



KEMENTERIAN SUMBER ASLI DAN KELESTARIAN ALAM
JABATAN PERHUTANAN SEMENANJUNG MALAYSIA

RESTORATION, RECLAMATION AND REHABILITATION OF DEGRADED FOREST AREAS IN PENINSULAR MALAYSIA : ISSUES, CHALLENGES AND WAY FORWARD

Silviculture & Forest Biodiversity Conservation
Divison



FORESTRY DEPARTMENT OF
PENINSULAR MALAYSIA





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INTRODUCTION



FORESTRY DEPARTMENT OF
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HISTORY OF 3RSM PROGRAM

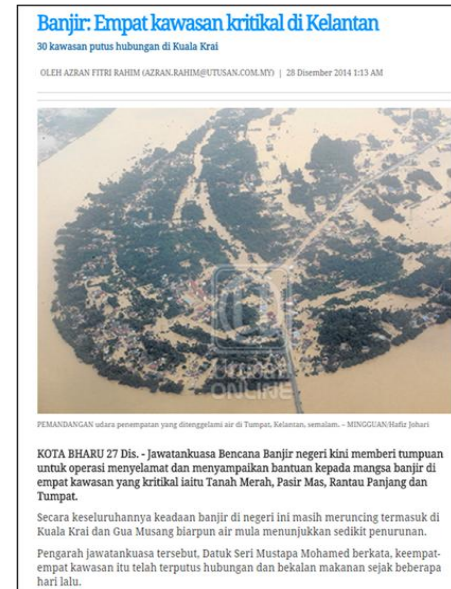
Rehabilitation, Reclamation
and Rehabilitation of
Degraded Forest Areas in
Peninsular Malaysia Program
(3RSM)

Mud flood in Kuala
Krai and Gua Musang,
Kelantan on 28th
December 2014

Landslide in Janda Baik,
Pahang on 2nd December
2014,

Mud flood in Cameron Highlands,
Pahang on 6th November 2014

In 2014, Malaysia was
awakening of public
concern by several
major natural disasters
that occurred in Pahang
and Kelantan.





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SHARED LEARNING : IMPLEMENTATION OF THE 3RSM PROGRAM IN PENINSULAR MALAYSIA



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IMPLEMENTATION OF THE 3RSM PROGRAM IN PENINSULAR MALAYSIA

The Cabinet gave approval to implement the Restoration, Reclamation and Rehabilitation of Degraded Forest Areas in Peninsular Malaysia (Restoration, Reclamation & Rehabilitation Program - 3RSM) on 2016

Degraded Areas Identified
4,750 ha

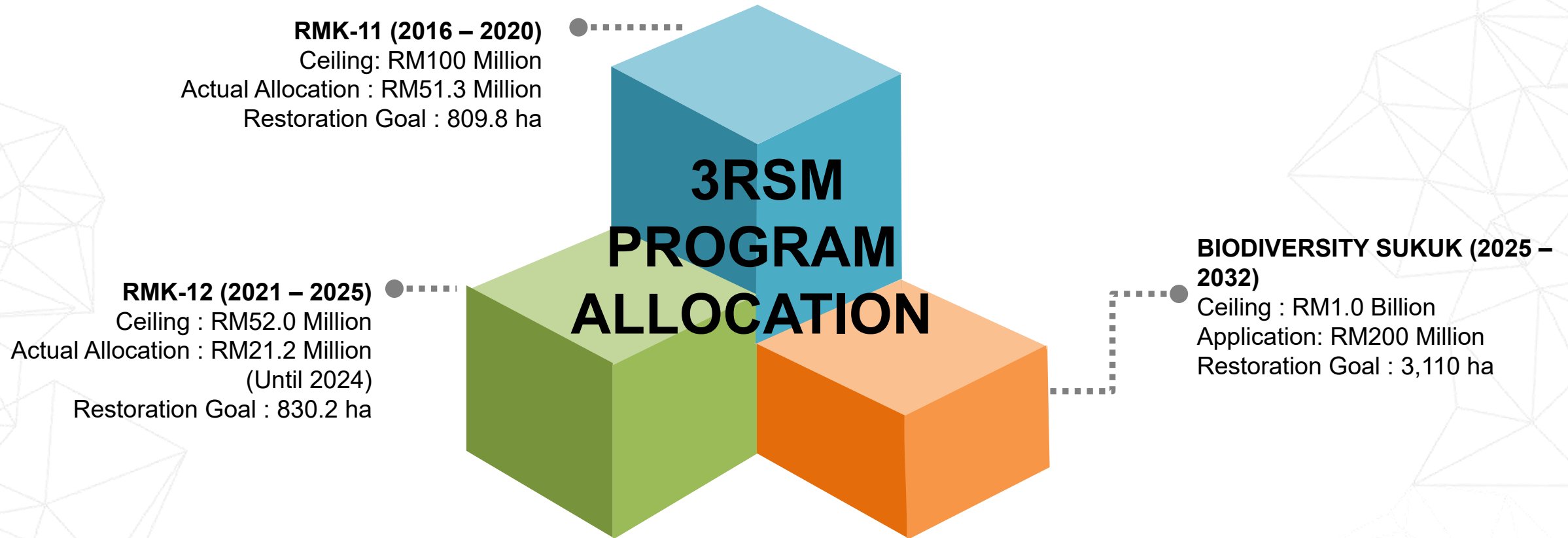
Target of Restoring Degraded Areas
1,640 ha (1,025,000 trees)

Degraded Areas Restored (2016 – Present)
1,235 ha (731,176 trees)

3RSM PROGRAM OBJECTIVES



3RSM PROGRAM FUNDING FINANCIAL ALLOCATION



CUMULATIVE ACHIEVEMENTS (UNTIL SEPTEMBER 2024)



ACHIEVEMENTS UNDER RMKe-11 [RP1 – RP5: 2016-2020]

NO.	YEAR	HECTARES (HA)	TOTAL OF TREES
1.	2016	0	0
2.	2017	237.0	148,125
3.	2018	87.0	54,375
4.	2019	135.93	74,592
5.	2020	349.87	186,389
TOTAL		809.80	463,481

ACHIEVEMENTS UNDER RMKe-12 [RP1 – RP4: 2021 –2024)

NO.	YEAR	HECTARES (HA)	TOTAL OF TREES
1.	2021	17.2	11,723
2.	2022	83.7	52,325
3.	2023	197.3	124,272
4.	2024	127.0	79,375
TOTAL		425.2	267,695

CUMULATIVE ACHIEVEMENT UNDER RMK

NO.	RMK	HECTARES (HA)	TOTAL OF TREES
1.	RMK-11	809.80	463,481
2.	RMK-12	425.2	267,695
JUMLAH		1,235.0	731,176

CURRENT STATUS: IMPLEMENTATION OF THE 3RSM PROGRAM YEAR 2023 - 2024



**LOCATION: PART OF COMPT. 166, HS YONG, PAHANG
AREA : 76 HA**

- Area : 76.0 ha
- Total of Trees Planted : 47,500 Trees
- Species : Merawan Siput Jantan, Keruing, Sentul, Meranti Temak Nipis, Meranti Tembaga, Petai



Petai



Meranti Tembaga

Keruing

**LOCATION: PART OF COMPT. 10, HS BUKIT ENGGANG,
KEDAH
AREA : 20 HA**

- Area : 20.0 ha
- Total of Trees Planted: 12,500 Trees
- Species : Meranti Tembaga, Keruing, Sentul, Petai, Meranti Temak Nipis.



Trees planted species



Site Visit and monitoring by BSB officers and staff to the project area

Hardening process

**LOCATION: PART OF COMPT. 94, HS GUNUNG ARONG,
JOHORE
AREA : 50 HA**

PROJECT STATUS: Ongoing project (Planting and Silviculture Treatment R3)

- Area : 50.0 ha
- Total of Trees Planted : 31,250 Trees
- Species : pioneer and climax species for peatland



Project signboard



Hardening process

Meranti Paya

Bintangor



Project area from aerial photo

**LOCATION: PART OF COMPT. 16 & 57, HS ULU SAT,
KELANTAN
AREA : 30 HA**

- Area : 30.0 ha
- Total of Trees Planted: 18,750 Trees
- Species : Meranti Tembaga, Meranti Sarang Punai, Keruing, Balau, Meranti Temak Nipis



Project signboard

Project boundary marking



Planting stock
(Meranti sarang punai)

Planting stock
(Meranti tembaga)

Balau

Balau Laut

Keruing

LOCATION: DURIAN TUNGGAL DAM, MALACCA
AREA : 50 HA (Restricted Area)

- Area : 50.0 ha
- Total of Trees Planted: 31,250 Trees
- Species : Merawan Siput Jantan, Meranti Temak Nipis, Meranti Tembaga, Kerdas, Kapur, Karas.



Site visit and monitoring by KPPSM, BKSA, JPN Melaka



Site visit and monitoring by BSB officer and staff



Meranti Temak Nipis



Merawan Siput Jantan

Kerdas

LOCATION: PART OF COMPT. 223 & 224, HS BINTANG HIJAU, PERAK
AREA: 100 HA

- Area : 100.0 ha
- Total of Trees Planted : 62,500 Trees
- Species : Meranti Tembaga, Meranti Sarang Punai, Merbau, Merawan Siput Jantan



LOCATION: PART OF COMPT. 4, HS BUKIT LAGONG, SELANGOR
AREA : 10 HA

- Area : 10.0 ha
- Total of Trees Planted: 6,250 Trees
- Species : Meranti Tembaga, Meranti Sarang Punai, Meranti Rambai Daun, Merbau, Chengal



LOCATION: PART OF COMPT. 11, 27 & 28, HS KENABOI, NEGERI SEMBILAN
AREA: 70 HA

- Area : 70.0 ha
- Total of Trees Planted : 43,750 Trees
- Species : Meranti Temak Nipis, Merbau, Merawan Siput Jantan



Merawan Siput Jantan



Merbau



Meranti Temak Nipis





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ISSUES & CHALLENGES



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ISSUES & CHALLENGES

Located in remote and hilly areas

Reoccurring natural disasters

Insufficient high quality species

Anthropogenic activities

Animal grazing

Species-site matching







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WAY FORWARD



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WAY FORWARD



R&D: To produce high quality local spesies

R&D – To identify effective storage method of planting material and seedling

R&D – Soil studies

R&D – Pest and disease control

R&D – Studies on plant that are prone to disease or pest attacks

R&D – To identify suitable species for each planted area



WAY FORWARD



Security of land tenure outside Forest Reserve

Implement an appropriate silvicultural treatment regime

Contractor's responsibility on access road & maintenances

Integrated enforcement applied using latest technology

Diversify planting material

Site preparation before actual planting



Budget



*Ecological Fiscal
Transfer for Biodiversity
Conservation (EFT)*



**MALAYSIA FOREST
FUND**

Sukuk Biodiversity



Wakaf Hutan

WAY FORWARD

Smart Forest Landscape Solution

- Monitoring
- Census
- IoT & AI



SMART FOREST LANDSCAPE SOLUTION



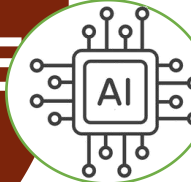
1. Smart FLR Solution

Provides Silviculturist with remote monitoring and control capabilities, soil crop matching analysis, optimize fertilizing, weeding, diagnose crop health and mortality rate.



2. IoT Sensor For Real-Time Monitoring

Monitoring environmental parameters and crop health in real-time, empowering silviculturist with valuable insights to optimize silviculture practices



3. AI Analysis And Prediction

Machine learning and AI will provide precise crop health analysis, valuable trend insights, and automated weeding and fertilizing process.



4. GIS System For Informed Field Management

Combining GIS with mutiple sensores may achieve accurate saptial mapping of fields, planning, enabling well-informed decisions, monitoring and silviculture treatments activities.



CONCLUSION



3RSM

3RSM program is a high-impact national project that supports the Greening Agenda and fulfils the country's international commitments



NETWORK



Involves a network of collaborations from various agencies



R&D



R&D is an important aspect to ensure that improvements and innovations can be carried out continuously



PROGRAM

3RSM program needs to be continued in 13th Malaysia Plan (2026 - 2030)

CONCLUDING REMARKS

Forests are part of human life and shall meet the people's aspirations in the present and future. Good governance of forest landscape restoration and policy framework are paramount to ensure that forests are sustainably managed as well as addressing relevant issues according to new world order and living in harmony with nature.





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THANK YOU



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