

EXECUTIVE SUMMARY

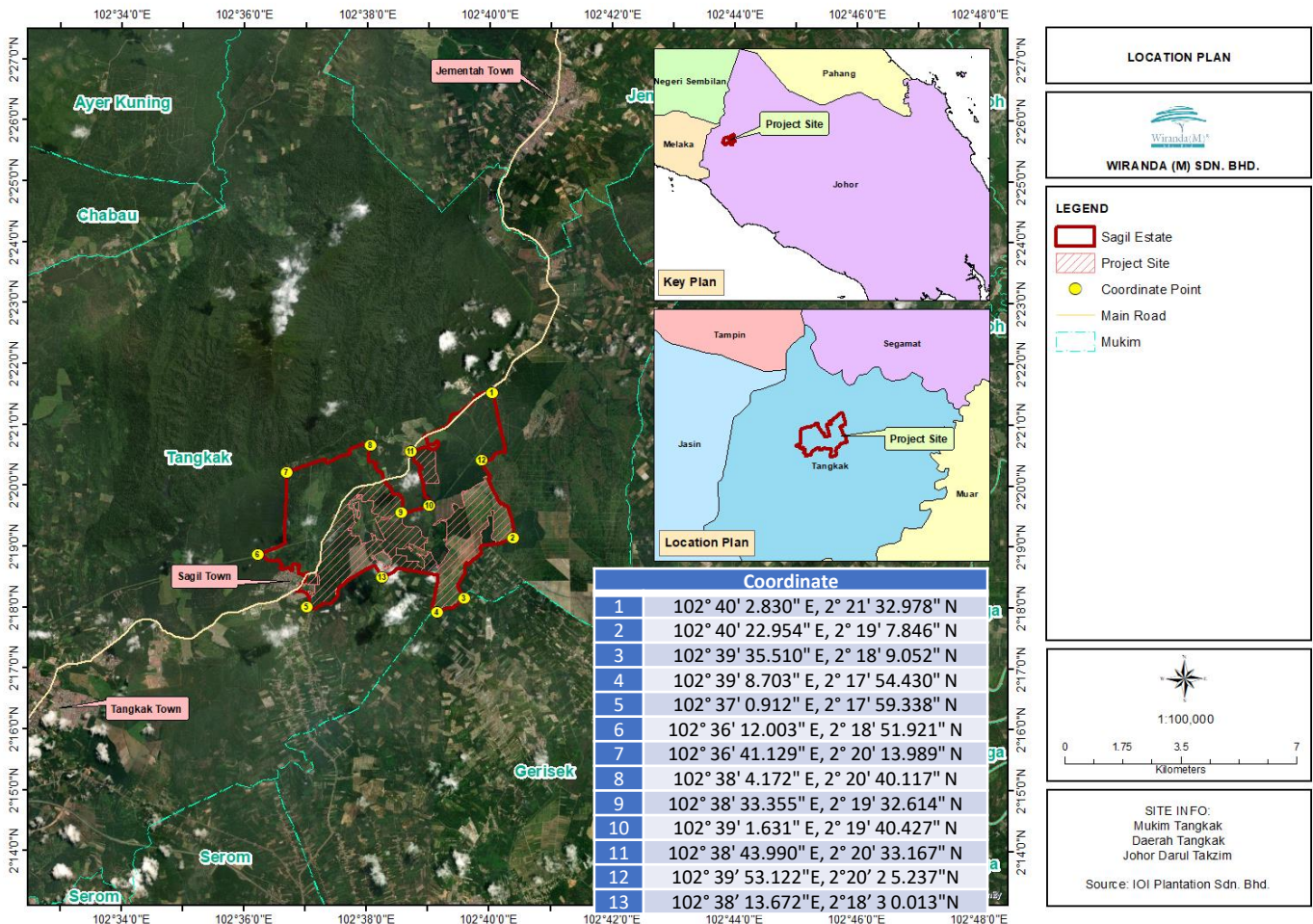
PROPOSED 1,043 HA OF COCONUT PLANTING PROJECT IN SAGIL ESTATE IN MUKIM TANGKAK, DAERAH TANGKAK, JOHOR DARUL TAKZIM

INTRODUCTION

IOI Plantation is planning to embarked on coconut cultivation in IOI Sagil Estate in Sagil. The Project proposes to turn an existing palm oil plantation into a coconut plantation in an area totaling 1,043hectares located in Sagil Estate

| PROJECT PROPONENT | ENVIRONMENTAL CONSULTANT | LEGAL REQUIREMENT |
|---|---|---|
|  <p>IOI GROUP IOI PLANTATION SDN BHD</p> |  <p>WIRANDA (M) SDN BHD</p> | <p>“Activity 1(b) Agriculture: Development of agricultural estates covering an area of 500 hectares or more involving changes in types of agricultural use.”</p> |
| <p>IOI City Tower 2, Lebuhr IRC, IOI Resort City, 62502 Putrajaya, Malaysia</p> | <p>No. 3374, Jalan 18/31, Taman Sri Serdang, 43300 Seri Kembangan, Selangor Darul Ehsan.</p> | |

PROJECT LOCATION



PROJECT DESCRIPTION

The project development consists coconut cultivation in Sagil Estate. This project shall involve the planting of two varieties of coconut trees i.e., Dwarf and Tall.

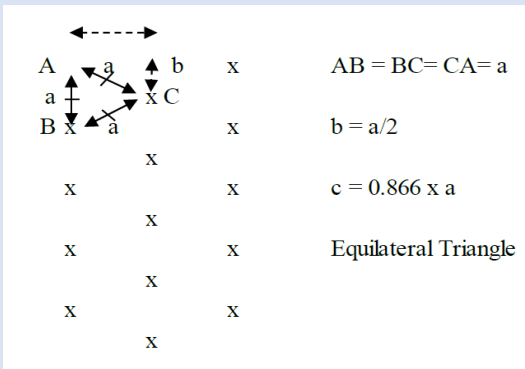
Planting density

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

Planting System

Equilateral triangular planting



Coconut Varieties

Malayan Yellow Dwarfs (MYD)

Malayan Red Dwarfs (MRD)

Malayan Brown Dwarfs (MBD)

Malayan Green Dwarfs (MGD)

Pandan

Nias

Tacunan

Sungai Gulang Gulang (SGG)

Matag

PROJECT ACTIVITIES

Pre - Development

- Pre-development activities: site investigation, surveys and collection of secondary data for planning and design

During Development

- Land Preparation
- Pre-Nursery
- Main Nursery
- Field Planting

Operation & Maintenance

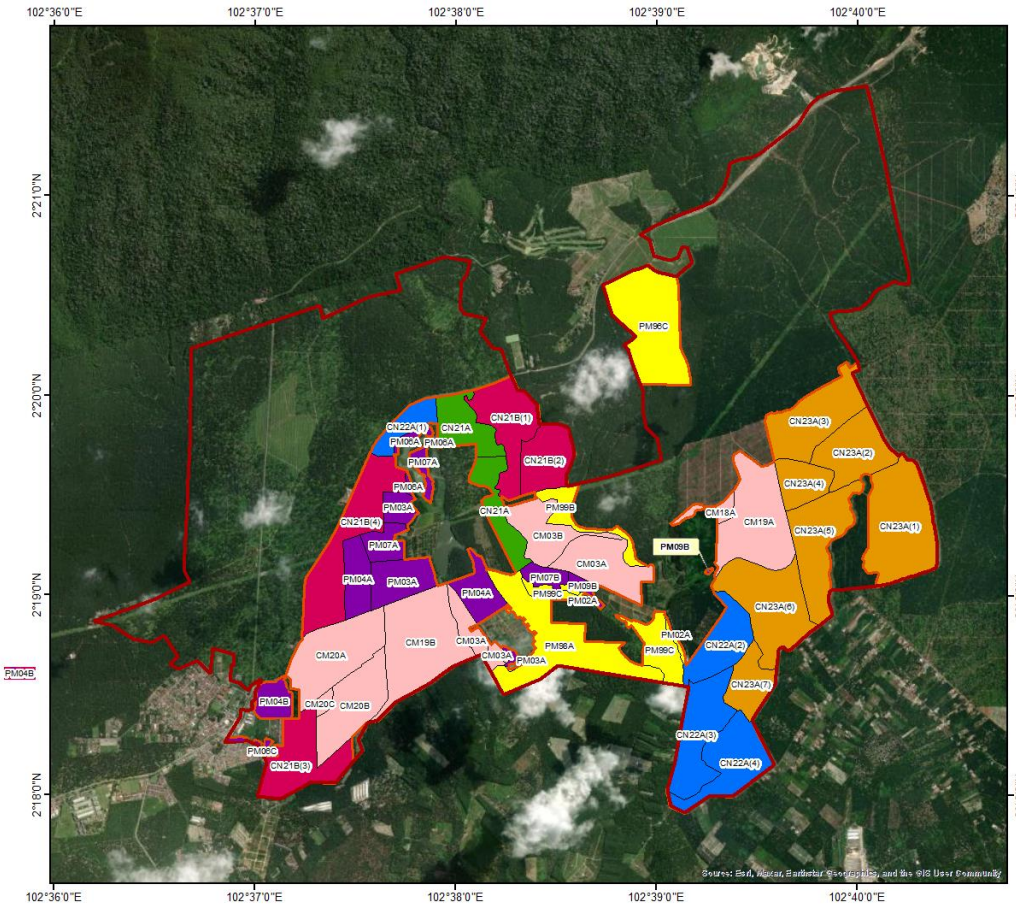
- Upkeep of Immature
- Upkeep of Mature
- Harvesting
- Manuring
- Water Management
- Pest and Disease
- Grading and Marketing



EXECUTIVE SUMMARY

PROPOSED 1,043 HA OF COCONUT PLANTING PROJECT IN SAGIL ESTATE IN MUKIM TANGKAK, DAERAH TANGKAK, JOHOR DARUL TAKZIM

COCONUT PLANTING PHASES



COCONUT PLANTING BLOCKS

Legend

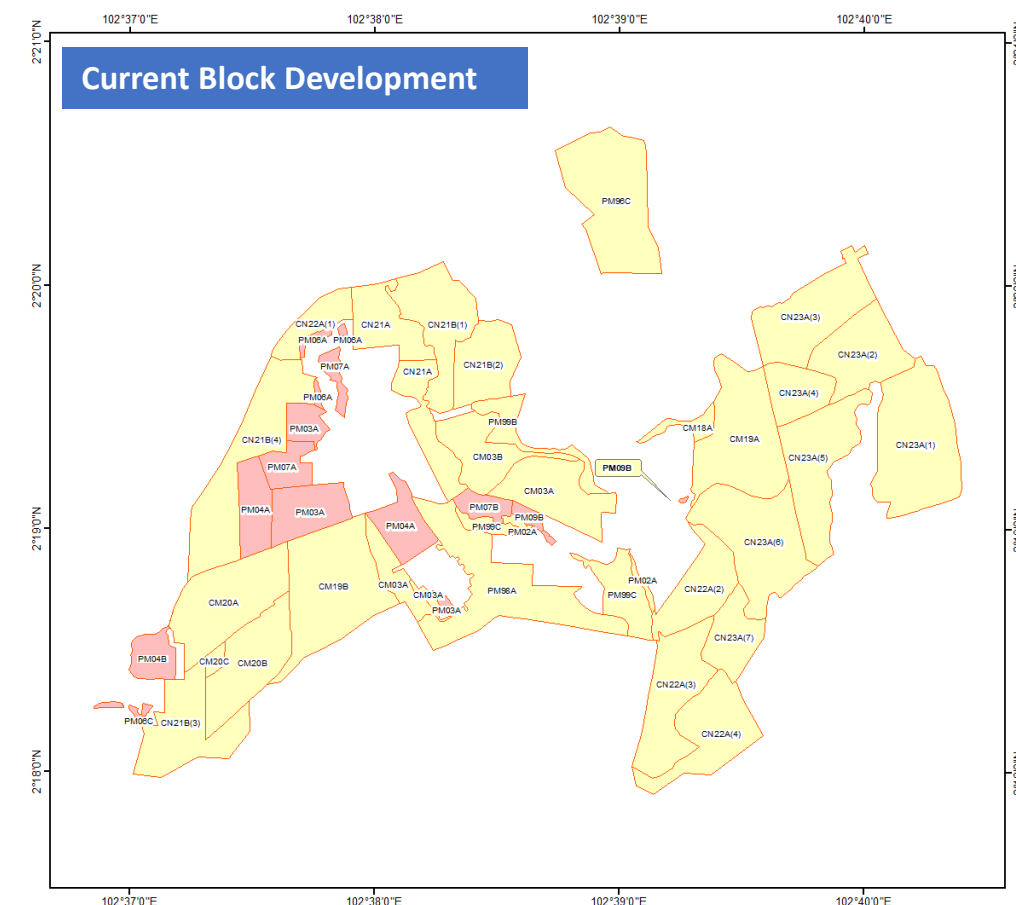
- Sagil Estate
- Project Site

Phase Development

- Existing (251 ha)
- FY20/21 (38 ha)
- FY21/22 (108 ha)
- FY21/22 (145 ha)
- FY22/23 (257 ha)
- FY23/24 (146 ha)
- FY24/25 (98 ha)

Scale: 1:29,816

SITE INFO:
Mukim Tangkak
Daerah Tangkak
Johor Darul Takzim
Source: IOI Plantation Sdn. Bhd.



CURRENT BLOCK DEVELOPMENT

Legend

- Project Site
- Completed
- Earthwork Phase

Scale: 1:24,409

SITE INFO:
Mukim Tangkak
Daerah Tangkak
Johor Darul Takzim
Source: IOI Plantation Sdn. Bhd.

EXISTING ENVIRONMENT

TOPOGRAPHY

- Slope:
 - Flat: 38.50%.
 - Undulating: 53.50%
 - Rolling: 7.87 %
 - Hilly : 0.12 %
- Elevation : 17 m to 73 m above the Mean Sea Level (MSL).

HYDROLOGY

- Contributed river :Sg Sagil, Sg. Bukit Serampang and Sg. Ayer Panas.
- All the contributed river will finally discharge into the main river of Sg. Muar.

AMBIENT AIR QUALITY & NOISE

- 4 sampling Station
- All sampling points for air quality complied with the limits prescribed in the New Malaysia Ambient Air Quality Standard 2020
- The average LAeq readings at all locations exceeded the Recommended Permissible Sound Level (RPSL) except for location NTB2, likely due to vehicular movements and community activities.

TERRESTRIAL FLORA & FAUNA

- **Flora:**
 - Flora biodiversity is generally low as it is within an estate setup & conservation value: least concern
 - 20 family of plants was identified
- **Fauna:**
 - 8 species of mammals, 32 species of avian and 16 reptile species

SOIL CHARACTERISTIC

- 20 soil series was identified
- Soil erosion risk class are low
- Estimation of sediment yield during pre-development 4.90 tonnes

METEOROLOGY

- Nearest meteorological station located at Hospital Tangkak. 10 years meteorological data (2014-2023).
- Annual rainfall : 67.3 mm to 237.1 mm
- Temperature :27.4 °C – 28.2 °C.
- Annual relative humidity: 73.4% to 79.9%.

WATER QUALITY

- 21 sampling points were taken from Sg Sagil, Sg. Bukit Serampang, Sg. Ayer Panas and Sg. Muar
- WQI ranged from 74.74 to 90.97.
- 19 sampling stations fall under Class II & only SGE 5 which falls under Class III
- 15 sampling stations categorised as “Clean” & others categorised as “Slightly polluted”

SOCIO-ECONOMY

- Percentage of Acceptance:
 - 92.2 acceptance,
 - 2.13% not sure
 - 5.6% non acceptance.

IMPACT ASSESSMENT & MITIGATION MEASURES (P2M2)

| Potential Impacts | Mitigation Measures |
|---|---|
| <p>Soil erosion and sedimentation</p> <ul style="list-style-type: none"> • Soil erosion and sedimentation will occur during site clearing activities | <ul style="list-style-type: none"> • Scheduling of the development. • Installation of BMPs such as silt trap, sediment basin etc. • Retain buffer zone. |
| <p>Hydrology</p> <ul style="list-style-type: none"> • Loose sediment being carried off site in surface runoff • Blockages in the drainage system, giving rise to localized flash floods | <ul style="list-style-type: none"> • Installation of BMPs such as silt trap, sediment basin etc. • Retain buffer zone. |
| <p>Waste Management</p> <ul style="list-style-type: none"> • Biomass waste • Solid waste • Sewage waste • Scheduled waste | <ul style="list-style-type: none"> • No open burning. • Provide garbage bins. • Proper storage area. • Proper waste management according to regulations |
| <p>Water Quality</p> <ul style="list-style-type: none"> • Increase turbidity & suspended solids • Contamination of fertilizers, pesticides • Accident spillage of scheduled wastes, • Improper management of other solid wastes & sewage | <ul style="list-style-type: none"> • Installation of BMPs such as silt trap, crusher run, temporary earthdrain, etc. • Proper storage, managed, and disposed of waste • Regular maintenance for machineries • Maintaining proper sanitation |
| <p>Air Quality</p> <ul style="list-style-type: none"> • Movement of vehicles and machinery during estate maintenance. • Spraying of agrochemicals | <ul style="list-style-type: none"> • Vehicle speeds shall be limited within the site to reduce the dispersion of dust from unpaved roads. • Spraying activities used equipped with appropriate protective gear. |
| <p>Noise Level</p> <ul style="list-style-type: none"> • Noise generation during development phase | <ul style="list-style-type: none"> • Servicing and maintaining vehicles & machineries |
| <p>Terrestrial Flora and Fauna</p> <ul style="list-style-type: none"> • Cleared and disturbed areas | <ul style="list-style-type: none"> • Maintaining riparian buffer zone • Involve PERHILITAN to overcome the wildlife conflict |
| <p>Socio-Economy</p> <ul style="list-style-type: none"> • Economic benefit to local people • An interaction between foreign worker and local resident. • Access road | <ul style="list-style-type: none"> • The relationship with local people must be monitored to avoid any problems. • Existing road condition needs to be maintained |

EXECUTIVE SUMMARY

PROPOSED 1,043 HA OF COCONUT PLANTING PROJECT IN SAGIL ESTATE IN MUKIM TANGKAK, DAERAH TANGKAK, JOHOR DARUL TAKZIM.

PERFORMANCE MONITORING (PM)

| LD-P2M2 TOOLS | PARAMETERS | RECOMMENDED LIMITS | FREQUENCY |
|--|---------------------------|--------------------|-----------|
| Perimeter Drain | Performance | - | Quarterly |
| Earth Drain with Check Dam | Sediment Level | | |
| Temporary or permanent waterway crossing(culvert/bridge) | Structure and Performance | | |

COMPLIANCE MONITORING (CM)

| COMPONENTS | PARAMETERS | COMPLIANCE LIMITS | FREQUENCY |
|---------------------|--------------------------------------|--|-----------|
| *Air Quality | PM ₁₀ , PM _{2.5} | 100 µg/m ³ , 35 µg/m ³ | Quarterly |
| **Noise | L _{Aeq} | Day: 55 dBA Night: 50 dBA | Quarterly |

IMPACT MONITORING (IM)

| IMPACTS | MONITORING PARAMETERS | APPLICABLE STANDARDS | FREQUENCIES |
|-------------------------|--|---------------------------------------|-------------|
| *Air quality | PM ₁₀ | 100 µg/m ³ | Quarterly |
| **Noise Quality | L _{Aeq} | Day 55 dBA | |
| | L _{max} | Night 50 dBA | |
| | 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 | - | | |
| ****Groundwater | Parameter for Agriculture Activities | National Groundwater Quality Standard | Quarterly |

Note: * New Malaysia Ambient Air Quality Standards 2020

** Guidelines for Environmental Noise Limits and Control, 2019

*** National Water Quality Standard (Class IIB)

**** National Groundwater Quality Standard (Agricultural)