

CHAPTER 10 : STUDY FINDINGS

10.1 INTRODUCTION

The development of the Project is integral in forest plantation growth and development in Piah Forest Reserve, District of Hutan Kuala Kangsar, Perak Darul Ridzuan. The DEIA study has attempted to clarify and address the environmental impacts with respect to the physical, ecological and socio-economic issues associated with the implementation of the Project. The interpretations made here are based on the best available information and the studies carried out as outlined in earlier sections of the DEIA report.

10.2 PRINCIPAL FINDINGS

The principal findings of the study are as follows:

10.2.1 During Construction Phase

Soil Erosion

Since there will be exposed areas due to the removal of existing vegetation cover during development stage, significant soil erosion and sedimentation may arise. The peak flow also slightly increases due to site clearing activities, which inevitably will affect erosion and sedimentation. However, with the implementation of the pollution prevention and mitigation measures as elaborated in the LD-P2M2, these impacts will be minimised by 25 times. Project developer also encourages adopting various guidelines with respect to erosion control such as the Forestry Department Peninsular Malaysia and Department of Irrigation and Drainage (DID) Guidelines.

Hydrology

The land clearing works during planting may cause many eroded materials to be transport and deposited within the estuary. The deposited material would decrease the conveyance capacities of the river and increase the risk of flooding. However, with the

implementation of the pollution prevention and mitigation measures as elaborated in the LD-P2M2, these impacts will be minimised.

Water Pollution

The rivers involve which are Sg. Rombai, Sg. Adu, Sg. Poi, Sg. Sira and Sg. Piah, the conditions of river water quality is still consider not alarming, where pollution is concerned. Most of the activities that will be carry out are plantation activities, and the deterioration of river water quality will be confine to the area within the plantation. However, with the implementation of the pollution prevention and mitigation measures as elaborated in the LD-P2M2, these impacts will be minimised.

Air

There will be no major impacts on the air quality due to this Project development. Temporary and short-term impact on air quality due to airborne dusts arising from the development activities and some air pollutants produced by vehicles used for plantation preparation. Furthermore, open burning is strictly prohibit under the Environmental Quality Act, 1974, Section 29A (1).

Noise

Noise pollution is also expect to be not significant during the use of machineries, equipment and mechanical works as only a limited number of equipment will be used. Furthermore, the Project site is surround by forest reserve area that can act as a noise barrier to filter the noise diffraction. The noise generated is expected to be of short term and intermittent in nature.

Ecology

There are no impacts on the flora since the project site is a secondary forest with pioneer species vegetation, while for the existing fauna,

they will move to the adjacent forests when the vegetative cover is cleared.

Traffic

Traffic is expect to increase slightly during development phase due to the number of trucks entering and leaving the project site for site clearing and preparation.

Public Health

Some potential health impacts during the development activities are associated with dust (respiratory problems in sensitive individuals), disease (malaria, tuberculosis) due to the presence of foreign workers and noise disturbance, but these shall be overcome by adopting and implementing recommended control practices in order to minimise it.

Waste Management

Since the Project site is a secondary forest, the amount of biomass for re-usable/marketable trees and non-economic vegetative wastes for the whole site is expect to be moderate. Windrow stacking method for biomass shall be utilise on-site to minimise the loss of topsoil and reduce the effects of erosion.

Socio and Economy

The proposed project is expect to encourage participation of locals at early stage. 77.6% respondents agree with the benefit from job opportunities. Human-wildlife conflict is expected to be encounter within the proposed project site especially during the clearing and felling stage. Disturbance and loss of wildlife natural habitats due to site preparation to make way for the new rubber forest plantation is unavoidable. In this regard, the contractors and workers shall follow

the mitigation measures outlined to reduce the potential impacts of human-wildlife conflicts.

10.2.2 During Operation and Maintenance Phase

Soil Erosion

During this phase, the soil would have been fully stabilised due to the existence of the cover crops and establishment of rubber forest trees that will reduce the soil surface from the natural erosion agent i.e. precipitation. Hence, the impact of soil erosion during this stage is minimised. However, all LD-P2M2 tools shall be maintain regularly to ensure that they work efficiently.

Hydrology

During operation phase, hydrology would not be a significant factor as the cover crops, drainage and rubber forest trees are already established. However, good water management must be practice and drainage system are well maintaining.

Water Pollution

Use of oil and grease and other agrochemicals can create water pollution if not stored and manage properly. However, with good management, the fire hazard and water pollution issues can be minimised.

Air

Once the rubber forest plantation is established, air pollution will not be a major concern during the operations phase. The movement of vehicles and machinery during estate maintenance is reduce, so dust dispersion will not be significant. Source of atmospheric pollution is temporary in nature and can be easily minimised with proper control measures.

Noise

Once the plantation area is in operation phase, again the movement of vehicles and machinery during estate maintenance is reduce. Thus, noise pollution and noise annoyance is relatively insignificant and within the control range as compared to the standard requirements.

Ecology

Flora: During the operation phase, there would be no significant impact on flora as the cover crop and rubber forest trees are established.

Fauna: The availability of food would eventually attract wildlife especially wild boar to enter the area. The project proponent/ plantation management is advice to refer to the Department of Wildlife and National Parks and seek their guidance on how to handle wildlife encounters.

Traffic

Tractor/lorry will be use to transport the latex during operation phase. Due to the assumption and calculation made, it shows that the number of vehicles may increases per day for a single trip but the increment of the vehicles is small. Overall, since the project site is located near the rural area and only involves agricultural activities, it is predicted that there is no major impact in traffic volume and no disturbance and congestion in that area.

Waste Management

The waste generation will not be as much compared with during the construction phase. Proper biomass mitigation measures shall be practice to avoid the blockage to the natural stream and drainage nearby in both phases. Burning is strictly prohibit at the Project site.

Schedule waste from lubricant oils and diesel that generated during maintenance can lead to water pollution and cause fire hazard at the Project site. However, with proper management, the fire hazard and water pollution issues can be minimised.

Sewage that produced during this phase can be manage properly if the project proponent complies with all the regulations in the Environmental Quality (Sewage) Regulations 2009.

Socio and Economy

During operation stage, impacts are mainly positive. The plantation is expect to provide local spending and positive impact into the local economy, generation of employment for local workers, creation of job opportunities for local residents and improve the two-way relationship between the community within study area and project proponent.

10.3 PRINCIPAL RECOMMENDATION

Several measures are recommend to be implement throughout the land clearing and operational phase of the project development. They are as follows:

- i. Land clearing and drainage earthworks shall be avoided during the monsoon season to minimize soil erosion problems. Exposed tracks of land shall be re-vegetated or re-turfed immediately. Loose soil shall be compacted as soon as possible.
- ii. The estate roads must be maintained regularly especially during the rainy season to minimise soil erosion. During the dry season, it shall be sprayed when necessary to control dust generation. Planting of cover crops shall be carried out on all exposed bare land.
- iii. The drainage system is recommend to be constructed at critical sections in the Project site especially along the access road in addition to the existing earth drains to cater for surface runoff and control of water for the plantation needs. An adequate permanent drainage system shall be constructed, maintained and de-silted regularly as a flood mitigation measure during the

operations phase. The LD-P2M2 control measures must be properly install, maintain and monitor.

- iv. The zero-burning principle must be enforce during the project development. Felled trees must be cut into small pieces and piled in between planting rows and left to rot where it will improves nutrient cycling, soil fertility and maintains soil moisture. Solid wastes generated from land clearing operations can be managed by appropriately disposed at an approved dumpsite.
- v. Noise control measures shall be implement at the source and in the transmission path. This can be achieve by careful maintenance of equipment, limiting development activities within permitted times, enclosing the area of development and controlling access to the work areas.
- vi. Adequate provisions shall be made for the storage and disposal of oil and grease and other agrochemical wastes to prevent contaminated runoff from entering nearby water bodies and seep into the groundwater.
- vii. The project proponent and his contractors must engage in dialogues with officers from the Department of Wildlife and National Parks in the planning stage of the project development to formulate a management plan and strategies for handling human-wildlife conflict incidents.
- viii. The Project Proponent must prepare an Environmental Management Plan (EMP) and introduce an Environmental Monitoring and Auditing Program. Even after appropriate mitigation and abatement measures has been implement, environmental monitoring is essential to evaluate the residual impacts and compliance with environmental regulations.
- ix. Many other mitigation measures and recommendations have been incorporated in this EIA report. They are more clearly spelled out in the various sections of the report dealing with

hydrology, erosion control, water quality, solid wastes, air quality, noise, water supply and socio-economics.

In conclusion, the project may generate beneficial impact notably in long term. From the DEIA study, most of the potential environmental impact and adverse impact highlighted can be controlled and minimised. The project development shall be coordinated and in line with the mitigating measures formulated prior to the protection of the ecosystem and raising the social acceptability. The project development activity can comply with sustainable development programme with a thorough and strict monitoring and supervision.

The proponent's effort to commission the DEIA study, thereby taking into consideration all environmental-friendly approaches and also incorporating pollution control measures in their future operations is commendable and should be given strong and favourable support from all relevant authorities. If there is any environmental impact to the surrounding, the Project Proponent shall rectify the impact immediately at their own cost.

Given the favourable outcome of the environmental impact assessment undertaken in this study. Therefore, it is recommended an approval is granted to **Hanamurni Sdn. Bhd.** to proceed with the implementation of the proposed Project entitled "**Proposed Rubber Forest Plantation on Parts of Compartment 126, 131 & 132 (Block 1) and Parts Of Compartment 125, 126, 131 & 132 (Block 2) with an Area of 1,600.00 Hectares (3,953.67 Acres) at Piah Forest Reserve, District Of Hutan Kuala Kangsar, Perak Darul Ridzuan**".