

# International Cooperation in Forestry Research and Capacity Building of Forest Research Institute Malaysia

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# 01. INTRODUCTION

- A Forest Research Institute (FRI) was established in a **deforested area** due to vegetable farming and mining activities at Kepong, Malaysia in 1925.
- The **experimental plantations** began in 1926. The plantation trials covered about 100 indigenous and exotic species.
- FRI became autonomous under the Malaysian Forestry Research and Development Board (MFRDB) Act on 1 October 1985 and was renamed Forest Research Institute Malaysia (FRIM).
- FRIM Act was enacted in 2016 and enables FRIM to commercialize its R&D findings and establish a company, FRIM Incorporated, to generate its own income.



FRIM in 1925



FRIM in 2022

# 02. RESEARCH DIVISIONS

Develops **technologies** and **provides solutions** to support and ensure the **sustainable management of resources** and **ecosystem services** of natural, urban and recreational forests.

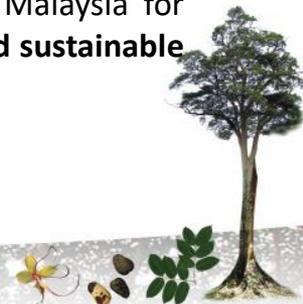
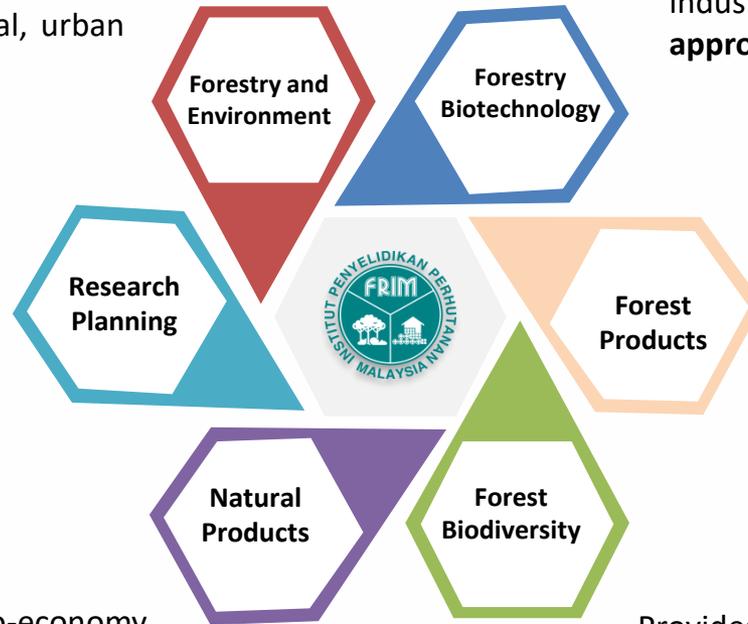
Conducts **socio-economic research** and **strategic analysis on forestry and environmental issues** for national development.

Supports the national bio-economy agenda via the **empowerment of natural product based industries** through bioactive feedstock security.

Produces **improved planting materials** and supports timber and herbal related industries through **biotechnological approaches**.

Focuses on the development of R,D&C towards **improvement on durability, service life, utilization of wood resources** and **ligno-cellulosic materials** for producing high quality/ value-added products.

Provides and develops **key scientific knowledge** to **safeguard biodiversity** and **ecosystem services** in Malaysia for enhancing **management and sustainable utilization**.



## 03. INTERNATIONAL COOPERATION IN R&D

### a) AFoCO – Domestication of Endangered, Endemic and Threatened Plant Species in Disturbed Terrestrial Ecosystem in Malaysia and Thailand (2006-2022)

#### Objectives:

- Domestication of endangered, endemic and threatened tree species
- Technology transfer and capacity building

#### Outcomes:

- Project site used as **demonstration plot** for site visits by government agencies/ private sector/ universities
- Project site as **benchmark** for upcoming planting projects by multinational companies



# 03. INTERNATIONAL COOPERATION IN R&D

## b) AKECOP – ASEAN-Korea Environmental Cooperation Project (2002-2011)

### Objectives:

- To investigate carbon sequestration and phytoremediation potentials of selected trees and shrub
- Soil amendment for growing multipurpose trees
- Natural regeneration on tin tailings

### Outcomes:

- Selection of suitable species and soil amendment method for increased economic and ecological values of ex-tin mine
- Pre-cursor to subsequent greening and conservation projects



Sand tailings in ex-tin mine before planting



Site visit by project evaluation panel in 2012

# 03. INTERNATIONAL COOPERATION IN R&D

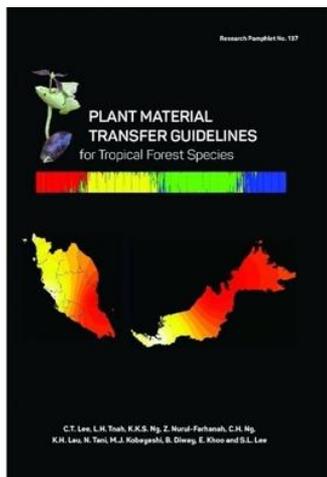
## c) Japan International Research Center for Agricultural Science (JIRCAS) – Vegetative and Reproductive Growth of Dipterocarp Timber Species and Gene Expression Analysis (2016 – 2020)

Objective:

- To understand the characteristics, functions and environmental adaptability of endemic genetic resources of tropical forests in Southeast Asia

Themes:

- Development of plant materials transfer guideline in Peninsular Malaysia
- Flowering gene expression analysis and development of flowering forecasting model
- Time-series analysis for causality between gene expression, physiological traits and environment



# 03. INTERNATIONAL COOPERATION IN R&D

## d) World Federation for Culture Collections (WFCC)-MIRCEN World Data Center of Microorganisms (WDCM)

Objective:

- To publish and manage data on biodiversity resources following Nagoya Protocol in Global Catalogue of Microorganisms (GCM) (<http://gcm.wfcc.info/cclist>)



Outcome:

- Use of 88 isolate of microbes for anti-cancer research



Signing of Memorandum of Understanding



# 04. CAPACITY BUILDING

AFoCO Project Outputs:

1. 4 Regional & National Seminar/ Workshop/ Webinar / Site Visits
2. Publications of books in print and electronic copies



Regional Seminar in 2017



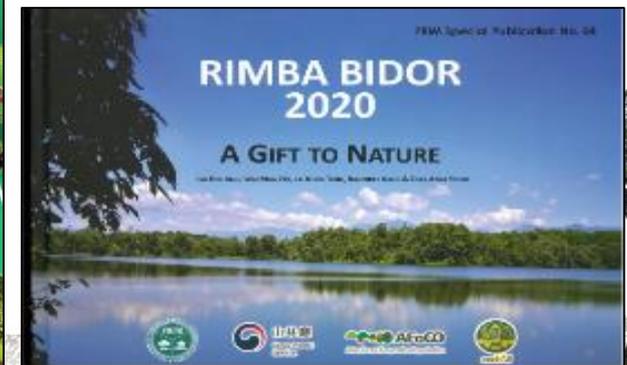
Regional Webinar in 2021



Study tour by Mineral Department in 2022



Field visit during Regional Seminar in 2017



Examples of publication from project

# 04. CAPACITY BUILDING

AKECOP Project: Training ground for local undergraduates, overseas post-graduates and technology sharing group with junior researchers



Training for final year undergraduates



Training for researchers from Myanmar



Research ground for post-graduates



18/10/2011

# 04. CAPACITY BUILDING



APAFRI: Eleventh Executive Forest Policy Course –  
Asia-Pacific Forests and Forestry in 2030 and Beyond: What The Future Holds?  
17 – 27 September 2019, Kuala Lumpur

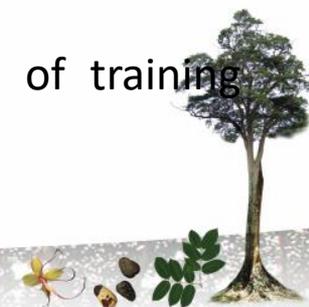
# 05. LESSONS LEARNED

## International Cooperation

1. International cooperation increases **opportunities for funding** and allows **multi-disciplinary studies**
2. International cooperation involves **multi-tier approvals** during internal process and may delay the inception of projects
3. Different organizations have **different expectations and regulations** and all must be diligently observed
4. Importance of **species selection** and appropriate **soil amendment** particularly on disturbed / degraded areas

## Capacity Building

1. Networking from collaborations provides a platform for **exchange of expertise and information** through technology transfer
2. Meeting different **needs of trainees** (student/officer level) and development of **suitable training materials** according to their national interests
3. **Evaluation** of trainees to assess level of understanding/ suitability of training modules



# THANK YOU

