

EXECUTIVE SUMMARY

Project Title:

Environmental Impact Assessment (EIA) for Proposed Forest Development Project (177.0 Ha) At HSK Sungai Durian (Compartment 56, 57 & 61 - Partially) Mukim Telekong, Daerah Batu Mengkebang, Jajahan Kuala Krai, Kelantan Darul Naim. (1st Schedule)



Project Proponent

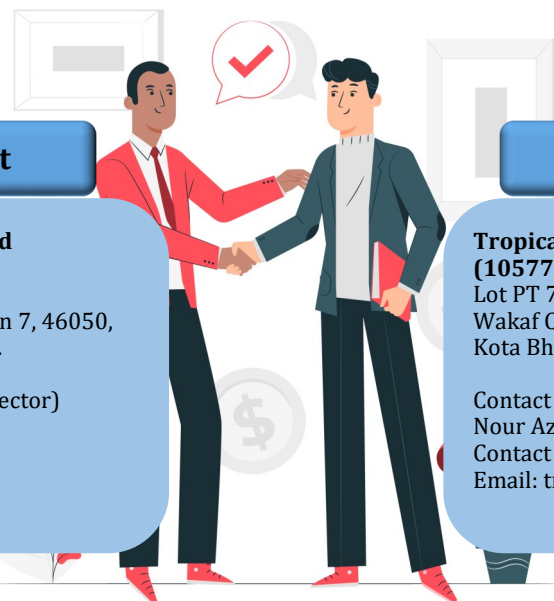
Billion Eco Mining & Agro Sdn Bhd
(842689-M)
Level P1, Menara Choy Fook On,
No. 1B, Jalan Yong Shook Lin, Section 7, 46050,
Petaling Jaya, Selangor Darul Ehsan.

Contact Person: Sum Ah Chong (Director)
Contact No: 03-7955 0166
Fax: 03-7956 2812

EIA Consultant

Tropical Growth (M) Sdn Bhd
(1057718-W)
Lot PT 766, Tingkat 1, Pasar Awam Bersepadu,
Wakaf Che Yeh, 15100
Kota Bharu, Kelantan.

Contact Person: Pn. Azni Masturah Binti Mohd
Nour Azlan (Team Leader)
Contact No: 09-747 8004/014-833 4224
Email: tropicalgrowth@gmail.com



Legislative Requirements

Legal Requirement (EIA Order 2015) First Schedule

"Item 5(e) of First Schedule: Development of planted forest
covering an area of 100 hectares or more but less than 500 ha"

Statement of Need

Forest revenue was the 4th largest contributor for **State of Kelantan**, amounting to RM129.5 million (12.65%) of total revenue, which showed an increase of RM6.5 million (5.28%) compared to the estimated RM123 million in 2020. (Sidang Dun Belanjawan 2021, Negeri Kelantan)



To provide local spending and positive impact into the local economy, generation of employment and creation of job opportunities.

To promote establishment of forest plantation for future sustainable timber supply and fulfill demand in Malaysia timber industry



To increase the investment in the timber industry and as one of main income for **State of Kelantan**.

* The Proposed project site is located at **HSK Sungai Durian** (Compartment 56, 57 & 61 - Partially) Mukim Telekong, Daerah Batu Mengkebang, Jajahan Kuala Krai, Kelantan Darul Naim to develop 177.0 ha of area with timber latex clone (TLC) forest plantation project.

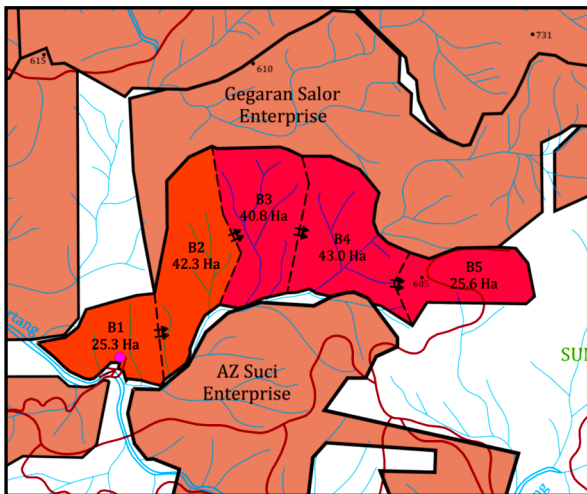
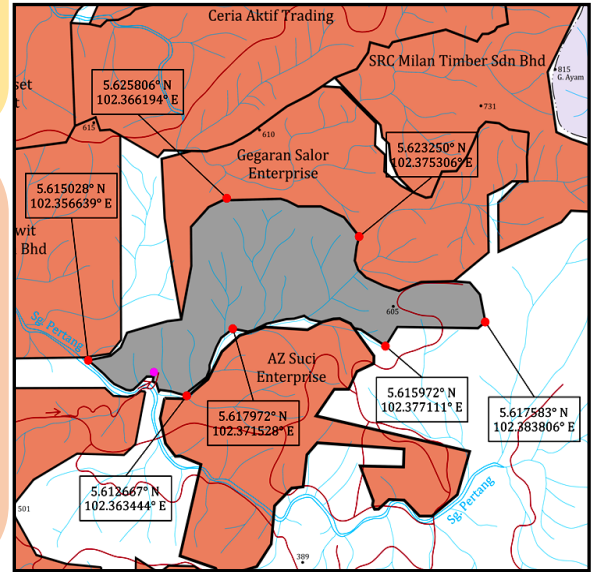
* The proposed project site lies at coordinate 05.612667° N to 05.625806° N and 102.356639° E to 102.383806° E.



Project Description

* **Billion Eco Mining & Agro Sdn Bhd** granted usage permit of fifty (50) years by **Department of Forestry (DOF) Negeri Kelantan** through letter PHN.KN.200/1/2650(15) dated on 31st January 2023.

* According to **Rancangan Tempatan Jajahan Kuala Krai 2035 (Penggantian)** document and official correspondence letter from **PLAN Malaysia Kelantan** through letter ref JPBD/PK/T/185/14/2/26 dated on 15th November 2023, the proposed project site is identified as forest reserve area known as **Hutan Simpan Kekal (HSK) Sungai Durian** and located under landuse zone for forestry area at **Blok Perancangan (BP) 1: Batu Mengkebang, Blok Perancangan Kecil (BPK) 1.13: Telekong/HSK Sungai Durian**.



* The proposed project site is being access from existing logging track and plantation road via Jalan Sungai Durian-Chenulang located approximately 7.8 km southwest part of proposed project site.

* The proposed project site will carried out phase by phase basis (5 blocks & 2 phases)

* Proposed development will carried out starting from **Phase 1** (Block B1 & B2 - 67.6 Ha) followed by **Phase 2** (Block B3, B4 & B5 - 109.4 Ha)

* Unusable area must be retained and preserved from any development activity.

* Total usable area is 145.53 ha (82.2%) and un-usable area is 31.47 ha (17.8%).

Proposed Planting Method

Legend	Proposed Planting Method
Slope 0° – 25° - 106.98 ha (60.4 %)	Terracing Method
Slope 25° – 35° - 38.55 ha (21.8 %)	Platform Method or spot planting
Slope >35° - 5.06 ha (2.9 %)	Not Recommended for forest plantation development
Buffer Zone (20m Both Sided) – 25.62 Ha (14.5 %)	
Road Reserved (4m both sided) – 0.79 Ha (0.4%)	

Main Activities Plantation



- Surveys:**
- Site Surveys
 - Boundary Survey
 - Ecology Studies
 - Soil Suitability Studies
 - EIA Report

- a) Site Preparation Works**
- Construction of Access Road
 - Biomass Disposal
- b) Establishment of Nursery Area**
- c) Establishment of Base Camp & Site Office**
- d) Earthwork, Drainage & Sedimentation Control**
- e) Construction Bridge and Culvert**
- f) River Buffer zone**
- g) Field Establishment**
- Terracing
 - Field lining, Holing and Planting
 - Temporary Stabilization & Cover Crop Establishment
 - Fencing/Trenching

- Maintenance**
- Weeding
 - Manuring
 - Refining and Thinning
 - Pest and Diseases
 - Pesticides and Fertiliser

Harvesting

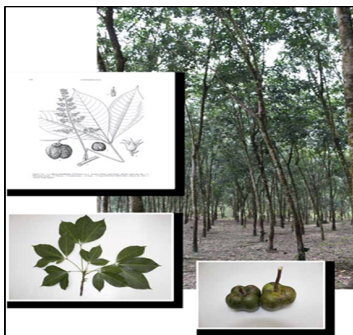
Replanting

Abandonment

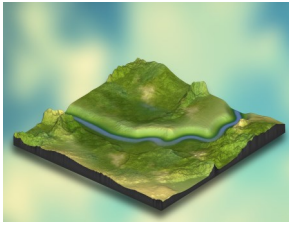
Planting Material

* The proposed forest plantation project is mainly focused on *Hevea brasiliensis* (Timber Latex Clone).

* This species is grown for timber production as its major produce and latex as by-product.



Existing Environment



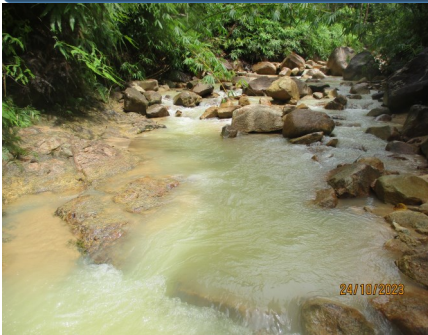
- * Highest topography - 629 to 680 meter ASL (8.9 ha or 5%)
- * Lowest topography - 220 to 271 meter ASL (12.4 ha or 7%)



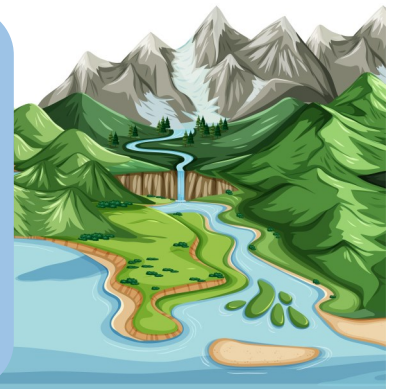
- * Fauna survey recorded 71 avian species from 33 family, 19 mammals species from 13 family and 15 herpetofauna species from 9 family.
- * Flora survey recorded 228 species plants from 75 family.
- * It was categorized to 139 species of tree (T), 27 species of shrub (S), 14 species of herbaceous (H), 30 species of climber (C), 7 species of palm (P) and 11 species of ferns (F).

- * Geology - The proposed project site was located within acid intrusive (undifferentiated) area.
- * Mineral - The proposed project site located within felsic to intermediate intrusive area.

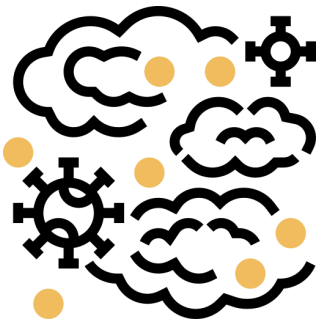
Water Quality



- * Water analysis has been conducted at seven (7) different sampling station
- * **Water Quality Index (WQI)** for seven (7) sampling station ranged from 81.84 to 90.81. All seven (7) sampling station has been classified in **Clean** condition under **Class II** of **NWQSM**.



Air Quality



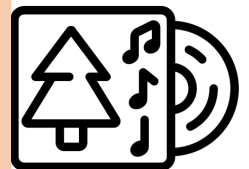
- * One (1) sampling station for ambient air quality (**A1**) has been set up within proposed project site.
- * Air quality measurement for parameter PM_{10} at sampling station **A1** is recorded for $24.7 \mu g/m^3$ which noted below standard limit of **Malaysian Ambient Air Quality Standard, 2020**.



Noise Measurement

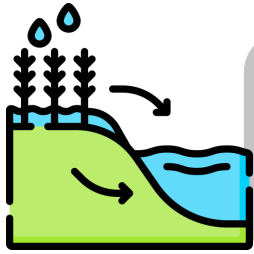


- * One (1) sampling station (**N1**) for noise measurement has been conducted which recorded noise level 53.6 dBA for day time while night time recorded for 56.2 dBA.
- * Result obtained for day time is below the standard limit whilst night time recorded slightly higher than standard limit of **Schedule 1 (Suburban Residential (Medium Density), Recreational) of Guidelines for Environmental Noise Limit and Control, Third Edition 2019 (Reprint 2021)** where the limit shall be 60 dBA (day time) and 55 dBA (night time).



Standard Guidelines for Environmental Monitoring

- * National Water Quality Standards Malaysia (NWQSM)
- * Malaysian Ambient Air Quality Standard 2020
- * Guidelines for Environmental Limits and Control, Third Edition, 2019 (Reprint 2021)

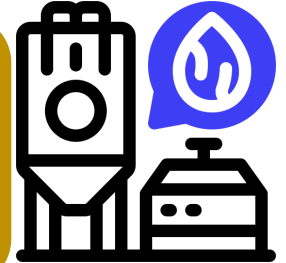


River Water Flow

- * Various small rivers found scattered within proposed project site will flow to Sg Pertang which located at south part of proposed project site.
- * River flow of Sg Pertang will flow towards Sg Nal located at west part outside of proposed project site. Sg Nal then finally flow to Sg Kelantan (major river).

Water Treatment Plant

- * No Air Kelantan Sdn Bhd (AKSB) water intake point located within 5.0 km radius of proposed project site. The nearest water intake is **Water Treatment Plant Kuala Nal** which located approximately 22.2 km (straight line) downstream from proposed project site area.
- * Official feedback from **Department of Health (DOH)** revealed there is one 'tandak air' located about 4.9 km southwest part from proposed project site. This 'tandak air' is used to supply water source to **Rancangan Pemulihan Tanah (RPT) Chenulang** community area.

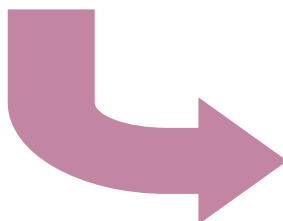
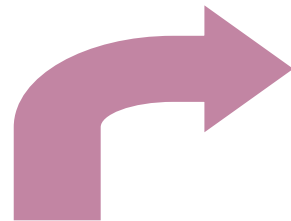


Socio Economy

- * No Orang Asli community area can be found surrounding area of proposed project site
- * The nearest local community area which known as **Rancangan Pemulihan Tanah (RPT) Chenulang** found located approximately 10.3 km (straight line) west part from proposed project site.
- * Information gathered from Penghulu **Rancangan Pemulihan Tanah (RPT) Chenulang**, En Mat Jusoh Bin Mat Nor revealed that **Rancangan Pemulihan Tanah (RPT) Chenulang** community area consist about six (6) village which known as **Rancangan Pemulihan Tanah (RPT) Chenulang**, **Rancangan Kemajuan Tanah (RKT) Chenulang Fasa 1**, Kg Limau Madu, Kg Kebun Pisang, Kg Pasir Jering and Kg Dusun Ban.

- * **Rancangan Pemulihan Tanah (RPT) Chenulang** consist about 4,000 populations with 649 houses for all six (6) villages.
- * **Rancangan Pemulihan Tanah (RPT) Chenulang** equipped with one (1) school (Sek. Keb. Chenulang) and one (1) health facility which is Klinik Desa Chenulang.
- * It was also revealed that three (3) villages (**Rancangan Kemajuan Tanah (RKT) Chenulang Fasa 1**, Kg Dusun Ban & Kg Pasir Jering) used 'tandak air' as their water sources while other three (3) villages (**Rancangan Pemulihan Tanah (RPT) Chenulang**, Kg Limau Madu & Kg Kebun Pisang) used facilities from **Air Kelantan Sdn Bhd (AKSB)** as their main water sources in daily activities.

- * Most of the villagers work as self employed. Some of them also working as government employees and private sector. Most of the local community in **Rancangan Pemulihan Tanah (RPT) Chenulang** work as farmers and running small business.
- * The nearest local community should give main priority for employment and participation in the proposed project site. Project proponent should maximize the local people to get along with the proposed project



Aerial Photo View of Rancangan Pemulihan Tanah (RPT) Chenulang Captured by Drone



Soil Erosion & Sedimentation



- * Land clearance activities are to be conducted in phases to reduce soil erosion. The proposed development will be carried out at **Phase 1** (Block B1 & B2 - 67.6 Ha) followed by **Phase 2** (Block B3, B4 & B5 - 109.4 Ha)
- * River buffer zone was preserved about 20.0 meter each side as regulated by **Department of Irrigation and Drainage (DID)**.
- * Soil erosion and sediment control measures include installation of silt traps and sediment basins.
- * The appropriate drainage system should be installed to lead the runoff from upper slopes.
- * Vegetation cover should not be cleared until earthworks are ready to begin in order to reduce soil erosion.

Water Pollution

- * **LDP2M2** element such as silt trap/sediment basin, earth drain, check dam, temporary or permanent river crossing shall be first established and regularly inspect and maintained.
- * Earthwork activities are to be conducted in phases to reduce soil erosion.
- * The river buffer zone was preserved about 20.0 meter each side.
- * Environmental monitoring programmer and environmental audit exercises are necessary to follow up the effectiveness.



Air Pollution



- * The proposed development will be carried out by phases.
- * Any fuel burning equipment installation have to be submitted to **Department of Environment (DOE) Negeri Kelantan** for **Written Notification (WN)** and **Written Declaration (WD)** within a month or thirty (30) days prior to any installation/construction or alteration of air pollution control system.
- * Regular watering shall be conducted for the unpaved road and exposed earth surface especially during dry season.
- * Open burning is strictly prohibited at all time.
- * Environmental monitoring program and environmental audit exercises are necessary to follow up the effectiveness of such **P2M2** that have been implemented.

Noise generation

- * Limit the working hours to daytime 7.00 am to 7.00 pm and vehicles and machinery to be well maintained.
- * Monitoring of ambient noise quality shall be regularly done at proposed project site and nearby plantation area.
- * Environmental monitoring program and environmental audit exercises are necessary to follow up the effectiveness of such **P2M2** that have been implemented on-site.



Flora & Fauna



- * The proposed development will be carried out by phases.
- * Both workers and local people are strictly prohibited from poaching on any wildlife species. An appropriate warning post 'No Hunting' should be erected at the approach and strategic location within proposed project site
- * Project proponent should seek advice from **PERHILITAN Negeri Kelantan** for development of a ditch/trench or electrical fencing at boundary of proposed project site.
- * The ditch or any other structural control system shall be well maintained to ensure its effectiveness.

Waste Generation

- * Open burning is strictly prohibited at all time. Any offences on the matter shall be subjected to heavier penalty of a fine not exceeding RM 500,000 or to imprisonment for a term not exceeding 5 years or both.
- * It is recommended that proper waste storage bins for the workers must be provided.
- * All scheduled wastes including used oil and spent/waste oil generated from machines, generators, chemical containers, etc. shall be collected and disposed off-site by licensed contractors for disposal.
- * Large stumps, small branches and other organic materials shall be disposed of via mulching/composting in a suitable area within the proposed project site.
- * Biomass wastes suggested to be buried within one (1) meter deep in the ground as to prevent these kinds of waste from entering and block the water ways within proposed project site.



Traffic Congestion



- * Project proponent should share cost of road maintenance to the existing plantation road with another neighbouring plantation. A proper arrangement shall be made in written between relevant parties as to avoid any misunderstanding in the future.
- * Project proponent has to ensure that no obstruction can be made at this existing plantation road especially during site clearing and preparation.

Health & Disease

- * Due to the increasing number of infectious diseases (Malaria, Dengue, Leptospirosis, COVID-19 and etc) the mitigating measures must be taken for any development works in order to prevent major outbreak.
- * Housekeeping need to conduct regularly in quarters, office, canteen and workshop. This will keep the project site clean and could avoid from the vector borne disease to breeding around.
- * Proper septic tank at worker's quarters area are required and need to be construct by the project proponent
- * Take great care when applying pesticides, or working in treated areas after spraying, as the risk of poisoning. During the spraying activities, workers need a proper cover such as PPE are mandatory to wear.



Safety & Security










- * Workers should provide an appropriate clothing, footwear and Personal Protective Equipment (PPE).
- * Emergency Response Plan also the vital role in proposed. This plan will include the flow chart/process that need to be taken when the emergency happens.
- * Appointed Environmental Officer (EO) or Safety Officer (SO) should constantly monitor and must recorded in log book.
- * Workers should be given proper and adequate training in machinery handling and safe working procedures.
- * The entrance must 24 hour guided by the security. The gate should be close and not allowed to enter proposed project site and directly report to the nearest police station.

Abandonment

- * Demolished all the worker's quarters, site office and etc. All the waste must be disposed with the proper way.
- * All the schedule waste must be return to the supplier or to the registered schedule waste collector.
- * Cover crop must be planted at all open area. It could avoid from the soil erosion in the slope area.



PROPOSED ENVIRONMENTAL MONITORING PROGRAM

Environmental Components	Parameter	Standard Requirements	Monitoring Station	Proposed Frequency
 <p>River Water Quality</p>	<ul style="list-style-type: none"> * Temperature * pH * Dissolved Oxygen (DO) * Biochemical Oxygen Demand (BOD) * Chemical Oxygen Demand (COD) * Total Suspended Solid (TSS) * Turbidity * Iron * Manganese * Ammonia Nitrogen * <i>E. Coli</i> 	<ul style="list-style-type: none"> * National Water Quality Standard for Malaysia (NWQSM) * Water Quality Index (WQI) * EIA Conditions of Approval 	<ul style="list-style-type: none"> * W1, W2, W3, W4, W5, W6, W7, W8, W9, W10, W11 & W12 (as per baseline study and subjected to change based on site condition according to development phase) 	* Monthly
 <p>Air Quality</p>	<ul style="list-style-type: none"> * PM₁₀ 	<ul style="list-style-type: none"> * Malaysian Ambient Air Quality Standards (2020) * EIA Condition of Approval 	* A1	* Quarterly
 <p>Noise Level</p>	<ul style="list-style-type: none"> * L₁₀, L₅₀, L₉₀, L_{eq}, L_{peak}, L_{max} and L_{min}. 	<ul style="list-style-type: none"> * Guidelines for Environmental Noise Limits and Control Third Edition (2019) * EIA Condition of Approval 	* N1	* Quarterly
 <p>Sedimentation & Erosion</p>	<ul style="list-style-type: none"> * Suspended solid * Turbidity 	<ul style="list-style-type: none"> * EIA Condition of Approval 	* Sediment basin discharge outlet	* Inspection by EO After Rainfall Event (12.5 mm)
 <p>Scheduled Waste Management</p>	<ul style="list-style-type: none"> * Visual inspection of storage condition * Signs of oil spill 	<ul style="list-style-type: none"> * Environmental Quality Regulations (Scheduled Wastes) (2005) * EIA Condition of Approval 	<ul style="list-style-type: none"> * At storage areas for scheduled wastes * At active work areas 	* Inspection by EO
 <p>Solid Waste Management</p>	<ul style="list-style-type: none"> * Visual inspection on mode and efficiency of disposal 	<ul style="list-style-type: none"> * Environmental Quality (Prescribed Activity) (Open Burning) Order (2000) * EIA Condition of Approval 	* General cleanliness	* Inspection by EO
 <p>Ecology</p>	<ul style="list-style-type: none"> * Flora * Wildlife 	<ul style="list-style-type: none"> * EIA Condition of Approval 	* Throughout proposed project site	* Inspection by EO

PROPOSED ENVIRONMENTAL MONITORING STATION

