



EXECUTIVE SUMMARY

EIA

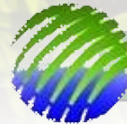
Environmental Impact Assessment (EIA) for the Proposed Agricultural Development on Lot 13450 (PN 45594), Lot 271 (PT2400/HSD 7078), Lot 272 (PT 3479/HSD 8972) & Lot 4044 (PN 22316), Londah Estate, Mukim Gemas, District of Tampin, Negeri Sembilan Darul Khusus.

Project Area : 2,332.67 acres (944 ha)



Project Proponent

F&N Agrivalley Sdn. Bhd.
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Attn: Dato' Raffiq Md Ariff



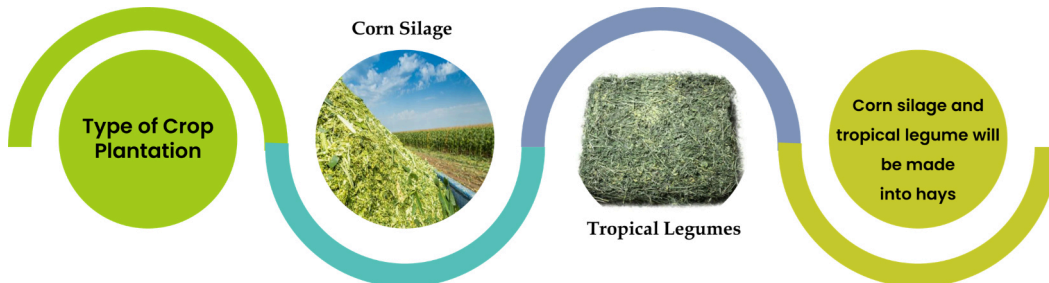
Environmental Consultant

ES Eco Smart Sdn. Bhd.
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Project Introduction

F&N Agrivalley is embarking on a strategic initiative to establish its very own forage production facility at Ladang Londah, located in Gemas, Negeri Sembilan and that makes a central focus of this EIA Report. This project will enable the company to cultivate and deliver fresh, locally sourced forage to Ladang Pasir Besar, ensuring a sustainable and reliable food supply for the dairy cows.



Legislative Requirement

Schedule	Prescribed Activity	Project Component
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.	The proposed project is to develop an agricultural estate with a total area of 2,332.67 acres (944 hectares) and involves land use change of an oil palm plantation to a dairy feed farm of corn and legumes.
	Activity 13 (Development in Slope Area): Development or land clearing less than 50 per cent of an area with slope greater than or equal to 25° but less than 35°.	There is approximately 0.39% of an area with slopes between 25° - 35° within the proposed Project Site.



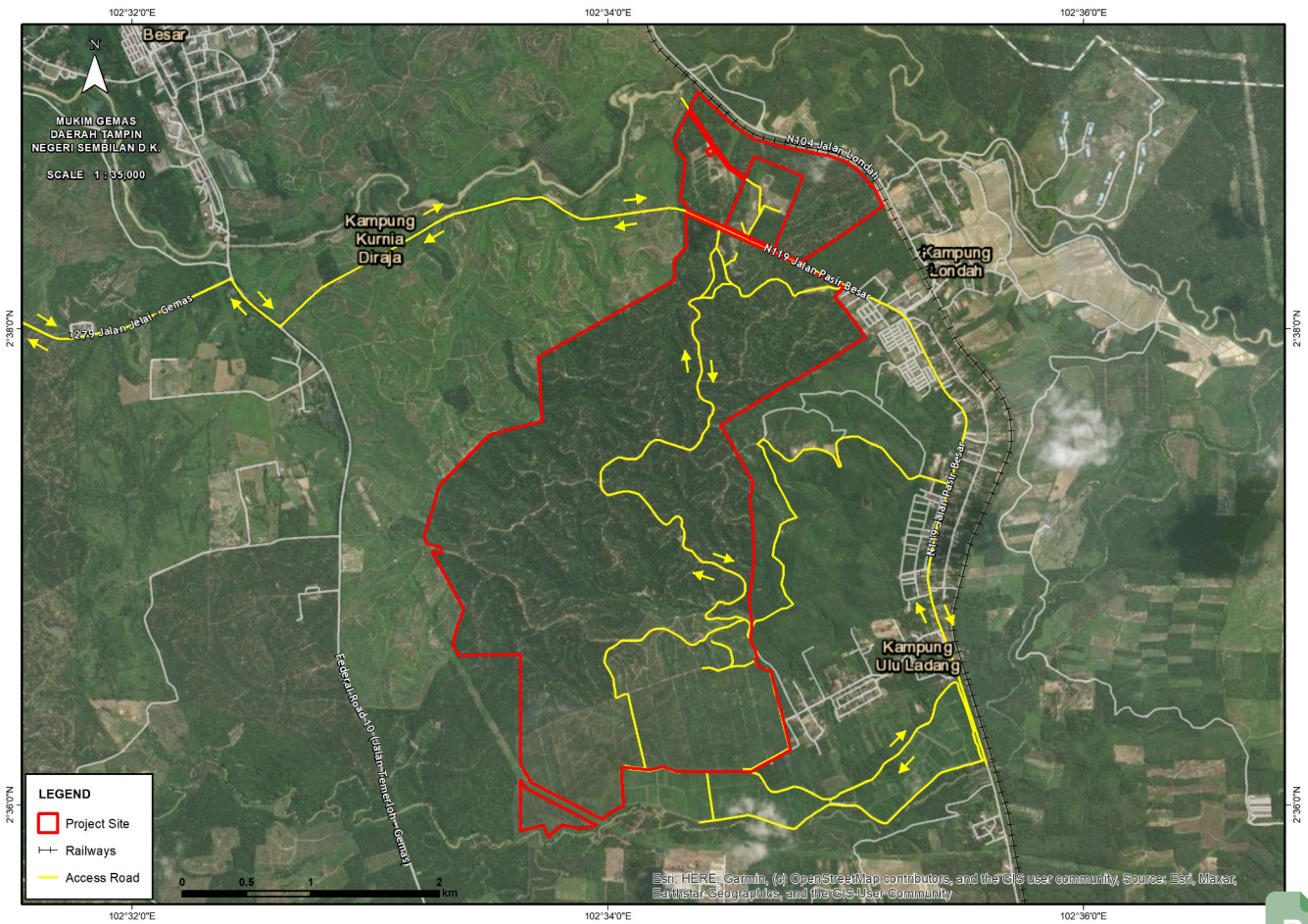
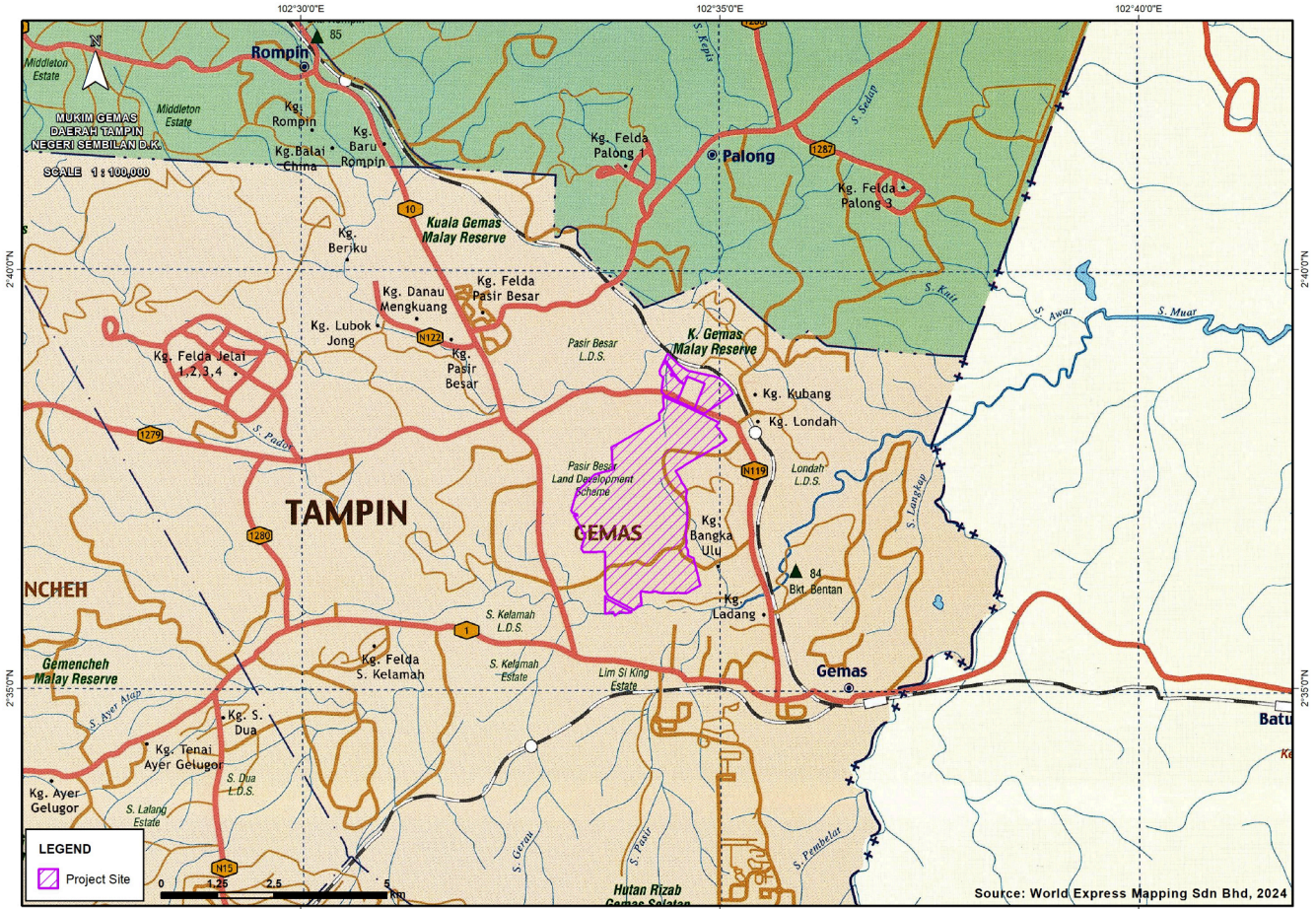
Zoning Compatibility

The siting of the proposed site is situated within the Blok Perancangan Kecil (BPK) 7.3: Bangkahulu/Londah as well as Blok Perancangan Kecil (BPK) 7.8: Gemas Utara/Ladang and has been zoned for industrial area.

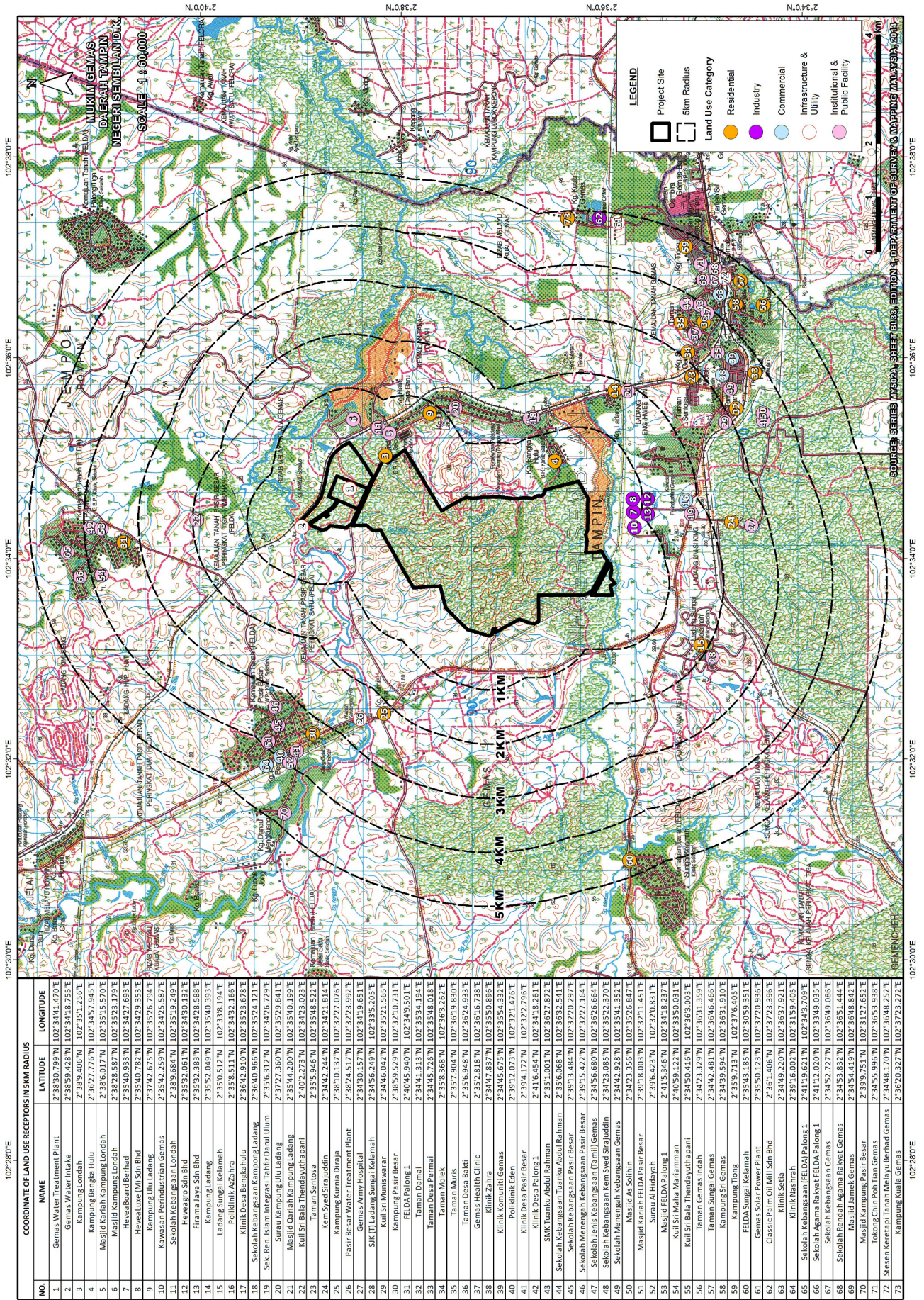
Majlis Daerah Tampin and PLAN Malaysia has confirmed via their letter in **Appendix 2.1** that the proposed activities for the collection and processing of agricultural products is allowed.

Therefore, the proposed project is in line with the activities permitted.

Project Location



Landuse 5-km Radius





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Statement of Need

The dairy herd at F&N AgriValley’s Ladang Pasir Besar confinement dairy operation requires large quantities of high-quality forages, such as corn silage and legume hays, to maximize milk yield and optimize milk quality.

To minimize transport costs and operating expenses, it is crucial that the forage production be located close to the dairy farm. Ladang Londah, situated conveniently nearby, offers a strategic location for this purpose. The necessary crop inputs, including fertilizers and pesticides, will be transported from suppliers to the agricultural project via Jalan Pasir Besar (N119).

Project Description

- The proposed crops plantation for this agriculture development are corn silage and legume hays.
- The scope of this EIA covers 2,332.67 acres (944 hectares) while only 1,251.05 acres (506.3 ha) will be developed as an agricultural area and the remaining area, with a more undulating slope will be remain untouched.

GUNA TANAH		UNIT	EKAR	%
	KAWASAN PERTANIAN	-	1251.05	55.11
	KAWASAN TANAMAN SEDIA ADA (DIKEKALKAN)	-	994.72	41.44
	JALAN	-	21.66	0.64
	KOLAM TAKUNGAN	6	64.57	2.77
	PEJABAT (BANGUNAN SEDIA ADA)	12	0.67	0.04
JUMLAH			2332.67	100.00



Planting and Harvesting Cycle

- Consist of **3** crop cycles per year
- **2** cycles of corn and **1** cycle of legume hay.
- Each cycle will span approximately **100** days,



Fertigation Application (Fertilizer, Seed & Water)

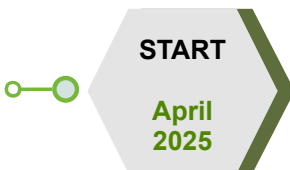


Pesticide Application and Weeding



Watering Needs

Project Implementation Schedule



- Earthworks and site clearing for Stage 1a and Stage 1b are scheduled to begin in April 2025 and completed by September 2025.
- Following this, earthworks for Stage 2 and Stage 3 will commence in June 2025 and October 2025, respectively.
- Once soil preparation and treatment are finalized, the planting process will begin, with two (2) cycles of corn and one (1) cycle of legumes being continuously cultivated.

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Existing Environment

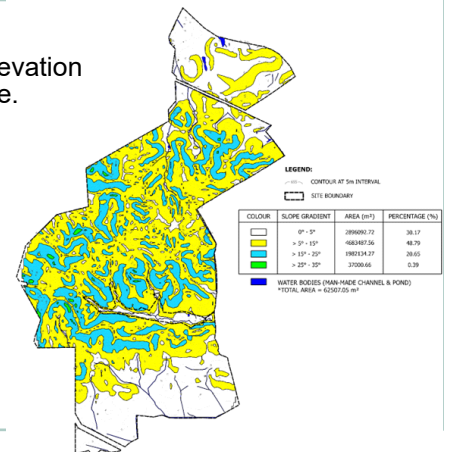
LAND USE

- The project site is primarily surrounded by oil palm plantation.
- Within the project site boundary lies the Gemas Water Treatment Plant (WTP), operated by Syarikat Air Negeri Sembilan (SAINS) which is on Lot No. 13450 (PN45594) and acquired from the owner.
- Outside the project boundary, the Gemas Water Intake is situated near Sungai Muar.
- The nearest settlements are Kampung Londah and Kampung Ulu Ladang, both located within a 500-meter radius of the project site boundary.

TOPOGRAPHY AND SLOPE

- The highest elevation is 131 meters at the west part and the lowest elevation is about 30 meters located at the north part of the proposed project site.
- Based on Geological Terrain Mapping Report :

Slope Gradient	Slope Classification	Percentage (%)
Slope gradient < 5°	Relative Flat	30.17
Slope gradient ranges from 5° - 15°	Gently Sloping Slope	48.79
Slope gradient ranges from 15° - 25°	Moderately Sloping Slope	20.65
Slope gradient ranges from 25° - 35°	Steep Slopes	0.39



GEOLOGY

Based on the Geological Map of Peninsular Malaysia, published by Department of Minerals & Geoscience Malaysia 2014, the regional geology of the respective proposed project site area consists of CLAY, SILT, SAND and minor GRAVEL.

HYDROLOGY

- Specifically, the streams draining the northern section of the project site flow via Sg. Kelubi into Sg. Muar, crossing the outer boundary of Gemas WTP. Streams such as Sg. Ayer Besi and Sg. Sialang drains southeastward into Sg. Muar. Meanwhile, the western-eastern portion of the site is drained by a small tributary of Sg. Muar. Eventually, Sg. Gemencheh flows into Sg. Muar before discharging into the Straits of Melaka.
- Based on JPS :
 - Alert, warning and danger flood levels of Sg. Muar is 20m, 21m and 22m respectively.
 - Alert, warning and danger flood level of Sg. Gemencheh is 24.5m, 25.5m and 26.5m respectively.
- Based on proposed earthwork plan, the finish platform level in the range of PL 25m - 37m proposed by G&P Professional Sdn. Bhd.

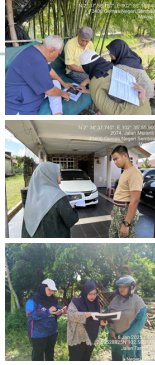
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Existing Environment

SOCIOECONOMIC

No.	Acceptance of Proposed Project	No. of Respondent
1.	Support	220
2.	Support with condition	55
3.	Not Support	46
4.	Neutral	31
Total		352



Distance Radius	No.	Settlement	No. of Respondents
0-1KM	1.	Kg Londah	18
	2.	Taman Halacara Baru	14
	3.	Kg Halacara Baru Londah	36
	4.	Kg Bangkahulu	8
1-2KM	5.	Kg Ulu Ladang	45
2-3KM	6.	Kg Ladang	7
	7.	Taman Sentosa	40
	8.	Kem Syed Sirajuddin	38
3-4KM	9.	Taman Damai	14
	10.	Taman Desa Permai	15
	11.	Taman Gemas Setia	11
	12.	Kg Seri Gemas	8
4-5KM	13.	Taman Muris	4
	14.	Taman Desa Bakti	12
	15.	FELDA Palong 1	22
	16.	FELDA Pasir Besar	17
	17.	Kg Pasir Besar	11
	18.	Taman Gemas Indah	8
	19.	Perumahan KTMB	4
	20.	Taman Sungai Gemas	11
	21.	Kg Bukit Masjid	9
Total		352	

ECOLOGY

Category	Flora	Fauna		
		Mammals	Birds	Herpetofauna
Species	31	2	6	1
Family	22	2	5	1
IUCN Red List 2023	-	1 EN	-	-
Malaysia Plant Red List	-	2 P	-	-
Wildlife Act 2010	-	-	-	-
Endemic	-	-	-	-



AMBIENT AIR

Environmental Baseline

Parameters	A1	A2	A3	A4	A5	A6	MAAQS
Particulate matter 10µm (PM ₁₀)	67	37	33	43	36	53	100 mg/m ³
Particulate matter 2.5µm (PM _{2.5})	25	31	25	26	25	43	35 mg/m ³
Sulphur dioxide (SO ₂)	<5	<5	<5	<5	<5	<5	80 mg/m ³
Nitrogen Oxide (NO ₂)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	70 µg/m ³
Carbon monoxide (CO)	1.4	2.4	2.4	2.4	2.9	3.4	10 mg/m ³
Ground Level Ozone as O ₃	<5	<5	<5	<5	<5	<5	100 µg/m ³

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Environmental Baseline

NOISE

Point	Results (LAeq)	
	Day Time	Night Time
N1	62.0	53.0
N2	60.0	57.0
N3	58.2	52.9
N4	49.6	48.3
N5	61.3	52.2
N6	61.2	56.7
Recommended Permissible Sound Level (LAeq)	60	55

VIBRATION

Monitoring Location	Time	Maximum RMS velocity at vertical direction, z-axis (mm/s)	Third Schedule: Recommended Vibration Limits for Human Response and Annoyance from Intermittent Vibrations (Residential)
V1	Daytime	0.146	0.8 to 1.6 mm/s (R=8 to R=16)
	Nighttime	0.101	0.4 mm/s (R=4)
V2	Daytime	0.112	0.8 to 1.6 mm/s (R=8 to R=16)
	Nighttime	0.090	0.4 mm/s (R=4)
V3	Daytime	0.491	0.8 to 1.6 mm/s (R=8 to R=16)
	Nighttime	0.337	0.4 mm/s (R=4)
V4	Daytime	0.090	0.8 to 1.6 mm/s (R=8 to R=16)
	Nighttime	0.067	0.4 mm/s (R=4)
V5	Daytime	2.192	0.8 to 1.6 mm/s (R=8 to R=16)
	Nighttime	0.448	0.4 mm/s (R=4)
V6	Daytime	0.469	0.8 to 1.6 mm/s (R=8 to R=16)
	Nighttime	0.426	0.4 mm/s (R=4)

WATER QUALITY

Sampling Point	WQI	Class of Water	Status
W1	68.80	Class III	Slightly Polluted
W2	71.62	Class III	Slightly Polluted
W3	72.86	Class III	Slightly Polluted
W4	73.93	Class III	Slightly Polluted
W5	74.22	Class III	Slightly Polluted
W6	77.75	Class II	Slightly Polluted
W7	81.93	Class II	Clean
W8	77.46	Class II	Slightly Polluted
W9	77.93	Class II	Slightly Polluted
W10	76.97	Class II	Slightly Polluted
W11	71.61	Class III	Slightly Polluted
W12	83.67	Class II	Clean
W13	87.81	Class II	Clean

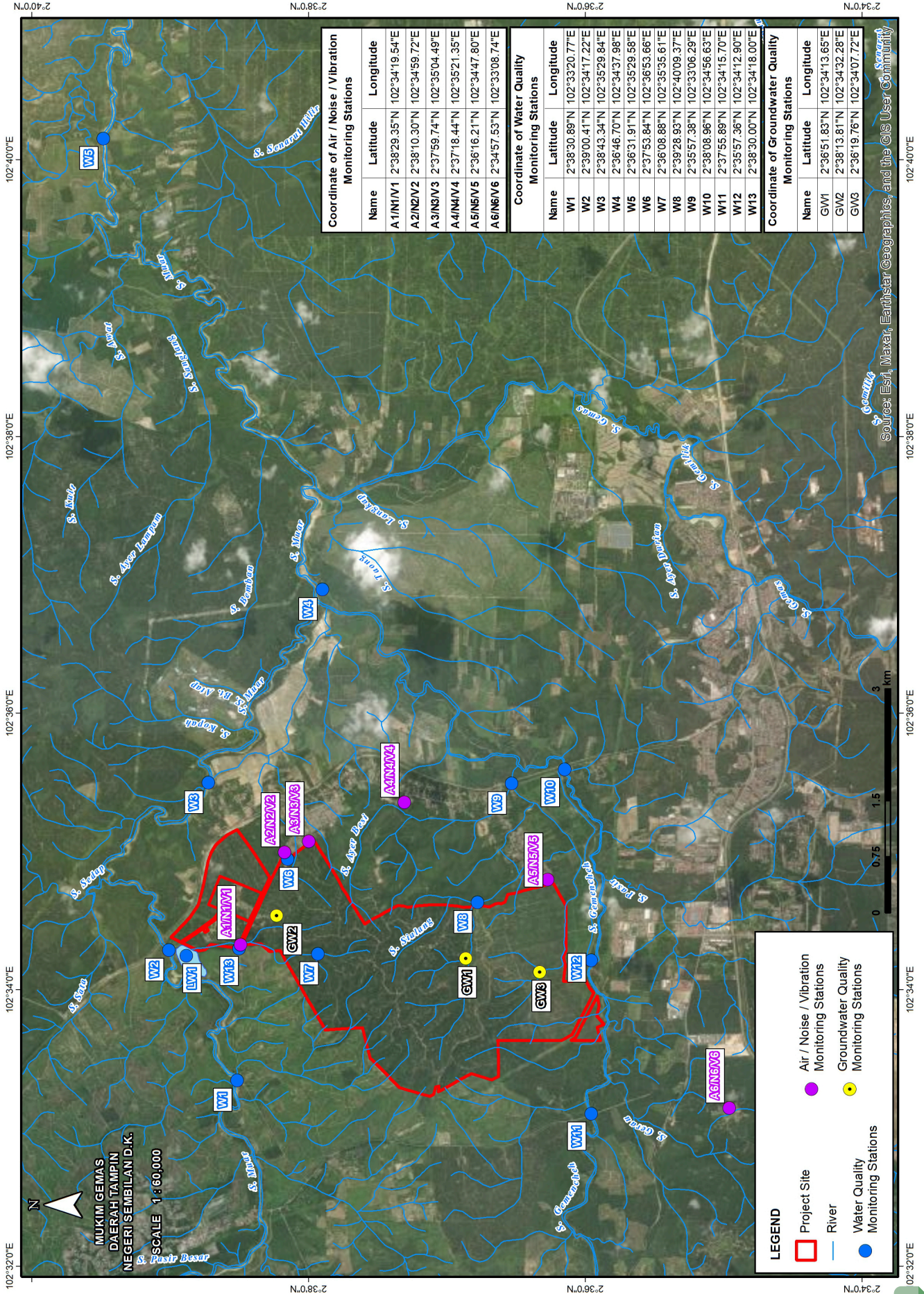
PONDED AREA WATER RESULT

Parameters	Result	NWQS
	LW1	Class IIA
pH	7.2	6.5 – 9.0
Temperature	26.7	Normal ±2
Dissolved Oxygen	8.2	5-7
Turbidity	79	50
Ammoniacal Nitrogen	0.6	0.3
BOD	2	3
COD	15	25
Total Coliform	7500	5000
Faecal Coliform	35	100
Chlorophyll a	<5	-
Phosphorus	< 0.05	0.2
Transparency	22	-

GROUNDWATER

Generally, groundwater analysis at GW1, GW2, and GW3 shows that all the tested parameters were found well within the recommended limit of Groundwater Quality Standard for Agricultural Use.

Sampling Location Plan for Water, Groundwater, Air, Noise and Vibration



EXECUTIVE SUMMARY

Summary Potential Impact and Mitigation Measures Construction Phase



ECOLOGY

Impact

- Disturbances to the biophysical and social environment caused by these activities are minimal.
- Based on the field ground survey and socio survey conducted, relatively low abundance of wild animals (amphibians, avian, mammal, and reptilian) was recorded inhabit the proposed project site. Thus, less impact to wildlife is expected to occur.

Mitigation

- Activities such as site clearing should be restricted within project boundaries.
- Avoid Sensitive Periods: Schedule noisy activities during periods of low bird activity, such as outside of breeding seasons or early mornings/late evenings.
- Break down construction into smaller phases, allowing birds time to adjust between periods of high noise.
- Any trapped, disoriented and injured animal must be rescued and relocated to nearest suitable and secured habitats.



EROSION AND SEDIMENTATION

Impact

When land is disturbed, the soil erosion rate will increase. Most erosion will cause sediment problems, and this can be greatly reduced by proper planning and maintenance.

Mitigation

- The detailed LD-P2M2 document shall be prepared in the Environmental Management Plan, (EMP) document that needs to be approved before the project is embarked.
- Site clearing must in phases
- Excavated topsoil shall be stockpiled, protected from erosion, and later used for re-vegetation.
- Access roads to the site shall be stabilized with aggregates or other material to reduce erosion from the road.



AMBIENT AIR QUALITY

Impact

- Dust dispersion from open stockpiles and vehicular movement.
- The potential impact is expected to be localized, temporary, and confined to permitted working hours

Mitigation

- Preferably schedule transportation during off-peak traffic hours to minimize congestion and emissions.
- Provide water jets at site entrances and exits to prevent soiling of roadways with soil particles and reduce fugitive dust.
- Cover lorries carrying soil and light materials with tarpaulin to prevent the dispersion of particles.
- Regular maintenance of vehicles and equipment to reduce emissions of pollutants like NOx, SOx, and CO.

EXECUTIVE SUMMARY

Summary Potential Impact and Mitigation Measures Construction Phase



NOISE

Impact

- The primary sources of noise pollution will be the agricultural operation of machinery and vehicle movement.
- The noise generated during land clearing activities may disturb fauna in the vicinity of the project site
- The noise generated is expected to be temporary and localised around the project site due to the machinery operations and vehicle movements.

Mitigation

- Scheduling noisy activities during designated hours, such as weekdays during daytime hours, and avoiding noisy activities during early mornings, evenings, and weekends, can help minimize disturbance to nearby communities and fauna at the vicinity.
- Proper maintenance of equipment to ensure optimal performance and noise reduction measures can further mitigate noise impacts.



WATER QUALITY

Impact

- Sediment runoff from loosened soil can increase the TSS and turbidity levels to Sg. Muar, Sg. Kelubi, Sg. Gemencheh and Sg. Sialang.
- The potential source is oil leakage from operation of machinery/equipment. Oils and grease can form a surface film on the water surface, which reduces oxygen uptake and thus affects aquatic life because the oxygen content is too low.
- Improper disposal of sewage from workers could lead to pollution of earth drain and subsequently nearby river.

Mitigation

- Strictly implemented all proposed mitigation in the LD-P2M recommendation.
- Set up temporary drain, silt traps, etc. before starting the project.
- Key points from the water quality modelling are to ensure TSS discharge from the project site is less than 50 mg/L, strict implementation of LD-P2M2 is necessary.
- Regularly monitored at final discharge point of sediment basin to assess Total Suspended Solids (TSS) and turbidity levels.



WASTE MANAGEMENT

Impact

- Biomass: The site clearing activities for the project are expected to produce approximately 131.54 t/ha of biomass.
- Solid Waste: The estimated quantity of domestic wastes will be generated at site (base on 0.8 kg/person/day) is about 80 kg/day.
- The types of scheduled waste are could be generated: Pesticides and Herbicides (SW101), Used Containers of Agrochemicals (SW109), Used Lubricating Oil (SW305), Contaminated Soil (SW408), Soil Contaminated by Agrochemicals (SW408), Crop Residues with Pesticides or Herbicides Contamination (SW410) and Grease Wastes (SW311).

Mitigation

- During site clearing, effort should be made to minimize the amount of biomass generated by adopting sustainable land clearing practices.
- All scheduled waste generated will be managed in accordance with the Environmental Quality (Scheduled Waste) Regulations 2005 and updating DOE on any changes.
- The storage area will be fenced, well-maintained, and clearly marked.
- Regular clean-up and proper containment of waste will be carried out to minimize any environmental impact.

EXECUTIVE SUMMARY

Summary Potential Impact and Mitigation Measures Operation and Maintenance Phase



AMBIENT AIR QUALITY

Impact

Spraying of agrochemicals in controlling weeds, pests and diseases could introduce chemical pollutants into the air in the form of spray droplets suspended in the air and swept away by winds. Again, this source of atmospheric pollution is temporary in nature and can be easily minimized with proper control measures.

Mitigation

- Only chemicals approved and registered under the Pesticides Act 1974 should be used.
- The frequency, dosage and timing of chemical applications must be closely monitored. Spraying of chemicals is strictly forbidden on rainy and windy days.



WATER QUALITY

Impact

Agricultural activities such as pesticide and fertilizer application pose a risk of contamination to nearby water bodies.

Mitigation

- Avoid applying fertilizers within 3-4 meters of watercourses to prevent contamination.
- Investigate algal blooms in ponds as they indicate nutrient run-off with surface water. Take necessary measures to address the cause of nutrient run-off.
- Encourage water harvesting practices such as directing water from roadside drains to retention pond. These practices help in retaining water and reducing run-off.
- Provide proper storage of fertilizers and pesticides
- Use fertilizers and agrochemicals for plant growth and pest control according to the manufacturer's recommendations.



GROUNDWATER QUALITY

Impact

Disturbance of soils for agriculture, especially through drainage, can lead to increased pH and nutrient leaching.

Mitigation

- Adopt precision techniques for irrigation and fertilization to minimize excess water and nutrient use, thereby reducing the risk of leaching into groundwater.
- Employ environmentally friendly pest control techniques to minimize pesticide usage.



NOISE

Impact

Agricultural activities such as irrigation, harvesting, and equipment maintenance generate noise, they are typically intermittent and localized to specific areas of the plantation.

Mitigation

- Utilizing quieter machinery and equipment;
- Scheduling noisy activities during off-peak hours can help minimize disturbances to nearby communities and wildlife habitats;
- Adhering to DOE noise guideline and regulations.

EXECUTIVE SUMMARY

Summary Potential Impact and Mitigation Measures Operation and Maintenance Phase



WASTE MANAGEMENT

Impact

- Corn and legumes residue
- Domestic waste, such as paper, plastics, and food waste
- Sewage from site office and working area

Mitigation

- The open burning of plant residues is strictly prohibited on the project site.
- Allow legume residues to decompose naturally to fix nitrogen and improve soil structure.
- Converting corn stover (stalks, leaves and husk) into silage for Ladang Pasir Besar livestock.
- Dry and store legumes residues can also be a high protein feed for animals.
- All scheduled waste generated will be managed in strict accordance with the Environmental Quality (Scheduled Waste) Regulations 2005.



SOCIO - ECONOMY

Impact

- The presence of foreign workers may cause apprehension among the local population due to fears of disease transmission and potential increases in crime.
- This stage can provide significant benefits to the local community through job opportunities and business ventures related to the project.

Mitigation

- The local population should be given preference in the allocation of jobs, not foreigners.
- Implementation of Corporate Social Responsibility (CSR) by the developer.
- Any influx of workers, especially foreign workers, may lead to social problems in terms of public safety and social harmony. To avoid such problems, project workers should be separated from local residents.



REPLANTING

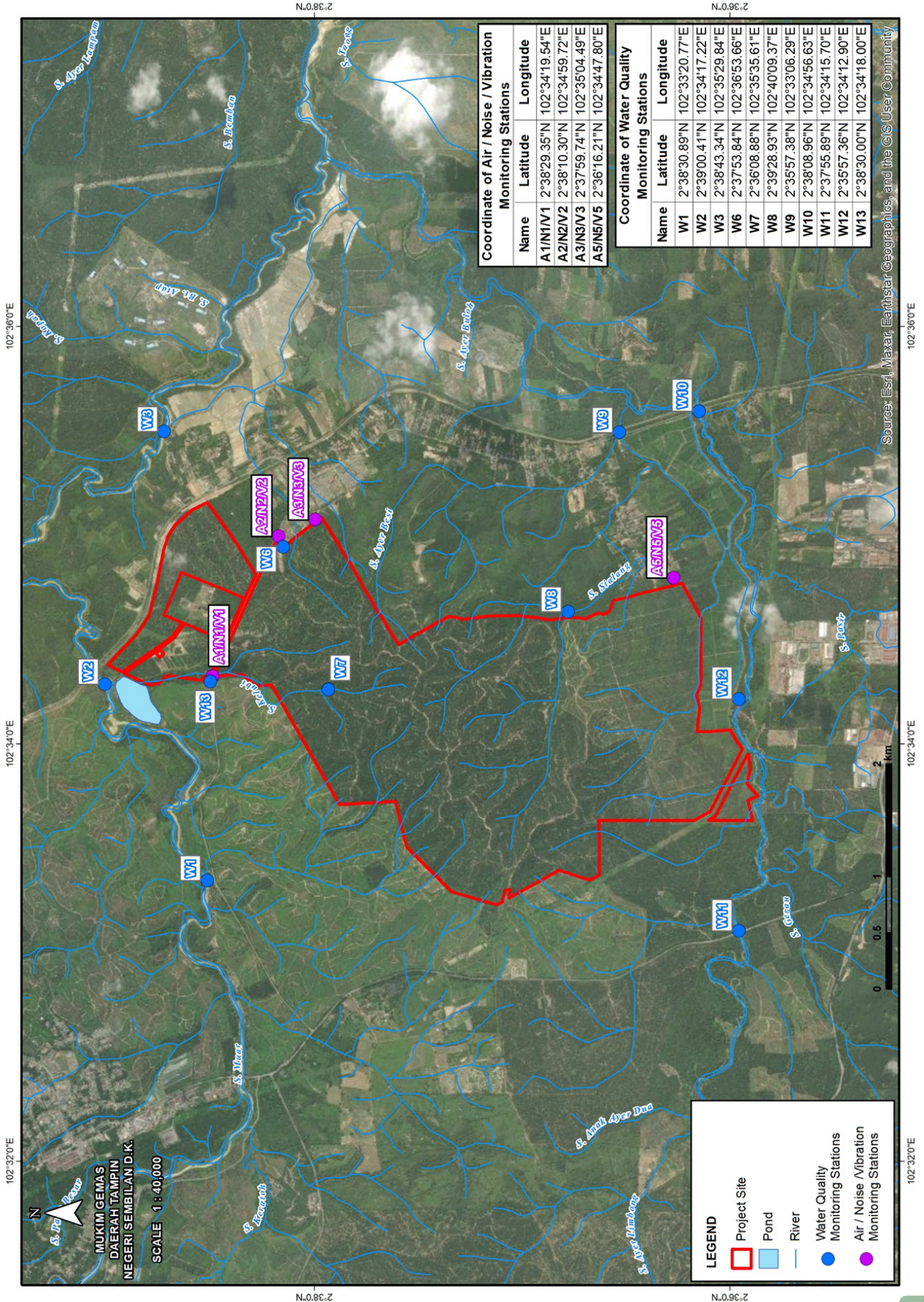
Impact

During the replanting stage, activities will include site clearing, soil replenishment, replanting, and maintenance. The impacts during this stage will be similar to those experienced during the development and operation & maintenance stages.

Mitigation

- Minimizing disturbance to the cleared site by implementing selective clearing techniques and utilizing existing infrastructure.
- Implementing soil erosion control measures, such as mulching can help prevent soil degradation during replanting activities.
- Regular monitoring and maintenance of newly planted areas are essential to ensure successful establishment and minimize further disturbances.

PROPOSED IMPACT MONITORING STATION DURING SITE CLEARING & EARTHWORK STAGES



PROPOSED IMPACT MONITORING STATION DURING OPERATIONAL STAGES

