

PLANT CONSERVATION THROUGH AN ARBORETUM DEVELOPMENT PROJECT IN TAMAN BOTANIKAL SEPILOK RESERVE, SABAH

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Abstract

One of the Sabah Forestry Department's conservation initiatives is the establishment of an Arboretum to plant and conserve *ex-situ* plants of interest, i.e. endangered, endemic, rare and commercially valuable plants (dipterocarps, figs, plantation species, exotic species and wild fruit trees) in Sabah. This is in line with one of the strategic directions of the 12th Malaysia Plan state development under the tourism sector, which is "Increasing the conservation, protection and management of biodiversity and sustainable environment". The project site is located within the Taman Botanikal Sepilok Forest Reserve, close to the Rainforest Discovery Centre. Several activities have been designed and implemented, including upgrading the nursery and facilities, opening and clearing parts of the area, planting, creating a public awareness interpretation station, developing digital applications, and participating in seminars or study tours. The output of this project will contribute to the global initiative Aichi Biodiversity Target 12, which specifically aims to prevent species extinction. The implementation of this project is also aligned with Target 8 in the Global Strategy for Plant Conservation (GSPC), which targets at least 75% of the endangered plant species to be housed in an *ex-situ* collection. This new arboretum development project will also contribute to Target 9 of the Malaysia National Strategy for Plant Conservation, which aims to conserve *ex-situ* 60% of plant species endangered in Malaysia.

Keywords: plant conservation, arboretum project, Taman Botanikal Sepilok Forest Reserve

1.0 INTRODUCTION

The Arboretum is a designated area for housing a collection of living plants for ex-situ conservation, research, and environmental education. The location for establishing this arboretum is within the Taman Botanikal Sepilok Forest Reserve, Sandakan, Sabah. The RDC, a renowned area, is also situated within this Arboretum, making it an ideal and strategic location for the project due to its status as a nature tourism and educational centre visited by approximately 45,000 visitors annually.

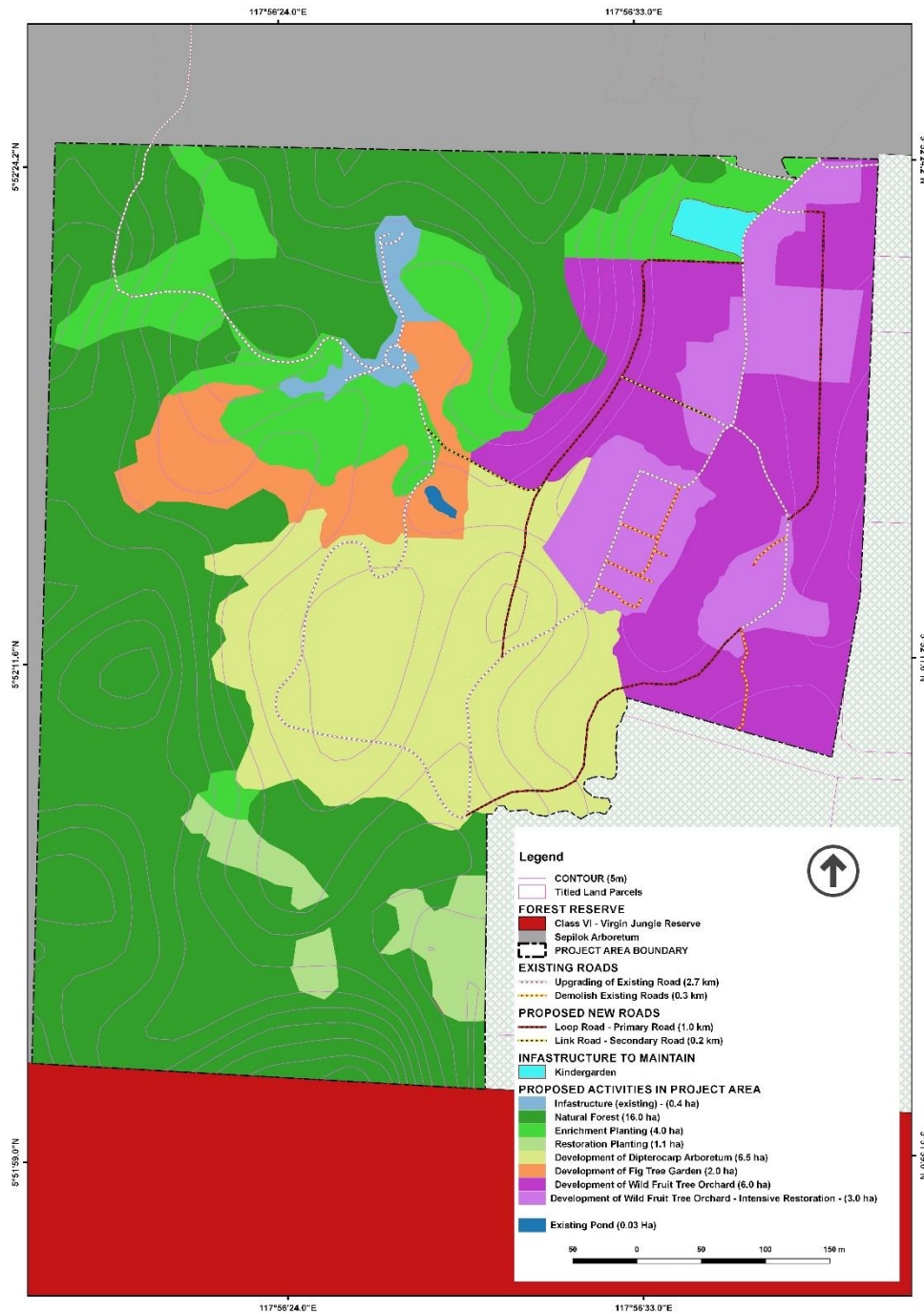
This arboretum project aims to house a collection of living trees from selected plant groups, including dipterocarps, figs, plantation species, exotic species, and wild fruit trees. These plant groups include endangered, rare, and endemic tree species. This project is aligned with one of the strategic directions of the 12th Malaysia Plan state development under the tourism sector, focusing on "Increasing the conservation, protection, and management of biodiversity and a sustainable environment." The Sabah Forestry Department will implement this project for five years (2021–2025). The total estimated project cost is RM one million.

2.0 LOCATION AND ACTIVITIES

The project site is located at the Botanical Forest Reserve, Sepilok, Sabah Forestry Department, and covers an area of about 17 hectares. The area was previously covered with shrubby undergrowth and has an undulating topography (Map 1).

The activities that have been carried out are based on the approved components as follows:

1. Upgrading the nursery site (to date, an expenditure of RM221,630.79 has been committed).
 - a. Upgrading the nursery site (namely Zone 4 Nursery and the main FRC Nursery) has been maintained by creating bedding areas for seedlings, constructing greenhouses and upgrading the site by installing black netting, storage repairs, and other enhancements.
 - b. Purchasing requirements for the nursery site, such as soil grinders, plant media, fertilisers, polybags, and others
 - c. Contract work at the nursery site (the work includes labelling, preparing planting media, planting seedlings, cleaning the surrounding areas of the nursery and other activities).



Map 1: The map of the Arboretum development areas.

- Construction of road facilities in the project area (about RM55,000 expenditure cost has been committed):
 - Gravel roads for vehicles and pedestrian trails. This includes repairing existing roads/trails within the arboretum (three new roads have been constructed approximately 2.5 km x 2 m, and maintenance on the existing roads/trails within the Arboretum has also been carried out).

3. Tree planting (a total allocation of RM286,401.00 has been spent).
 - Contract work for establishing the arboretum (area cleaning, planting, landscaping/decorating, building ponds and others). To date, an area of approximately 8 hectares has been opened/cleared. So far, a total of 900 seedlings have been planted. Two new ponds have been created, and one existing pond has been maintained.
4. Fieldwork (a total allocation of RM110,000.00 has been committed for this purpose).
5. Planting material collection for target plant species (seeds, seedlings, cuttings, and others), including purchasing seedlings/trees. Approximately 800 planting materials are being grown in Zone 4 Nursery.
6. Research and Training
 - Conservation status assessment of threatened species (species assessment). A total allocation of RM35,000.00 will be committed in the year 2025.
 - Development of digital spreadsheets (digitisation of plant information). An allocation of RM18,000.00 has been allocated for the year 2025.
 - Procurement of computers, equipment, and other equipment (an allocation of RM20,000.00 has been spent on purchasing a laptop, a desktop computer, and other computer equipment).
 - Purchase/participation in human resource modules. A total of RM30,000.00 has been allocated for this component, which is RM15,000.00 for 2024 and 2025.
7. Exhibition and public awareness stations (a total of RM79,999.79 has been allocated for this component).
 - Construction of pavilion or station for visitors (5 shelters have been constructed).
 - Printing posters and purchasing exhibition materials (an allocation of RM10,000.00 has been committed to poster installation).

3.0 OUTPUT OF THE PROJECT

- a. *The establishment of an arboretum.* The arboretum covers an area of 17 hectares that houses a collection of living plants, including timber tree species (dipterocarps), fig-trees, plantation species, exotic species, and wild fruit trees.
- b. *Publication of research findings on threatened plant species.* This will enhance information and knowledge regarding threatened plant species in Sabah. In addition, information on each tree that has been planted will be stored in the Brahms database (Botanical Research and Herbarium Management System). This will facilitate disseminating botanical information in line with the digitisation of data and information.

The dissemination of plant information will also be shared through exhibitions at the public awareness interpretation station. This will enhance public awareness and environmental education activities.

- c. Contribution to Global Initiatives. This effort will also contribute to the global initiative known as Aichi Biodiversity Target 12, which specifically aims to prevent the extinction of known threatened species and to improve the conservation status of those species. This initiative encourages the implementation of ex-situ conservation actions and the recovery and reintroduction of species. The execution of this project is also in line with Target 8 of the Global Strategy for Plant Conservation (GSPC), which aims for at least 75% of threatened plant species to be placed in ex-situ collections.
- d. National Conservation Goals. Based on this GSPC, a national strategy plan, the Malaysia National Strategy for Plant Conservation, has been developed to strengthen conservation efforts in Malaysia. This new arboretum construction project will contribute to Target 9 of this national strategy plan, which aims to ex-situ conserve 60% of threatened plant species in Malaysia.

4.0 CONCLUSION

This project will significantly enhance the conservation and protection of biodiversity while bolstering the country's tourism offerings, given its proximity to notable attractions in Sepilok, including the Orangutan Rehabilitation Centre and the Bornean Sun Bear Conservation Centre (BSBCC). The establishment of this arboretum will further augment the existing tourism appeal in Sepilok, Sandakan, by highlighting the government's commitment to environmental conservation efforts. Additionally, the existing environmental education programs at the RDC will be significantly strengthened with the presence of this arboretum, ultimately increasing public awareness of plant species.

5.0 REFERENCES

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