

EXECUTIVE SUMMARY

PROPOSED 1,385 HECTARES OF COCONUT PLANTING PROJECT IN PAYA LANG ESTATE IN MUKIM GEMAS AND BULOH KASAP, DISTRICT OF SEGAMAT, JOHOR DARUL TAKZIM

PROJECT PROPONENT



IOI PLANTATION SDN BHD
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ENVIRONMENTAL CONSULTANT



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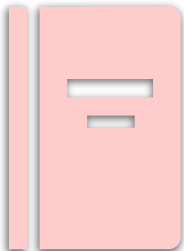
INTRODUCTION

- To develop approximately **1,385 hectares** of coconut planting in Paya Lang Estate

LEGISLATIVE REQUIREMENT

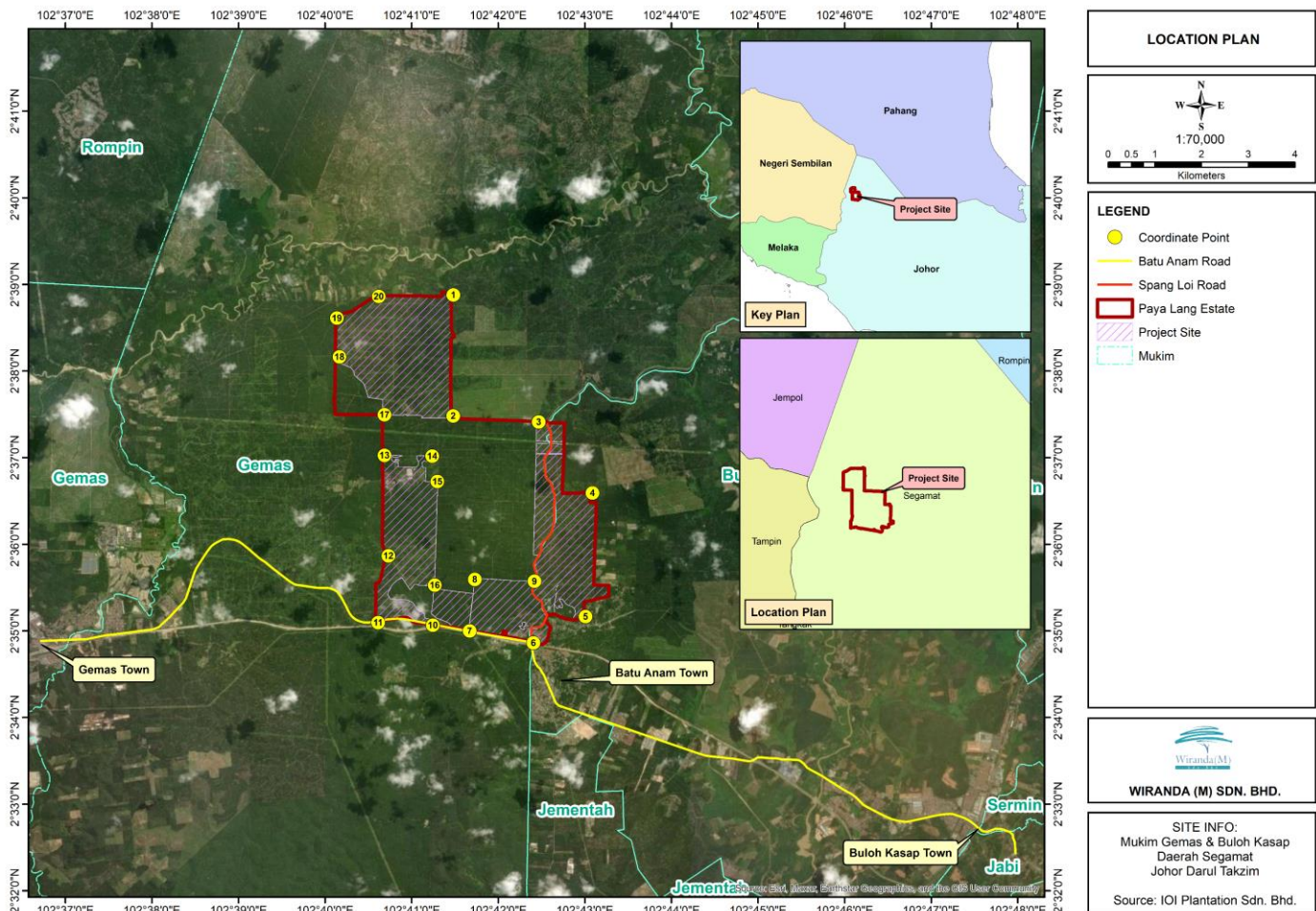
FIRST SCHEDULE :

“Activity 1(b) Agriculture: Development of agricultural estates covering an area of 500 hectares or more involving changes in types of agricultural use.”



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PROJECT LOCATION

- Located in **Paya Lang estate** with an area of **1,385 hectares** in Mukim Gemas and Buloh Kasap, District of Segamat, Johor Darul Takzim

ACCESS ROAD

- Can be accessed from **Segamat town** by following through Jalan Sia Her Yam for about 100m and turning right onto Jalan Genuang for about 18.5km; then u-turn onto Jalan Batu Anam/Route 1 for about 260m; and for 450m slightly left onto Jalan Gemas-Segamat and turn left to Jalan Spang Loi about 600m to get to the boundary of the Project site.
- The Project site can also be accessed from **Gemas District** by heading east on Route 1 for about 11.7km and turning slightly left onto Jalan Gemas - Segamat for about 450m; then turning left to Jalan Spang Loi about 600m to get to the boundary of the Project site.

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PROJECT CONCEPT

Table 5.2.1: Coconut type

Type	Age of maturity (years)	Age of replant (years)
Tall	5.0 to 6.0	>70
Dwarf	2.5 to 3.0	>25
Hybrid	3.5 to 4.0	>45

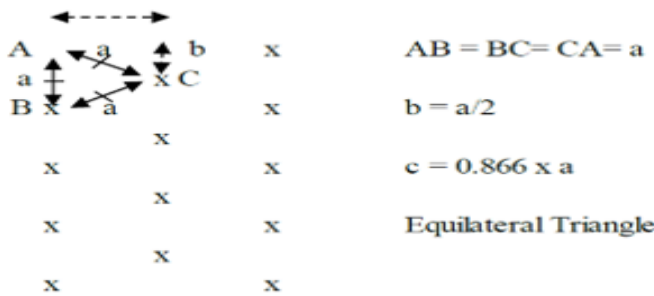
A. Planting density |

Planting densities for each cultivar are based on the type namely:

- a) Dwarf x Tall hybrid at 178 palms per hectare
- b) Dwarf at 250 palms per hectare
- c) Tall at 178 palms per hectare

B. Planting System

Equilateral triangular planting



PROJECT ACTIVITIES

DURING DEVELOPMENT

Land Clearing/ Preparation of Land Development

Field Planting

OPERATION & MAINTENANCE

Upkeep of immature

Upkeep of Mature

Harvesting

Water management

Fertilizer

Pest and Disease

Grading and Market

PRE-DEVELOPMENT (Preliminary Investigation)

Boundary Marking

Buffer Zone Marking

Soil Survey

Water Quality, Air and Noise Study

Flora and Fauna Study

Meteorological Study

Socio Economic Study

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EXISTING ENVIRONMENT

TOPOGRAPHY

- Generally, this project site lies at an elevation of 12 m to 60 m above the Mean Sea Level (MSL).
- Project site is dominated by undulating areas(61.91%) followed by Flat (25.03%), Rolling (12.92%) and Hilly (0.14%)

WATER QUALITY

- Sixteen (16) sampling points were taken in Sg. Muar, Sg Tatat, Sg Senarut Hilir, Sg. Merlimau and its tributaries near and in the Project site.
- WQI ranged from 60.71 to 81.20
- All sampling stations are categorized as 'Slightly Polluted' except for PLE3 which can be categorized as 'Clean'.

HYDROLOGY

- There are three (3) sub-catchments of this project site.
- The river that contributed in this project site is tributaries of Sg Muar, tributaries of Sg. Mutan, and Sg. Merlimau. All the contributed river will finally discharge into the main river of Sg. Muar.

AIR QUALITY & NOISE LEVEL

- All sampling points for air quality complied with the limits prescribed in the New Malaysia Ambient Air Quality Standard 2020
- Daytime range: 45.2 dBA to 54.1 dBA
- Night time range: 46.4 dBA to 51.7 dBA.
- All sampling stations comply with the recommended limit of First Schedule in the Guidelines for Environmental Noise Limits and Control (2019)

SOIL SUITABILITY

- The soil type in the Project site consists of 15 soil series.
- All the soil series for coconut planting suitable except soil series; Disturbed Land (Dld/2) (the land has been already established with building; estate office and labour quarters) and Water (W)

TERRESTRIAL FLORA & FAUNA

- Flora: 22 families and 33 species of plants where dominant species are grasses, shrubs and ferns
- Fauna: 5 families and 6 species of mammals , 25 families and 35 species of birds and 10 families and 15 species of reptiles



GROUNDWATER

3 samples for groundwater analysis

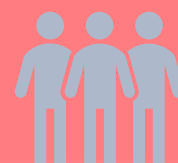
All heavy metal analyses were not detected and/or lower than limit

Total Nitrogen, Potassium and Ammoniacal Nitrogen level varied from 2.6 mg/l to 9.7 mg/l, 15.4 mg/l to 59.3 mg/l and 0.4 mg/l to 2.8 mg/l respectively

Manganese as Mn detected slightly higher than Standard in GW3 with the value of 0.466 mg/L

SOCIO-ECONOMY

82.3% of the respondents agree with the Project, 3.1% disagree and 14.6% were unsure.



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IMPACT ASSESSMENT & MITIGATION MEASURES (P2M2)

Potential Impacts	Mitigation Measures
Soil erosion and sedimentation • Soil erosion and sedimentation will occur during site clearing and planting activities	• Scheduling of the development. • Installation of BMPs such as silt trap, sediment basin etc. • Retain buffer zone.
Water Quality • Decrease in water quality level • Loose sediment being carried off site in surface runoff	• Installation of BMPs such as silt trap, sediment basin etc. • Retain buffer zone.
Waste generation • Solid waste • Biomass waste • Scheduled waste	• No open burning. • Provide garbage bins. • Proper storage area. • Proper waste management according to regulations
Air Quality • Air-borne pollution from use of heavy duty machineries • Dust generation from vehicles in and out from the site	• Exposed areas shall be stabilized or vegetated (where applicable) as soon as practicable. • Servicing and maintaining vehicles & machineries
Noise level • Noise generation during development phase	• Servicing and maintaining vehicles & machineries
Socio-economy • Increased in business opportunities • Interaction between foreign worker and local resident	• PP should foster good relationships with the local residents by getting feedback, recording local complaints, and taking remedial action • Workers must be given sufficient instructions, training and advice and information of good work procedures, work ethics, and code of conduct and safety rulings during working and after working hours.
Hydrology • Increased in surface run-off during clearing and planting activities	• Installation of BMPs such as silt trap, sediment basin etc.
Terrestrial Ecology • Direct loss of vegetative cover • Conflict between human-wildlife is expected	• Schedule of work shall be carefully planned so that the time gap between site clearing and agricultural development is minimized

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PERFORMANCE MONITORING (PM)

LD-P2M2 TOOLS	PARAMETERS	RECOMMENDED LIMITS	FREQUENCY
Sediment Basin/Trap	Silt Marker	2/3 depth from sediment trap	Weekly or after rain event (in- situ)
Perimeter Drain	Performance	-	Quarterly
Earth Drain with Check Dam	Sediment Level		
Temporary or permanent waterway crossing(culvert/bridge)	Structure and Performance		

COMPLIANCE MONITORING (CM)

COMPONENT	REGULATED PARAMETERS	APPLICABLE STANDARDS	MONITORING LOCATIONS	FREQUENCIES
Water Quality (Discharged from Sediment Trap)	Total Suspended Solids (TSS)	50 mg/L	Refer LD-P2M2 Conceptual Plan (Appendix 8)	After 12.5 mm rainfall (using rain gauge)
	Turbidity	250 NTU		

IMPACT MONITORING (IM)

IMPACTS	MONITORING PARAMETERS	APPLICABLE STANDARDS	FREQUENCIES
Air quality	PM ₁₀	100 µg/m ³	Quarterly
Noise Quality	L _{Aeq}	First Schedule, Guidelines for Environmental Noise Limits and Control, 2019.	
	L _{max}		
	L _{min}		
*Water Quality	Total Suspended Solids (TSS)	50 mg/l	Monthly
	Biochemical Oxygen Demand (BOD)	3 mg/l	
	pH	6.0 – 9.0	
	Turbidity	50 NTU	
	Ammoniacal Nitrogen (NH ₃ -N)	0.3 mg/l	
	Dissolved Oxygen (DO)	5 – 7 mg/l	
	Chemical Oxygen Demand (COD)	25 mg/l	
	Oil and Grease	0.04;N	
	Fecal Coliform (count/ 100mL)	400	
	Temperature	-	Quarterly
Groundwater Quality	All parameters outlined in National Groundwater Quality Standard by DOE	-	