Name of Developer: Orin Fernandes

Developers' Address: Chinese Landing Barama River

Contact details: 694 3708

Business Name: Orin Fernandes Sawmill

Project Type: Sawmill

Projected Capital Investment: Guy$30M

Annual Turnover: Projected Guy$ 10M

Project Duration: Approx. 20 years based on market demands and trends

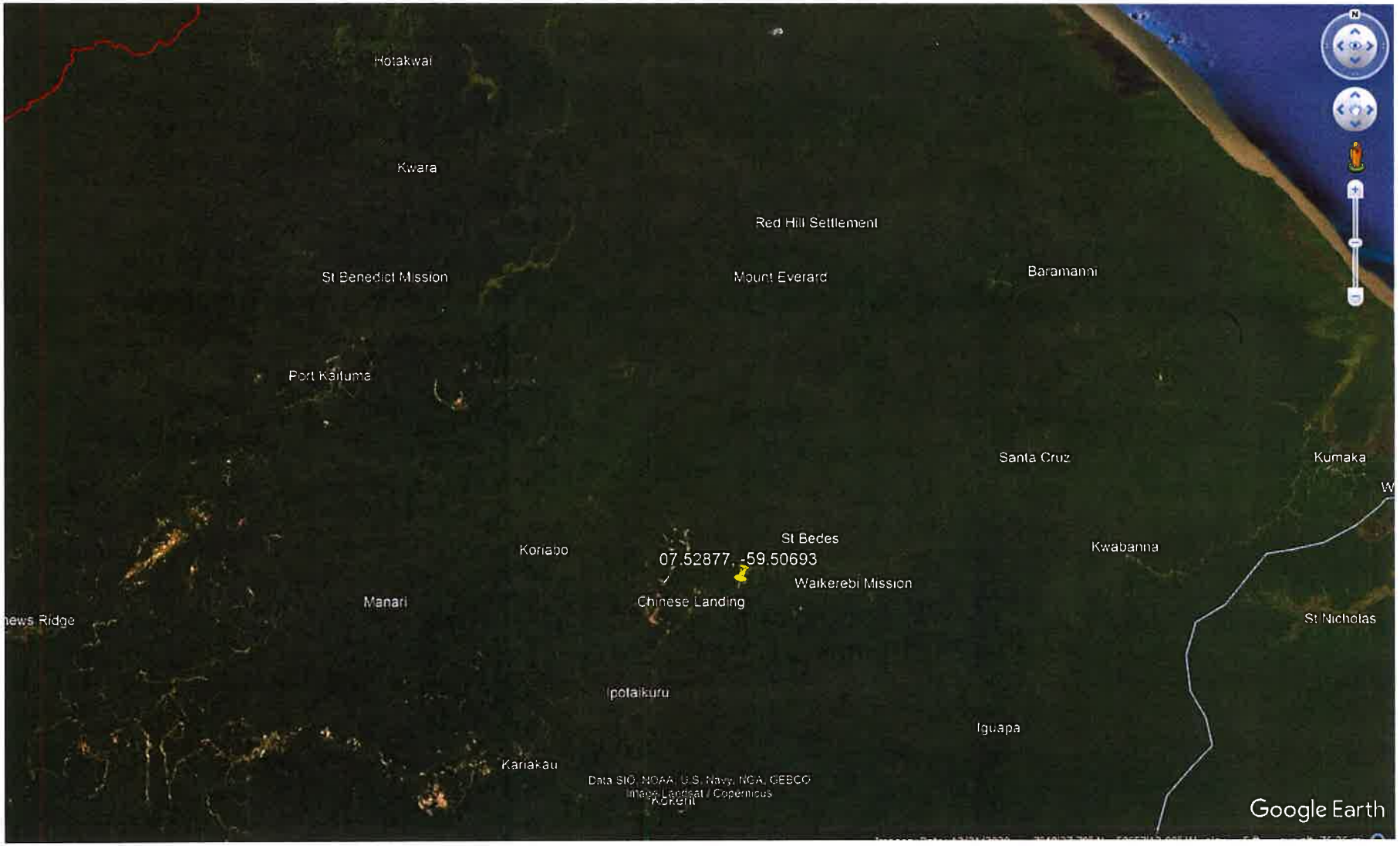
Proposed Project Location: Chinese Landing Village Barama River, Moruca Sub-Region #1, Guyana

Project Location and Description

The proposed sawmill will be **located** at Plot 'G', situated at Hauraruni, Left Bank of the Marakai Creek on the Western Side, of the Soesdyke-Linden Highway. The proposed site has a **total land area** of 4.8170 acres, covered in both shrubs and Dakama trees but approximately one (1) acre of the land will be cleared to establish the proposed sawmill. The general topography of the area is slightly undulating and the soil type is predominantly white sandy soil which is freely drained. The proposed site is surrounded by vegetation (Dakama trees) on the west, east is the Soesdyke-Linden Highway, while to the north and south is vegetation (Dakama trees). Please refer to Figure 1 below.

The proposed sawmill site is **accessible** by the Soesdyke-Linden Highway, a paved road capable of accommodating two-way traffic and withstanding inclement weather. From the Highway, a turnoff can be made west onto an existing sandy trail (Refer to Figure 2 below) which is approximately 1.35 km from the Hauraruni Village.

Figure 1: Showing the location of the sawmill



Description of the Site

The proposed sawmill site is located within a forested area on the right bank of the Barama River. The soil type is predominantly clay, which naturally drains into the nearby river. The sawmill will occupy Lot 460 in the Long Creek Commercial Area, along the Soesdyke-Linden Highway. This area spans approximately 3 acres and features a slightly undulating topography surrounded by dense vegetation.

The site is accessible via a 2-hour journey from Kwebana Landing through the Barama River. The sawmill is positioned on the right bank of the river within the Chinese Landing village (Refer to Figure 2 below).

Project Design

The sawmill facility will utilize the entire 3-acre site and feature state-of-the-art machinery for efficient wood processing. Key infrastructure includes:

- **Residential Units:** Two buildings for accommodation: a family house and a workers' house, each measuring approximately 20 ft x 30 ft.
- **Utility Buildings:** A generator room (10 ft x 15 ft) for power supply.
- **Operational Facilities:** A log pond and a sawmill/lumber yard shed measuring 100 ft x 45 ft.
- **Access:** The only access to the site is via the river, ensuring an eco-friendly transport route.

Operational Phase

The sawmill is expected to process approximately 70-150 cubic meters of logs monthly. Equipment on-site includes:

- One mill
- One moulder/planer
- One surface planer
- One edger
- One or two chainsaws
- Two diesel generators (125 KVA primary and 95 KVA standby)
- One tractor

Timber species to be processed include Bulletwood, Kabukalli, Purpleheart, Karatie, Silverballi, Greenheart, and others. Logs will be sourced from the neighboring Amerindian community of Waikerebri Village and transported via the river.

Upon arrival, logs will be unloaded into a log pond with a capacity of 200-300 m^3. A tractor will transfer the logs from the pond to the mills, where they will be debarked and sawn into boards. Both rough and dressed lumber will be produced and stored on dunnage/stickers for delivery to customers.

Utilities and Services:

- **Water Supply:** Sourced from a nearby creek and rainwater collected in two 450-gallon tanks.
- **Power Supply:** Primary electricity will be provided by a 125 KVA generator, supplemented by solar lighting to reduce reliance on the generator at night.
- **Communication:** Mobile services provided by GTT and Digicel.

- **Fuel Storage:** Fuel storage includes 3-45 drums of diesel and 2-45 gallon drums of gasoline, secured in designated areas.

Safety Measures:

- PPE (e.g., gloves, visibility vests, helmets, goggles, steel-tip boots) provided to all workers.
- A first aid kit will be available in the office, and a van will be on standby for emergencies.
- Fire extinguishers and sand buckets will be strategically placed.
- "No Smoking" signs will be prominently displayed in critical areas.

Project Size

The total capital investment for the sawmill operation is 30M Guyana dollars, with an estimated annual turnover of 10M Guyana dollars. The operation will employ 15 individuals from the local or nearby communities. Working hours are Monday to Friday, 8:00 AM to 5:00 PM, and Saturday, 8:00 AM to 12:00 PM.

Non-Technical Explanation of the Project

The sawmill aims to transform raw logs into high-quality lumber, utilizing sustainable and abundant timber resources. This initiative will:

- Boost employment and income in rural areas.
- Foster economic growth in related industries such as transportation, manufacturing, and retail.
- Adhere to environmental protection standards and promote sustainable forest management.
- Enhance Guyana's reputation in the global wood products market.

By adding value to natural resources and prioritizing sustainability, the sawmill will contribute to local development and long-term economic and environmental benefits.

Potential Effects on the Environment

The sawmill's operations may impact the local environment through waste generation, vibrations, and emissions from sawdust and machinery. To mitigate these impacts, the project will:

- Implement waste reduction practices.
- Use energy-efficient equipment.
- Enforce proper disposal methods for sawdust and other by-products.

Comprehensive environmental management practices will ensure minimal ecological disruption while promoting sustainable forestry and resource conservation.

Environmental Effects	Mitigation Measures
Noise Nuisance Excessive noise from machinery, generators, and other equipment can disrupt workers' comfort and concentration. To mitigate this, all machinery and equipment will be regularly repaired and maintained in strict accordance with the manufacturer's specifications, ensuring optimal performance and minimal noise levels. Maintenance activities will be conducted exclusively during business hours to reduce disruption. Additionally, generators will be housed in a dedicated generator room equipped with exhaust stacks to further minimize noise impact on the surrounding environment and workspace.	**Noise Nuisance Management** The use of modern machinery ensures reduced noise levels compared to older models, minimizing disruptions. Generators will be housed in a dedicated generator room equipped with exhaust stacks to further mitigate noise impact. All machinery and equipment will be operated during regular business hours and maintained in strict adherence to the manufacturer's guidelines to ensure optimal performance and noise control. To enhance safety and efficiency, our experts will inspect the machinery, ensuring sharp blades are installed as needed. The workforce will be provided with all necessary personal protective equipment (PPE), including hearing protection, to safeguard their health and well-being in the work environment.
Fire Hazards Potential fire risks may arise from defective electrical equipment, such as faulty wiring or overloaded sockets, as well as from intentional acts of arson or careless behavior by workers, including smoking on the worksite.	**Fire Prevention and Response Measures** Fire extinguishers and sand buckets will be strategically placed throughout the sawmill to ensure quick access in case of an emergency. All staff members will receive comprehensive training on the proper use of fire extinguishers to enhance preparedness. Additionally, electrical points and circuits will undergo regular inspections and maintenance to identify and address potential hazards promptly.
Vibration The operation of heavy equipment and machinery can generate vibrations that may impact the surrounding environment and worksite.	**Vibration Management** Equipment will be operated only as needed to feed wood into the mills, minimizing unnecessary vibrations. To further reduce vibration impact, all machinery will be mounted on a concrete platform. Operations will be conducted during regular business hours, with all equipment maintained and utilized in strict accordance with the manufacturer's instructions to ensure safety and efficiency.
Particulate Matter (Dust) Dust emissions are anticipated from equipment such as mills and planers during operation.	**Particulate Matter (Dust) Management** Dust emissions from equipment such as mills and planers will be managed using dust containment containers connected to the planers' extractor devices. Sawdust produced by the mills and planers will be regularly cleared from the mill floor to maintain cleanliness and minimize airborne particles.

	To further control dust levels, the mill floor will be periodically dampened. Additionally, all personnel will be provided with appropriate personal protective equipment (PPE), such as dust masks, to safeguard their health and well-being.
Water Pollution Sawmills may contribute to water pollution through runoff from the mill floor, sawdust, chemicals used for wood treatment, or oil and fuel spills from machinery.	• Install proper drainage systems to prevent runoff into nearby water sources. • Implement oil and fuel spill containment systems, such as spill kits and catch basins. • Use biodegradable and eco-friendly chemicals for wood treatment where possible. • Regularly inspect and maintain machinery to prevent leaks.
Soil Erosion The construction and operation of sawmills, particularly in areas with deforestation or limited vegetation, can lead to soil erosion, especially during heavy rainfall.	• Implement erosion control methods, such as planting vegetation or creating berms around the site to prevent soil loss. • Design the facility with proper drainage to minimize water runoff. • Avoid disturbing the natural landscape more than necessary.
Waste Generation (Wood Waste) Sawmills generate large amounts of wood waste, such as sawdust, wood chips, and off-cuts, which can contribute to landfill issues if not managed properly.	• Repurpose sawdust and wood chips for other industries, such as for biomass fuel, mulch, or in the production of composite materials. • Establish recycling programs for wood waste, converting it into value-added products. • Implement efficient waste management systems to reduce waste sent to landfills.

Waste Generation

Solid Waste Management

Domestic waste, including food packaging and drink cans, will be collected in covered waste containers and stored in 45-gallon barrels before being disposed of in a designated pit. Due to the sawmill's remote location, transportation of wood waste, such as shavings, wood ends, and slabs, to the nearest community for use by poultry farmers is costly and logistically challenging. As a result, the wood waste generated will be responsibly utilized for landfilling, ensuring that it is managed on-site in a way that minimizes environmental impact.

Effluent

Greywater and sewage produced by employees and customers will be directed into a septic tank for anaerobic treatment. The septic tank is designed for easy access to facilitate regular maintenance. Once the tank reaches capacity, professionals will be responsible for its safe and efficient emptying, ensuring compliance with environmental standards and minimizing the risk of contamination.

Hazardous Waste

The servicing of equipment such as the tractor, chainsaws, and generators will generate approximately 10-15 gallons of waste oil. To prevent spills and ensure safe storage, the waste oil will be kept in securely covered 5-gallon plastic pails within the mechanic workshop. Whenever possible, the used oil will be repurposed and returned to the chainsaws, promoting efficient resource use and minimizing waste.

Prepared by:Orin Fernandes (Owner)

Date: 2025-01-02