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Development Inventory of the Country-specific Activity Data and Estimation Methods for Forests Ecosystems and Land-use Change in Malaysia

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Forest Resources Malaysia

- Classification of forest types in different regions
- Verification of reported figures/ statistics
- Definition & interpretation
- Reporting source
- Policy & Jurisdiction
- Satellite imageries vs. aerial photograph techniques
- Uncertainties & unsuitability of assumptions

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Malaysia: Forested Area By Region, 2000 (Million Hectares)

Region	2000	2005
Peninsular Malaysia	5.94	
Sabah	4.42	
Sarawak	9.84	
Total	20.20	

Source: FDPM, FD-Sabah & Sarawak

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Malaysia: Permanent Reserve Forest by Region, 2000 (Million Hectares)

Region	Protective	Productive	Total
Peninsular Malaysia	1.90	2.90	4.80
Sabah	1.03	4.97	6.00
Sarawak	0.91	2.69	3.60
Total	2.91	10.56	14.40

Source: FDPM, FD-Sabah & Sarawak

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Malaysia: Distribution and Extent of Major Forest Type, 2000 (Million Hectares)

Region	Inland	Swamp	Mangrove	Others	Total Forested Land
Peninsular Malaysia	5.500	0.200	0.100	0.100	5.900
Sabah	3.810	0.120	0.340	0.340	4.420
Sarawak	8.640	1.040	0.130	0.130	9.840
Total	17.950	1.360	0.670	0.284	20.160

Source: FDPM, FD-Sabah & Sarawak

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The Extent of Forest Resources

- Rich biodiversity of flora & fauna
- Sustainable Forest Management (SFM)
 - Achieve balance between development and conservation
- National & State forest policies
 - National Forestry Policy (NFP) 1978
 - Sarawak Forest Ordinance (1958)
 - Sabah Forest Policy (1948)

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The Extent of Forest Resources (cont.)

- **Permanent Forest Estate (PFE)**
 - Permanently maintained for economic, protection, recreational and/or other purposes.
 - Production Forest
 - Supply of resources
 - Protection Forest
 - Conserving resources and biodiversity
- **Stateland Forest (SLF)**
 - Land reserve for development

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Malaysia: National Communication

- National Initial National Communication 1994
- Second National Communication 2000 – on-going

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Initial Communication Possible Uncertainties

- Definition of classifications/ categories
- Extend of forest resources inventory
- Default values
- Extensiveness of calculations
- Collaborators & Working Group
- Incomparable practices and data

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Essential Data Comparison

	Initial Inventory	Current Inventory
Area	Acreage of forest and agriculture plantation	Acreage of PRF category and sub-categories, stateland, wildlife reserves, plantations, and non-forest trees.
Annual growth rate	Acacia mangium = 15.0 tdm/ha Others = 11.0 tdm/ha (average of Eucalyptus, Tectona, Pinus spp.) Source: IPCC Guidelines for National Greenhouse Gas Inventories, Vol. 2, 1995.	<ul style="list-style-type: none"> • Acacia Mangium • Tectona grandis • Pine • Azadirachta excelsa • Rubber • Oil palm • Others = 12.5² tdm/ha (mixed fast-growing hardwoods)
Commercial harvest	Plantation logs = 10,232,348 m ³ Rubberwood = 1,156,667 m ³	Total HHW/ MHW/ LHW = 5,049,284 m ³ Rubberwood – Not available

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	Initial Inventory	Current Inventory
Fuelwood	Not accounted.	Figures from FD- Sabah & Sarawak only.
Non-forest trees	Not accounted	Statistics and key assumptions of FDP, FD – Sabah & Sarawak..
Area converted annually	1 kha	FDP, FD – Sabah & Sarawak statistics on area harvested (mean average less than 10 years)
Fraction biomass on-site and off-site	Burned on-site = 0.07 (tropical forest) Carbon fraction burned on/off - site = 0.45 Burned off-site = 0.68	Integrated working group assumptions.

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Second National Communication

- FRIM appointed leading LULUCF sector
- Working closely with several relevant departments
 - Forest Department: Peninsular Malaysia, Sabah & Sarawak.
 - Department of Agriculture (DOA)
 - Universiti Putra Malaysia (UPM)
 - Malaysian Palm Oil Board (MPOB)
 - Malaysian Rubber Board

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Second National Communication Approach



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Comparison of Sectoral Report for Land-Use Change & Forestry (Gg)

	Total Land-Use Change & Forestry (CO ₂ removals)	Changes in forest and other woody biomass stocks (CO ₂ removals)	Forest & grassland conversion (CO ₂ emissions)	Abandonment of managed lands (CO ₂ removals)
Initial Inventory		-68,717		N/A
Current Inventory (Peninsular Malaysia & Sarawak)	-290,309	-236,778	10,550	-64,082 (Sarawak only)

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Progress Update

- Completed Peninsular Malaysia
- Completed Sarawak
- Review & Update
- Sabah to be completed March
- Inclusion of soil activity data
- Reporting
- Initiate new tools

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Issues & Challenges

- Close cooperation
 - Awareness
- Forest Inventory Data
 - Forestry Department
 - Forest Research
 - Ministries
- Sins of reporting
 - Forest conversion
 - Shifting cultivation
 - Totally Protected Area (TPA)
- Assumptions & Uncertainties
 - Agreement to conclusion

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Knowledge Gaps

- Inclusion of Totally Protected Area/ National Parks/ Wildlife Reserves
- Abandonment of managed lands
 - Logging purposes
 - Shifting cultivation
- Plantation
 - Oil palm
 - Rubber
- Soil activity data
 - Soil types
 - Land use
 - Mapping

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Knowledge Gaps (cont.)

- New software tool adaptation
- Long-term monitoring & measurement activity/ research
 - Incorporation of other studies
 - Experimental plots
- Ground survey of forest/ plantation establishment
 - Age
 - Growth rate

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Knowledge Gaps (cont.)

- Estimation & Assumptions of burning
- Forest fire
- EFDB
- GPG-LULUCF 2003
- Training & Workshop Update

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Conclusion

- Working group to integrate existing reporting and classification of resources
- Update on software tools and discussion groups
- Responsible experts involvement
- Continuous reporting
- Experience of various countries

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Thank You!

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