

## PROJECT TITLE

**PROPOSED FOREST PLANTATION DEVELOPMENT  
(*EUCALYPTUS* SP. AND OTHER SPECIES) ON SULTANATE  
LAND PT7264 BLOCK E (120.703 HA), AT MUKIM  
RENOK, DAERAH CHIKU, JAJAHAN GUA MUSANG,  
KELANTAN DARUL NAIM.**

## PROJECT PROPONENT AND ENVIRONMENTAL CONSULTANT

### PROJECT PROPONENT

**ACTUAL TIMBER SDN. BHD. (202401008496 [ 1554346-X])**

No. 35B (2<sup>nd</sup> Floor), Jalan Bercham,  
Medan Bercham, Selatan 1,  
31400 Ipoh, Perak.

Contact Person: Mohd Faizal Su Bin Shaari

### ENVIRONMENTAL CONSULTANT

**NILAIMAS SERVICES (001953513-D)**

No. 17-2 & 17-3, Jalan Equine 10D,  
Taman Equine,  
43300 Seri Kembangan, Selangor.

Contact Person: Dato' Seri Ts. Hj. Mohd Nawahidudin Bin Mahamad Isa



### SAMM ACCREDITED LABORATORY

**CHEMVI LABORATORY (514202-D)**

No. 22A, Jalan Sungai Jeluh 32/192,  
Nouvelle Kemuning Industrial Park,  
Bukit Rimau, Sec 32,  
40460 Shah Alam, Selangor Darul Ehsan.



## LEGISLATIVE REQUIREMENT

**ENVIRONMENTAL QUALITY ACT 1974,  
ENVIRONMENTAL QUALITY (PRESCRIBED ACTIVITIES)  
(ENVIRONMENTAL IMPACT ASSESSMENT) ORDER 2015,**

**The Proposed Project falls under:**

### **FIRST SCHEDULE**

**Activity 5: Forestry**

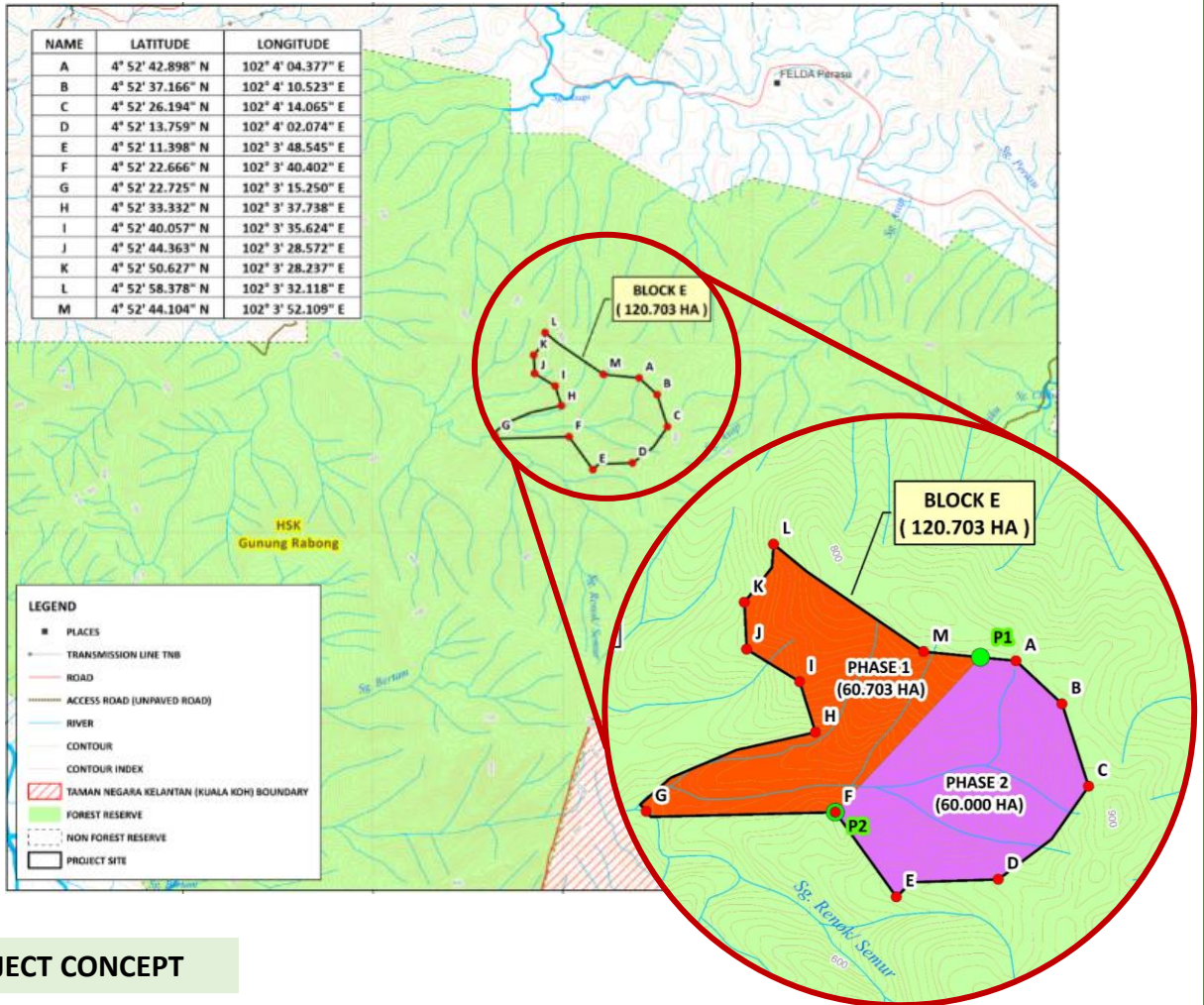
**Activity 5 (e):** Development of planted forest covering an area of 100 hectares or more but less than 500 hectares



# PROJECT DESCRIPTION

## PROJECT LOCATION

- The proposed Project site is located on **Sultanate Land PT 7264 (Block E)** within HSK Gunung Rabong, Mukim Renok, Daerah Chiku, Jajahan Gua Musang, Kelantan.
- The proposed development covers a **total area of 120.703 hectares**.
- The Project site is located in a hilly area with an **elevation ranging from 412m – 862m**, with slopes **> 25°**.



## PROJECT CONCEPT

- The forest plantation development will involve clear felling of the existing forested area (only within the Project boundary), and replanting with ***Eucalyptus* sp. and other species** as considered suitable by the *Jabatan Perhutanan Negeri Kelantan*.
- The Project site will be **developed into two (2) phases** in order to minimize potential negative impact that may arise especially during clear felling, site clearance and earthwork activities.
- After the completion of planting activities in Phase 1, the planting in Phase 2 will begin immediately to ensure optimal land opening.

Phasing	Area (Ha)
P1	60.00
P2	60.703

## PROJECT DESCRIPTION

### PROJECT SCOPE

- Site clearing (**clear-felling method**) will be carried out before plantation of *Eucalyptus* sp. and other species.
- The Project site will be **left for about three (3) months for cover crops process** to maintain soil fertility before re-planting the *Eucalyptus* saplings.
- Site preparation and planting operations will be carried out by phases – two (2) phases.
- Areas with **slope above 30°** and **elevation exceeding 600m above sea level** will be **left untouched**.



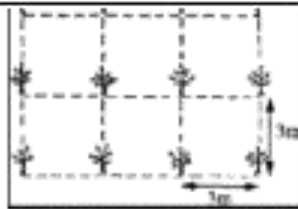
Example of digging planting hole



Hole diameter is 20 cm



Hole depth is 15 cm



Planting distance (Space between Hole):  
3m x 3m



A seedling of hybrid *Eucalyptus* sp.



Planting process of Hybrid *Eucalyptus* sp



Apply a layer of mulch to the soil



Keep the soil moist



Fertilize the hybrid *Eucalyptus* plant





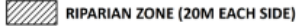



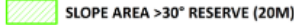


1 year old *Eucalyptus* (Hybrid) Plant

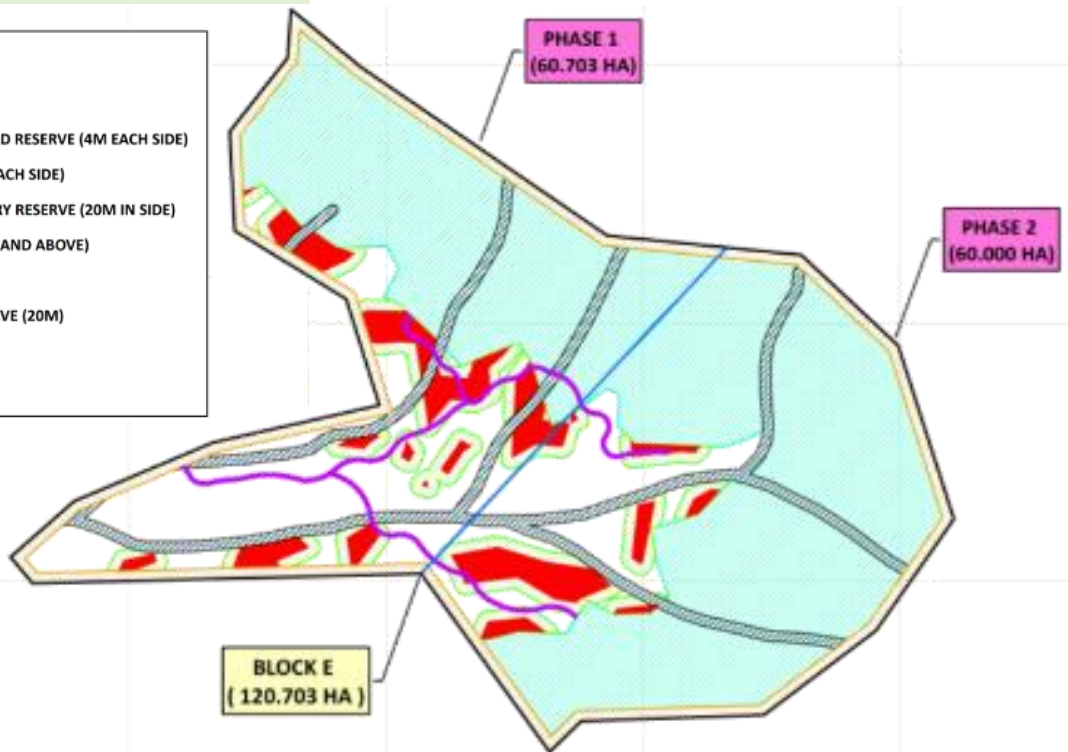
- Construction of plantation road.
- Site clearing/ clear-felling.
- Establishment of site office and storage facilities.
- Water supply and electrical supply.
- Mobilization of work force and heavy machinery.
- Establishment of drainage systems.
- Earthwork activities.
- *Eucalyptus* sp. plantation.
- Establishment of nursery area.
- Establishment of buffer zone.
- Solid and scheduled waste and biomass management.
- Establishment of LD-P2M2 & BMPs.



# PROJECT DESCRIPTION

## DEVELOPED AND UNDEVELOPED AREA

LEGEND	
	RIVER
	PROPOSED ACCESS ROAD RESERVE (4M EACH SIDE)
	RIPARIAN ZONE (20M EACH SIDE)
	PROJECT SITE BOUNDARY RESERVE (20M IN SIDE)
	UNTOUCH AREA (600M AND ABOVE)
	SLOPE AREA (>30°)
	SLOPE AREA >30° RESERVE (20M)
	PHASE BOUNDARY
	PROJECT SITE



PHASE	TOTAL WORKABLE AREA (HA)	TOTAL WORKABLE AREA (%)
PHASE 1	7.73	13.89
PHASE 2	1.46	2.43
<b>TOTAL</b>	<b>9.187</b>	<b>16.32</b>

- Low-risk area **Phase 1 – 13.89% (7.73 Ha)**
- Low-risk area **Phase 2 – 2.43% (1.46 Ha)**
- Total low-risk area (**Phase 1 & Phase 2**) – **9.19 hectares (16.32%)**
- Indicates the area that will be planted with *Eucalyptus* sp. and other species.

AREA AVAILABILITY	BLOCK E ( 120.703 HA )			
	PHASE 1		PHASE 2	
	AREA	%	AREA	%
SLOPE AREA >30° RESERVE (20M)	9.124	15.03	6.440	10.73
PROPOSED ACCESS ROAD RESERVE (4M EACH SIDE)	1.119	1.84	0.460	0.77
RIPARIAN ZONE (20M EACH SIDE)	10.014	16.50	8.068	13.45
PROJECT SITE BOUNDARY RESERVE (20M IN SIDE)	6.992	11.52	4.256	7.09
UNTOUCH AREA (600M AND ABOVE)	25.022	41.22	39.318	65.53
<b>TOTAL UNWORKABLE AREA</b>	<b>52.271</b>	<b>86.11</b>	<b>58.542</b>	<b>97.57</b>
<b>TOTAL WORKABLE AREA</b>	<b>7.729</b>	<b>13.89</b>	<b>1.458</b>	<b>2.43</b>
<b>TOTAL PHASE AREA</b>	<b>60.703</b>	<b>100.00</b>	<b>60.000</b>	<b>100.00</b>

# EXISTING ENVIRONMENT



## Land Usage

- Current land usage: **Forested Area**
- Radius 5km: Residential Area (**Felda Perasu**)



## Topography

- Undulating terrain with contour lines from 200m to 1500m
- Very steep slopes (**Slope > 25°**)
- Located out of flood prone area



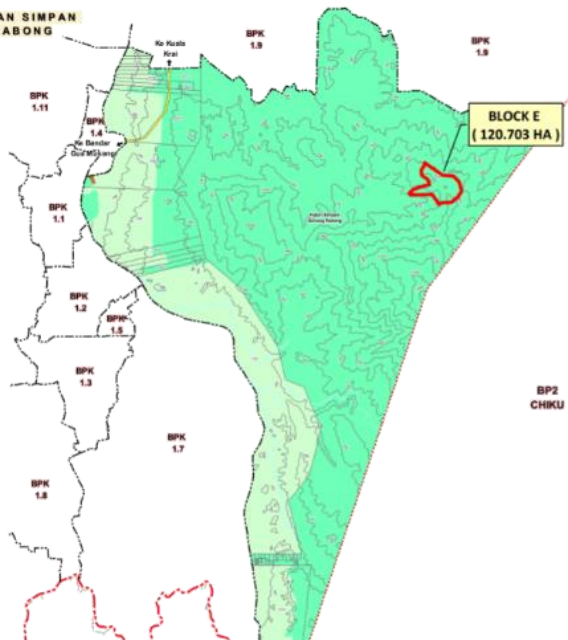
## Traffic and Accesibility

- Main road: 8 (*Jalan Persekutuan*) *Lebuhraya Kota Bharu – Gua Musang*

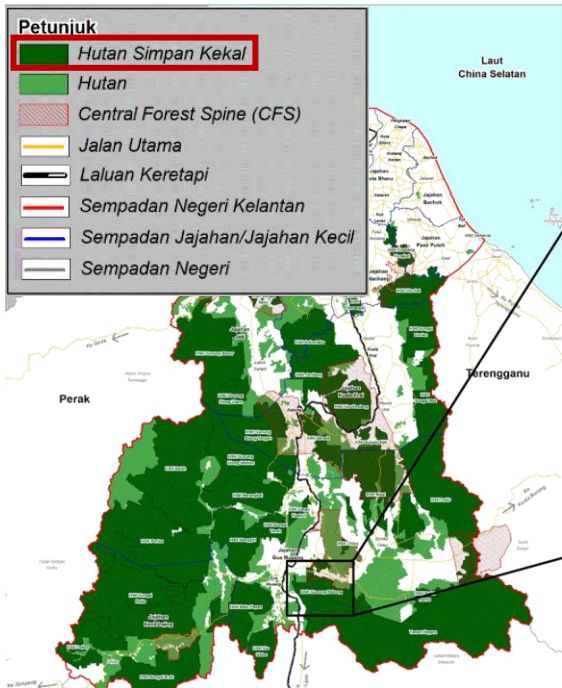
## LAND USE BASED ON LOCAL PLANS

Petunjuk		
Guna Tanah	Luas (Hektar)	Peratus (%)
<b>Kediaman</b>		
Perumahan Tetap Cadangan	2.31	0.02
<b>Pengangkutan Dan Kemudahan Pengangkutan</b>		
Jalanraya Sedia Ada	13.00	0.10
<b>Pertanian</b>		
Pertanian Sedia Ada	2,872.77	22.42
<b>Hutan</b>		
Hutan Simpan Kekal Sedia Ada	7,047.80	55.00
Hutan Simpan Negeri Sedia Ada	2,811.37	21.94
<b>Badan Air</b>		
Sungai / Badan Air Semulajadi Sedia Ada	67.52	0.53
<b>JUMLAH</b>	<b>12,814.77</b>	<b>100.00</b>

BPK 1.12 HUTAN SIMPAN GUNUNG RABONG



RANCANGAN TEMPATAN JAJAHAN GUA MUSANG 2020

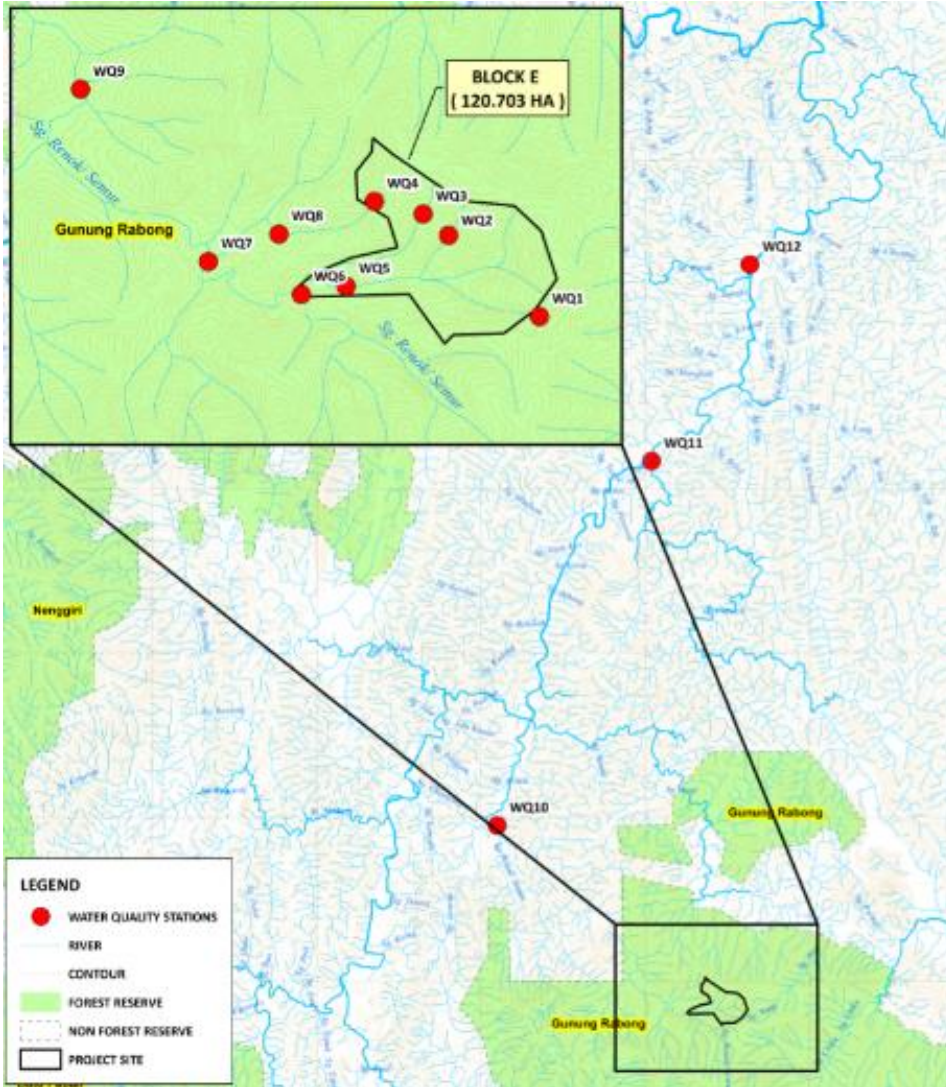


RANCANGAN STRUKTUR NEGERI KELANTAN 2040



# EXISTING ENVIRONMENT

## WATER QUALITY



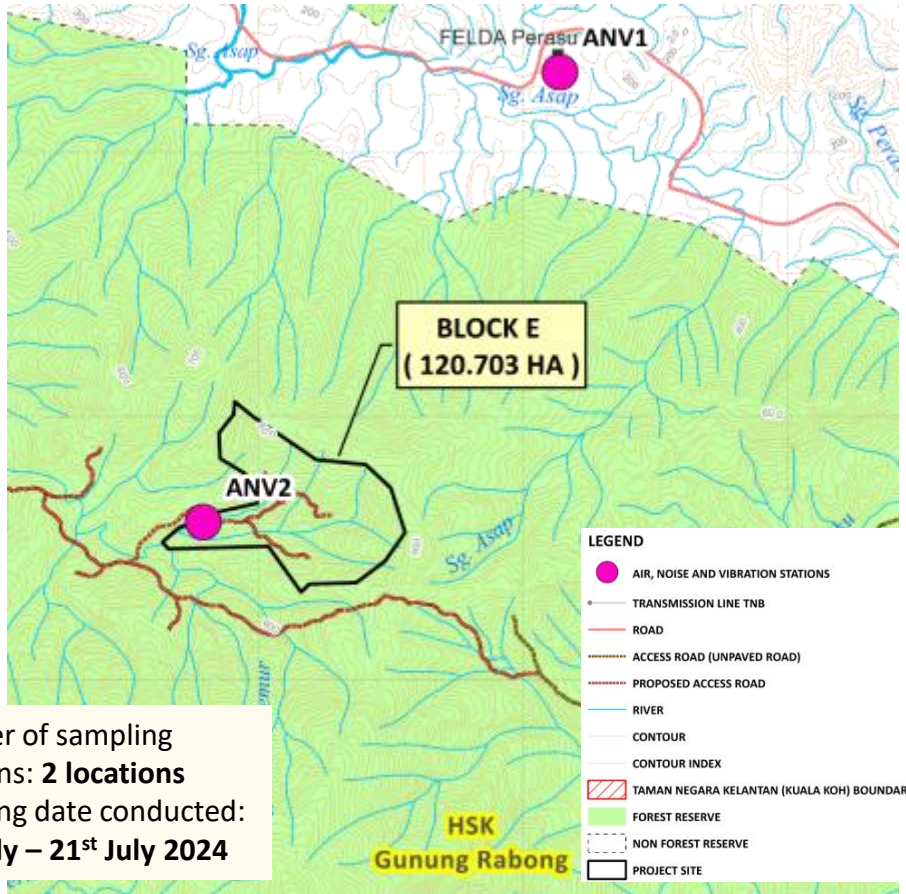
- Number of sampling locations: **12 locations**
- Sampling date conducted: **16<sup>th</sup> May – 30<sup>th</sup> May 2024**

- Water quality parameter is in **“good condition”** for most of the sampling station comparable to **Class II as “Clean”** (NWQS).
- Only three (3) sampling locations exhibit **WQI Class II (W9 & W11) & Class III (W12)** which classified as **Slightly Polluted**.

Name	Coordinate	Remarks
<b>W1</b>	4° 52' 17.580" N, 102° 4' 10.186" E	Sg. Renok/ Semur (Upstream of Project Site)
<b>W2</b>	4° 52' 36.113" N, 102° 3' 49.408" E	
<b>W3</b>	4° 52' 40.997" N, 102° 3' 43.617" E	
<b>W4</b>	4° 52' 43.840" N, 102° 3' 32.495" E	
<b>W5</b>	4° 52' 24.379" N, 102° 3' 26.124" E	
<b>W6</b>	4° 52' 22.532" N, 102° 3' 15.900" E	
<b>W7</b>	4° 52' 30.012" N, 102° 2' 54.720" E	Sg. Renok/ Semur (Downstream of Project Site)
<b>W8</b>	4° 52' 36.313" N, 102° 3' 10.780" E	
<b>W9</b>	4° 53' 9.351" N, 102° 2' 25.522" E	
<b>W10</b>	4° 55' 28.840" N, 102° 0' 6.536" E	Sg. Renok (Downstream of Project Site)
<b>W11</b>	5° 1' 30.468" N, 102° 2' 38.208" E	Sg. Galas (Downstream of Project Site)
<b>W12</b>	5° 4' 45.441" N, 102° 4' 15.006" E	WTP Limau Kasturi Water Intake/ Sg. Galas (Downstream of Project Site) <b>21.90 km from Project site</b>

# EXISTING ENVIRONMENT

## AIR, NOISE & VIBRATION QUALITY



- Number of sampling locations: **2 locations**
- Sampling date conducted: **20<sup>th</sup> July – 21<sup>st</sup> July 2024**

Name	Coordinate	Description
A1/N1/V1	4° 54' 19.816" N, 102° 4' 51.809" E	Felda Perasu
A2/N2/V2	4° 52' 28.619" N, 102° 3' 24.414" E	Project site entrance

### AIR QUALITY

Air quality is within the stipulated limit (Malaysia Ambient Air Quality Standard 2020)

- **PM<sub>10</sub> : 100 µg/m<sup>3</sup>**
- **PM<sub>2.5</sub> : 35 µg/m<sup>3</sup>**

### VIBRATION QUALITY

Vibration level is within the stipulated limit (Guidelines for Environmental Vibration Limits and Control, Third Edition (2021))

- **Day time: 0.1 mm/s**
- **Night time: 0.1 mm/s**

### NOISE LEVEL

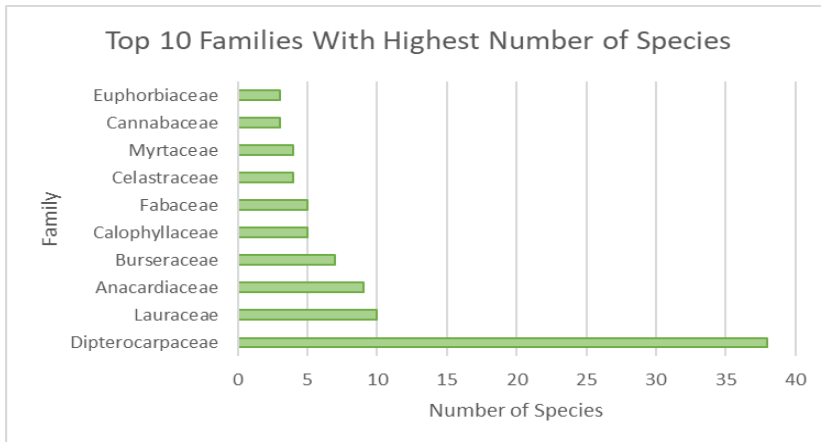
Noise level is within the stipulated limit (Guidelines for Environmental Noise Limits and Control, Third Edition (2019))

First Schedule – Recommended Permissible Sound Level (L<sub>aeq</sub>) By Receiving Land Use for New Development (Low Density Residential)

- **Day time: 55 dBA**
- **Night time: 50 dBA**

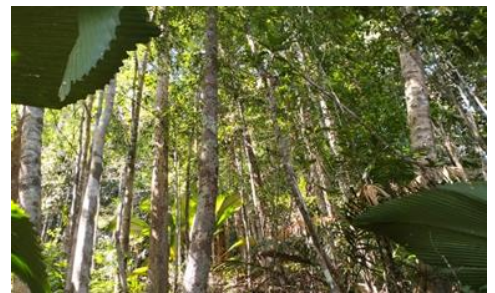
# ECOLOGY STUDY

## FLORA SURVEY



Aerial view of the Project site (undisturbed forested area)

- Most of this region is covered with thick forest.
- The proposed Project site's in-situ habitat attributes mostly primary growth which influence the assemblages of fauna in the proposed Project site indirectly.
- 10 families with highest number of species were identified.
- Most of the species found are classified as Least Concern (LC) and Not Evaluated (NE) as listed in IUCN Red List and Malaysia Plant Red List.



The lower area is dominated by palm trees such as umbrella-leaved palm (*Johannesteijsmannia altifrons*)

## FAUNA SURVEY



*Paguma larvata* - Masked Palm Civet - Musang

*Panthera tigris* - Malayan Tiger - Harimau Belang



Discovery of an old Asian elephant footprint



Discovery of wild boar footprint

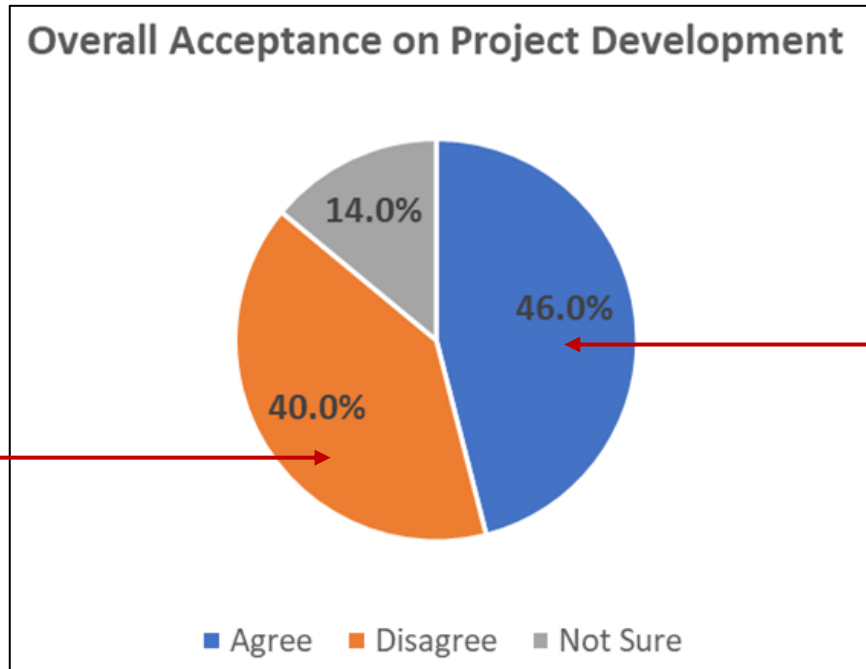


- Survey conducted has recorded 20 species of mammals from 12 families.
- Most of the species found are classified as Least Concern (LC) as listed in IUCN Red List.
- Whereas, there are 9 Protected species (Schedule 1) and 7 Totally Protected species (Schedule 2) as listed in Wildlife Conservation Act 2010.

# SOCIO-ECONOMY STUDY

## SOCIO-ECONOMY SURVEY

Anticipated Potential Positive Impact		%
1.	Business opportunity; offering services/ supplies to Project developers	80.0
2.	Job opportunities	80.0



Anticipated Negative Impacts		%
1.	Health problems	20.0
2.	Water pollution/ decreased water quality	46.0
3.	Noise disturbance resulting from site preparation activities	16.0
4.	Air pollution/dust problems due to earthworks activities	40.0
5.	The road is damaged due to heavy vehicles exiting/entering	32.0
6.	Traffic congestion and the risk of accidents due to the increase in heavy vehicles	28.0
7.	Safety problem	62.0
8.	Concern increases of social issues	26.0
9.	Concern of foreign workers	18.0
10.	Wild animal disturbance	90.0
11.	Flooding	48.0







- 40% of the respondents disagree with the proposed Project development due to concern on their safety that might be resulted from the wildlife-human conflict as well from the soon-to-be frequent movement of heavy vehicles to and from the Project site.



- Nevertheless, most of the respondents agrees with proposed Project development as this Project could offer job opportunities to the local residents, in addition to enhance the economy of the state.



## POTENTIAL IMPACTS AND MITIGATION MEASURES

	POTENTIAL IMPACTS	MITIGATION MEASURES
	<ul style="list-style-type: none"> <li>Erosion due to site clearing/ plantation activities.</li> <li>Deteriorates water quality.</li> </ul>	<ul style="list-style-type: none"> <li>Erosion prone activities should be scheduled for the drier period;</li> <li>All filled areas must be firmly consolidated and compacted;</li> <li>Install suitable size of sedimentation ponds;</li> <li>Construct proper and adequate surface water drains/ channels designed to prevent erosion and slope failure;</li> <li>Prepare LD-P2M2 prior Project commencement;</li> <li>Maintenance of drainage system and all erosion control tools;</li> <li>Vegetation along the rivers must be retained as buffers.</li> </ul>
	<ul style="list-style-type: none"> <li>Water pollution due to site clearing/ plantation activities.</li> <li>Accidental oil/ fuel leakage/ spillage from storage tank.</li> </ul>	<ul style="list-style-type: none"> <li>Construct temporary earth drain that connect to sediment pond;</li> <li>The earthworks must be carried out during dry weather;</li> <li>Install mitigation instruments: ESCP/ LD-P2M2;</li> <li>Regular water quality monitoring should be done by a competent person and full time EO on monthly basis;</li> <li>Practices a reasonably good level of housekeeping;</li> <li>Proper irrigation system shall be designed for nursery and plantation operation;</li> <li>Apply the fertilizers and chemicals during the local wet season.</li> </ul>
	<ul style="list-style-type: none"> <li>The use of heavy machineries can increase vibration level.</li> <li>Transportation of plantation materials will cause dust dispersion.</li> <li>Improper waste management will cause air pollution.</li> </ul>	<ul style="list-style-type: none"> <li>Exposed soil areas and stockpiles shall be dampened with water using water browser;</li> <li>Vehicle wheel-wash facilities shall be provided at the exits to the paved road;</li> <li>No burning of wastes shall be permitted;</li> <li>Conduct monitoring and maintenance;</li> <li>Provide PPE to workers.</li> </ul>
	<ul style="list-style-type: none"> <li>Impact is significant as the existing environment will be altered. Natural vegetation will be cleared and replaced with new one.</li> <li>Fauna will lose their natural habitat due to site clearing and site preparation.</li> </ul>	<ul style="list-style-type: none"> <li>The site clearing should be planned and initiated near the existing roads and moving towards the forest area;</li> <li>Site clearing shall be conducted in proposed phases; Riparian buffer zone is recommended to be allocated particularly along main river;</li> <li>Riparian areas are not worked on;</li> <li>BMP's shall be provided during site clearing/ site preparation stage;</li> <li>Felling and removal of trees, vegetation and natural cover shall be conducted by reputable Sub-contractor;</li> <li>Felled trees and other biomass can be used as mulch at suitable area;</li> <li>Collaboration with Jabatan PERHILITAN is necessary – officially request Jabatan PERHILITAN to catch, trap and remove the conflicting species;</li> <li>A Wildlife Management Plan (WMP) needs to be established to encounter the potential negative impacts of the Project;</li> <li>Installing electric fences, drains and barriers around the Project site properly to prevent the elephant or other animals from entering the Project site.</li> </ul>

## POTENTIAL IMPACTS AND MITIGATION MEASURES

	POTENTIAL IMPACTS	MITIGATION MEASURES
	<ul style="list-style-type: none"> <li>• Transportation of plantation materials and waste which can disrupt traffic movement.</li> <li>• The movement of plantation vehicles and heavy machineries can cause road damage.</li> </ul>	<ul style="list-style-type: none"> <li>• A detailed TMP shall be prepared. Prior to entering paved road, lorry shall undergo types of cleaning process;</li> <li>• Maintenance of paved road to be done to repair the damage cause by Project's heavy machineries;</li> <li>• The Project Proponent shall install clear speed limit and warning signs beside the road approaching worksite areas;</li> <li>• Crusher run should be used throughout the plantation road (on site) and maintained weekly;</li> <li>• Material transportation shall be avoided during peak hours (7.00 am – 9.00 am).</li> </ul>
	<ul style="list-style-type: none"> <li>• Generation of waste from site clearing activities, workers rest area, and the use of machineries.</li> <li>• Generation of waste from plantation activities.</li> </ul>	<ul style="list-style-type: none"> <li>• Open burning shall be prohibited;</li> <li>• General refuse generated shall be stored in enclosed bins separately from hazardous wastes;</li> <li>• General wastes shall be kept segregated and reused or recycled whenever possible;</li> <li>• Adopting proper housekeeping practices and proper maintenance of the drainage system;</li> <li>• Reuse of waste materials, recovery and recycling shall be taken place whenever.</li> </ul>
	<ul style="list-style-type: none"> <li>• Plantation activities can cause pollution which will deteriorate the health of nearby residents.</li> <li>• The spread of disease/ Covid-19 outbreak.</li> </ul>	<ul style="list-style-type: none"> <li>• The local communities shall also be encouraged and given the opportunity to acquire the necessary technical know-how through training scheme related to the operation;</li> <li>• The Project Proponent must provide adequate utilities and facilities to the workers' rest area;</li> <li>• Safety on all phases of the work must be addressed fully right from the start;</li> <li>• First aid equipment must be readily accessible at all work sites.</li> </ul>

