

ADVANCING THE GREENING SARAWAK INITIATIVE: DIVERSE STRATEGIES IN MONITORING FOREST PLANTATION DEVELOPMENT

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ABSTRACT

The 'Greening Malaysia: 100 million Tree Planting Campaign' was launched on January 5th, 2021 with a target of planting 100 million trees nationwide by 2025. The Ministry of Natural Resources, Environment, and Climate Change initiated the campaign as part of the national agendas for addressing climate change, preserving the country's biological diversity, and improving the quality of the environment and livelihood of people. In line with this campaign, the YAB Premier of Sarawak announced that the state government aims to plant 35 million trees by 2025 under its Greening Sarawak Campaign initiatives, with forest plantations being one of the key components. Sarawak embarked on its Forest Plantation efforts in 1997, aiming to reduce pressure on natural forests while ensuring the sustainable supply of raw timber. To ensure the success of forest plantation development, the Forest Department Sarawak (FDS) has paved diverse strategies to monitor planting progress closely. These strategies include regular audits and field monitoring, enforcing the half-yearly report submission by LPF holders to track progress, and addressing any deviations from Tree Planting Plans (TPP); as well as other comprehensive approaches that will be further elaborated in this paper. The paper will also highlight FDS's strategies for leveraging advanced technology and intensifying the research and development (R&D) program in forest plantations through scientific research, research collaboration, and technology transfer. Through these strategic approaches and unwavering commitment, Sarawak achieved its goal of planting 35 million trees a year ahead of the target, with inclusive participation from multiple stakeholders.

Keywords: Greening Sarawak, 100 million Tree Planting Campaign, Forest Department Sarawak (FDS), forest plantation, License for Planted Forest (LPF)

1.0 INTRODUCTION

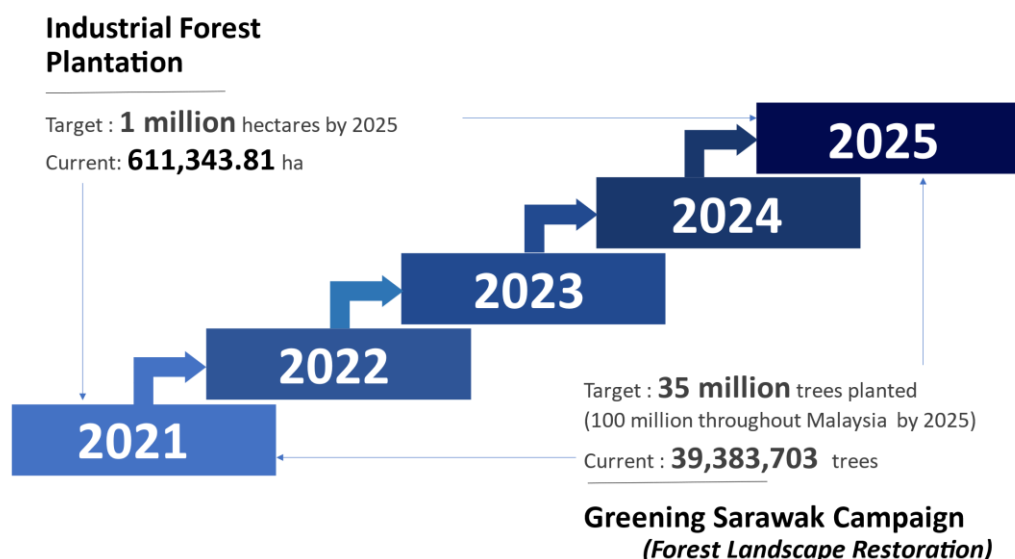
Motivating factors for initiating restoration in Sarawak are already relatively well in place. Its principles, techniques and components in its approach has, in fact, been in existence as early as 1920s through reforestation activities by Forest Department Sarawak (FDS), as well as the gazettement of Totally Protected Areas (TPAs) and Permanent Forest Estates (PFEs). Supported by the State Government, FDS has embarked on its large-scale FLR program at beginning of the year 2019 and has been announced as one of the State's main agendas to ensure that Sarawak would continue to maintain 62% of its forest cover - the largest in the nation - and will always be sheltered by green trees.

Since its official launch on 15th June 2019 at Sabal Agroforestry Centre, Simunjan (*currently known as Sabal Forest Landscape Restoration Centre*), Sarawak's Forest Landscape Restoration (FLR) Programme has been significantly progressing over time. The objectives of FLR in Sarawak include:

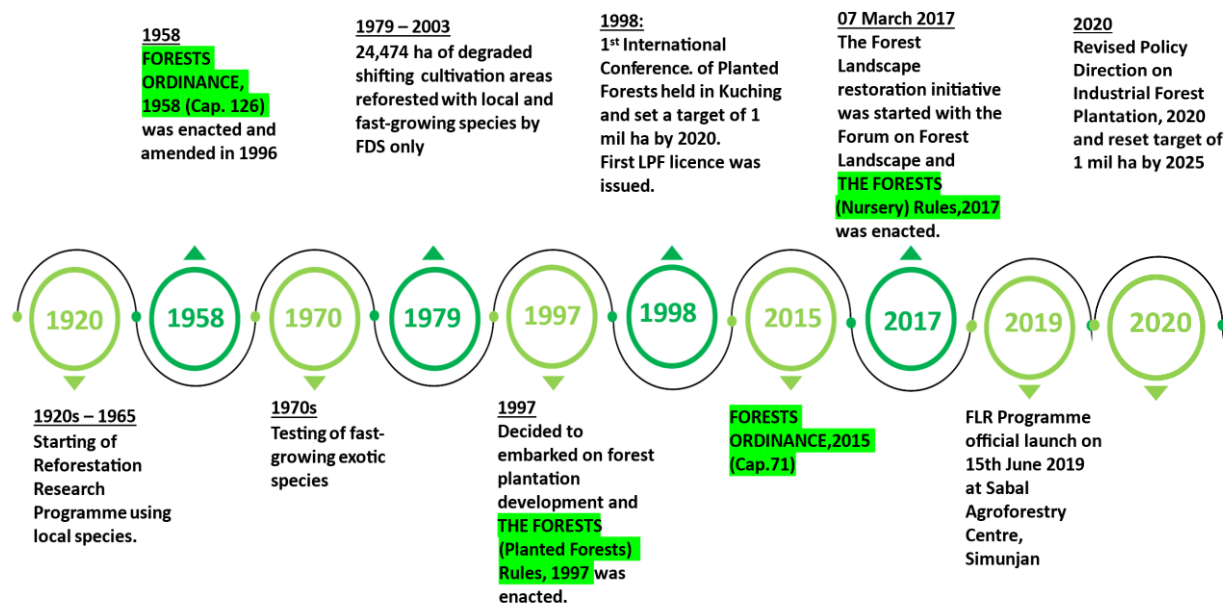
- i. To enrich logged-over areas with high value timber species
- ii. To restore and conserve degraded forests especially in Permanent Forest Estate
- iii. To alleviate livelihood of forest-dependent communities
- iv. To reduce pressure on natural forests by shifting timber production towards plantations of fast-growing species

The Forest Landscape Restoration (FLR) initiative in Sarawak aligns with the national *100 Million Tree Planting Campaign* led by the Ministry of Natural Resources, Environment, and Climate Change. FDS has rebranded its FLR Programme to the *Greening Sarawak Campaign* and intensified its target, surpassing the original goal of planting 35 million trees by 2025, with 39,383,703 trees already planted—mainly contributed by Licensed for Planted Forests (LPF), as one of the three (3) main forested land classes in Sarawak under restoration strategies beside PFE and TPA. This effort is in line with the Revised Policy Direction on Industrial Forest Plantation, which aims to establish 1 million hectares of planted forests by 2025. The move is also in tandem with Sarawak's vision to become a developed state by 2030, which emphasizes economic prosperity and environmental sustainability as outlined in Sarawak's Post-Covid Development Strategy (PCDS) 2030.

In order to achieve the target of one (1) million hectares of planted forest by 2025, the Forest Department Sarawak (FDS) has paved diverse strategies to monitor planting progress closely. These strategies include regular audits and field monitoring, enforcing the half-yearly report submission by LPF holders to track progress, and addressing any deviations from Tree Planting Plans (TPP); as well as leveraging advanced technology and intensifying the research and development (R&D) program in forest plantations through scientific research, research collaboration, and technology transfer.



1.1 The chronological events leading to the development of forest plantation include;



1.2 Laws and Regulations

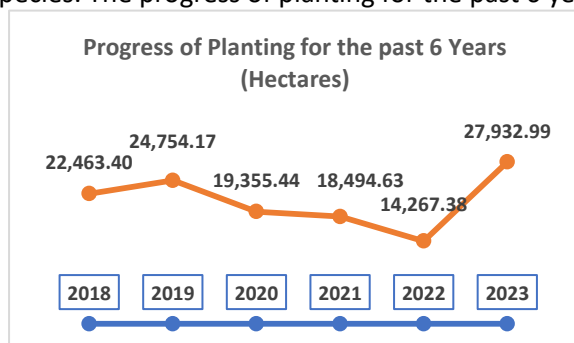
In term of governance, forestry sector has been well regulated through Forest Ordinance 1958. Thereafter subsequent amendments were in 1996 and 2015 for the licensing process and issuance will abide with the Rules and Regulations. As for Planted Forests, these Planted Forests Rules, 1997 and Nursery Rules, 2017 were the governing legislation.

2.0 OBJECTIVES

This paper explores the strategies employed by the Forest Department Sarawak (FDS) to ensure LPF holders in achieving their planting targets, with a focus on their monitoring processes, use of advanced technology, and research and development efforts. It highlights how FDS's strategic approaches, including rigorous auditing, field monitoring, and technological advancements, have contributed to their success in reaching their tree planting goals.

3.0 CURRENT SCENARIOS

A total of 55 Licensed for Planted Forests have been issued with gross licence area of 2.2 million hectares of which the total plantable area is about 1.3 million hectares. To date, Sarawak Government has established **611,343.81 hectares** of planted forests with major species planted such as *Acacia mangium*, *Falcataria moluccana*, *Eucalyptus pellita*, *Neolamarckia cadamba* and other species. The progress of planting for the past 6 years is summarised in the graph below.



Plantation Species	Planted Area (ha)	%
<i>Acacia sp.</i>	334,070.46	55
<i>Falcataria moluccana (Batai)</i>	108,173.77	18
<i>Eucalyptus sp.</i>	97,969.29	16
<i>Neolamarckia cadamba (Kela)</i>	35,146.96	6
Others (rubber, etc)	35,983.33	5
Total planted area (ha)	611,343.81	100

4.0 CURRENT STRATEGIES TOWARDS ACHIEVEMENT OF PLANTED FOREST

FDS is actively conducting monitoring and auditing activities. This is to ensure that the planting progress are being carried out according to approved Tree Planting Plan (TPP) and in compliance to relevance rules and regulation. Amongst the activities involve are:

- i. Field verification or ground truthing versus half-year report submitted by licensed holders
- ii. Compliance Audit to legal provision
- iii. Engagement Session with Plantation Licensed Holders through meetings, dialogue, seminar and other kind of platforms
- ii. Industrial Forest Data Management
- iii. Issuance of reminder letter to non-performing LPF Holders.
- iv. Training program/ capacity building
- v. R&D Program aims to enhance sustainable practices, improve plantation productivity, and ensure the long-term health and viability of our forest resources

By integrating these advanced practices and technologies, Sarawak can enhance its monitoring and auditing mechanisms, ensuring more effective management of its large-scale forest plantations and better compliance with regulations.

5.0 RESULTS

Sarawak has successfully planted 35 million trees, achieving the target a year ahead of the 2025 goal, with substantial contributions from the industrial sector, particularly forest plantations. This success is largely attributed to the rigorous monitoring, data verification, and reporting mechanisms established by the Forest Department Sarawak (FDS). Key outcomes of these efforts include:

- 5.1 Improvement in HYR Reporting: All Licensees for Planted Forests (LPF) holders have demonstrated enhanced compliance with Half-Yearly Reporting (HYR) requirements, leading to more accurate and timely records of planting activities.
- 5.2 Progress in Planting Activities: There has been a noticeable improvement in the planting progress among LPF holders, with most following their Tree Planting Plans (TPP) diligently.
- 5.3 Shift from Oil Palm to Industrial Tree Plantations (ITP): LPF holders have been encouraged to stop planting oil palm and shift their focus to industrial tree plantations, aligning their activities with sustainable forestry goals.
- 5.4 Understanding of Clear Felling and Mechanical Site Preparation: LPF holders now have a better understanding of key concepts such as clear felling and mechanical site preparation, which are essential for effective and sustainable forest plantation management.
- 5.5 Success Among Newcomers: New LPF holders have adopted the correct practices from the beginning, contributing positively to Sarawak's industrial forest development.
- 5.6 Adherence to Maintenance: Most LPF holders are maintaining their forest plantations as required, ensuring the sustainability of their planting efforts and compliance with licensing terms.

- 5.7 Resolution of Issues Through Engagement: Many challenges and issues faced by LPF holders have been successfully resolved through direct engagement with FDS, leading to smoother operations and better outcomes for both parties.
- 5.8 Second Rotation of Industrial Tree Plantations: Some LPF holders have already harvested their first rotation of ITP and begun the second rotation, indicating progress and long-term sustainability within the sector.

Overall, these results underscore the effectiveness of FDS's strategies in driving Sarawak's Forest plantation program, ensuring sustainable forest management and contributing to the broader reforestation goals of the state.

6.0 THE WAY FORWARD

With the successful early completion of the 'Greening Sarawak Campaign' tree planting target, there are several strategic areas for further development to ensure continued success and sustainability in environmental conservation. Below are the key recommendations for the way forward:

6.1 Enhancing Technological Integration

Incorporating drone technology further into forest plantation monitoring will significantly boost the accuracy, speed, and reliability of data collection, leading to better-informed decision-making and more effective management of Sarawak's forest resources.

6.2 Data integration with existing system (REVLOG, EFIMS)

Integrating data and information with existing systems like REVLOG (Revenue Log System) and EFIMS (Enterprise Forest Information Management System) can greatly enhance the efficiency of monitoring and administrative processes within the forest management framework. This integration will streamline the following activities:

6.2.1 Compilation of Half-Yearly Reports (HYR): By consolidating LPF holders' submissions into a unified system, data from the HYRs can be easily tracked, reviewed, and cross-referenced with field observations, improving accuracy and accountability.

6.2.2 Submission of Tree Planting Plans (TPP): LPF holders' TPP submissions can be incorporated into the integrated system, allowing for real-time updates and better monitoring of adherence to these plans. This ensures that the data is current and readily accessible for audits and reviews.

6.3 Research and Development (R&D)

6.3.1 Innovation in Plantation Techniques: Fund and encourage research into new plantation techniques, tree species selection, and sustainable forest management practices.

6.3.2 Collaboration with Academia and Research Organizations: Strengthen collaboration with academic institutions and international research organizations to drive innovation and improve forest plantation outcomes.

6.4 Enhancing Collaboration and Knowledge Transfer

6.4.1 Global and Regional Partnerships: Expand collaboration with global and regional organizations to facilitate the exchange of knowledge, best practices, and new technologies related to forestry.

6.4.2 Capacity Building: Strengthen knowledge transfer programs to ensure that LPF holders and local communities benefit from the latest advancements in forest plantation management.

6.5 Engaging and Educating Industries and Government Agencies

6.5.1 Broaden Outreach: Engage more communities, industries, and government agencies in the tree planting process through outreach and education programs.

6.5.2 Raise Awareness: Promote education initiatives to enhance public understanding of reforestation's importance and the sustainable use of forest resources.

6.6 The LPF Task Force Committee formation

The Task Force Committee formation is a better way to plan and manage; oversee and facilitate on the implementation towards achieving the one (1) million ha of industrial forests by 2025 based on revised policy. There are some issues and challenges faced throughout the implementation of planted forest in Sarawak that the committee need to address such as land claim, Shortage of labour, shortage of high-quality planting material and etc.

7.0 SUMMARY

While the early success of the 'Greening Sarawak Campaign' is a significant achievement, continuous improvement is necessary to ensure long-term sustainability. By enhancing technology, expanding data sharing, fostering R&D, engaging stakeholders, updating policies, and assessing impacts, Sarawak can lead the way in environmental conservation and climate change mitigation, setting an example for other regions.

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