

## EXECUTIVE SUMMARY

The purpose of this Executive Summary is to provide a synopsis of the 3<sup>rd</sup> Deramakot Forest Reserve 10-Year Medium Forest Management Plan (2015-2024), hereafter known as the 3<sup>rd</sup> FMP, which is the Sabah Forestry Department's comprehensive document for guiding the management of Deramakot Forest Reserve (DFR). DFR is a logged-over Class II Commercial Forest Reserve. It is located in the central part of Sabah, which is within the Forest Management Unit (FMU) 19A. It covers an area of approximately 55,507 ha, which represents 2.5% of the Commercial Forest Reserves in Sabah. DFR is one of the Commercial Forest Reserves directly being managed by the Sabah Forestry Department (SFD).

### **Ecosystem Management**

The management of DFR has been an evolving process, beginning with a high research component in collaboration with the German Agency for Technical Cooperation (GTZ), which ended in 2000. The initial or 1<sup>st</sup> FMP (1995 – 2004), focused primarily on timber management and protection of wildlife and watershed. In the pursuit of SFM and further guide on forest management in DFR that can balance the ecological, economic and social functions, the 2<sup>nd</sup> 10-Year Forest Management Plan (2005 – 2014) was formulated by incorporating new knowledge and reflected changing management philosophies and biodiversity and cultural values. Throughout the period of the 2<sup>nd</sup> FMP, the SFD continued to implement (not without constraints) all activities in accordance with the plan, based on sustained yields and with full integration of social and ecological conditions by strictly following the FSC principles.

The current planning effort - a 3<sup>rd</sup> FMP (2015 – 2024), has evolved into an ecosystem management-based approach. In ecosystem management, the overarching goal of forest sustainability in turn assures the array of resources, uses, and values for current and future generations. According to Grace (2003), ecosystem management can be defined as an ecological approach to resource management, where all aspects of an ecosystem are considered important, and decisions are made based on the best understanding of ecological interactions and processes necessary to sustain the ecosystem's composition, structure, and function over the long term.

### **Strategic Plan and Forest Certification**

As part of the strategic planning effort, the SFD adopted a vision and a mission statement for DFR in this 3<sup>rd</sup> FMP, which articulates the SFD's commitment to manage DFR using the principles of ecosystem management. In 1997, DFR became the world's first tropical forest to be certified as a well-managed forest under the gold standard of the FSC of which, the SFD was closely audited by the third-party auditor – the SGS-Forestry Malaysia. And because of this significant progress, the SFD has every reason to be proud in terms of its management in DFR. This was amplified by the success of DFR in receiving another five-year certification by the FSC's certification scheme as a well-managed forest. The re-certification covered the period between October 31<sup>st</sup>, 2014 and October 30<sup>th</sup>, 2019 (4<sup>th</sup> FSC Certification), making DFR the longest continuously certified tropical rainforest in the world to be certified under the FSC scheme.

## **Planning Process**

The planning process for this 3<sup>rd</sup> FMP, which was carried out by the FMP Team that comprises of various disciplines and expertise began in early 2014. Collectively, past management, lessons learned, the findings, recommendations from the re-certification process and comments and inputs from stakeholders provided the philosophical foundation for this 3<sup>rd</sup> FMP and the future management of DFR. As in the case of the previous management plans where they were revised at 5-year intervals, this 3<sup>rd</sup> FMP will also be revised and updated during the mid-term review, which is in 2019. This process will allow for increased opportunities for comments and inputs preferably from stakeholders, and allow the SFD to more effectively anticipate and respond to changing issues, understandings, technologies, and forest conditions. The execution of this 3<sup>rd</sup> FMP planning process consisted of the following basic steps:

- Resource inventories and computerized information systems were conducted and/or updated as part of the SFD's continuous forest inventory process in DFR.
- A comprehensive review of the SFD's past performance effectiveness and efficiency (quality, cost, budget, schedule performance, etc.) and lessons learned were conducted. The review and the lessons learned form a platform or foundation for the preparation of the 3<sup>rd</sup> FMP.
- A draft plan was developed and distributed for comment to help determine the stakeholders' acceptance of the draft.
- The draft plan was revised, considering comments received.

## **Plan Structure**

This 3<sup>rd</sup> FMP is organized into nine (9) core Chapters, plus an Executive Summary to address the resources, uses and values and to sustain the ecosystem's composition, structure and function of DFR:

- Introduction, Vision, Mission and Management Objectives
- General Information of DFR
- Review of Past Management
- Forest Resource Base
- High Conservation Value
- Management Strategies, Actions and Implementation
- Environmental Impact Assessment and Forest Certification
- Budget and Financial Analysis
- Monitoring, Reporting and Review

All information found in each Chapter provides a basic understanding on the direction that the SFD intends to follow concerning the management of DFR. In addition, operating manuals, standards of procedures (SoP), and other documents are referenced; and attached in Appendices. Together, with its reference materials, the plan provides a comprehensive source of information and guidance on the management issues of the state's forest in DFR for the SFD and the public.

### **3<sup>rd</sup> FMP Highlights**

This 3<sup>rd</sup> FMP provides a comprehensive source of information and guidance for the SFD in general and the Deramakot management team in particular, on the management issues of DFR for the next 10 years. CHAPTER 1 of the plan provides information or basic background of DFR and an understanding of the directions the SFD is to follow concerning the management of DFR. It also highlights a number of key changes from the 2<sup>nd</sup> FMP. This part of the plan also includes the SFD's vision, mission and policy statements and management objectives to ensure the perpetuity of DFR as a natural resource, which is managed to balance a variety of uses and values in an ecologically sustainable manner.

**CHAPTER 2** describes the basic information pertaining to DFR. This basic information amongst others includes location, legal description of DFR, physical features and resources (climate, hydrology, topography, geology and soils, vegetations/forest types, wildlife), infrastructure, socio-economic, etc. CHAPTER 3 on the other hand, is a comprehensive review of the SFD's operations during the 2<sup>nd</sup> FMP (2005 to 2014), which had been undertaken based on the effectiveness and efficiency of the SFD's management performance and achievements against its objectives, prescriptions, implementation schedules, community needs and budgets. In this Chapter, it highlights the SFD's operational achievements and lessons learned over the last 10 years in DFR and management implications for the 3<sup>rd</sup> FMP.

**CHAPTER 4** of the plan provides details on the high conservation values (HCV) in DFR. The HCV assessment in DFR was executed from 9<sup>th</sup> to 20<sup>th</sup> of July 2013 by a team of various biological and social experts by following the national standards as prescribed in the High Conservation Value Forest Toolkit for Malaysia in 2009. The findings emphasized the importance of maintaining selected sites as HCVF or Areas within DFR that include unique or threatened ecological areas, habitats of high conservation significant species and/or areas of cultural significance that must be managed so as to maintain the value of the attributes. The SFD also emphasized that HCV forests and areas will not be converted to other land-use types that may degrade the attributes' conservation values.

**CHAPTER 5** prescribes the timber resources in DFR based on the forest inventory assessment results reported in the 2<sup>nd</sup> FMP. The AAC of 17,600 m<sup>3</sup> as set in the 2<sup>nd</sup> FMP is maintained for the current planning period (3<sup>rd</sup> FMP), while CHAPTER 6 is the most important part of the plan. It prescribes the management strategies, actions, and implementation of various activities that are to be carried out within the three (3) main zones or land-uses, namely, Conservation, Production and Community Forestry.

There are 19 compartments with a gross area of 5,548.6 ha that have been designated for protection/conservation in DFR. These areas are mostly steep areas with slopes >25° that form part of the catchment areas. In addition, there could be another

approximately 7,449 ha within the production area that have been identified for conservation areas. These areas comprise of patches of steep areas with slopes >25°, riparian reserves and HCVs. Therefore, the total protection/conservation area in DFR for the planning period is 12,998 ha or 23.4% of the total area of DFR.

A gross area of about 49,941.6 ha comprising 117 compartments in DFR is designated for natural forest management (NFM), particularly for timber production by selective harvesting, while there are two (2) sub-compartments (16.7 ha) in NFM that have been set aside for the local communities in Kg. Balat for their community forestry programs. The long-term objective of NFM in DFR in general is to sustain production of high value timber for revenue generation based on the AAC limit while maintaining a high degree of species and structural diversity. Forest harvesting, which is based on an area-control yield regulation and the AAC of 17,600 m<sup>3</sup> is confined to the net production area of approximately 41,571.9 ha. There are twenty five (25) compartments covering an area of about 10,581 ha scheduled for harvesting in the planning period 2015–2024. The gross area that has been identified to be harvested annually range in size, that is, from 970.6 ha to 1,221.6 ha, giving an estimated annual yield of between 15,000 and 20,000 m<sup>3</sup>. Logging operation is based on reduced impact logging (RIL).

In the current planning period, about 11,037 ha covering 26 compartments are scheduled for timber stand improvement treatment. On the other hand, rehabilitation planting with Laran (*Anthocephalus cadamba*) and Binuang (*Octomeles sumatrana*) will be continued in compartments 108 (100 ha) and 109 (100 ha) respectively. The new additional area of DFR, that is, Cpt. 136 (363.4 ha) was also being identified for the rehabilitation program.

An essential part of yield regulation is the permanent monitoring of the growing stock by repeated inventories or by the use of permanent plots - a practice known as *continuous forest inventory* (CFI). A permanent monitoring and control system will be established during this management planning period, and repeated inventories will be carried out as a routine management activity. A portion of the former inventory lines of each compartment will serve as permanent inventory lines, and will be repeatedly inventoried every 5 to 10 years. There are 32 compartments where permanent plots will be set-up during the management planning period.

The SFD will continue to involve the local communities in Kg. Balat, Kg. Kuamut, Kg. Desa Permai and Kg. Tulang-Tulang, which are all located along the three major rivers, namely, Kinabatangan River, Kuamut River and Milian River, in various community development programmes through the DFR Social Forestry Committee. There are five main activities that have been outlined in this 3rd FMP for the local communities throughout the plan period. These are (i) to employ many competent villagers for the various management and labor jobs in DFR; (ii) to involve the local communities in forest fire prevention; (iii) to involve the local communities in controlling illegal forest encroachment and felling in DFR; (iv) the SFD will continue to organize

necessary training and courses to the local communities for human capacity building; (v) the SFD will continue to promote the goodwill of forestry to the local communities by extending various community welfare programs, or better known as CSR (Corporate Service Responsibility); and (vi) the SFD will help the local communities to implement agro-forestry activities.

**CHAPTER 7** of the plan prescribes the estimated financial requirement to implement the various activities particularly those that are described in CHAPTER 6. This Chapter also looks at the viability of SFM in DFR. The SFD would require approximately RM 86 million to implement all SFM activities as prescribed in this 3<sup>rd</sup> FMP. More than half of the total budget is being allocated for forest harvesting (33%) and on personnel salary and allowance (30%). The rest of the costs are for silviculture operations, forest rehabilitation, forest protection (forest encroachment, illegal logging, forest fire and illegal hunting) and socio-economic development programs for the local communities.

Based on the results of the financial analysis, the generated gross revenue from DFR during the plan period is projected at RM 124 million and a net revenue at RM 38 million at current prices. This shows that SFM in DFR is viable at 7% and 10% interest rate. The computed Net Present Value (NPV) for the implementation of SFM at 7 % interest rate is RM 27,434,393, while at 10 % interest rate, the NPV is RM 24,283,648. The benefit-cost ratio is 1.46; both at 7% and 10% interest rate. However, SFM in DFR is not viable if the timber prices decrease by 20% at base costs, or if the costs increase by 20% and the log timber prices decrease by 5%, both at 7% and 10% interest rates. Therefore, the SFD must reduce its operation costs, increase efficiency and strive to have higher log prices to avoid losses. In this case, the SFD must produce at least 103,621 m<sup>3</sup> of timber, which requires a total area of 6,229.7 ha to be harvested during the planning period in order to avoid loss. The SFD must exceed the break-even point of about 72,379 m<sup>3</sup> of timber production within the planning period in order to break-even. It demonstrates that the amount of timber (AAC of 176,000 m<sup>3</sup>) to be harvested during the planning period is adequate and economically feasible.

**CHAPTER 8** of the Plan highlights the requirement of an Environmental Impact Assessment (EIA). In this Chapter, various mitigation measures were recommended to manage the impact of the forestry activities, which are to be undertaken in DFR. The last Chapter, that is, CHAPTER 9 prescribes the issues on monitoring, reporting and plan review. The SFD monitoring will include all aspects of forest management such as, timber harvesting operations, road construction, soil protection, environmental impacts and wildlife.

As in the case of the 2<sup>nd</sup> FMP, this 3<sup>rd</sup> FMP is also flexible that allows for change. Therefore, although this 3<sup>rd</sup> FMP is valid until 2024, it is subject to be reviewed or updated by 2019. The intent is to maintain or create a desired or preferred future

forest, as determined by society's expectations and the dynamics of natural ecosystems in the DFR.