Project Summary- Logging Activities within SFA ESS 06/10

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Project Type: Logging

Project Location: SFA ESS 06/10, Left Bank Bonasika River, Right Bank Essequibo River

Sector of Operation: Forestry

Annual Turnover: 3.5 million dollars

Working Hours: 7a.m.-4 p.m.

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Project Description

The State Forest Authorization (SFA) was granted in 2010 by the Guyana Forestry Commission (GFC), and operational activities have begun since then. The concession is situated at Left Bank Bonasika River, Essequibo. The concession area is 19364 acres (7837 hectares). The operational activities entail strictly logging activities employing selective harvesting to ensure sustainable management of the forest resource (GFC, n.d.). These activities include but are not limited to identify harvestable trees, tree marking, directional felling to minimize damage to residual trees, post-harvest assessments to evaluate forest regeneration, and road construction with minimal environmental impact to access harvesting areas. All the logging activities comply with the GFC requirements and international best practices to promote sustainable forest management and biodiversity conservation (GFC, 2010; ITTO, 2006).

The topography of the area is flat and the soil type is sandy/clayey soils. The concession can be accessed from the Essequibo River.

The logs are fell using mechanized method which is the chainsaws and the logs are transported by a tractor to the log market. Log species such as Kabakali, Shibidan, Taurinero, Duka, Kerati, Wallaba, Silverbali, etc. are harvested based on the quota stipulated by GFC which is 2115.72 cubic meters per year which is about 100 tags per month.

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Further, there are other small logging concessions nearby and they have to follow and comply with the requirements set out by GFC and international best management practices.

Solar lights are used in the evening and Digicel services are provided in the area and given the remoteness of the area, there is landline service available. The only means of transportation is by the River.

Project size and duration

The annual turnover as of 2023 was 3.5 million dollars, Currently, there are 5 hired to work in the concession to perform different tasks such as operators, 'chokermen', driver, etc. The life of the operation is dependent on achieving the annual allowable cuts which is 100% but due to challenges, the annual allowable cuts is at less than 50% so a 1-year contract, SFA Agreement granted by GFC. The intention is to achieve 100 % once the challenges are overcome. Once 100% annual allowable cuts are achieved then GFC will grant a 3 years contract.

Construction phase

No construction activities are required within the concession area, as existing trails provide adequate access to the concession and other areas within it.

Project Operation

Logging activities will be carried out in accordance with the criteria stipulated by the Guyana Forestry Commission (GFC). A tree spotter identifies suitable trees

for harvesting based on these criteria. The selected trees are marked, and the direction of their fall is determined to minimize damage to surrounding vegetation.

Approximately 6 persons will be hired to perform different task within the concession. The chainsaw operators fell the marked trees using directional felling techniques. Once felled, the logs are trimmed and extracted by tractor and transported to the designated log market. The tractor will transport the logs from the log market to the barge for delivery to the sawmills.

Additionally, there are two camps made of tarpaulins and they are measuring 25 ft L by 20 ft W by 10 ft H. the ideal location used to setup the camps were access to water, particularly the creek water which is used for both domestic purposes such as bathing, washing, etc. and drinking and occasionally, rainwater is also harvested.

The working hours are from 7 a.m. to 4:00 p.m. from Monday to Saturday. However, sometimes due to the fulfilment of orders, workers may request to work on Sunday(s).

A first aid and snake bite kits will be provided to treat minor injury and snake bite and a speed boat is available to transport any injured person to the nearest health center.

The closure phase of this concession will occur if the Guyana Forestry Commission (GFC) does not renew the State Forest Authorization (SFA)

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Agreement upon its expiry, and may be if production levels remain low. In such cases, the Environmental Protection Agency (EPA) will be officially notified of the cessation of operations, including details of site conditions and the decommissioning plan. Equipment, such as tractors, will be removed from the concession, and tarpaulin camps will be dismantled. Posts used to support tarpaulins will be stored in a designated area for potential reuse, while the tarpaulins themselves will be responsibly disposed of, prioritizing recycling or authorized landfill options in line with EPA standards. The solid waste pit and pit latrine will be properly backfilled, ensuring measures to prevent environmental contamination. Workers and their belongings will be removed from the concession in an organized manner to avoid leaving debris. Additionally, basic site rehabilitation measures, such as leveling disturbed areas or planting trees, may be undertaken to restore the site to a natural state. The entire process will be documented, with reports submitted to the GFC and EPA to ensure regulatory compliance and environmental safety.

The potential environmental Impacts and mitigation measures

The environmental impacts identified in the table, may be generated from the logging activities within the concession, and it is anticipated that these impacts are unlikely to be significant.

Potential environmental impacts	Mitigation measures
Carbon Emissions	• Trees are harvested using selective logging, not clear

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• Loss of Carbon Storage: Removal of trees reduces the forest's ability to sequester carbon, contributing to greenhouse gas emissions. • Machinery Emissions: Use of chainsaws and tractors generates carbon emissions from fuel consumption.	felling. Directional felling techniques are employed to minimize damage to surrounding vegetation and ensure the survival of saplings and non-target species (GFC, 2010). • Selective logging emits 6% of tropical greenhouse gases annually (Ellis, etal, 2019) as the Guyana Forestry Commission, (2024) posited that the total carbon dioxide emissions for the year 2023, as stated in the document, are **13,936,482 tCO2e** • Tractor and chainsaws are switched off when not in use and they are serviced at least once per month ensuring optimal performance, fuel efficiency and reduced emissions into the environment.
Soil Erosion and Compaction **Trail and Road Use**: The use of existing trails by tractors and other machinery can lead to soil compaction and erosion, especially during the rainy season.	All operational activities are conducted during the dry weather. The trails are maintained to reduce soil erosion as well as most of the forest remained intact trail to reduce the displacement of soil particles. Buffer zones are

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	maintained, and the harvesting of logs is not done within the buffer zones.
Loss of Biodiversity • **Habitat Disruption**: Felling trees and transporting logs can disturb wildlife habitats, leading to the displacement of species. • **Key Species Removal**: Logging may disproportionately target high-value timber species, reducing the abundance of keystone species and affecting ecosystem balance.	Logging is avoided in areas critical for wildlife or near water bodies as buffer zones are maintained. There is a fine once GFC found that harvesting is done in the buffer zones. Workers are warned not to hunt, trap wildlife especially the protected, threatened and endangered species. The value timber species such as Greenheart, Purpleheart, Wamara, and others are harvested based on the stipulated requirements outlined by the Guyana Forestry Commission (GFC) to ensure sustainable forest management. These requirements include adherence to the Minimum Cutting Diameter (MCD) for each species, which ensures that only mature trees are harvested while younger trees are left to grow and contribute to future forest regeneration. Additionally, selective logging practices are employed, meaning that not all trees in a given area are harvested, and key seed trees

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	are retained to support natural regeneration. Directional felling techniques are also mandated to minimize damage to surrounding vegetation, including saplings, non-target species, and wildlife habitats. Furthermore, the spacing and density of harvested trees are carefully regulated to maintain biodiversity and prevent overharvesting. For example, if multiple high-value trees are present in close proximity, the logger may only be allowed to harvest a portion of them to preserve forest structure and ecosystem balance. These guidelines, combined with regular monitoring and reporting by the GFC, ensure that the harvesting of these valuable species supports long-term forest health and sustainability while providing economic benefits.
Forest Degradation • **Selective Logging Damage: Even with selective logging, damage to surrounding trees and vegetation can occur during felling and extraction.**	• To minimize logging damage, directional felling techniques are mandated to control the direction in which trees fall, reducing harm to nearby vegetation, saplings, and non-

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• **Canopy Gaps: Removal of large trees creates canopy openings, altering microclimates and exposing the forest floor to more sunlight, which can affect species composition.**	target species. Pre-harvest planning is required to carefully design logging blocks and skid trails, minimizing unnecessary machinery movement and protecting residual trees. Additionally, only mature trees that meet the Minimum Cutting Diameter (MCD) are marked for harvesting, ensuring younger trees remain for future growth. Skid trails are strategically managed to prevent excessive soil compaction and damage to adjacent trees. • The number of trees removed is regulated per hectare to maintain adequate canopy cover and preserve the forest's microclimate. Key seed trees and habitat trees are retained to support natural regeneration and provide wildlife shelter. Post-harvest monitoring ensures that canopy gaps are not excessively large and that regrowth progresses as expected. Additionally, selective logging practices are designed

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	to maintain species diversity, avoiding overexploitation of high-value species that could alter forest composition.
Water Pollution • **Sedimentation**: Soil erosion from trails and log extraction can lead to increased sedimentation in rivers and streams, which can harm aquatic life.	Riparian Buffers: a buffer zone of vegetation of approximately 30 meters is maintained along rivers, streams, and other water bodies to filter sediments and prevent direct runoff. No Logging in Buffers: logging or machinery use is avoided within these buffer zones to protect aquatic ecosystems.
Noise and Disturbance • Noise from chainsaws, tractors, and human activity can disrupt wildlife behavior, particularly for species sensitive to disturbances.	The noise levels produced are anticipated to be minimal, as the tractor and chainsaws are fitted with exhaust stacks and undergo regular monthly servicing to minimize emissions and reduce operational downtime. Chainsaw blades are routinely inspected and replaced with sharp ones to ensure efficiency. Workers will be equipped with proper personal protective equipment (PPE), including hearing protection. he chainsaws and tractors will be switched off when not in use, and their

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	short operating duration is unlikely to significantly impact wildlife.
Dust Dust particles are emitted during tree cutting and from the use of trails, especially during dry weather, which may affect air quality and visibility.	To mitigate this, speed limits on the trail will be reduced to 30 km/h during dry weather to minimize dust generation, and the majority of the forest remains intact due to the selective logging techniques employed, which maintain an adequate canopy cover to reduce the dispersion of dust particles and help preserve air quality.
Non-hazardous waste Solid waste, including cans, tins, bottles, food boxes, plastic bags, and other items generated by workers, can negatively impact the environment if not properly managed.	Solid waste will be collected in a garbage receptacle and emptied a solid waste pit. Small quantities of sawdust and wood ends will be produced when cutting the trees and removing spilt ends. The sawdust will be left at the tree stumps to decompose and the wood ends will be repurposed for meat boards, stools, etc.
Hazardous waste • **Fuel and Oil Spills**: Accidental spills from chainsaws, tractors, or other machinery may contaminate water sources and the soil.	Approximately two 45-gallon drums of diesel and 5 gallons of gasoline will be stored at the campsite. The fuel containers will be tightly covered to prevent leaks or spills, and a funnel or hose will be used for refueling the

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	tractor and chainsaw. A repurposed lube oil bottle will serve as a drip tray to collect waste oil during servicing of the tractor and chainsaw. Approximately 1-2 gallons of waste oil will be generated and stored in a tightly covered plastic jar.
Cumulative Impacts Several other active small-scale logging concessions surround this area, potentially contributing to cumulative impacts on air, water, and land quality.	These loggers are also required to follow the GFC and EPA's guidelines to ensure the sustainable management of forest resources and the preservation of biodiversity.

References:

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