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Forestry and its industries remain one of the most important socio-economic sectors in the country. In this context, the need for useful and enlightening information about Malaysian forestry and its various roles is crucial both for its sustainable management as well as to enhance public awareness. I would like to congratulate the authors of this e-book on *Malaysian Forestry – Past, Present and the Future*, for this timely publication. I am sure this e-book will reveal the importance of forestry to the students and the general public alike, in Malaysia as well as world wide.

Prof. Datin Paduka Dr. Aini Ideris  
*Deputy Vice Chancellor, (Academic and International)*  
*Universiti Putra Malaysia.*
This e-book on **Malaysian Forestry – Past, Present and the Future** makes a significant contribution to bridge the information gap in the study of the forestry development in the country. I am delighted to write a message for this e-book and applaud the authors for their outstanding effort. It is also a reflection of the international linkages forged by the faculty with other faculties throughout the world to further the interest in tropical forestry. I highly recommend this e-book as an essential reading for anyone interested and involved in the Malaysian forestry sector.

Professor Datin Dr. Faridah Hanum Ibrahim

*Dean, Faculty of Forestry, Universiti Putra Malaysia.*
Preface

The publication of “The Colonial British Forestry and the years thereafter” by Dr. J. Ratnasingam with Dr. F. Ioras in 2006 contributed significantly to greater public appreciation of the evolving state of Malaysian forestry. This book won a citation at the London Book Fair in 2008, in the Environment & Natural Resources (ENR) category – a proclamation of its intellectual merit. Currently there is a drive for the information to be made more accessible and less detailed and hence, for a topic like Malaysian Forestry, an e-book seemed to fit the bill perfectly. This e-book caters for students, professionals, and subject matter experts alike and enables further research to be made by those wishing to pursue the matter in greater detail. This e-book takes on the key contents from the published book and encapsulates it in an easy to read format. We are confident that this e-book will serve its intended purpose well.

Authors

March 2011
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Forest Service during the Colonial Period
Chapter 1

1. Introduction
2. Arrival of the Colonial Powers
3. The Colonial Expansion
4. The Colonial Economic System
5. The Colonial Forest Administration
6. Forest Service in Malaya
7. Professional Forestry in Malaya
8. Conclusion
Introduction

• Forestry in Malaysia originated from the colonial British Forestry

• It was established in India with the concern over the forest resources

• This caused selective forest conservation to take place as the result of resources exploitation
Arrival of the Colonial Powers

• The colonial expedition was pioneered by the Portuguese which was motivated by the spice trade monopoly in the 14th century.

• The expedition was soon succeeded by the Dutch and the British who later arrived in the 15th century.

• During that period the motivation soon changed to resource security as Europe was experiencing the Industrial Revolution.
The Colonial Expansion

- Colonial expansion started when the Portuguese conquered Malacca in the early 14th century, which was soon followed by the Dutch and the British, then the Japanese in the Second World War, and later back to the British after the war.

- The British used the method of advisory system to expand their domain in the Malay Peninsular.

- With the introduction of the advisory system, various new laws and regulations were introduced, which later led to various revolts that were motivated by the dissatisfaction among the local population.
The Colonial Economic System

• The British strategy was building upon the best in that period which resulted in an imbalanced economic growth in Malaya.

• Under the British administration, duel economic system was practiced where it consisted “Principal Economy” and “Secondary Economy”

• The “Principal Economy” was centered on the rubber and tin industry with the “Secondary Economy” focused on the traditional economy for local consumption.
The Colonial Forest Administration

• Forest administration in Malaya was the result of the exploitation of the mineral and timber resources by the British.

• During that period, control and legislation were established to regulate the flow of resources in the country.

• However, economic and environment functions were not seen as important.

• This resulted in resource depletion in some forested areas under its administration, that forced the British to adopt the colonial forest service in Malaya.
The forest service was founded in Malaya soon after the foundation of forest service in the British empire was laid by Dietrich Brandis in the late 19th century.

The development of forest service in the empire were divided into several stages.

1. The Foundation
2. Defining a Forester
3. Branching as an Independent Division
4. Development in Malaya
The Foundation

• The foundation was laid by Dietrich Brandis, the first Superintendent of the Forest in Pegu, Burma (Myanmar) and later the Chief Commissioner of the Indian Forest Department, founded in 1881.

• Brandis inaugurated a training program that was based on the France and Germany experience for British recruits as there wasn’t an autonomous discipline for forest services in the British Empire.

• 1885 was the year when training for British foresters started at the Royal Technical Engineering College at Cooper’s Hill, Egham Surrey with William Schlich as the professor.
• A fully professional forestry school under probation was soon established in 1905 at St. John College, Oxford.

• Later in 1910, the Colonial Forest Service was opened for graduates from forestry schools in Edinburgh and Cambridge that marked the start of forest services throughout the British Empire.
Defining a Forester

- In the development of the forestry institution, William Schlich defined the foresters as:

  A scientific technical expert of the forest, distinct from a woodsman

  A person who has knowledge and practical experience in their field of practice
With the definitions provided, various training was provided for the foresters in the empire. In Malaya the milestones were:

The recognition of the merits of practical training and experience which were recognised by GES Cubitt, the Inspector of Forest in Burma

The induction of a local training programmes for junior staff which was introduced to further improve the efficiency of the forest department staff and to increase recruitment
Branching as an Independent Division

• With all these developments, forestry which was initially a part of the engineering division soon branched out to be an independent division.

• It was a necessity to fulfill the needs of the forestry workforce throughout the British Empire that stretched from Africa to Asia.

• The forest service in the empire soon branched out to every region of the empire, where each branch specialised into the local forest type present in the region.
Development in Malaya

• Before the forest service was established in Malaya, Burma was the patron of the forest service in the country.

• This soon changed when GES Cubitt recognised the various needs to run the forest service which are strongly localised according to the local forest that were available in that area, which resulted in the start of the forest service in Malaya.
The two critical factors for the development of the forest service in Malaya were:

The need for a local workforce which were well acquainted with the local forested area, and the rural environment.

The need to have an economically viable workforce for the forest service which was justified to became a solution against retrenchment due to the economic slump of 1932.
Professional Forestry in Malaya

• After Malaya established its own forest service, a review of the forest service in the country was soon conducted to evaluate its efficiency and to further improve the forest service in the country.

• The forest service required a professional development for its sustainability, in terms of its production. These events were marked by the milestones.

1. The Visitor
2. The Recommendations
3. The Developments
In 1900 H.C. Hill made a visit to Malaya to make recommendations for a combined forest service for the Straits Settlement and the Federal Malay States.

In his visit, Hill endorsed existing policies including taking control of un-alienated forest, which sets aside various land claims and in addition, imposed the government monopoly on valuable forest products.

Hill also ruled out the artificial regeneration of Taban (*Palaquium* spp.) at the expense of other commercial species, favouring natural regeneration which became an essential element of Malayan silviculture.
The Recommendations

In Hill’s recommendations:

He emphasised sustainable production as a cheap source of fuel that resulted in the development of the charcoal industry.

The taxation system was restructured for the overall development of Malaya, that resulted in systematic taxation that allowed the further development of the timber industry.
Hill also suggested that:

The timber industry be set on a competitive footing to attract employment to reduce labour shortage

Practical scientific approach was also used for sustainable timber management in the long run for the timber industry
The Development

• Based on Hill’s recommendations:
  
  Various new taxes were introduced, further improving the wood prices in the market

  Professional forestry practices allowed the effective control of resources, avoiding resource depletion in forested areas

• These development soon led to the emergence of forestry as an economic activity in Malaya
Conclusion

• Colonial foresters believed that their work was for the good of the country.

• In this context, they are the ‘stewards’ entrusted in taking care of the well being and the wealth of the forest resource.
Malaysian Forestry in the Post-Independence Era
Chapter 2

1. Introduction
2. Forest from Resource to Commodity
3. The Forest Production
4. Non-Timber Forest Products
5. Forest Service
6. Types of Forest in Malaysia
7. Silviculture
8. Conclusion
Introduction

• The timber industry was transformed to become a competitive industry, which was stimulated by the fear of timber shortage and the growing need for oil and coal for domestic demands.

• With independence granted by the British, Malaysia soon started to have control of its own economy and enjoyed further development of the timber industry.
Forest from Resource to Commodity

• Timber became an important commodity, due to growing demand of quality wood and fuel for domestic usage.

• High revenue return in the timber trade further contributed to its economic growth.
However, the timber trade was constrained by:

The high cost of timber extraction due to inadequate infrastructure.

The competition from established rivals which had a large holding of the market share.
• These constraints hampered the expansion of the international timber market in the country.

• During World War II, timber trade was halted due to Japanese occupation and after the war, Malaya became a net importer of timber for its post-war reconstruction.

Foresters surveying a deforested land area
The Forest Production

• The forest economy in Malaya was dominated by the Chinese owned business, although there were diversity in economic activity.

• The timber industry were largely made up of Chinese workforce, who were expert in sawing timber into merchantable forms, such as planks.

• By European and American standards however, these sawmills are considered to be very antiquated, but the results obtained from the cheap labour and low mechanics were judged to be surprisingly good for its quality output.
• With the availability of labour laid off from the mines due to the drought and the likeness of the Chinese owned business to resist radical change, the government came to the decision to upgrade the industry.

• By 1939, most timber stands were believed to be unreachable by loggers. This was soon made convenient with the expansion of the roads and railway networks along with the use of river conveyance, resulting in the reduction of extraction cost of timber.
• The government further provided assistance by improving the sawing and grading operations, through advice and consultations to the mill owners.

• For example, forest engineer W.F. Chipp provided advice on mill designs and sawing methods, which resulted in the introduction of modern sawmills, that were able to convert various unused species of timber into sawn timber.

• Japanese occupation in Malaya soon saw a temporary decline in the industry as many valuable forest stands were destroyed due to the conversion of forested land for other uses.
• The lack of regulations further contributed to forest land degradation, as there were no control exercised over land use.

• The lost of new silvicultural manuals and its sample plots resulted in the lost of valuable information for silvicultural practices, making rehabilitation of the forest rather difficult.

• The timber industry later recovered when, Malaya was handed back to the British, after the war.
**Forestry Statistics (2008)**

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
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<tbody>
<tr>
<td><strong>Total Land Area</strong></td>
<td>32.3 million hectares</td>
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<tr>
<td>Total Forested Area</td>
<td>20.89 million hectares</td>
</tr>
<tr>
<td>Plantation Forest</td>
<td>2.13 million hectares</td>
</tr>
<tr>
<td>Annual Average Loss of Forested Area</td>
<td>50,000 hectares</td>
</tr>
</tbody>
</table>

*Malaysia has seen a steady reduction of its forested land over the years, but the establishment of forest plantations is expected to off-set the loss in forest cover.*
• The export of Malaysian timbers consisted of mainly Dipterocarps timbers to the European Union and United States of America.

• Throughout the timber industry’s development, demand has been growing rapidly, as tropical timber was highly regarded for its high quality.
Non-Timber Forest Products

• Though the timber industry was the heart of the forest economy, non-timber forest products also have its contributions.

• Though the scale of its contribution was rather small, these products have significant uses in the manufacturing of chemicals for a wide variety of industrial uses.

• The non-timber forest products traded at that time were:

1. Dammar
2. Gutta-Percha
3. Jelutong
4. Rattan and Bamboo
• These forest products did attract the attention of the government at that time, as they had various industrial applications. Further, it was viable as an economic prospect in the long term, as their extraction did not involve the process of felling trees.

• The fact that it’s a self-sustaining resource prompted the control of such resources, as the conventional extraction methods realised by the British was harmful to the source of these products.
• Government participation in the non-timber forest products industry was driven by the revenue from the products and the protection of the species, which produce such products.

• Many incentives were given to encourage the involvement of the local population in the economy, and at the same time alternative methods of extraction were introduced to ensure the sources of these products were not destroyed.
DAMMAR

• Dammar is a resin derived from the resin Dipterocarpaceae used to manufacture varnish.

• Its extraction requires a licence issued by the Forest Department.

• Tapping of Dammar is usually done by hacking the stem of the tree, which is harmful to it, resulting the death of the plant.

A Dipterocarp tree
• Government involvement in the industry was motivated by the protection of the source of the product.

• Branch tapping was introduced to reduce damage to the tree but it was disfavoured as it produced low yields.

• With the introduction of the synthetic varnish, the industry soon started to decline as synthetic varnish was preferred.

• The reluctance of the tappers to adopt branch tapping also contributed to the industry phasing out as heavy loss of trees are experienced, damaging the viability of the industry.
GUTTA-PERCHA

• Gutta-Percha is a type of rubber derived from the Taban (Palaquium gutta) tree, which was used to insulate the submarine cables.

• With the long duration it required to go into production and yields lower than Para rubber, it drew little investment as a non-timber forest product.
• Extraction from leaves was introduced to replace the conventional method of extraction with the same motive involved.

• With the drop in the price of Gutta-Percha, the industry soon phased out with the return of the rubber industry.

A botanical picture of *Palaquium gutta*
JELUTONG

• Jelutong is a latex produced by *Dyera costulata* which was often used in the manufacturing of chewing gum, waterproofing fabrics and electrical insulation.

• The Forest Department’s involvement in the extraction was motivated by the prevention of careless tapping of the trees.

• The department played the role in improving extraction methods and refining the yields and controlling the trade through licensing.
• Though Jelutong did manage to improve returns, the negative factors such as an unstable market and complications in the industry caused the traditional network to be exposed to the risk of opportunistic extractions.

• These constraints were further heightened by tapping related disease and the lost of many seed bearing Jelutong trees.
RATTAN AND BAMBOO

• Unlike the other non-timber forest products stated earlier, rattan and bamboo have made it into the industry as viable forest products.

• This was demonstrated with the presence today of both rattan and bamboo in the non-timber forest products in furniture and other household products.
With the experience on various non-timber forest products by the Forest Department, the non-timber forest products could not be organised as a state-controlled capital-intensive modern industry.

With this the department withdrew itself from the industry, while maintaining its role in research and development, providing assistance to entrepreneur and providing protection to economically valuable species.
Forest Services

• Forest services were not widely regarded as a revenue by the British during the colonial period.

• However after independence, these services started to be recognised as a form of revenue by the government.

• These services are:

1. Clean Air
2. Water Resource
3. Leisure Sites
4. Genetic Bank
5. Medicine
CLEAN AIR

• Forest as a source of oxygen.

• Regulating the gaseous cycle of the world through photosynthesis.

• Sustaining life through the endless supply of oxygen.
WATER RESOURCE

• Forest as a source of clean water.

• Acting as a natural storage, storing water from water catchments.

• Providing clean water for various uses.

• A renewable source for all.
LEISURE SITES

• Forest as a place for leisure.

• A site for various recreational activities.

• Generating prospects for tourism.

• A possible low cost, high profit business.
GENETIC BANK

• Forest as a source of genetic materials.

• A natural database of genetic information.

• Potential for vast application in biotechnology.

Biotech methods

A gene sample

Genetically modified radish
MEDICINES

• Forest as a source of medicine.

• Yielding various potential cures for medical breakthroughs.

• Aiding the effort for better human health care.

Kacip Fatimah (Labisa pumila)

Tongkat Ali (Eurycoma longifolia)

Mas Cotek (Ficus deltoidea)
Types of Forest in Malaysia

• Malaysia is known for its diverse forest resource.

• These forest types are:

1. Ericaceous Forest
2. Montane Oak Forest
3. Highland Dipterocarp Forest
4. Hill Dipterocarp Forest
5. Lowland Dipterocarp Forest
6. Swap Forest
7. Mangrove Forest
Locations of the Forests According to Type

- **Lowland Dipterocarp Forest, Swamp Forest, Mangrove Forest**
- **Hill Dipterocarp Forest**: 300m – 1200m a.s.l.
- **Highland Dipterocarp Forest**: 750m – 1200m a.s.l.
- **Montane Oak Forest**: 1200m – 1500m a.s.l.
- **Ericaceous Forest**: Above 1500m a.s.l.
Ericaceous Forest

- Located at altitudes higher than 1500 meters above sea level
- Consist of small sized species of plants such as Kelat, Pitcher plants, ferns and moss.
Nepentes spp.

Angiopteris spp.
Montane Oak Forest

• Located at altitudes 1200 – 1500 meters.

• Contains many medium sized species such as Lithocarpus spp., Castanopsis spp. And Podocarpus spp.
Pinus caribaea

Pinus merkusii
Highland Dipterocarp Forest

• Located at altitudes 750 – 1200m above sea level

• The majority of the stand of the forest consist of Agathis
Agathis spp.

Pteris spp.
Hill Dipterocarp Forest

• Located at altitudes of 300 – 750 meters above sea level.

• The largest type of forest coverage in Malaysia.

• Majority of the species are Seraya, Keruing and Meranti
Swintonia spicifera

Agathis alba
Lowland Dipterocarp Forest

• Located at altitudes up to 300 meters above sea level.

• Densely populated with species of Shorea, Bangkirai and Dryobalanops.
Dryobalanops lanceolata

Swintonia specifera
Swamp Forest

- Known as the wetlands
- Located in areas that have poor irrigation system
- Known for its rich aquatic and amphibious biodiversity
- Has highly decayed organic matter content in its soil, in the form of peat
Dryobalanops oblongifolia

Dipterocarpus crinitus
Mangrove Forest

• Located in the muddy shores and river estuary, with brackish water and saline present.

• Home to trees and plant species that are able to tolerate high concentrations of salt

• Forest products are often harvested to be used for construction poles and for making charcoal
Rhizophora spp.

Avicennia spp.

Bruguiera spp.
Silviculture

• Silviculture was one of the legacies left behind by the British.

• It is a practice applied as a post harvesting treatment should any regeneration problems arise from harvesting of forest products.

• This treatment is also applied for forest rehabilitation and forest reclamation operations, where the destroyed forest will be restored back to its original state before harvesting.
• Though many valuable information on silviculture were lost during the war. Continuous research have allowed various silviculture methods to be introduced for the forestry practices in the country.
Forestry in Malaysia has experienced rapid changes from being a resource supplier to platform for a range of economic activities.
Forestry as an Industry
Chapter 3

1. Introduction
2. Timber Industry
3. Furniture Industry
4. Non-Timber Industry
5. Service Industry
6. Conclusion
Introduction

• Forestry, along with its global development has changed from being a commodity to an industry.

• The change was brought about by the demand for high quality forest products instead of quantity, stimulated by customer demand.

• The consumers were environmentally conscious, in which their decision to buy forest products was strongly influenced by the environmental issues.
Timber Industry

• The timber industry soon experienced changes in its management concept, where it shifted from sustainable timber management to sustainable forest management.

• In the new trend of management, high quality timber yield was stressed, instead of the high timber yield for the timber industry.
Timber Industry of Malaysia (2008)

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<tr>
<td>Annual Growth</td>
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• The new management system was also strongly influenced by the environmental issues through the demand for timber from sustainably managed forest.

• These demands came from the environmentally conscious consumers who wanted to be assured that their purchases came from sustainably managed forest.

• This factor caused the emergence of green markets which only allowed environmentally friendly forest products to be traded.
The emergence of the green market clearly demonstrated the consumers’ involvement with environmental issues.

This new scenario forced the industry to be interactive to both the consumer needs and the environment needs in its trade practices.
Furniture Industry

• The furniture industry in the country started off as an industry for fulfilling the household needs.

• The industry during the Colonial period and the post independence period were strongly localised to the areas rich in resources.

• The furniture industry soon changed from an industry of manufacturing necessities to an industry of manufacturing luxuries.
## Furniture Industry of Malaysia (2008)

<p>| | |</p>
<table>
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<tr>
<td>Annual Growth</td>
<td>8.5%</td>
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• This was demonstrated by the production of high end furniture.

• The rise in its demand brought about by the commercialisation in manufacturing of furniture, resulted in the introduction of high tech equipment and cheap methods for mass production.
The emergence of globalisation further stimulated the industry to a higher level, where the global market was the focus of furniture entrepreneurs.

The new market in return, brought new trends in business management of the furniture industry where family owned businesses shifted to corporation owned businesses.
Non-Timber Industry

• For the non-timber industry, it soon became a domestic product with limited usage with a traditional background.

• These products found little demand in the commercial market as its range of utilisation were limited.

• The lack of commercialisation was seen as the primary contribution for the stunted growth of this industry in the post independence period, as the nation was primarily focused on timber as the primary commodity.
Various high-tech machines
• This period however did not last long as the market trend soon changed with these products gaining recognition for its potential applications in the commercial sector.

• The new market started to bring change to the uses of non-timber products, resulting in its mass production.

• Introduction of technology soon widened the use of non-timber products as it allowed the innovation of more new products to suit a wider range of consumers and uses.
Services Industry

• Forest services in Malaysia, have enjoyed consistent growth throughout the years after independence, stimulated by market growth.

• Recreation was the primary driver of the forest services industry, as the forest offers a variety of leisure sites which can be capitalised for the recreation activities.

• With the number of visitors increasing, the recreation services of the forest grew at an exponential rate throughout the years.
• However the extensive growth strained the environment as conflicts between human and wildlife occurred in the process.

• Therefore recreation services as an economic activity required proper planning to avoid forest use conflicts.
Conclusion

• A massive change in the forestry economic activities were obvious. This new change continue to force the forestry community to be interactive with the various stakeholders.
The Future of Malaysian Forestry
Introduction

• Forestry practices have become more environmentally friendly and at the same time, more interactive with the general public and the community.

• New concepts have also been introduced to address the current environment issues, such as *Global Warming and Climate Change*, where the forest is seen as the solution to mitigate climate change.
Recognising Biodiversity

• Biodiversity plays an important role in the ecology and the ecosystem, in which it indicates forest health.

• In sustainable forestry practice, biodiversity is recognised as the entity that benefits mankind.
In an effort to conserve biodiversity, various laws and regulations have been put in place.

New initiatives, such as the CITES, were introduced to control the trade of endangered species to prevent extinction.
CITES is an international agreement between governments drafted from the resolution adopted in 1963 after the meeting of the International Union for Conservation of Nature (IUCN). The motion of CITES was agreed in 1973 and enforcement soon came in 1975. This motion aim was to ensure that the trade of wildlife species does not threaten their survival. The protection provides by CITES varies according to the species survival status. The participation of countries into this agreement are on the voluntary basis and once their participation is verified they will be known as Parties. So far for now, there are 33,000 species protected under this agreement and the number of species listed under its protection are expected to rise throughout the years.
The concept of sustainable forest management has been widely practiced in Malaysia since independence.

Malaysia has been renowned for its Selective System Management (SMS) which emphasises on minimal damage to the harvested forest land and the promotion of high stock regeneration for the quick recovery of the forested area.
Timeline of Forest Management Systems in Malaysia

- Unnamed British System - 1940’s
- Malayan Uniform System (MUS) - 1963
- Selective Management System (SMS) – 1987 & Present
• The concept of forest harvesting operations varies around the world, with each country having its own version and name for the system.

• Malaysia has its own laws and acts which covers the management and protection of the forest.

• For example: The National Forestry Act of 1984 requires a forest management plan to be drafted and approved by the Forest Department, before any forestry activities can be carried out.
## List of Forestry Laws in Malaysia

<table>
<thead>
<tr>
<th>Law</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Forestry Act 1984</td>
<td>Administration, management and conservation of forests and forestry development within the States of Malaysia.</td>
</tr>
<tr>
<td>Water Act 1920</td>
<td>Administration, management and conservation of water sources, streams and river within the States of Malaysia.</td>
</tr>
<tr>
<td>Environmental Quality Act 1974</td>
<td>The prevention, abatement, control of pollution and enhancement of the environment, and for purposes connected therewith.</td>
</tr>
</tbody>
</table>
• These policies and practices are continuously refined to suit the ever changing needs.

• The application of laws and regulations and the introduction of new harvesting methods for the forest resources, signify such changes.

• Silviculture practices has also changed from treatment of forest stands to forestry-based operations, such as forest rehabilitation and forest reclamation.

• Coupled with the application of environmentally friendly methods in silviculture, greater protection to the forest was accorded.
Mitigating Climate Change

• The changes in the climate have caused many solutions to be sought to address the issue, and from the forestry point of view, the forest conservation is necessary.

• The forest acts as a *Carbon Sink* and through this function, the carbon content in the atmosphere can be reduced and regulated.
Forest Certification

• The motion of forest certification was initiated in 1987 when Friends of the Earth UK (FoE-UK) published their Good Wood Guide which resulted in an ITTO pilot study of forest monitoring and timber-labelling in the tropical countries.

• They later encouraged ITTO to consider certification and labelling as a mechanism for improving forest management.
Later in 1990, Hubert Kwisthout from the Ecological Trading Company proposed the setting up of the International Forest Monitoring Agency, IFMA which was the earliest suggestion for an independent agency that conducts verification of sources, monitoring and standard-setting of forest products.

After several meeting and discussions with various working groups and stakeholders from the forestry industry, The Forest Stewardship Council (FSC) was formed to facilitate and provide certification for the forest under its endorsement.

FSC was the pioneer in forest certification in the world, which was soon followed by other organisations such as The Programme for the Endorsement of Forest Certification (PEFC) and Malaysia Timber Certification Council (MTCC).
• With this development, forest certification became the key indicator of sustainable forest management, by having its brand as a label of trust for the consumers of forest products, and it is estimated that 1 billion ha of forested land area has been certified.

• The Malaysia-Netherlands Joint Working Group’s (M-NJWG) kicked off certification practices in Malaysia.
• Under this initiative, sawn timber, plywood and moulding were selected as the forest products which will be certified under the forest certification project.

• The Malaysia Timber Certification Council (MTCC) was soon founded in 1998 to manage the affairs of forest certification in Malaysia and it became an independent organisation in 2001.
• In recent years, in addressing Global Warming, forest certification had to face other challenges.

Land Conversion of Forested Land

Mitigation of Climate Change

• Furthermore with the attention from the general public, forest certification has become proactive in addressing these issues through education programs.
Forestry and People

• Throughout the periods of human civilisation, forestry and mankind has a long history of relationship, where mankind relied on the forest for its resources, while the forest relied on mankind for its ecological dynamics.
Today forestry practices emphasises sustainable forestry practices where all aspects that affected forestry practice are taken into consideration, such as environmental, social and economical impacts, regeneration potentials of the ecology and the participation of all parties involved in forestry.
• Participation of all stakeholders is a critical aspect to bridge the gap between forestry and people.

• Recently, forestry has evolved to cover a wider range of issues, such as mitigation of climate change and addressing the conservation of biodiversity, while at the same time playing its role in economics.

• In order to accomplish this goal, education and interaction between the general public and the entities of forestry is a must in addressing the recruitment of human capital into the forestry field.
Conclusion

• With all the new concepts and issues that surround forestry, the future of forestry is volatile.

• However public relations and communications with the general public is important, as forestry no longer stands in its own domain, as contact and engagement with the people is continuously intensifying.
CHALLENGES TO FORESTRY RESEARCH AND DEVELOPMENT
Chapter 5

1. Introduction
2. The Motivation for Research and Development
3. The Foundation Institutions
4. The Growing Practice
5. Conclusion
Introduction

• Research and Development (R&D) is a vital aspect in every field of practice. Although driven by the would be economic gains, R&D has evolved to become an integral part of sustainable forestry and environmental management.

• Forestry perspectives around the world has undergone tremendous changes, and being an all inclusive sector for multiple stakeholders, R&D in forestry is increasingly important.
The Motivation for Research and Development

- Forestry R&D in Malaya came almost simultaneously along with the forest service during the colonial period.

- At that time, the motivation for R&D was primarily for resource conservation as the British experienced severe resource depletions.

- Silviculture was the initial scientific approach for forest management in the early days of forestry practices, aimed at increasing productivity of forest products, particularly timber.
• When the timber industry emerged as an economic activity in Malaya, R&D activities gained further importance.

• With the growing demand for the diverse expertises in the industry, institutions related to research and development were establish to provide valuable and industry relevant research outputs.
• The aspects of research covers scientific, social and economic forestry that soon shaped the R&D activities.

• Emergence of the concept of sustainable forestry justified the increasing need for R&D in the forest sector.

Tissue culture of forest plants
The Foundation Institutions

• The early forestry institutions in the British Empire at that time was the St. John’s College, the forestry schools in Edinburgh and Cambridge and the Imperial Forest Institute in Dehra Dun India.

• Subsequently, the Forest Research Institute (FRI) of Malaya was established, integrating the forestry school and the Botanical Gardens.
• Along with Cubitt’s vision for R&D expansion, the FRI in Malaya became the centre for tropical forest research under the direction of F.W. Foxworthy who was a botanist and wood technologist.

• After independence, the name FRI was changed to Forest Research Institute of Malaysia (FRIM).

• Some however, retained their name such as the Penang Botanical Gardens.
• New educational institutions were established after the independence, such as Universiti Putra Malaysia, which houses the first Forestry Faculty established in the country. The Faculty of Forestry was one of the foundation faculties in what was then known as the Agricultural University of Malaysia, which started in 1971.

• In 1996, the School of International Tropical Forestry was established in University Malaysia Sabah (UMS).

• These institutions aim to produce the necessary human resource and at the same time conduct Forestry R&D.

A group of forestry students surveying the forest canopy
The Growing Practice

• Through the change of time, forestry R&D was forced to change to keep up with the society’s ever changing needs.

• From the profit and revenue perspective, the changing demands from the forest resource that brought about a transformation in the roles played by the forests.
• Although social studies have never been emphasized in forestry, it soon became important to address social impacts on the forest resource.

• Further, the study of forestry has changed from a trans-discipline to an inter-discipline study by having its various practices to be interrelated to one and another, which resulted in a comprehensive field.
• These new developments make forestry a challenging field for the new generation of foresters as custodians, as they have to cope with the demands of the various stakeholders.

• These changes demonstrate that forestry has evolved to become an interactive field of practise, indicating that foresters no longer work just in the forest, but also with the general public and other stakeholders within the society.
• There is much more that needs to be done in the field of forestry in order to transform it as a preferred career.

• However, the dynamics of the forestry field in Malaysia since the early Colonial period has changed significantly. Changes and adaptations are important if forestry is to thrive in Malaysia, marching towards becoming a developed country!
Further Reading


Appanah, S. 1999 Trends and Issues in Tropical Forest Management: Setting the Agenda for Malaysia. FRIM, Kepong.
Bengston, D.N., 1994 Changing forest values and ecosystem management. Society and Natural Resources 7, 515-533.


This is not the end, but simply the end of the beginning.

Thank you for your interest in Malaysian Forestry.