

Baishanlin International Forest Development Inc.

PROJECT SUMMARY

for

Environmental Authorization Application to the EPA for Logging Operations of State Forest Exploratory Permit 1/2011 (Baishanlin A&B)

Project Title

Baishanlin International Forest Development Inc.

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Location of Project

On 4th November, 2011, Baishanlin International Forest Development Inc. was awarded a State Forest Exploratory Permit (SFEP) 01/2011 for **Area A** - Located on the Left Bank Essequibo River, Right Bank Rewa River, Right Bank Aktayaru Creek. Area A is within Administrative Region 9. **Area B** - Left Bank Berbice River; Right Bank Essequibo River and area is within Administrative Region 9 and Region 6.

Description of Project Site

The project site of Area A is of Mixed Forest with land area of approximately one hundred and two thousand, three hundred and thirty-two (102,332) acres and Project site of Area B is of Mixed Forest with land area of approximately one hundred and fifty-six thousand, five hundred and fifty seven (156,557) acres.

Project Rationale

In order to satisfy the needs for raw materials of Baishanlin Linden Wood Processing Plant, to meet the harvesting requirements of Guyana, and to improve the forestry sector capability, by provision of increases in job opportunities, while aiding in the economic and social development in of the concession, Baishanlin company plans to engage in forest harvesting activities with its allocated SFEP in accordance with the policies and laws of Guyana, and more particularly, the Guyana Forestry Commission and the Environmental Protection Agency legislations.

To sustain its operations the Company is currently sourcing rough chain cut lumber from SFPs holders and logging communities as well as TSA holders. However, the fluctuation in the provision of raw materials and quality of material from these suppliers has been affecting the efficiency of the Company's operation and the ability to meet market obligations. As such, Bhaishanlin is pursuing the establishing of a logging operation within the concession to supply logs for the existing sawmilling and downstream processing operations and to produce high quality lumber for both the domestic and overseas markets.

Project Description

The Project will entail the extraction of timber within the forest and transportation to the processing facility at Haimorakabra and at Linden. Logs will be harvested from the approved harvesting blocks and transported to a log yard for grading. The logs will then be transported by logging trucks to Haimorakabra where they would be processed or further transported to Linden's processing facility.

The scope of the operation comprises two phases: a preparatory phase and an operational phase.

Phase 1: Preparatory Phase

Activities include the following:

- a) Studying the geographic parameters of the area and determine the critical skills sets required to organize the planning and harvesting operations;
- b) Recruiting a forest manager, and technicians who will form part of the planning team;
- c) Carrying out forest inventories and similar studies on geology and soils, biodiversity, and social issues within the concession area, in consultation with stakeholders;
- d) Carrying out a zoning of the concession area to establish areas designated for production and protected areas;
- e) Determining a feasible production cycles and production levels in consultation with the GFC;
- f) Purchasing and deploying a large number of logging equipment and vehicular units, covering from chainsaws to heavy bulldozers;
- g) Establishing initially more than 196 km of all-weather roads to allow access to the concession area; the all weather roads will incorporate a number of bridges and culverts

and the establishment of a number of borrow pits; the construction of the roads will lead to the felling of trees along the planned road alignment

- h) Setting up small but fully functional camps/villages that include workers' accommodation, workshops/garages, fuel depots, a First-aid post, and log depots/sawmill sites.
- i) All activities will be done in accordance with the requirements of the Guyana Forestry Commission, including the Code of Practice for Forest Operation.

Phase 2: Operational Phase

Activities will involve the following:

- a) Carrying out 100% pre-harvest inventories and the preparation of stock maps;
- b) Aligning and constructing access roads, skid trails and log depots;
- c) Tree marking, directional tree felling and skidding operations;
- d) Log market operations-sorting, grading and stacking of logs by species or dimensions, and loading logs on to logging trucks; Short and long haul operations in accordance with onsite wood processing requirements and marketing practices.

Capital investment in the Project:

The Company intends to invest approximately US\$4,000,000 per year within the first five (5) years of the operation.

Employment by the Project:

It is expected that the Company will employ approximately 50 persons for this project.

Life of the Project:

The project will have an initial life span of twenty five (25) years.

Potential Environmental Impacts and their mitigation

Timber harvesting operations require interventions in the forest ecosystem and such interventions generally result in some environmental and social impacts. The general impacts anticipated are:

Physical Impacts from Earth works

Earth works include felling trees and bulldozing trees and stumps, scarification of the soil surface grubbing of the soils surface prior to road construction, digging of the soil surface in borrow pit construction to extract fill material, grading and moulding activities to establish gradients or road profiles, and modification of stream courses to accommodate bridges and culvert construction works.

Impacts to Land/Soil:

Construction of roads, bridges log yards and drainage will require the removal of topsoil and vegetation. Road construction in particular will necessitate a whole range of soil moving works and the creation of borrow pits, creating dust and erosion. Removal of vegetation will expose soil to the elements or erosion. Eroded material can pollute waterways if not managed properly. Dust will impact on air quality.

Mitigation measures:

The company will comply with the requirements of the GFC's Code of Practice (CoP) for Timber Harvesting. Vegetation removal will be limited and logging will not be done on steep slopes.

Impacts to Air:

Impacts to air could result from fumes from exhaust for vehicle and machinery, dust from roads and dust from sawmilling activities.

Mitigation measures:

These are not expected to be significant and will be localized. Measures would be implemented to minimize these potential effects.

Noise and Vibrations:

The company will purchase and deploy assorted heavy duty equipment, including bulldozers, skidders, excavators and motor-grader within the concession area. These machines will be used in road construction (including bridge and culvert construction), in felling, skidding and hauling logs. The use of these machines will create noise, vibration and in many instances dust that would cause discomfort to fauna leading to their temporary migration from some sites. Noise will be generated from operation of logging equipment, transport vehicles, generator and sawmill.

Mitigation measures:

Efforts would be made to ensure noise level do not exceed the levels specified by the EPA. Personal Protective Equipment will be provided to employees. Equipment and machinery will be equipped with the requisite muffler devices and generator would be enclosed.

Impacts to Water (both ground and surface):

Surface water could be impacted by the construction of roads, bridges, skid trails and from surface runoff. Contamination can occur from spillage and improper disposal of both liquid and solid waste as well.

Mitigation measures:

The GFC CoP for Timber Harvesting outlines specific measures to be implemented to prevent contamination of surface water from the above activities. The developer will comply with these requirements. Additionally, use of roadways during the raining will be avoided.

Ecological Impacts

Timber harvesting leads to the removal of large prime quality trees that create gaps and lead to changes in the under storey (in relation of temperature, humidity and light) and changes in species composition; for example light tolerant species will replace shade demanding (light intolerant) species. The selection of the better quality trees from forest stands may lead to genetic deterioration within the mass of vegetation while altering forest structure at the stand level.

Noise and vibration associated with timber harvesting frequently leads to increase stress levels among fauna, and forces them to migrate to quieter areas. Such forced migration could give advantages to predators over their prey and jeopardize mating cycles. Arboreal animals (for example sloths, monkeys, squirrels, and coatis are particularly vulnerable to such interference.

Earthworks, when not managed properly could lead to stream pollution of waterways with dire consequences for flora and fauna within and on the margin of waterways.

Felling trees (and constructing roads) could alter landscape values through the deterioration of aesthetic values.

Mitigation measures:

GFC guidelines for biodiversity protection within forestry concessions will be applied and 5% of the concession would be established as biodiversity reserve. Bhaishanlin's operations will comply with GFC Code of Practice, and the Company will implement reduce impact logging (RIL) techniques. Areas of unproductive forests and areas where logging activities would be difficult will not be disturbed, thus contributing to the areas maintained.

Social Impacts

Baishanlin International Forest Development Inc. will recruit people from neighbouring communities, who has the relevant skills set, and train them in various areas. Increases in financial flow within the communities could lead to both negative and positive benefits. Further, the many workers will be employed and deployed within the concession area and these will cause the generation of waste of various kinds and staff welfare issues that need to be managed.

Forest based activities are associated with a number of hazards from the natural environment (diseases spread by bats, monkeys, mosquitoes, etc.) and various illnesses or injury resulting from the use of machines such as chainsaws, the inhalation of smoke and dust, and the use of contaminated water. Dust pollution and vibration can affect workers, as can the uncontrolled use of pesticides used for spraying logs or lumber or for sanitation purposes. Matters of occupational safety and health are therefore key considerations for workers welfare.

No hunting has been detected within the concession area to date but the opening up of access roads to the area could lead to an influx of people and the setting up of mining operations or

farms, thereby diversifying land use. New mining and farming activities within the area could lead to the development of ancillary businesses such as shops and even discos, and create a whole new web of social and economic activities.

Environmental Compliance

Baishanlin International Forest Development Inc. will comply with all national laws, regulations and guidelines as it relates to the environment and to forestry operations of this nature. In particular the operations of the project will be guided by the Environmental Protection Act, the Environmental Permit and the GFC Code of Practice for Timber Harvesting.