MINISTRY OF NATURAL RESOURCES, ENVIRONMENT AND CLIMATE CHANGE
FORESTRY DEPARTMENT OF PENINSULAR MALAYSIA
STATE FORESTRY DEPARTMENTS[1]
SABAH FORESTRY DEPARTMENT
FOREST DEPARTMENT SARAWAK

FOREST MANAGEMENT AND ENVIRONMENTAL IMPACT

Main Points

What we examined?

- Malaysia is a tropical country that covers an area of about 33 million hectares (ha), consisting of three regions; the Peninsular Malaysia, Sabah and Sarawak. Malaysia recognises forests as a strategic national heritage treasure and is committed to maintaining forest areas that fulfil the importance of forest ecosystem services, biodiversity conservation, environmental protection and sustainable use of resources towards national socioeconomic development and the well-being of current and future generations.
- The Malaysia Policy on Forestry states that Malaysia is committed to maintaining at least 50% of the country's land area to consist of forests and tree cover.
- The audit involves an assessment of forest management and its environmental impact covering the period from 2016 to 2021. The assessment covers two main Audit areas such as activity performance and management. Audit analysis of forest management data from nine states namely Johor, Kedah, Kelantan, Pahang, Perak, Sabah, Sarawak, Selangor and Terengganu have also been carried out.
- Activity performance is evaluated based on the achievement of outputs and outcomes consisting of the benefits/impact of forestry activities on economic, social and environmental aspects. Output achievement is evaluated based on five elements, namely Forest Coverage, Gazettement, Production and Consumption of Forest Products, Forest Plantation Establishment and Ecological Linkages. In addition, the outcome is evaluated based on four elements that is the Forestry Industry, Social Welfare and Wildlife, Environmentally Sensitive Areas and Impact on the Environment.
- The assessment of activity management is based on six aspects that consists of Financial Achievement, Forest Resource Management, Natural Forest Development, Management of Forest Plantation Development Project, Forest Resource Enforcement and Monitoring as well as Forestry Systems and Technology.

[1] Johor, Kedah, Kelantan, Pahang, Perak, Selangor and Terengganu

Why it is important to audit?

- To evaluate whether forest management has been implemented prudently, efficiently and effectively to maintain sufficient forest areas for the benefit of ecosystem services, biodiversity conservation, environmental protection, sustainable use of resources and socioeconomic development.

What we found?

Overall, based on the audit scope, it can be concluded that forest management in Malaysia has been managed sustainably to provide socioeconomic benefits and maintain environmental sustainability. However, based on audit samples reviewed against nine states, there were cases where the weaknesses of forest management for logging activities, forest plantation development, mining and quarrying within the Permanent Reserved Forest (PRF) had a negative impact on the environment.

Output Achievement

i. Forest Coverage

- The forested area in Peninsular Malaysia covered 5.77 million ha in 2016 showing a downward trend of 78,579 ha (1.4%) to an area of 5.69 million ha in 2020. However, an increase of 32,390 ha to 5.73 million ha was recorded in 2021.
- In the Sabah region, the forest cover area measuring 4.56 million ha in 2016 increased by 209,081 ha (4.6%) in 2017 and remained the same until the following year. In 2019, there was a downward trend of 87,855 ha (1.8%) and remained until 2021 at an area of 4.68 million ha.
- For the region of Sarawak, the area of forested areas has shown a downward trend of 264,440 ha (3.3%) starting in 2016, which is an area of 7.91 million ha to 7.65 million ha in 2021.
- Forested area coverage as of 31 December 2021 is 18.05 million ha (54.6%) of the country's land area which is in line with its commitment to maintain at least 50% of the country's land area with forested area coverage.

ii. Gazettement

- For the year 2016 to 2021, PRF in Peninsular Malaysia has been gazetted with an area of 78,259 ha while an area of 61,612 ha has been degazetted. Overall, gazetting has exceeded the degazetted area of 16,647 ha.
- In the region of Sabah, an area of 50,616.73 ha involving 46 new areas has been gazetted as a Forest Reserve compared to the degazette area of 27,395.48 ha involving 49 Forest Reserves. In addition, an area of 123,012.05 ha involving 17 Forest Reserves has been reclassified.
- In the Sarawak region, the gazetted PRF covers an area of 3.94 ha (65.7%) compared to the target of 6 million ha. Fully gazetted Protected Areas are 0.87 ha (87%) compared to the target of 1 million ha.

- The number of Orang Asli Villages (OAV) until 31 December 2021 is 853 villages with an area of 134,513 ha. However, the gazetted number of OAV is only 215 (25.5%) villages with an area of 40,628.45 ha.

iii. Production and Consumption of Forest Products

- The total amount of Malaysian logs production is 64.54 million m^3 for the period from 2016 to 2021. It shows a downward trend of 8.15 million m^3 (53.6%) from 2016 of 15.2 million m^3 to 7.05 million m^3 in 2021. Logs consumption for the year 2016 until 2021 is as much as 59.47 million m^3. The total consumption of logs shows a downward trend of 4.79 million m^3 (40.4%) from 2016 of 11.76 million m^3 to 6.97 million m^3 in 2021.
- The total production of sawn timber for the year 2016 until 2021 is 17.69 million m^3. It shows a downward trend of 1.47 million m^3 (43.2%) from 2016 of 3.4 million m^3 to 1.93 million m^3 in 2021. The quantity of sawn timber consumption for the year 2016 to 2021 is 2.82 million m^3. The consumption of sawn timber dropped in 2017 and 2020 by 0.1 million m^3 (15.2%) and 0.22 million m^3 (28.2%) respectively.
- Based on the approval of the National Land Council (NLC), the total Annual Allowable Cut (AAC) for Malaysia for the period of the Eleventh Malaysia Plan (11MP) is 1.23 million ha or 246,888 ha per year which is estimated to yield 65.28 million m^3 or 13.06 million m^3 of timber per year. During the 12MP period, the total area of AAC is 1.16 million ha or 232,710 ha per annum. For the period of 2016 to 2021, the total AAC that was logged amounting to 1.02 million ha (69.2%) or 38.90 million m^3 does not exceed the approved AAC of 1.47 million ha or 71.8 million m^3 of timber.

iv. Forest Plantation

- The area of the Forest Plantation Development Zone (FPDZ) within PRF in Peninsular Malaysia set by the NLC is 439,189 ha while the area approved by the State Executive Council Meeting (State Exco) is 389,645.64 ha (88.7%). An area of 213,522.19 ha (54.8%) of the approved forest plantation area has been harvested. In addition, 113,039.50 ha (52.9%) of the harvested area has been planted and the remaining 100,482.69 ha (47.1%) has yet to be planted.
- Four states namely Pahang, Kedah, Selangor and Negeri Sembilan have approved FPDZ exceeding the limit set by NLC which are 63,903.05 ha, 12,463.63 ha, 381 ha and 88.21 ha respectively.
- The states of Kelantan, Pahang and Johor have recorded the area of the highest harvesting area which is 105,331.24 ha, 46,851.40 ha and 29,512.65 ha respectively.
- As of September 2021, the states of Kelantan, Pahang and Johor have recorded the highest area of unplanted areas, which are respectively 64,825.20 ha (61.5%), 18,016.91 ha (38.5%) and 7,127.96 ha (24.2%) of the area of forest plantations that have been harvested.
- In the region of Sabah, the area of natural forest clearing is larger than the cultivated area. A total of 37 companies have been granted

approval to develop forest plantations in PRF with a total area of 272,246 ha. Out of the total harvested area, 109,103 ha (40.1%) of the area has not yet been planted.

- For the Sarawak region, there are 48 companies that have been given approval to develop forest plantations. As of 31 December 2021, an area of 0.52 million ha (52.2%) of cultivation has been made compared to the area that has been targeted, whereas 0.48 ha million (47.8%) of the area has yet to be planted.

v. Loss of Carbon Stocks Above Ground

The total area that has lost its carbon stock storage capacity is 842,514.69 ha (6.8%) of the total area of HSK/HS/Permanent Forest Estate which is 12,362,029 ha. The area has lost the ability to store carbon stock with an estimate of 118.08 Mt C.

vi. Ecological Linkages

- A total of 145 (41%) out of 356 Central Forest Spine (CFS) project strategies set have not been implemented, 54 strategies (15%) are being implemented and 157 strategies (44%) have been completed for eight states.
- The state of Perak has shown the lowest strategy implementation progress which is 22.2% (12 out of 54 strategies) followed by Kelantan with 25% (8 out of 32 strategies), Johor with 31% (18 out of 58 strategies) and Terengganu by 46.7% (14 out of 30 strategies).
- In the Sabah region, five out of the eight Heart of Borneo (HoB) project output targets set were successfully achieved. Whereas it is found that only one output was achieved out of the three output targets set in the Sarawak region.

OUTCOME ACHIEVEMENT

- Economic aspect - the forestry sector's contribution from 2016 to 2021 to Malaysia's Gross Domestic Product (GDP) shows a total of RM45.451 billion (0.5%), ranging from RM6.601 billion (0.4%) to RM9.246 billion (0.7%). Employment opportunities in the forestry sector in Peninsular Malaysia have shown a downward trend of 7,862 employees (25.7%) from 30,591 employees starting in 2018 to 22,729 employees in 2021. For the Sabah Region, the number of jobs is much lower than in 2016 with 20,401 employees, a reduction of 12,487 employees (61.2%) to a total of 7,914 employees in 2021. This reduction was also recorded in the Sarawak Region, which is more than 50% compared to 2016, from 33,423 employees to 14,187 workers in 2021.
- Social aspect - 89% of the 188 indigenous respondents agreed that forest harvesting activities have undermined the supply and quality of water and rivers; the local economy; and socio-cultural. In addition, the conflict between humans and wildlife shows that 56,349 complaints and 2,562 roadkill cases have been received by the Department of Wildlife and National Parks (DWNP) for the period of 2016 to 2021.

- **Environmental aspect** - less satisfactory due to cases recorded that have a negative impact on the environment from harvesting activities, mining, FPDP and encroachment. Infringement on the Conditions of Approval of the Environmental Impact Assessment (EIA) Report causes air and water pollution as well as landslides and floods.

ACTIVITIES MANAGEMENT

- Findings in **financial management** as follows:
  - For the period from 2016 to 2021, the management and development allocation channeled by KeTSA to Forestry Department of Peninsular Malaysia (FDPM), Forest Research Institute Malaysia (FRIM), Sabah Forestry Department (SFD), Forest Department Sarawak (FDS) and DWNP respectively amounted to RM1,047.84 million and RM710.51 million compared to the respective expenses amounting to RM1,042.89 million (99.5%) and RM688.76 million (97%).
  - Under the Forest Plantation Development Program (FPDP) Loan Scheme, a total of RM940.75 million in loan value for the development of 129,575.99 ha of forest plantations has been approved involving RM570.52 million (60.6%) for loans in Peninsular Malaysia, RM297.91 million (31.7%) from the Sabah region and RM72.33 million (7.7%) from the region of Sarawak. The overall loan repayment collection is low which is RM27.91 million (3%) of the total approved loans.

- Weaknesses in the **management of forest resources** as follows:
  - The Forest Management Plan (FMP) was found to have no key indicators, targets and a period to evaluate the achievement of the FMP, the preparation of the FMP did not follow the prescribed format, the FPDZ was not submitted together with the 2016 – 2025 FMP and a comprehensive Forest Sector plan / FMP plan was not prepared.
  - The Mid-Term Review (MTR) for Kelantan's FMP has not been applied; All FMPs in the Sarawak Region's FMU have not yet implemented a review; and the prepared report does not show the target/achievement quantity (Terengganu).
  - For the implementation of FMP, five (7.9%) strategies recorded less than 50% achievement and 17 (27%) out of the 63 targeted strategies have not been implemented (Johor). For Terengganu, more than 50% of the target was not achieved.

- Findings in the management of **natural forest development**:

  Harvesting

  Infringements and non-compliance with related regulations, conditions, guidelines and orders are as follows:

  - In Peninsular Malaysia, there are cases of violations of the license requirements and additional requirements of Forest Harvest License where there is excess felling of trees in the buffer zone, the opening of areas/roads to carry out uncontrolled felling, towing lanes, access roads

and temporary constructions exceeding the approved area and there is a case of damage to the buffer zone sign. In addition, three cases of tag serial numbers marked on felled trees and mother trees differ from the records in the Marking Trees Book and the five harvesting licenses approved in 2020 and 2021 did not use the Pre-F results of the approved area. For silvicultural treatment activities, 322 out of 353 post-F works worth RM2.9 million have not yet been implemented even though the results of the Post-F analysis have been determined.

- In the Sarawak Region, five licenses did not comply with five out of six post-harvest activity conditions and a forest Liquidated Ascertained Damages (LAD) compensation payment of RM60,903 was imposed by the Sarawak Forestry Department. In addition, there are cases of violation/non-compliance of garbage management, disposal of plant waste, soil pollution, preservation and maintenance of buffer zones as well as assessment of water quality from the aspects of salinity, turbidity, pH and dissolved oxygen.
- In the Sabah Region, there exists a license that does not submit an EIA or PMM application to the DOE. In addition, there are cases of violations of the terms of the environmental agreement involving soil erosion control, silt deposition, river protection, oil, toxic waste and solid waste in the licensing area.

Mining

Infringements and non-compliance with related rules and regulations as follows:

- Three harvesting licenses were issued without providing a Mining Operations Scheme (MOS) Approval Letter and EIA Report. There are also approvals on seven licenses within the Environmentally Sensitive Area (ESA), while two licenses have carried out mining activities prior to DOE's EIA approval. In addition, there is no silvicultural treatment or replanting of trees after clear felling activities have been completed.
- There have been cases of slopes collapsing and entering river streams in mining areas. The construction of tailing ponds on two active tributary channels causes disruption and obstruction to the creek flow. Fortifications are not built around storage areas for raw materials and liquid fuels in order to contain any spills.

Quarry

Non-Compliance towards Environmental Quality Act 1974 [Act 127] and other related rules and regulations as follows:

- The breached buffer zone has not been restored, the physical features of the Watercourse Buffer Zone (WBZ) and the watercourse have been destroyed due to the construction of the quarry road built across the original course of the watercourse.
- Waste materials such as hydraulic oil/diesel are placed in the open and are not properly managed. There was a design failure of the bund wall

that houses the diesel tank skid. Small openings cause diesel fuel waste to flow along with rainwater runoff.

- The construction of water reservoirs without permission and disturbing the flow of water becomes turbid. Suspended content in water exceeds the set limit of 50 mg/l, i.e., 156 mg/l as well as boundary violation/disturbance to watercourses (overburden).
- Sedimentation traps are not built causing the water quality to exceed the permitted Total Suspended Solids (TSS) and Nephelometric Turbidity Unit (NTU) readings.

Restoration

Monitoring activities have been carried out but it has been found that there are still weaknesses as follows:

- As of 31 December 2021, the achievement of restored degraded forest area is only 827 ha (50.4%) compared to the target of 1,640 ha. Meanwhile, the achievement of tree planting of various species was only 0.48 million trees (46.4%) compared to the target of 1.03 million trees.
- 18 out of 41 forest restoration and conservation works found that 17,331 (48.6%) of 35,638 trees had died involving an estimated area of 38.08 ha. The crop area is covered with weeds and wild plants over 1.3 meters high.

Tasek Bera Ramsar Site (TBRS)

Monitoring activities have been carried out but it has been found that there are still weaknesses as follows:

- The exploration of 377 ha of the TBRS FR area by external agencies or individuals and the clearing of land for plantations in the buffer zone area caused the natural features to further erode and an area of 548 ha of degraded area.
- The crossing of the wildlife route between TBRS and Chini Tambahan FR such as in the Sungai Bera area has been affected resulting in tourism facilities in the resort area being damaged by a group of wild elephants.
- Eight out of the 11 monitoring stations showed poor water quality levels (Class III).

- Weaknesses in the **development of the forest plantation project**:
  - Four states did not start planting activities according to the set period between 1 month to 14 years involving an area of 70,780.93 ha.
  - In Peninsular Malaysia, the area planted with non-forest plantation species is 21,684.36 ha (18.1%). The tree species involved are oil palm with an area of 11,698.48 ha, durian with an area of 7,241.80 ha and other species with an area of 2,744.08 ha. In Sarawak, oil palm cultivation is approved by the state government for as much as 20% of

the entire forest plantation license and only for one cycle (25 years) with an area of 255,308 ha.

- Silvicultural treatment of forest plantation trees is less satisfactory in three states where no treatment activities such as weeding, felling, and fertilizing are implemented.
- Non-compliance with license conditions, permit conditions, EIA conditions and other related regulations as follows:
  i. The EIA report for the planted durian species is not prepared and durian trees are not interspersed with forest trees.
  ii. 31 licenses did not submit an EIA report during application.
  iii. 37 licenses do not provide an Environmental Management Plan (EMP). All 31 approved licenses did not appoint an Environmental Officer (EO) and 33 EIA Forms 1-18 were also not submitted to the state DOE.
  iv. Permits for the use of the Forest Plantation Project were issued to five companies involving an area of 1,850 ha despite being outside the FPDZ.
  v. Forest plantation activities covering an area of 402.34 ha have been worked by three companies without a use permit since 2007.

- Findings for **enforcement activities and forest resource monitoring** are as follows:
  - The remaining pending cases from 2016 to 2021 in Peninsular Malaysia which exceeded three months are 671 cases (18.7%).
  - An area of 38,789.59 ha in PRF involving 851 locations in Malaysia was recorded to have been illegally explored with various activities such as agriculture, mining, settlements, building construction, jetty construction, aquaculture activities, cemeteries, recreation area, food stalls and houses of worship.
  - SIRIM has issued a Suspension of Certification letter to the Kelantan State Forestry Department for failing to meet the Malaysian Criteria and Indicators (MC&I) Natural Forest certification criteria.

- Weaknesses in the management of **forestry systems and technology** as follows:
  - In Peninsular Malaysia, the eGP and FMRS systems are used for monitoring and enforcement purposes. However, the geospatial database is not being updated accordingly for nine forest resource information.
  - Geospatial data information in the eGP and FMRS systems for PRF area, boundary run and license/permit data are not updated. Both of these systems are not used optimally and are less effective due to forest resource information updating not being implemented and data or images being used not in real-time.

- For Sarawak Region, the DA42-MPP Aircraft is used for monitoring and enforcement purposes. However, for the period from March to June 2022, the aircraft has not yet been optimally used. The DA42-MPP aircraft was only used for 135 hours and 25 minutes or 84.5% compared to the 160 hours it should have been.
- In the Sabah Region, the iForSabah system which uses a Geographic Information System (GIS) platform is used to support the state government's efforts to create systematic forestry data to document the wealth of forest resources in one system. However, it is still in the development phase.

What do we recommend?

- NRECC, FDPM, FDS and SFD carry out the process of collecting and verifying national forest area data on an annual basis by creating a complete database on PRF, protected areas and Government land forests.
- NRECC strengthens engagement between state governments in providing directions or action plans for the implementation of sustainable forest management through good governance and best practices to ensure that the forestry sector continues to contribute towards the achievement of sustainable national development.
- NRECC, the Ministry of Plantation and Commodities and other departments/agencies involved, carry out studies and evaluations of the success of forest plantation development programs from economic, social and environmental aspects as well as long-term impact studies on the level of ecosystem degradation, plant species and the risk of natural disasters and negative effects on the environment and society.
- FDPM, FDS, SFD and enforcement agencies are involved in increasing monitoring and enforcement activities in an integrated manner to ensure that every development project in forested areas complies with the development conditions set including aspects of environmental compliance. Take legal action against violations of license conditions, EIA approval conditions and environment-related guidelines.
- Using geospatial data, forestry technology, hyperspectral systems and War Room optimally in forest management as well as monitoring development in forested areas to overcome the shortage of human resources in the field.