

Project Description

For

Lethem Hospital in Region No. 9



Developer: Ministry of Health

Contractor: China Machinery Engineering Corporation

Project Description

1. Project Summary

The Government of Guyana has received a loan from the Inter-American Development Bank (IDB) for Health Care Network Strengthening (GY-L1080 I 5706/0C-GY). The objective of the project is to improve the health of the Guyanese population through increased access, quality, and efficiency of health services.

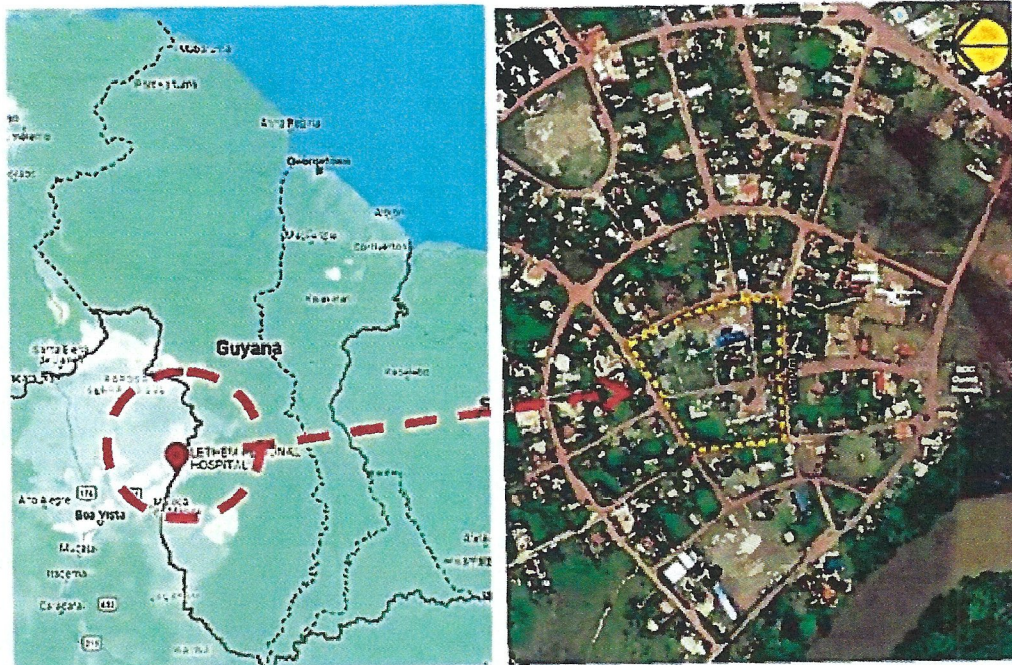
The specific objectives of this operation are to: (i) improve health outcomes associated with low and high complexity procedures, by expanding the capacity of strategic hospitals; (ii) extend coverage of diagnostic, medical consultation, and patient management services inclusive of the country's hinterlands, through digital health (DH); and (iii) increase the efficiency of the public health system, by strengthening key logistic management, and support processes and inputs.

As a part of this project, the Government of Guyana and IDB, proposal for the design and construction of a NEW REGIONAL HOSPITAL and the rehabilitation of the Existing Main Hospital Building in Lethem, Region #9, Guyana.

2. Location of Project

The proposed hospital construction project is located in the existing Lethem Regional Hospital Compound in the Town of Lethem, the administrative center of Region #9 [Upper Takutu-Upper Essequibo], which is located on the latitude of 3.38333 and longitude of -59.8.

Situated at the Brazilian border, the town serves key administration, commercial and health care services destination for several outlying villages, whose inhabitants are predominately indigenous Amerindian. The land profile [Lethem] is gently undulating territory at a general elevation of 90 to 120 meters.



3. Project Site

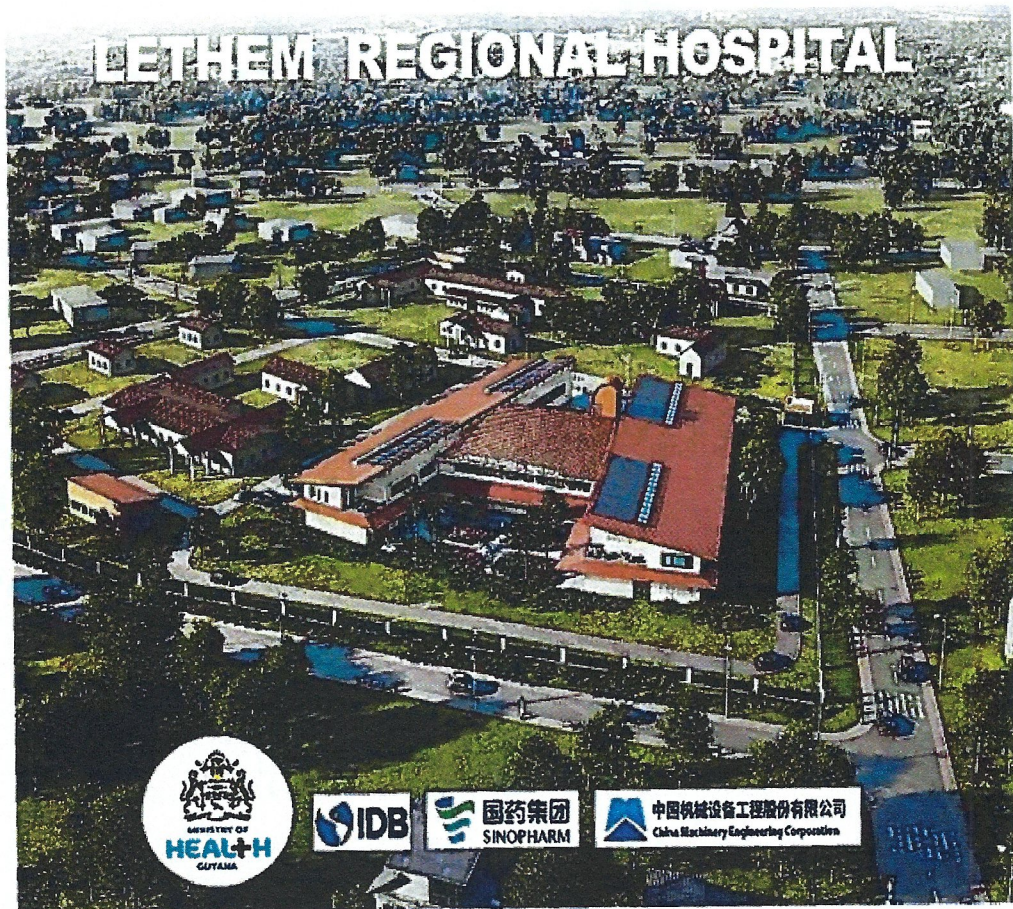
The Lethem hospital compound is approximately 10.5 acres with the project development area being approximately 2.5-3.5 acres. [1 acre = 4,046 M²].

The site has an irregular shaped boundary, which is bounded on all four [4] sides with paved circulation roads. The existing hospital compound has several buildings and offer critical health services, which shall be retained and continue during the construction of the subject project. In this context, the access to the site is restricted to the north site only, where several access points exist.

The soils in this region are predominantly sandy loam, with a pH ranging from 4.5 to 6.5.

The specific soil type of Lethem is likely to be a Ferrosol, as this is the most common soil type in the region. Refer to the ESHS and Geotechnical reports for technical information.

The area identified shall be utilized for the construction of the New Hospital Building, renovation of the existing main hospital building, its services and support infrastructure inclusive of roadways, pavements, landscape works.



4. Hospital Overview

This project is Design and Build Lethem Hospital in Region No. 9. This hospital will have 100 new beds. It includes outpatient services, medical technology, inpatient wards, and auxiliary facilities. Total covered area is 9524 m² with outdoor patient parking. The project includes the construction of a new hospital building and renovation of existing hospital structures, including its service and support infrastructure such as roads and sidewalks.

Portions of the existing hospital buildings will be preserved. Some existing structures will be demolished to make space for the new hospital building. Some existing structures will be converted into ancillary buildings. During the construction phase of this project, the existing buildings retained will need to remain operational. The main entrance for this project will be on the north side of the site to minimize impact on existing building use.

5. Main Technical Data

Table 1 List of medical department and distribution of beds

NO	MEDICAL DEPARTMENT	BED NUMBER
1	OBS/GYN CLINIC	-
2	PRE-NATAL	10
3	LDR SECTION	-
4	POSTNATAL	11
5	LABORATORY	-
6	IMAGING UNIT	-
7	OUT-PATIENT UNIT	-
8	EMERGENCY UNIT	6
9	FEMALE WARD	22
10	MALE WARD	22
11	SURGERY DEPARTMENT	-
12	PAEDIATRIC UNIT	16
13	ICU/HDU	13
	TOTAL	100

6. Project impacts

Project impacts are just described in the table below.

Table 6-1 Summary of environmental and social impacts

Factor	Impact	Risk Level
Soil	Soil Disturbance and Erosion caused by topsoil cleaning and earth excavation work	Low risk
	Soil contaminated by the hazardous materials (fuel and oil) from construction machinery	Low risk
	Soil contaminated by non treated effluents and sewage	Low risk
	Soil contaminated by solid waste	Low risk
	Soil contaminated by medical waste	Low risk
Water	Identical with the soil except for water sedimentation	Low risk
Noise	Workers' health effected by noise generated during construction activities	Low risk
	Hospital's staff, patients and visitors health effected by noise generated during construction activities	Low risk
	Noise generated by the use of generators, pumps and compressors	Low risk
Air	Ambient air quality	Low risk
	Emission of greenhouse gas caused by the use of construction machinery	Low risk

7. environmental management and mitigation measures

It outlines measures to mitigate the potential environmental and social

impacts discussed in above Table. It includes recommendations for the design phase, actions before construction, mitigation strategies during construction.

7.1 Design Phase Considerations

Here are recommendations that should be considered in the project design, including for the various interventions at the hospital.

- Incorporate Guyana National Building Codes in the hospital designs.
- Construct the ground floor above ground level and improve drainage designs to minimize flooding risk.
- Consider regular maintenance of essential systems (electrical, air-conditioning, oxygen supply, vacuum, sewage, wastewater, plumbing, drainage, potable water, and medical waste management).
- Assess the liquid waste management system's capacity and effectiveness for potential upgrades.
- Include provisions for water harvesting, universal access, landscaping features to offset flood risk, drainage improvements, and energy-saving infrastructure.
- Consider natural ventilation, ensuring proper design and installation.
- Explore using renewable energy sources, especially solar energy,

adhering to the Bank’s guidelines for solar equipment sourcing.

- Improve parking design to accommodate increased staff, patient, and visitor loads.
- Share specific intervention designs with hospital management for review and input before finalization.
- Carefully plan construction to prevent or minimize service disruption, involving MoH and hospital management. Construct new buildings first, relocate existing services, then commence work within the existing space.

7.2 Prevention and Mitigation Measures During Construction

Impact	Prevention and mitigation measures
Soil Disturbance and Erosion caused by topsoil cleaning and earth excavation work	<ul style="list-style-type: none"> • An outdoor rainwater network is set up to collect rainwater from the hospital campus, which is then discharged into the municipal rainwater network. • The ground floor will be built above the ground level and the drainage system will be improved to minimize flooding risk.
Soil contaminated by the hazardous materials (fuel and oil) from construction machinery	<ul style="list-style-type: none"> • Ensure the availability of an environmental kit consisting of sand, sawdust or shavings, shovels, plastic bags, and temporary containers to respond to potential spills. • The design of the equipment locations must include safety measures for emergencies or spills: underneath the equipment or storage tanks, there should be a concrete platform • Maintenance of machinery and vehicles should be conducted off-site at authorized workshops.
Soil contaminated by non treated effluents and sewage	<ul style="list-style-type: none"> • Utilize portable toilets and bathrooms during the construction phase and ensure permanent facilities are in place for the operational phase.

Impact	Prevention and mitigation measures
	<ul style="list-style-type: none"> • Maintain separate toilets for men and women, adhering to the standard of 20 men or 15 women per toilet. Sanitize superficially at least three times a day and conduct in-depth cleaning twice a week. • Ensure proper disposal of waste through certified companies. • Ensure that all waste disposal companies are certified by the relevant environmental authorities (e.g., EPA and/or Ministry of Health).
Soil contaminated by solid waste	<ul style="list-style-type: none"> • Implement a waste segregation system on-site to separate domestic waste, recyclables, and hazardous waste. • Provide labeled waste bins for different types of waste (e.g., food waste, plastics, cardboard, glass, hazardous) to encourage proper disposal. • Ensure waste storage areas are equipped with appropriate containment measures to prevent waste from spilling or spreading to surrounding soil. • Establish designated waste storage areas with clear signage to prevent unauthorized disposal. • Arrange for regular waste collection and disposal through authorized waste management services. • Conduct training sessions for construction workers on proper waste disposal practices and the importance of maintaining a clean work environment. • Display informative posters and guidelines about waste management and soil contamination prevention at prominent locations on-site. • Regularly monitor and inspect waste storage areas and construction sites for any signs of improper waste disposal or soil contamination. Implement corrective actions promptly if any issues are identified during inspections. • Encourage the use of eco-friendly and biodegradable materials for construction to reduce the risk of soil contamination. • Opt for construction materials with minimal packaging to reduce waste generation. • Implement erosion and sediment control measures, such as silt fences and sediment traps, to prevent contaminated runoff from affecting the soil. • Stabilize exposed soil surfaces with vegetation or other erosion control techniques. • Develop and implement an emergency response plan to

Impact	Prevention and mitigation measures
	<p>address accidental spills or significant waste-related incidents.</p> <ul style="list-style-type: none"> • Equip the site with spill containment kits and train workers on their proper use.
Soil contaminated by medical waste	<p>Set up reminders or protections in front of medical waste storage facilities that may be damaged by construction nearby, and train mechanical operators and workers to identify medical waste.</p>
Identical with the soil except for water sedimentation	<ul style="list-style-type: none"> • Implement erosion control measures, such as silt fences, sediment traps, and stabilizing exposed soil surfaces with vegetation, to minimize soil disturbance and reduce sediment runoff. • Design and install effective drainage systems to manage surface runoff and prevent sediment from entering water bodies. • Conduct regular monitoring of water quality in nearby water bodies to detect any changes in sedimentation levels and take corrective actions if necessary. • Schedule construction activities during dry seasons to reduce the risk of increased sediment transport due to surface runoff during the rainy season. • Educate construction workers on best practices for minimizing soil disturbance and managing sediment runoff. • Establish temporary storage areas for construction materials away from water bodies to prevent accidental sediment transport.
Workers' health effected by noise generated during construction activities	<ul style="list-style-type: none"> • Conduct regular noise level monitoring on-site to ensure compliance with established safety standards. • Implement noise control measures, such as using quieter construction equipment and machinery and/or installing noise barriers around high-noise areas.
Hospital's staff, patients and visitors health effected by noise generated during construction activities	<ul style="list-style-type: none"> • Provide all construction workers with appropriate hearing protection devices, such as earplugs or earmuffs. • Schedule noisy construction activities during times when fewer patients, visitors, hospital personnel and workers are present on-site or outside of peak working hours to minimize exposure. • Implement rotating work schedules to limit individual workers' exposure to high noise levels. • Conduct regular training sessions for workers on the risks

Impact	Prevention and mitigation measures
	<p>of noise exposure, the importance of using hearing protection, and proper use and maintenance of hearing protection equipment.</p> <ul style="list-style-type: none"> • Display informative posters and signage about noise hazards and protection measures at prominent locations on-site. • Provide designated quiet areas where workers can take breaks away from high-noise environments to reduce overall noise exposure. Ensure rest areas are well-insulated and located away from noisy construction zones. • Regularly maintain and service construction equipment and machinery to ensure they operate efficiently and produce minimal noise. Replace or repair any faulty equipment that generates excessive noise. • Establish and enforce guidelines for contractors' workers regarding cultural behaviors that contribute to noise, such as playing loud music or speaking loudly. • Promote a culture of noise awareness and encourage workers to be mindful of their noise levels on-site.
Ambient air quality	<ul style="list-style-type: none"> • Implement dust suppression techniques such as water spraying on exposed soil, stockpiles, and construction areas to minimize particulate matter. • Cover stockpiles of dry materials like sand and debris to reduce wind-blown dust. • Use enclosures or dust extraction systems during activities that generate significant dust, such as cutting concrete walls, floors, and blocks. • Ensure construction equipment and vehicles are well-maintained and comply with emission standards to minimize particulate matter and gas emissions. • Restrict idling of vehicles and machinery to reduce emissions. • Provide personal protective equipment (PPE), such as masks and goggles, to workers to protect them from dust exposure. • Conduct regular health checks and monitoring for workers exposed to dust and particulate matter. • Maintain a clean construction site by promptly removing waste and debris. • Establish designated areas for storage and handling of construction materials away from active work zones and sensitive receptors.

Impact	Prevention and mitigation measures
	<ul style="list-style-type: none"> • Schedule soil-disturbing activities during periods of low wind speeds and avoid dry, windy conditions to reduce dust generation. • Plan construction activities during non-peak hours to minimize exposure to surrounding communities and hospital occupants. • Implement an air quality monitoring program to regularly assess particulate matter levels on-site and in the surrounding area. • Take corrective actions if particulate matter levels approach or exceed the maximum exposure limits. • Provide training for construction workers on best practices for reducing dust and managing emissions. • Communicate with hospital staff, patients, and visitors about potential air quality impacts and mitigation measures being implemented.
<p>Emission of greenhouse gas caused by the use of construction machinery</p>	<ul style="list-style-type: none"> • Schedule and plan construction activities to minimize the use of machinery, thus reducing fuel consumption and emissions. • Use energy-efficient and low-emission construction machinery and vehicles whenever possible. • Ensure regular maintenance and servicing (out of the project area) of construction machinery and vehicles to maintain optimal fuel efficiency and minimize emissions. • Replace or upgrade outdated machinery with more efficient models to further reduce greenhouse gas emissions. • Implement efficient fuel management practices, such as proper fueling techniques and regular checks to prevent fuel wastage. • Use cleaner fuels, such as low-sulfur diesel, to reduce emissions from combustion. • Enforce strict policies to limit idling of construction machinery and vehicles to reduce unnecessary fuel consumption and emissions. • Educate operators on the importance of turning off engines when machinery is not in use. • Invest in carbon offset initiatives, such as tree planting or supporting renewable energy projects, to compensate for the emissions generated during construction. • Partner with local environmental organizations to develop and implement offset programs.

Impact	Prevention and mitigation measures
	<ul style="list-style-type: none"> • Optimize the construction design and plan to reduce the need for extensive site preparation and earthmoving, which can lead to higher emissions. • Implement a monitoring system to track greenhouse gas emissions from construction activities. • Report emissions data to relevant authorities and stakeholders, and take corrective actions if emissions exceed acceptable levels. • Prioritize the procurement of energy-efficient demand-side equipment (e.g., A/C units, fans, lighting fixtures) to reduce emissions during the construction and operational phases. • Consider the lifecycle emissions of equipment and materials when making procurement decisions

8. Conclusion

The Health Care Network Strengthening Project aims to improve the health of the Guyanese population through increased access, quality, and efficiency of health services by improving health outcomes associated with low and high complexity procedures, by expanding the capacity of strategic hospitals; by extending coverage of diagnostic, medical consultation, and patient management services, inclusive of the country's hinterlands, through digital health; and by increasing the efficiency of the public health system, by strengthening key logistic, management, and support processes and inputs.

The Project, according to the IDB's classification, is Category B due to potentially moderate direct, indirect and cumulative negative environmental and social impacts from activities during construction,

rehabilitation and operation of the healthcare facilities and associated infrastructure. The project is likely to cause mostly local and short-term negative environmental and associated social impacts for which effective mitigation measures are readily available.

During the conduct of the ESA and preparation of the ESMP, key project details emerged, including the hospital to be targeted under the project, and some of the likely interventions at each of these facilities, based on their current priority needs. These were taken on board in the ESA to provide a better analysis and understanding of the potential impacts of the project.

This ESA and ESMP assessed the potential impacts of project activities across the various components of the project. Most of the impacts will occur during the construction phase and are short term, localized, and are low to medium risks. Most of the direct impacts will occur within the hospital's environment itself. Impacts relating to the wider community are mainly related to the disruption of services at the hospital during the construction period.

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 health care delivery in Guyana, especially in the regions within which the hospital are located.