

RONG-AN INC



SFEP 1/2017

SEPTEMBER 2019

A. OVERVIEW

RAI's proposed investment in SFEP 1/2017 over an area of 417,809.23ha in the upper Barama-Cuyuni District (see Figure A), demonstrates a commitment to the strategic development of the forestry sector. RAI has the capability for managing the area of interest in a sustainable and environmentally responsible manner.

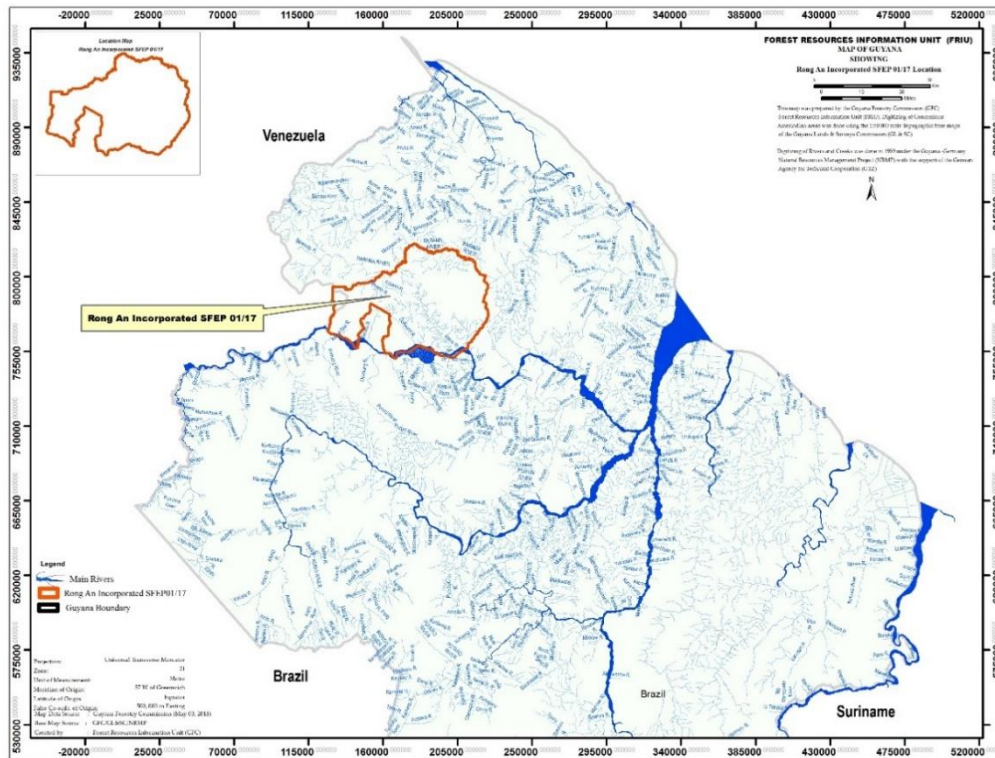


Figure A: Map showing general location of the concession area.

In the pursuit of its investments, RAI will benefit from three factors, as follows:

- a) The GFC's forest management framework already incorporates the fundamental objectives of the GSDS Vision 2040 and other overarching policies and initiatives by stakeholders within the forestry sector;
- b) The concepts and intent of *sustainable forest management* and *sustainable mining* are more *aligned* than they would appear to be at first sight and RAI is positive about partnerships with the mining community already entrenched within the concession area; and
- c) RAI will benefit from 140km of the BHR, *constructed by BCL and currently maintained by GGI*.

The primary challenge RAI will confront in its investment is the absence of an overarching 'mining development plan' for the general concession area, indicating where and when new large scale mining activity and ancillary roading infrastructure will develop; and therefore there is no *immediate* opportunity for RAI to align its field operations with such a broad 'mining development plan'.

Stakeholders impacted directly by RAI's investments are encouraged with the proposed developments. In the short term, RAI's investments will restore (and enhance) economic activity in Administrative Regions 2 and 3 which subsided when BCL closed operations at Buckhall in 2016. In the longer term, RAI's investments will firstly drive the economic expansion of the upper Barama-Cuyuni

district, via enhanced accessibility for the mining community, public officers, and other stakeholders. RAI also expects that its environmental conservation practices will provide critical support for (GGMC's initiatives) on *sustainable mining*.

In the context of sustainable development and the GSDS 2040, the award of the forest concession to RAI affords stakeholders a unique opportunity to forge an integrated and coherent approach to natural resources management.

B. INTRODUCTION

RAI was incorporated in Guyana on September 1, 2006; its registered address is Lot 'A', Block '2', Public Road, Land of Canaan, East Bank Demerara, Guyana. On April 28, 2017, RAI made application for a 417, 809.23 ha¹ parcel of forest designated SFEP 1/2017 and on July 5, 2017 GFC granted SFEP 1/2017 to the company. One-third of the concession area lies in Region 1, while the southern two-thirds of the area is a part of Region 7.

RAI's primary interest in the area is the sustainable harvesting of merchantable timber for offsite processing. The SFEP granted *exploratory* rights to the area so that the company can study issues such as the merchantable stocking of the area and stakeholders' interests and then determine whether timber harvesting business there would be feasible.

In keeping with standard practice, RAI applied to the EPA for an environmental authorization. Following on from a scoping meeting, and other stakeholder inputs that identified stakeholders' interest in the area, the EPA asked RAI to prepare an ESIA based on a TOR the EPA provided. An environmental authorization from the EPA is a prerequisite for applying for a State Forest Authorization for the same area

Historically, the mining community used the Barama River and the Cuyuni River respectively to access mining properties in the upper Barama-Cuyuni District; however, BCL constructed the 140 km BHR in the early 2000s to access the eastern boundary of TSA 4/91 and subsequently, the BHR emerged as another option for accessing mining communities such as Aranka 'village' and Calaloo 'village'. Four the Indigenous communities lie *outside* the concession area: Baramita is situate to the north-west of SFEP 1/2017 on *left bank* Barama River, while Kariako and Kokerite lie to the north east, also on *left bank* Barama River; the village of Kurutuku lie to the southeast on *right bank* Cuyuni River and RAI shares common boundaries with the extension of the village granted on left bank Cuyuni River.

C. RAI'S LOGGING PROJECT

Overview

RAI's business objective is to harvest merchantable timber on a sustainable basis. RAI's operations will be developed within the legal framework for logging activity; specifically, GFC's COP and GFFO as well as in line with prescriptions agreed with the EPA, duly set out in RAI's Environmental and Social Management Plan.

RAI will not, engage in any *concession-based* wood processing operations; all merchantable logs will be transferred to an offsite location for processing.

¹ The consultants have recommended that the SFA-TSA be issued for 409,808 ha.

Operational parameters

Key provisional sustainability parameters have already been agreed with the GFC, with respect to the *annual allowable area* for felling and the *annual allowable cut*. Figure B summarises RAI's flow of operations. Other critical elements of RAI's project include:

- a) the recruitment and training of field operatives (and sawmill technicians) to take forward reduced impact logging and ancillary operations in the approved manner;
- b) the identification and management of operational hazards impacting on the work of field operatives in line with OSH obligations;
- c) sourcing equipment, devices and tools to ensure efficient operations at all levels; and ensuring that operatives are familiar with their use and limitations as well as their preventive maintenance;
- d) reconnaissance and exploratory operations targeting the zoning of the concession area into compartments and blocks, the identification of a biological reserve, and the assessment of species composition and spatial distribution of merchantable stock;
- e) Reconnaissance and exploratory operations targeting projections for the development of a network of roads, skid trails, log markets, forward camps and base camps to manage the extraction of the merchantable stock targeted;
- f) The development of an ESIA report in line with the TOR prescribed by the EPA
- g) The development of FMPs and APOs prescribing the order and nature of logging and ancillary operations; and
- h) Continuous monitoring of stakeholders' interests.

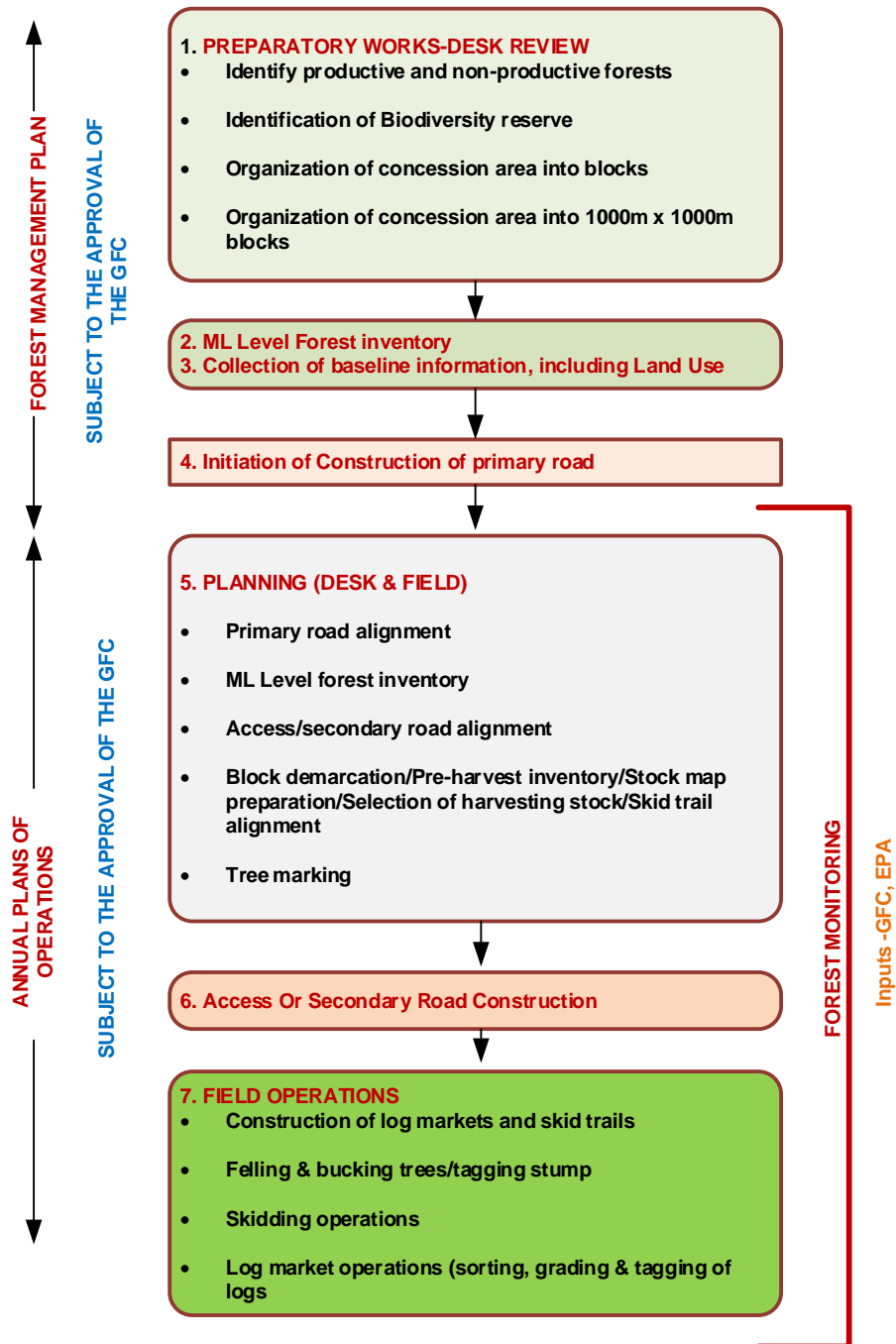


Figure B: Outline of RAI's Forest Operations

D. CONSULTANCY INPUTS

RAI contracted FTCI to take forward the ESIA process in accordance with a TOR provided by the EPA. (FTCI was incorporated as a company on May 1, 2002 primarily to undertake teaching of RIL and allied practices for GFC staffs, forestry students, forest operatives and representatives of environmental NGOs. On October 30, 2018 ACTO appointed FTCI as a "Centre of Excellence in training on sustainable forest management in the Amazon Region". FTCI undertakes consultancies in the forestry sector, especially consultancies linked to capacity building within communities).

FTCI, in keeping with the multidisciplinary approach to ESIA's recruited consultants to support the ESIA process. However, since the signing of the contract with RAI, FTCl increased its capacity and were able to assign staff to the consultancy.

The team of consultants comprised the following:

- a) Environmental Engineering Solutions (2 persons): a company expertise in the collection and analysis of environmental data)
- b) FTCl staffs (6 persons; four persons with expertise in forestry, a botanist and a sub-professional) engaged in the collection of baseline data and social surveys.
- c) A wildlife technician (1 person) with expertise primarily in the capture and identification of fauna; and
- d) A team leader who helped coordinate the ESIA development process.

E. BASELINE DATA AND INFORMATION

(a) Overview

The TOR for the ESIA dictated the nature and scope of the baseline data collected. Baseline data was obtained from many sources, including historical data obtained from the GGMC library. GFC's forest resources information unit were able to generate thematic maps for the concession area.

Twelve visits were made to the concession area between December 2017 and July 2019; these included an aerial survey of the concession area, patrols on the left bank Cuyuni River between Tapir Landing and Dukwarri Landing; patrols on right bank Barama River between Waiamu River and Ianna River and visits to the Aranka-Calaloo mining district.

Notwithstanding a long history of mining, more than 90% of the concession area is intact; access is currently limited to specific areas on the perimeter of the concession area. Consequently, the collection of environmental data was stymied by accessibility issues. In addition, weather patterns have been erratic: during the official rainy season some areas were quite dry. Further water levels in the Cuyuni and Barama Rivers are influenced by rainfall in Venezuela.

Environmental data was collected from several locations, including six (6) provisional permanent monitoring stations.

Formal and informal social surveys were conducted at Buckhall, 70km BHR, Kariako Village, Kokerite Village, Yakishuru Landing, Ianna Landing and Dukwarri.

(b) Context for the Project

- *Indigenous communities*

Officially, four indigenous communities occur **adjacent to** the concession area: Baramita, Kariako, Kokerite and Kurutuku. Officially, both Kariako and Kokerite are situated on left bank Barama River, however a few residents of both villages occupy farmsteads on the right bank Barama River within, but at the edge of the concession area. The extended Kurutuku Village lies on both banks of the Cuyuni River. No commercial scale logging currently occurs in those areas.

- *Land Use*

The major form of land use within the SFEP area is gold mining and GGMC's records indicate extensive exploratory geological surveys since the 1940s primarily within the **Ianna District**, right bank Barama River and **Aranka District**, left bank Cuyuni River. GFC's records (at January 29, 2018) indicate that 88.6% of the concession area is under some form of mining authorization, however the area under **active** mining activity is a mere 2.3% of the total area under mining authorizations (or 2.02% of the concession area). There are Dragas operating in both the Barama and Cuyuni Rivers respectively.

- *Mining Communities*

There are three major gold mining *communities* within the concession area: Aranka Village, Calaloo 'village', and Ianna 'village': each of these communities are associated with innumerable clusters of satellite mining camps. In addition, there are many landings along the Barama River and Cuyuni River respectively, including Yakishuru Landing, Ianna Landing and Bamboo Landing on the Barama River and Aranka Landing, Waiamu Landing, Devil Hole and Dukwarri Landing on the Cuyuni River. The landings and riverside dwellings comprise a mix of miners, speed-boat operators for hire, farmers, fishermen and businesses approved by GGMC. It is estimated that about three thousand people work in and around the concession area.

- *Road networks*

The mining community established an extensive road network, although, they benefitted significantly from logging roads constructed by Barama Company Limited. Historically, the transfer of personnel and goods to Aranka depended on trips by boat from Bartica (and times of five to twenty days travelling time have been reported). Over the past 10 years, miners at Aranka were able to develop road networks linking up with BCL's Buckhall Road (BHR). The roads allow for the relatively rapid transfer of heavy equipment, fuel and rations to mining zones, in a much shorter time; and roads are the only *feasible* option in the dry season. The BHR has emerged as the main access road for miners in the Aranka-Calaloo district.

- *Airstrip*

There is one (private) airstrip at Yakishuru Landing within the concession area which accommodates both scheduled and chartered services serving the Ianna District. Heavy goods are transferred from Charity to Ianna via the Moruca, Waini and Barama Rivers-this trip takes five to 10 days in the **wet** season. (Nowadays, miners also make extensive use of helicopters).

F. KEY BASELINE PARAMETERS

(a) Socio-economic environment

Core stakeholders *on the ground* include a mix of transporters, boat captains, vendors, public officers, loggers and *sailors*. The consultants relied on *formal* and *informal* surveys. Formal surveys were conducted at Kariako Amerindian Village and Kokerite Amerindian Village. (No direct consultations were conducted at Baramita Village or Kurutuku Village: Baramita Village centre is far away from the concession area and will not be impacted directly by RAI's operations in the near future; similarly, for Kurutuku, RAI's logging operations are unlikely to impact on the *extended* Village area before 2030).

Informal-interviews were conducted because many persons expressed reluctance to participate in anything other than one-to-one conversation. In fact, many of the persons interviewed informally had no fixed work area or residence of any kind within the concession area itself.

All stakeholders expressed interest in seeing RAI's forestry development plans come to fruition within the area. (Residents of Kokerite have expressed interest in extending their titled land area, but their requests over the years have apparently been stymied by the small size of their population).

(b) Physical environment

- Topography

The concession area straddles the Cuyuni-Barama Watershed. GFC produced with adequate detail on the topography, soil and vegetation parameters features of the concession area, as well as the location of nearby indigenous villages. The concession area straddles the Cuyuni-Barama Watershed.

The concession is drained by right bank tributaries of Barama River and left bank tributaries of the Cuyuni River. Major tributaries of the Barama River include the Waiamu River, Ianna River while major tributaries of the Cuyuni River include Aranka River and the Irama River. The total estimated length of all permanent water ways, creeks and rivers within the concession is 4, 132 km; therefore, the drainage density (D_d) is about 0.01km/ha (0.99km/km²). The prevailing stream pattern is dendritic stream pattern is the dominant type in the area.

Generally, except right bank Barama River between Waiamu River and Ianna River, the concession area is very hilly, with the highest points having elevations above 305meters, especially in the Enamu-Waiamu District at the north eastern area of the concession with elevations of 1000+ feet, the Ianna-district to the extreme north of the concession area, the Aranka-Irama District at the south eastern area of the concession with elevations of 750+ feet.

(c) Biological environment

- Flora

GFC's data indicate that more than 70% of the concession area comprise forest type "1-Mixed Forests on Undulating to Hilly Terrain", a terrain type that supports about 90% of the merchantable timber on the concession area. The consultants established that all

Ter Steege (2000) classified the general concession area as *Northwest Wet Forests* and 61 genera of merchantable and potentially merchantable species have been recorded for the area. Data garnered from the PMS, other plots, reconnaissance work as well as pre-harvest inventory in Compartment 2 validate the general information published by Ter Steege,2000 .

There are several species of palms present in the forests as well as a rich mix of other plant forms such as lianas, epiphytes, grasses and plants common to slow moving rivers and swamps

No commercial scale logging has been detected to date. There is some major forest degradation at specific mining districts and such sites have been classified as *non-productive forests*.

- Fauna

Camera traps, nets, fishing rods and seines were the primary tools used to record fauna within the concession area. Seines and nets were used over very short periods. An impressive array of fauna has been recorded for the concession area, particularly in the categories *Aves* and *Fishes*. The cameras were not as 'productive' as the consultants had hoped, however three days' set up is a relatively short time for a trail camera.

G. KEY SOCIO-ECONOMIC, ENVIRONMENTAL AND BIOLOGICAL IMPACTS

(a) Socio-economic impacts

RAI plans to employ up to 150 persons for wood processing and ancillary operations at Buckhall and many skilled ex-workers of BCL in Region 2 (including residents of Caria-Caria) are hoping for employment, *near to their homes*. Generally, the mining community of about 1,200 persons welcomes the return of logging to the area and has a specific interest in **new road networks** that will allow them to access to mining claims that are currently *inaccessible*. (Some 300 persons in Administrative Regions 2 and 3 engaged with the *Buckhall Community and currently providing various services including* the vending of an assortment of goods, hospitality services, and land based and/or riverine transport services, expect to witness an increase in business when RAI starts logging).

Direct negative impacts relate primarily to traffic density on RAI's concession-based logging roads and opportunities for conflict with other road users. One of the more positive aspects of the BHR is the absence of any human dwelling or farm, except for 70km BHR where the GPF and GFC maintain a check point. At 70km GGI maintains a base and there is a private restaurant there as well.

At a more overarching level, RAI's logging operations will open the scale of business activity in Bartica, Linden, Parika, Supenaam and Anna Regina. Further, the Buckhall-Aranka road corridor is likely to attract more attention from policy makers due to the expansion of developmental activities in the area.

RAI will depend on engagements with stakeholders to address issues at hand.

(b) Environmental impacts

Road construction and road maintenance will be the major sources of environmental impacts in the area, due to the prevailing hilly nature of the terrain and the drainage density (0.99m/ha). (4132km/417809.23ha), respectively. Elevated sediment levels in streams are anticipated after new road works or major road maintenance works. Localized dust nuisance is likely to be a major hazard given the number of vehicles RAI will be using. Localized concentrations of fumes will occur near log markets, and in areas where felling and timber extraction are in progress.

Timber harvesting will modify the hydrology of the concession area, the carbon signature of the forest resource and the aesthetic aspect of the landscape.

Any leaching or spillage of petroleum products will alter soil ph. and soil biology, and if such soil gets into waterways may lead to the death of riverine species.

RAI will adopt RIL practices and will comply fully with GFC's COP and GFFO. During the rainy season, RAI will reduce any trucking trips and road maintenance activities requiring earthworks.

(c) Biological considerations

In the main, timber harvesting will contribute to short term forest degradation. harvesting may lead to mortality or the migration via the modification of existing niches for wildlife. Timber harvesting will also alter ecological relationships: animal-animal, animal-plant and between various plant forms. The construction of roads linked to timber harvesting will create opportunities for interventions by other land users such as miners.

H. PROJECT RISKS

The outlay of mining properties within the concession area could be a major risk for RAI's logging operations if all the properties hold significant quantities of gold ore. To date just about 3% of the area is impacted directly whereas another 5% of the concession area is pockmarked with small mining

operations. Fortunately, intensive mining operations are localized for many years now in the Aranka-Calaloo District and the Ianna District. Several small itinerant operations exist along the banks of the Cuyuni River, and the Barama River. Normally, RAI will not harvest timber within 500m of riverbanks, so those operations do not pose a risk to RAI's operations.

Small itinerant mining operations could have a nuisance value however if RAI were to try to impress customers overseas who value forest conservation.

I. PROJECT VIABILITY

All RAI's financial analysis indicate that the logging venture will be profitable. A major cost centre for RAI is the long-haul distance for conveying logs from the concession area to Buckhall, a minimum distance of 150km, reaching 200km in ten years. Road construction costs will also increase as RAI reaches the hillier areas to the west, northwest and south west of the concession area. However, both the road maintenance costs, and the haul distances are manageable and are consistent with profitable logging businesses in the upper Berbice and Upper Essequibo Districts.

RAI's experience with the *planning of timber harvesting operations and vehicle use* coupled with intensive training of forest technicians are the keys to reducing costs. RAI believes that in the final analysis the projects viability rests with its capability for processing timber locally and to market value added timber products overseas. RAI already has well established markets for its products (based on its operations at TSA 1/2017, upper right bank Berbice River).

Finally, RAI has a very strong management team that gives the company the capability for managing a viable enterprise and a competitive edge in the timber industry.

A forest monitoring officer will be employed and one specific responsibility for that person will be to manage RAI's relationships with stakeholders.

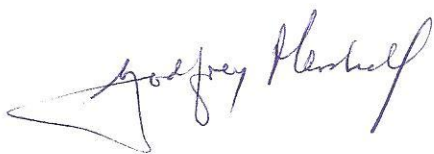
J. STATEMENT

Research elsewhere has demonstrated that well run forest concessions are major drivers of forest conservation. The proliferation of signals and signage that RAI will introduce as a standard part of its operations coupled with the hygienic standard of its camps and precautions taken with the use of machines will drive behavioural change within the mining community.

RAI's logging operations is projected to restore about G\$500 million per year to the combined economies of Regions 1, 2 and 3 (which those regions lost when BCL closed operations) and increase national timber output by 12%. With some 150 persons to be employed, the revenue base for the GRA and NIS will expand markedly.

The consultants believe that RAI will abide by all local laws and forest management standards and that the company is sincere in its commitment to regular engagements with stakeholders.

The consultants recommend that an environmental authorization be granted to RAI.



G. Marshall
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