

Draft National Action Plan for Brunei within the APMS framework. Version 2 10 February 2008

Focal Area	Operational Objectives (APMS)	National Objectives	National Actions	Priority	Time Frame (MONTHS)	Involved Agencies	Proposed Lead Agency
1. Inventory and Assessment	1.1 Determine the extent and status of peatlands in the ASEAN region (including issues of definition)	1.1 Determine the extent and status of peatland areas in Brunei	1.1.1 Adopt the definition of peat and peatland adopted by ASEAN	H	0 - 3	DEPR, FD, TCP, DoA, UBD, LD, SD, JKR	
			1.1.2. Adopt ASEAN classification for peat and peatland	H	0 - 3	DEPR, FD, TCP, DoA, UBD, LD, SD	
			1.1.3. Determine current extent and status of peatlands in Brunei and produce inventory, with information held in a spatial database. COMMENT: Status and extent should be determined primarily by use of remote images	H	0 - 12	DEPR, DoA, FD, TCP, UBD., BM, BSP, PNHS, LD, SD	
			1.1.4. Conduct rapid botanical surveys to identify distinct vegetation communities found on peatlands (linking to (7)) COMMENT: moved from focal area 2.(Research)	H	0 - 12		
	1.2 Assess problems and constraints faced in peatland management	1.2. Improve understanding of peatland ecosystems, their value and issues affecting them	1.2.1. Assess peatland values and direct uses	H	0 - 12	TCP, DDEPR, DoA , FD, UBD, JKR	
			1.2.2. Perform a present and future threats analysis	H	0 - 12		
1.3 Monitor and evaluate peatland status and management	1.3 Monitor and evaluate peatland status and management	1.3.1. Based on methodologies used in the inventory and assessment exercise, develop a monitoring programme to evaluate peatland status and management	H	0 - ONGOING	TCP, DDEPR, DoA , FD, UBD, JKR, BSP, PNHS		
2. Research	2.1 Undertake priority research activities	2.1 Undertake research activities targeted at improving management and conservation of peatlands	2.1.1. Conduct a project on natural succession on degraded peatland where drainage has occurred and where there has been no drainage.	H	6 - ONGOING	FD, UBD, PNHS	
			2.1.2. Conduct research on drainage, groundwater and fire interrelationships in catchments containing intact and degraded peatlands	H	6 - ONGOING	JKR, UBD, BSP	

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			2.1.3. Conduct research associated with pilot rehabilitation projects, including a review existing research such as JICA's report on suitable tree species and suitable planting methods	H	12 - ONGOING	UBD, FD, GEC	
			2.1.4. Conduct base-line studies on carbon storage and CO ₂ emissions from degraded peat areas, intact PSF and pilot project areas before project implementation. COMMENT: the project should develop a definition of "degraded"	H	6 - 24	UBD	
			2.1.5. Encourage the development of a peatland research group at Universiti Brunei Darussalam, with the collaboration of research sections of relevant government agencies (Agriculture, Forestry, Fire, Brunei Shell, DEPR and others)	M	0 - ONGOING	UBD Agriculture, Forestry, Fire and Rescue, Brunei Shell, DEPR	
3. Awareness and Capacity Building	3.1 Enhance public awareness on importance of peatlands, its vulnerability to fire and the threat of haze through implementation of a comprehensive plan	3.1 Enhance public awareness of peatland management and consequences of peatland degradation	3.1.1. Develop locally-relevant awareness materials for the public highlighting detrimental effects and penalties for non compliance with regulations to the public Comment : Focus on enforcement & monitoring rather than awareness	H	0 - 6	DEPR, PNHS, BSP, FD, GEC	
	3.2 Build institutional capacity on management of peatlands	3.2 Strengthen capacity for sustainable peatland management and rehabilitation of degraded areas	3.2.1. Identify government agencies and other stakeholders with responsibility for peatland management and document specific responsibilities of each agency	H	0 - 6	DEPR, FD, UBD, TCPD, JKR, DA, HOUSING, LD, SD, District Offices	
			3.2.2. Organise seminars for government agencies , policy makers and private sector decision-makers on major issues affecting peatlands and the sustainable management of peatlands, including rehabilitation COMMENT: Suggested to be organized at ministerial level	H	0 - 12	All relevant agencies and institutions	
			3.2.3. Evaluate present level of knowledge of wise use of peatlands and perform Training Needs Analysis for government and private sector staff	H	0 - 6	All relevant agencies and institutions	

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			3.2.4. Develop appropriate training materials and identify trainers	H	0 - 6	All relevant agencies and institutions	
			3.2.5. Organise and conduct training courses	H	6 - 12	All relevant agencies and institutions	
			3.2.6. Establish a national working group on peatlands COMMENT: Probably to be conducted on ad hoc basis Likely lead agency? MIPR? DEPR? Which agency has the responsibility for peat soils on Stateland (Unclear)?	H	0 - 12	All relevant agencies and institutions	
			3.2.7. Organise and participate in field training at rehabilitation projects in Malaysia (North Selangor PSF) and Indonesia (Sumatra / Central Kalimantan)	M	6 - 24	GEC, DEPR, FD, DoA, TCPD, ISB-MTP, District Offices, PWD, FRD	
			3.2.8. Produce (or adapt) manual on best management practice in peatland	H	6 - 12	DEPR, FD, GEC, DoA	
4. Informatio	4.1 Enhance information management and promote sharing	4.1 Establish web-based database for information storage and exchange	4.1.1. Develop and maintain centralised spatial web-based database on peatlands of Brunei, holding data obtained from the inventory and assessment activities	M	6 - ONGOING	DEPR, FD, BSP, PNHS, TCP	
5. Policies and Legislation	5.1 Develop or strengthen policies and legislation to protect peatlands and reduce peat fire	5.1 Review and strengthen policies and legislation relating to the use of peatlands	5.1.1 Review existing policies, laws and regulations on use of peatland resources and address conflicts and gaps where necessary	M	0 - 12	All relevant agencies	
			5.1.2. Draft and circulate a central policy on peatlands and their use	M	6 - 15	All relevant agencies	
			5.1.3 Draft and formulate new laws and regulations where necessary	M	6 - 15		
			5.1.4 Draft an EIA process document for consideration by government as suggested under the HoB initiative	M	6 - 12	All relevant agencies	

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			5.1.5 Strengthen enforcement activities within peatland areas	H	0 - ongoing	All relevant agencies	
			5.1.6 Strengthen regulations on resource use in peatlands	H	0 - ongoing	All relevant agencies	
6. Fire Prevention, Control and Monitoring	6.1 Reduce and minimise occurrence of fire and associated haze	6.1 Reduce occurrences of fire and associated haze	6.1.1 Analyse trends in fire occurrences in Brunei in terms of area and frequency	H	0 - 6	FRD, FD, BSP, PWD, DCA, DEPR, TCP	
			6.1.2 Identify areas most prone to fire and produce fire risk map	H	0 - 12	FRD, FD, BSP, PWD, DCA, DEPR, TCP	
			6.1.3 Implement water control measures to reduce fire risk during dry periods	H	0 - ongoing	FRD, PWD, BSP	
			6.1.4 Devise fire prevention, forecasting and control measures	H	0 - 12	FRD, BSP, DEPR.	
			6.1.5 Establish specialised peat fire prevention and control units in agencies where they did not exist and upgrade existing fire fighting teams COMMENT: Already existing in Fire Service, Brunei Shell and Forestry Dept	H	0 - 12	FRD, BSP, DEPR, DoA, JKR, FD	
			6.1.6. Devise and implement zero-burning strategies for activities in peatlands	M	0 - ongoing	FRD, BSP, DEPR, DoA, JKR, FD	
7. Conservation	7.1 Promote conservation of peatland biodiversity	7.1 Promote conservation of peatland biodiversity	7.1.1 Identify peatland areas which are currently under protection	H	0 - 6	FD, BM, Land Dept	

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			7.1.2 Ascertain status and management needs of existing peatland Totally Protected Areas (TPAs), especially Ulu Mendaram Wildlife Sanctuary. COMMENT: Check status of Ulu Mendaram Wildlife Sanctuary with Brunei Museum	H	0 - 6	FD, BM, Land Dept	
			7.1.3 Protect Ulu Mendaram Peatlands [in line with proposal by Anderson and Marsden]	M	0 - 6	FD, BM, Land Dept	
			7.1.4 Modify existing TPA system to ensure that good representatives of the whole range of floristic communities on peat are conserved, identified from the inventory and assessment activities	M	0 - 24	FD, BM, LD	
			7.1.5 Support management plan and strategy for Tasek Merimbun ASEAN Heritage Park	M	0 - ongoing		
			7.1.6 Collaborate with the Brunei Tropical Biodiversity Centre and the Heart of Borneo (HoB) initiative in identification and conservation of peatland areas	H	0 - ongoing		
8. Integrated Management of Peatlands	8.1 Promote multi-agency involvement in peatland management	8.1 Promote integrated / multi-stakeholder management of peatlands	8.1.1. Based on inventory and assessment activities, formulate an integrated zoning plan for peatlands , including areas for sustainable forestry, for agriculture, conservation, recreation and tourism activities	H	0 - 15	All relevant agencies Brunei Shell Brunei army Telecommunications company, electrical, sewerage, public utilities etc.	
			8.1.2 Work with relevant agencies such as Land Dept, Town and Country Planning and Housing Department to investigate other methods for extracting and sourcing of sand for housing development	H	0 - 12	BELAIT DO, HOUSING, LD, SD, BSP	
			8.1.3. Ensure peatland issues are integrated into national and district physical plans	M	0 - ongoing	All relevant agencies	

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	8.2 Promote integrated water resources and peatland management using a basin-wide approach and avoiding fragmentation	8.2 Improve water management in peatland areas	8.2.1. Stop further drainage of pristine peatland and degraded areas except those currently which are being used or are suitable for agriculture (specifically the shallow peat less than 1 m depth)	H	0 - 12	PWD, DoA, FD	
	8.3 Promote integrated forest and peatland management	8.3 Promote sustainable forestry on peatlands	8.3.1. Evaluate sustainability of current timber extraction practices on peatland and recommend best methods to avoid detrimental effects.	M	0 - 12	FD	
	8.4 Manage agriculture in peatland areas in integrated manner	8.4 Promote sustainable methods of agricultural development on degraded peatland	8.4.1 Identify and map areas suitable for agriculture	H	0 - 6	DoA	
			8.4.2. Restrict agricultural development on peatland to those crops requiring a high water table and restrict to shallow (<1 m depth) and degraded areas of peat	M	0 - 12	DoA	
	8.5 Promote integrated community livelihood and peatland management	8.5 Ensure that local people's use of peatlands is integrated into peatland management plans	8.5.1. Compile and review resource use and methods of harvesting by local people in peatlands and integrate information into integrated peatland management plans	H	0 - 18	UBD, PNHS	
9. Establishment	9.1 Promote best management practices	9.1 Promote best management practices in peatland management	9.1.1 Develop demonstration sites to showcase best practices in ecotourism, sustainable forestry, agriculture and conservation	M	0 - 24	FD, DoA, TOURISM, BM, UBD	
10. Restoration and Rehabilitation	10.1 Develop appropriate techniques for the restoration or rehabilitation of degraded peatlands	10.1 Identify strategies to restore degraded peatlands	10.1.1 Map and investigate the characteristics of the drainage canal network in peatland areas such as discharge, patterns and seasonality.	H	0 - 12	JKR, FD, LD, SD, TCP	
			10.1.2. Undertake rapid pre feasibility study on hydrological regime and blocking of canals in peatland areas	H	0 - 6	JKR, TCP, LD, SD	
			10.1.3 Undertake rapid pre feasibility study on extension of the Seria ring drain to other areas involving ASEAN and other regional expertise	H	0 - 6	JKR, TCP, LD, SD	

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	10.2 Rehabilitate burnt, drained and degraded peatlands	10.2 Implement pilot projects on strategies to rehabilitate degraded peatlands	10.1.4 Identify and promote restoration and rehabilitation measures which are applicable to Brunei	H	0 - 12	JKR, FD, TCP, UBD	
			10.2.1. Undertake pilot project on blocking of canals in a degraded peatland area	H	6 - ONGOING	JKR, UBD, FD	
			10.2.2. Identify source of seedlings and include the role of forestry's in acquiring seeds/seedlings for replanting of suitable peat forest species which are not regenerating naturally	H	0 - ONGOING	FD, ISB-MTP, UBD	
			10.2.3 Undertake trial planting of suitable peat swamp forest tree species in pilot areas where the water table has been restored				
			10.2.4 Develop rehabilitation plan and implement for sand mining areas on peatland including identifying options for water-based recreational activities	H	0 - ongoing	BELAIT DO, HOUSING Dept, JKR, FD	
			10.2.5 Assess post-harvest rehabilitation plans for logged areas and ensure compliance	M	6 - 12	FD	
			10.2.6 Implement obligatory replanting programme for logged peatland forest in particular the alan bunga peat swamp forest	H	0 - 12	FD	
11. Peatlands and Climate Change	11.1 Protect and improve function of peatlands as carbon sequestration and storage	11.1 Maintain the carbon storage and sequestration functions of peatlands	11.1.1 Obtain baseline data on carbon storage, carbon sequestration and carbon emissions from intact and degraded peatlands	H	6 - ongoing	UBD, BSP	
	11.2 Support peatland adaptation process to global climate change	11.2 Assess impacts of climate change and develop adaptation	11.2.1. Assess the impact of possible climate change scenarios on peatlands in Brunei	H	6 - 12	DEPR, UBD, BSP, DCA Met Office, JKR Water Services	

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		measures	11.2.2. Identify management strategies to minimise peatland vulnerability to global climate change	H	12 - 18	DEPR, UBD, BSP	
			11.2.3. Integrate peatland issues into national climate change adaptation plans	H	6 - ongoing	All relevant agencies	
			COMMENT: Brunei does not have one yet? Find out status from DCA Meteorological office				
			11.2.4 Review and analyse long term meteorological data from relevant agencies to forecast trends and effects	H	0 - 6	DCA	
12. Regional Cooperation	12.1 Promote exchange of expertise in addressing peatland management issues	12.1 Promote regional and trans-border cooperation and transfer of expertise in addressing peatland management issues	12.1.1. Initiate high level discussions and develop action plan on cross-border cooperation with Sarawak on conservation and management of Ulu Mendaram peat dome, the Labu peat swamp forest and shared domes along the lower reaches of the Belait River	H	0 -18	FD, FOREIGN AFFAIRS MIPR, MoD	
			12.1.2. Ensure that activities are carried out in collaboration with the Heart of Borneo (HoB) project	M	0 - ONGOING	All relevant agencies	
			12.1.3. Identify trainers, resource persons and experts from local and other ASEAN countries to share expertise	H	0 - ONGOING	UBD, PNHS,	
13. Financing of the Initiative	13.1 Generate financial resources required for the programmes and activities to achieve target of the strategy	13.1 Create awareness of importance of conservation and rehabilitation of peatlands amongst donors	13.1.1. Produce awareness materials for funding organisations on the existence of pristine peatlands in Brunei and their importance in carbon storage and carbon sequestration; and the cost-effectiveness of reducing / preventing carbon emissions through conservation of intact peatlands and rehabilitation of degraded peatlands	H	0 - 6	GEC, NGOs	
			13.2 Identify funding agencies and funding mechanisms and prepare	13.2.1. Identify priority projects and produce proposals for funding	H	0 - 3	GEC, UBD, PNHS, DDEPR, FD, ISB-MTP

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		proposals for submission to donors	13.2.2. Compile list of potential funding sources and circulate proposals (regional) to potential funders	H	0 - 6	GEC, UBD, PNHS, DDEPR, FD	
			13.2.3. Explore opportunities for funding under the Convention on Biological Diversity (CBD) via the Heart of Borneo project COMMENT: Funds within Brunei? Brunei Shell, National Development Plan (NDP), various internal departments such as Drainage Dept. or R&D budgets within various depts., corporate sector, LNG, banks such as Brunei Islamic Dev. Bank, Yayasan HMHB, Standard Chartered and HSBC, Bilateral donors such as Korea, Japan, Singapore etc.	H	0 - ongoing	GEC, UBD, PNHS, DDEPR, FD, ISB-MTP	
			13.1.5. Explore opportunities for funding rehabilitation and conservation projects under innovative mechanisms such as avoided deforestation and avoided carbon emission funds	H	0 - ongoing	GEC, UBD, PNHS, DDEPR, FD, ISB-MTP	

KEY TO AGENCIES

Brunei Muara District Office

Belait District Office

Tutong District Office

Temburong District Office

BM: Brunei MusDDEPRm

FRD: Fire and Rescue Department

BSP : Brunei Shell Petroluem

DoA : Department of Agriculture

DEPR : Department of Environment, Parks and Recreation, Ministry of Development

FD: Forestry Department

GEC: Global Environment Centre (regional NGO)

ISB-MTP: International School Berakas, Million Trees Project

PWD : Public Works Department (Water Services Dept. (DWS), Drainage and Sewerage Dept (DDS), Roads Dept (DOR))

HDD : Housing Development Department

FishD : Fisheries Dept

DCA Department of Civil Aviation (Metereological office)

LD: Land Department

SD: Survey Department

TCP: Town and Country Planning

UBD: Universiti Brunei Darussalam

NGOs : Penaga Natural History Society, Brunei Nature Society

BLNG Brunei Liquified Natural Gas

Tourism Development Department

Attorney General Office

Royal Brunei Police Force