department of Education – Region 7	Interested Parties
8.	K. Douglas	Department of Education – Region 8	Interested Parties
9.	S. Haywood	Department of Education – Region 9	Affected Parties
10.	S. Blackman	Department of Education – Region 9	Affected Parties
11.	L. Anderson	Department of Education – Region 10	Affected Parties
12.	W. Arrindell	Linden Mayor and Town Council	Key Stakeholder
13.	S. Arjoon	Regional Democratic Council – Region 3	Key Stakeholder
14.	Y. Das	Neighbourhood Democratic Council – Canal Polder, Region 3	Key Stakeholder
15.	O. Wilburg	Wauna Primary School, Region 1	Interested Parties
16.	N. Bacchus	Indigenous People's Commission	
17.	K. Sears	Cyril Potter College of Education	Interested Parties
18.	H. McKend	Public Participant	Interested Parties
19.	Integrated Science Tutor	Public Participant	Interested Parties

Appendix D – Photos of Meeting





Appendix E – Microsoft PowerPoint Presentation



SUPPORT FOR EDUCATION RECOVERY AND TRANSFORMATION PROJECT

Environmental and Social Assessment and Environmental and Social Management Plan

IDB

MOE

Project Background

The Support for Education Recovery and Transformation Project is an IDB supported project aimed at supporting the transformation of the primary education sector to ensure that the country will have the required human capital to manage and drive economic growth and diversification. The Project focuses on recovery from the COVID19 pandemic and lays the foundation for the transformation of the primary education sector, most importantly addressing the unequal delivery of education across regions.The Project has three components:

- Component 1: Creation of Improved Learning Spaces
- Component 2: Digital Infrastructure
- Component 3: Enhance MOE's mechanism and services to better identify and serve students at risk

The Environmental and Social Assessment (ESA) and Environmental and Social Management Plan (ESMP) Framework are required to satisfy the IDB's requirement. The IDB also required a Labour Management Plan, a Stakeholder Engagement Plan, and a Social-cultural Analysis to be prepared.



Belle West Primary School

IDB MOE

2

Project Activities

Under Component 1 of the Project, 4 communities have been identified to benefit from the construction of new primary schools. In addition 13 schools have been identified to benefit from remodeling, rehabilitation, extension and equipment, mainly in the Hinterland regions.

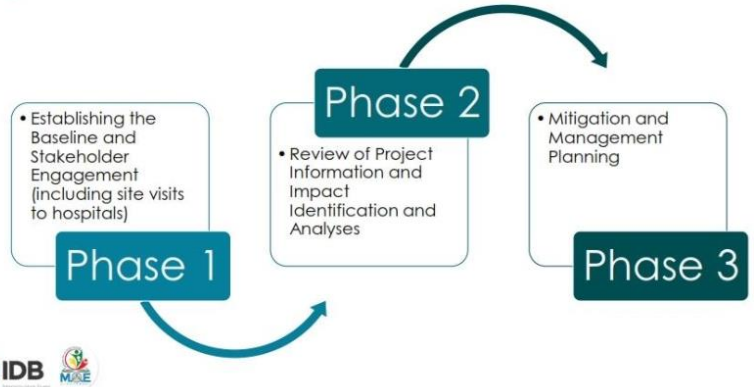
Regions	Name of Primary Schools/Locations	Current Enrollment
	New Constructions	
Region 3	Tuschen	0
Region 3	Recht door Zee	0
Region 9	Tabatinga	0
Region 10	Wisroc	0
	School Extensions	
Region 1	Kariakau Primary School	132
Region 1	Hosororo Primary School	505
Region 1	Wauna Primary School	409
Region 1	Arakaka Primary School	157
Region 1	Hobodeia Primary School	91
Region 3	Belle West Primary School	449
Region 8	Monkey Monutain Primary School	225
Region 8	Mahdia Primary School	435
Region 9	Yorong Peru Primary School	40
Region 9	Karasabai Primary School	466
Region 9	Achawib Primary School	157
Region 9	Annai Primary School	145
Region 9	Potarinau Primary School	114

3



Methodology

Phases of ESA and ESMP Framework Preparation



5

Schools/Sites Visited

Site visits were conducted to all of the proposed sites for construction of new primary schools:

1. Recht door Zee – Region 3
2. Tuschen – Region 3
3. Tabatinga – Region 9
4. Wisroc, Region 10

Three schools were assessed from the identified list of thirteen for extensions:

1. Kariakau Primary School – Region 1
2. Hosororo Primary School – Region 1
3. Belle West Primary School – Region 3



Aerial view of proposed extension at Belle West Primary



Aerial view of proposed extension at Kariakau

6



Site Visits Findings – New Constructions

Site Visit Findings

1. The sites are free from any encumbrances and competing land use.
2. The sites are zoned for construction of educational facilities.
3. The sites are adequate to construct a new primary school with the required accompany amenities.
4. The sites are surrounded by occupied and unoccupied residential plots.
5. The areas drain easily, and is not prone to flooding from heavy precipitation.
6. Electricity and potable water are available at the sites
7. The sites can be accessed by multiple entrances





Recommendations from Key Stakeholders

1. The contractors should be required to remove all construction waste in a timely manner. The contractors should consult the Local Authorities on the disposal of the waste.
2. The contractors should employ an environmental, health and safety personnel during the construction period.
3. The contractors should utilize the local workforce as much as possible. There is an abundance of skilled, semi-skilled and unskilled persons within the communities.
4. Residents from the communities are looking forward to the construction of the primary schools since the cost of transportation for students to attend schools outside of the communities is prohibitive. This has resulted in a lot of school dropouts.
5. Construction materials should be transported to the site on weekends or in the evenings and there is adequate space onsite for the storage of construction materials.
6. Construction waste which is re-useable should be provided to the communities. All other waste should be transported to the disposal site by the contractors.
7. Trucks bringing materials to the sites can damage community roads. Recommended that the contractor limit the weight of trucks and fix any damage caused.
8. Use local construction materials where possible.
9. Construction sites should be secured.



Site Visits Findings – (School Extensions/Rehabilitation)

Current Schools Facilities

1. The schools are overcrowded, and lacks adequate space to effectively deliver curriculum during contact hours.
2. Rooms and buildings such as the Science Labs, Auditoriums, and ITC Hubs are being used as classrooms to offset the demand for space.
3. Schools have limited essential facilities such as running water to the washrooms, internet services, mess halls, and canteens.
4. Other services such as libraries, school kitchens are in need of rehabilitation and/or upgrades.
5. Generally there is adequate space within schools compounds to facilitate extension.







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Recommendations from Key Stakeholders

- Noise and dust are expected to cause a temporary inconvenience during construction but is generally not a significant concern given the necessity of the project. However, noisy and disruptive works should be conducted during the weekends and after teaching/contact periods.
- Physical barriers should be installed with clearly marked signs of danger to prevent students from wandering into active construction area.
- A Code of Conduct should be prepared for the contractor to adhere to the general rules of the school, such as no smoking.
- Construction waste should be transported to a designated area for disposal according to best practices within the respective communities. Construction waste which is re-useable should be provided to the community.
- The contractor is expected to follow the rules and regulation of the communities/villages, and have regular updates meetings with the community. .
- Contractors should hire within the communities/villages. Furniture can be built within the community.
- Contractors should have their own washroom facilities and water sources so that they would not need to the use the schools'.
- Contractor should not use the schools main entrance.

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Impact Assessment and Mitigation and Management Planning and ESMP Implementation Framework

Physical Resources – Impacts and Mitigation Measures

Ambient Noise Levels

Impact Risk: Medium

Mitigation Measure:

- Schedule construction works during term breaks or outside normal school hours;
- Inform the schools' management in advance of any construction activity that will result in significant noise and likely to affect classes;
- Workers should be equipped with the necessary PPE to mitigate noise pollution. Hearing protection for employees exposed to high noise levels: ear muffs and earplugs for employees who operate heavy-duty machines/equipment;
- Noisy activities should not occur in close proximity to proximate receptors during the night, on Sundays and on Holidays. It is recommended to not conduct any works after 18:00hrs and prior to 06:00hrs;
- Noise levels should be controlled at the source through installation of muffles on exhaust system;
- Noisy equipment such as generator should be sited away from receptors;
- The contractors should ensure that machinery and equipment are working efficiently; and
- Periodic monitoring of noise levels should be conducted.

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Physical Resources - Impact and Mitigation Measures

Ambient Air Quality
Impact Risk: Medium

Mitigation Measures:
- Schedule major construction works to during term breaks or outside normal school hours;
- Erect dust screens around work areas if required;
- Visual monitoring of dust generation/accumulation should be done;
- Workers should be equipped with the necessary PPE to combat dust nuisance.
- During dry periods it may be necessary to soak some areas of the construction zone and routes where vehicles and equipment traverse;
- Dry materials for construction such as sand should not be stockpiled in close proximity to receptors such as classrooms, offices and neighbouring properties;
- All vehicles transporting loose materials should be covered to minimize dust emissions;
- All mechanical equipment should be adequately maintained to reduce gaseous emissions; and
- Utilize only electrical pumps or solar powered pumps for the operational phase.

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Physical Resources - Impact and Mitigation Measures

Soils
Impact Risk: Low

Mitigation Measures:
- Adequate drainage
- Designate routes for heavy-duty vehicles
- Redistribute cleared soils within compounds

Water Resources
Impact Risk: Low

Mitigation Measures:
- Prevent sedimentation, improper waste disposal or contamination by hazardous materials.
- Maximize opportunities for rainwater harvesting

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Waste –Management Measures

Construction Phase

- Use portable toilets.
- Channel wastewater from temporary living sites to a soak away.
- Collect waste in bins and empty regularly.
- Waste should be separated.
- Consolidate construction waste and reuse (if possible).
- Collect waste oils and reuse or dispose in a safe and acceptable manner.

Operation Phase

- Waste such as paper and cardboard, empty plastic bottles, cans, etc. should be collected via bins placed at strategic points around the compound.
- The bins should be emptied on a regular basis, or once filled.
- Garbage should not accumulate onsite and should be collected and disposed of at an area and in a manner approved by the local authorities.
- No burning of any type of waste should occur.
- Sewage systems should be well maintained and emptied regularly.
- Channel discharge from septic tanks to a soak-away system.

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Social Resources – Impacts

Social Resources					
Employment					
Project construction activities	Temporary employment for persons from local communities	Positive, Direct, Short-Term, Localised	Minor	Almost Certain	N/A
Improved Facilities					
Project operations	Increases in wellbeing and quality of life for students, teachers and parents	Positive, Direct, Long-Term, Localised	Moderate	Almost Certain	N/A
Traffic					
Project operations	Traffic congestion during drop off and pick up periods	Negative, Direct, Long-Term, Local	Moderate	Likely	Medium
Land Take and Land Use					
Project construction activities	Inadequate space in school boundaries to install project interventions	Negative, Direct, Long-Term, Localised	Minor	Unlikely	Low
Archaeological Resources					
Project construction activities	Damage to archaeological resources	Negative, Direct, Long-Term, Regional	Moderate	Rarely	Low
Community Conflicts					
Presence of non-local workforce	Community conflict due to not complying with community norms, use of alcohol and drugs, and sexual relations/exploitation with local women	Negative, Direct, Short- to Long-Term, Localised	Moderate	Likely	Medium

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Social Mitigation and Management Measures – Disruption of Teaching and Contact Learning

- Plan pre-construction activities early to identify suitable rooms or adjoining buildings into which to relocate students or teaching areas.
- Construct new buildings first, then relocate existing services those buildings, and then commence within the existing space.
- Contractors to advise facilities management well in advance concerning access closures, rerouting of pedestrian traffic and interruptions in water, electricity and sewerage services.
- Construct in phases.

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Social Mitigation and Management Measures – Code of Conduct for Workers

- Compliance with applicable laws, rules, and regulations.
- Compliance with applicable health and safety requirements.
- The prohibition of the use of illegal substances.
- Prohibition of sexual harassment.
- Prohibition of violence or exploitation.
- Protection of children.
- Sanitation requirements.
- Avoidance of conflicts of interest.
- Respecting reasonable work instructions.
- Protection and proper use of property.
- Duty to report violations of the Code.
- Non retaliation against workers who report violations of the Code.
- Respecting the rules, norms, customs and practices of nearby indigenous communities.

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Social Mitigation and Management Measures – Labour Management Plan

- The selection and employment should be conducted in a fair and transparent manner, and according to the requirements of the project.
- Recruitment procedures should be transparent, public, and non-discriminatory
- Applications for employment should only be considered if submitted via the official application procedures established.
- Clear job descriptions should be provided in advance of recruitment.
- Women and other vulnerable groups should be encouraged to apply for jobs.
- All workers should have written contracts describing terms and conditions of work.
- No child under the age of fifteen should be employed, and no young person under the age of sixteen should be employed at night.

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Socio-cultural Analysis

One of the four new schools identified for new construction is located in a region with a significant Amerindian population, and most of the schools identified for rehabilitation/expansion are located within Amerindian Communities. Therefore a Socio-Cultural Analysis (SCA) was done to determine the potential impacts and risks of the project to Amerindian communities.

There is no indication that the project will have significant and permanent negative impacts on the community as long as the mitigation measures are implemented.

Impacts Level: Low

Risk: Community conflicts with outside contractors, Chance Findings of Archaeological Resources, Land take and Land Use

Opportunities: Improved Facilities, Local Employment, and Community Development

Mitigation Measurers: Free, Prior, and Informed Consent (FPIC), Code of Conduct for Workers, Appropriate Stakeholder Engagement, adequate and timely information disclosure, Grievances Redress Mechanism, following National Trust of Guyana's protocol on chance findings/ESMP and Conflict Prevention.

Grevlance Redress Mechanism (GRM): Use the Project's GRM to formally lodge complaints/suggestion against and to the project

22

Chance Find Procedure

The following procedure should be followed during project construction in the event that archaeological materials or site is discovered within the construction sites:

- All activities in the immediate vicinity of the remains should cease immediately.
- The find location should be recorded, and all remains left in place.
- Contractor to inform the MoE who should then inform and the National Trust of Guyana of the find.
- The National Trust of Guyana should coordinate with the relevant personnel to determine the significance of the findings and assess appropriate mitigative options.
- If the significance of the remains is judged to be sufficient enough to warrant further actions which cannot be avoided, MoE, in collaboration with the National Trust of Guyana, should determine the appropriate course of such action.
- Relocation of the artefacts for preservation and security reasons may be determined as an appropriate action.
- The National Trust of Guyana should inform the MoE of when work may recommence in the specific area.

Contractors should provide training to employees on identifying and protecting finds by causing limited disruption and damage to archaeological materials, if found.

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Stakeholder Engagement Plan (SEP)

Objective of SEP: The stakeholder engagement process is aimed at enhancing project acceptance, and contribute significantly to the project's successful development and implementation.

Stakeholder Identification: Project Affected Parties (Students and Teachers), Interested Parties (Community members seeking employment), Key Stakeholders (MoAA, REDOs), Disadvantaged/Vulnerable Group (Differently Abled Persons/Group Reps.)

Engagement Methods: Focus Groups Discussions, Community Meetings, Feedback and Suggestion Box, Internet and Digital Media

Information Disclosure: Project Design (Overall project scope and activities), Project Inception (Proposed construction plans including project scope and timeline), Review of Initial Engagement (Guidance on health and safety practices for schools identified for construction/expansion and provision of essential services), Close of Project (Closing report of the project)

Grievance Mechanism: The PIU to facilitate grievance from the stakeholders in accordance with the mechanism provided and in a timely manner

Monitoring and Reporting: Key Performance Indicators should be used to monitor performance based on the parameter including, but limited to - Number of consultation meetings and other public discussions, Number of grievances received, Number of press materials published

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Grievance Redress Mechanism

- The Supervisory Consultants Project Manager, along with the Contractor's Project Manager/ESHS Personnel, should investigate reported grievances to determine the validity of a complaint and cause for the grievance;
- It should then be determined whether grievance can be resolved by the Project Team or whether outside authorities with regulatory or other responsibilities and relevant skills are to be consulted;
- Or it should be determined if corrective action are to be taken by the Contractor and what those actions are;
- The Supervisory Consultants Project Manager should prepare a grievance report, including supporting materials such as photographs. If necessary, a clear list of tasks and outcomes expected shall be developed
- If grievance is the fault of the Contractor, then the Contractor is to implement corrective action immediately.
- The Supervisory Consultant Project Manager, along with the Contractor's Project Manager/HSSE Personnel should conduct follow-up inspection to monitor the situation and determine whether problem is likely to recur and put measures in place to prevent recurrence.
- In addition to the project level GRM, a safe and ethical process for reporting, investigating, and addressing allegations of Gender Based Violence, Sexual Exploitation and Abuse and Sexual Harassment (GBV/SEA/SH) should be established.

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Health and Safety – Impacts

Health and Safety					
Occupational Health and Safety of Project Workforce					
Project construction activities	Accidents at worksites result in injuries or fatalities	Negative, Direct, Short- to Long-Term, Localised	Major	Unlikely	Medium
Public Health and Safety					
Project construction activities	Marginal increases in traffic and increased security risk in local communities	Negative, Direct, Short-Term, Localised	Negligible	Unlikely	Low
Project construction activities	Transmission of COVID-19 among receptors: project workforce, local communities, school populations	Negative, Direct, Long-Term, Regional	Extreme	Unlikely	High
Health, Safety and Security of Students and Teachers					
Project construction activities	Noise and dust nuisance, unsafe conditions around material stockpiles and construction zones, sexual harassment of students and teachers	Negative, Direct, Short-Term, Localised	Minor	Likely	Medium

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Workers Health and Safety

- The requirements of the Occupation Safety and Health Act should be complied with.
- Contractors should designate someone with the responsibility of ensuring occupational safety and health.
- Workers should be properly oriented to the safety and health rules and guidelines.
- Adequate training should be provided to workers in the execution of their tasks.
- An Emergency Response Plan should be prepared and made available to all relevant personnel and the necessary training and resources required should be provided.
- Well-equipped first aid kits should be provided at all work sites with at least one personnel trained in first aid.
- Protective gear should be provided to employees and should be worn at all times during operation. Safety rules and guidelines should be posted at strategic locations.
- Adequate signage should be erected, especially in hazardous areas.

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Public Health and Safety

- Secure work areas from unauthorized persons.
- Demarcate all hazardous areas and cordon off the construction area.
- Install warning signs in areas which present a risk for incidents.
- Inform school administrations, staff, PTA, and visitors of risks and required precautionary measures.
- Store construction materials and waste in an organized and orderly manner.
- Contractors should use separate access.
- Inform school's management prior to undertaking high-risk activities.

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Emergency Response – Construction Phase

- Prepare an Emergency Response Plan (ERP) as part of the CESMP.
- The ERP should be unique to each of the selected school.
- The ERP should outline measures for emergencies response (spills of hazardous materials, accidents or medical emergencies).
- The ERP should describe the general types of emergency and actions to be followed should an emergency occur during the mobilization and operational phases of the project and should include:
  - Emergency Contact Details
  - Emergency Procedures
  - Authority of Control
  - Emergency Response Equipment
  - Scenario Description and Response
  - Incident Reporting

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Contractor ESMP

- The contractors should prepare a CESMP to address environmental, social, health and safety issues pertinent to the construction phase of the project.
- Submit CESMP to the Supervisory Consultants, and MoE for approval prior to the commencement of works.
- Prepare the CESMP using this ESMP, relevant national standards and guidelines including those of the MoH and IDB, as a guide.

The CESMP should include:

- HSSE Policy
- Management Structure
- Work Programme
- Solid Waste Management Measures
- Liquid Waste/Wastewater Management Measures
- Hazardous Waste Management Measures
- Hazardous Materials Management Measures
- Erosion and Sedimentation Control
- Dust Control
- Noise Prevention
- Workers Health and Safety
- Community Safety
- Emergency Preparedness and Response Plan
- Chance Find Procedure
- Training
- Site Closure, Decommissioning and Restoration
- Grievance Mechanism
- Monitoring and Reporting
- Budget

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Reporting

Pre-Construction

- CESMP prepared for approval of Supervisory Consultants and MoE

During Construction

- Immediate notification to MoE of any incidents or violations.
- Progress meetings of the contractors with representatives of the MoE

Post-Construction

- Submission of Completion Report to MoE.

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Monitoring Framework (Project Construction)

Environmental and Social Criteria	Frequency	Locations
Air Quality • Evidence of dust accumulation and suspended particles through visible observation • Period checks with receptors	Continuous	• Around active construction zones • School buildings or facilities most proximate to active construction zones • School boundaries to immediately adjacent land uses
Noise • Decibel levels	Periodically	• Around active construction zones • School buildings or facilities most proximate to active construction zones • School boundaries to immediately adjacent land uses
Water Quality • Visual observation for sedimentation and oil and grease	As needed	After periods of heavy rainfall
Waste Management • Compliance with CESMP and waste management practices • Littering and waste accumulation	Weekly	Waste receptacles, disposal sites and active construction sites.
Health and Safety • Use of protective gear by workers • Adequate and appropriate signage • Location of Emergency Procedures • Availability of emergency response equipment • Health conditions of staff • Stocked First Aid Kit • Demarcation of construction site • COVID-19 Preventative Measures	Weekly	Active construction work areas
Community Wellbeing/Concerns • Employment • Grievances which may arise	Weekly	Communities in which the schools will be constructed, extended, or those to benefit from other interventions

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Monitoring Framework (Project Operations)

Environmental and Social Criteria	Frequency	Locations
Solid Waste ▪ Adequate bins are provided ▪ Bins are emptied in a timely manner ▪ Signs of littering and accumulation of wast	Weekly	Within and around school compound
Waste Water ▪ Septic tanks and grease traps installed and are functioning ▪ Septic tanks and grease traps are cleaned/emptied regularly ▪ Black and grey water are treated and discharged via soak away	Monthly	Waste water discharge areas
E-waste ▪ E-waste is managed in accordance with E-waste guidelines ▪ Damaged components of solar energy systems are disposed of in accordance with best practices.	Annually	All schools

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EMP Implementation Framework

Pre-Construction Phase	
MoE	Establish PIU and hire Environmental and Social Specialist
	Hire Supervisory Consultants
	Engage the EPA on obtaining Construction Permits for new schools
Supervisory Consultants	Assign ESHS Personnel as part of the Supervision Team
	Prepare construction bidding documents to include environmental and social requirements
	Ensure that the contractor's CESMP is prepared and approved.
Contractors	Assign responsibilities for environmental and social compliance to a competent team member
	Prepare the CESMP
	Conduct workers orientation and training on health and safety practices to be followed at the construction site
Construction Phase	
MoE	General oversight of the project's environmental and social compliance
Supervisory Consultants	General oversight of the contractors environmental and social performance
	Monitor project activities to ensure health, safety, environmental and social compliance
	Identify non-conformances and recommend corrective actions
	Participate in stakeholder engagements and take the lead in addressing/responding to stakeholder grievances
	Convene meetings and discuss status of contractors' compliance with environmental requirements
Contractor	Implementation of the CESMP, and environmental, social, health and safety mitigation and management measures and corrective actions
	Participate in the project's progress meetings to discuss environmental, social, health and safety compliance
	Monitor for non-compliances and effectiveness of mitigation measures
	Engaging with stakeholders and addressing any grievances which might arise
	Conducting regular refresher training for workers on environmental, social and health and safety requirements
Operation Phase	
MoE and Regional Education Departments	Prepare guidelines for the management of e-waste.
	Ensure e-waste and waste generated from the solar energy installation are managed in accordance with the guidelines.
	Ensure proper management of solid and liquid waste.

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Conclusion

1. The project will finance the construction of four new primary schools at Recht door Zee (Region 3), Tuschen (Region 3), Tabatinga (Region 9) and Wisroc (Region 10), and the rehabilitation/extension of 13 existing primary schools.
2. The project is classified as Category B, which means it is likely to cause mostly local and short-term negative environmental and associated social impacts and for which effective mitigation measures are readily available.
3. The project is not complex and most of the impacts will occur during the construction phase and are short term, localised, and are low to medium risks.
4. Implementation of the recommended management and mitigation measures during pre-construction, construction and operational phases will ensure that potential adverse project impacts are prevented or reduced.

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