



Republic of the Philippines

**Department of Environment and Natural Resources**

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**MEMORANDUM**

MAR 18 2022

**FOR/TO :** **The Director**  
DENR Foreign Assisted and Special Project Service

**The Bureau Directors**  
Forest Management Bureau  
Land Management Bureau  
Ecosystems Research and Development Bureau  
Environmental Management Bureau

**The Regional Executive Directors**  
DENR CAR, Regions 2, 4A, 4B, 7, 8 and 13

**The Center Heads**  
Forest and Wetland Research, Development and Extension Center  
Watershed and Water Resources Research, Development and Extension Center

**FROM :** **The OIC Director**

**SUBJECT :** **REVIEW OF THE IMPLEMENTATION OF THE NATIONAL ACTION PLAN FOR SUSTAINABLE USE AND PROTECTION OF PHILIPPINE PEATLANDS (NAPP) 2008-2020**

**DATE :**

This refers to the National Action Plan for the Sustainable Use and Protection of Peatlands in the Philippines (NAPP) 2008-2020 with the goal of promoting the sustainable management and wise use of peatlands for conservation of biodiversity, climate change mitigation and enhance benefits to local community. It was initiated by this Bureau in collaboration with other concerned government agencies, local government units, academe, and non-government organizations.

The NAPP spells out operational objectives and serves as the guide for the implementing agencies and collaborating partners on specific actions that must be undertaken to ensure the protections and sustainable use of peatlands in the Philippines.



As stakeholders in peatland management, we would like to request for your inputs on the achievements of targets, and issues or challenges in the implementation of NAPP. Your inputs will contribute to the formulation of strategies which will be included in the updating of the National Action Plan. We would appreciate receiving your comments/suggestions on or before **April 1, 2022**.

Attached herewith is the draft NAPP review matrix and the reply form for your reference and input. You may also download the draft NAPP review matrix at this link: <https://tinyurl.com/NAPPReview>. The NAPP may also be downloaded from the BMB website (<https://bmb.gov.ph/index.php/resources/downloadables/publications/action-plans>) as reference. For further information and any clarification, your staff may contact Ms. Zoisane Geam G. Lumbres or Ms. Janina Jasmine Mendoza from BMB Caves, Wetlands and other Ecosystems Division, through email address [cawed@bmb.gov.ph](mailto:cawed@bmb.gov.ph).

For consideration.

  
NATIVIDAD Y. BERNARDINO



Republic of the Philippines  
Department of Environment and Natural Resources  
BIODIVERSITY MANAGEMENT BUREAU



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ZAFD ZO-THO-AZO-THAZ

Sustainable Use and Protection  
of  
*Philippine*  
**PEATLANDS**



# **NATIONAL ACTION PLAN FOR THE SUSTAINABLE USE AND PROTECTION OF PHILIPPINE PEATLANDS**

UNDER THE FRAMEWORK OF THE  
ASEAN PEATLAND MANAGEMENT  
STRATEGY (APMS)

Prepared by:



Department of Environment and Natural Resources  
Protected Areas and Wildlife Bureau

With support from:



Australian Government  
AusAID



**Cardno  
ACIL**



Global Environment  
Centre





## PREFACE

The development of the National Action Plan for the Sustainable Use and Protection of Peatlands in the Philippines is initiated by the Protected Areas and Wildlife Bureau of the Department of Environment and Natural Resources (PAWB-DENR) in collaboration with other concerned government agencies, local government units, academe and non-government organizations.

Within the framework of the ASEAN Peatland Management Initiative (APMI) and consistent with the operational focal areas of the ASEAN Peatland Management Strategy (APMS), the National Action Plan focuses on multi-stakeholder partnership and collaborative approaches to attain the following objectives :

- (1) awareness raising and capacity building;
- (2) protecting peatlands with high conservation values;
- (3) setting up of appropriate institutional structure; and
- (4) developing sustainable peatlands management strategies.

The National Action Plan spells out specific operational objectives and serves as the guide for the implementing agencies and collaborating partners on specific actions that must be undertaken to ensure the protection and sustainable use of peatlands in the Philippines.

The PAWB-DENR will facilitate the implementation of the Action Plan at the national level to ensure that the goals and operational objectives are met on time. It shall likewise prepare and follow-up the issuance of an Executive Order from the Office of the President to ensure the integration of the NAP activities in the sectoral plans and programs of the various agencies and local government units involved in the NAP implementation.

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The preparation of the NAP on Peatlands was made possible through the collaborative efforts of various institutions, and individuals, as follows:

### Government Agencies:

**DENR** through the Protected Areas and Wildlife Bureau, Forest Management Bureau, Ecosystems Research and Development Bureau, Environmental Management Bureau, Foreign Assisted and Special Project Office, Public Affairs Office, Human Resources Development Service, Policy and Planning Office, the National Mapping and Resource Information Authority, National Water Resources Board and Regions 8, 12 and 13.

**Department of Agriculture** through the Bureau of Soils and Water Management, National Irrigation Administration, Agricultural Training Institute, **Department of Agrarian Reform**, **Department of Interior and Local Government** – Bureau of Fire Protection, **Department of Education**, **National Economic Development Authority**, **National Commission on Indigenous People**, **National Museum of the Philippines**

### Local Government Units

Provincial Government of Agusan del Sur

Municipality of San Francisco, Agusan del Sur

Municipality of Alang-Alang, Leyte

Municipality of Sta Fe, Leyte

Barangay Caimpugan, San Francisco, ADS

### Academe

University of the Philippines Diliman

University of the Philippines College of Forestry and Natural Resources

### Non-Government Organizations (Local)

Conservation International-Philippines

Laksam Buhay Foundation Inc

KLIMA-Climate Change Center

Propegemus Foundation

Philippine Australia Community Assistance Program

Society for the Conservation of Philippine Wetlands

### Global Environment Centre

Dr. Jon Davies

Mr. Chee Tong Yiew

### Friends of Peatlands

Mary Jean A. Caleda

## ACRONYMS

ACB	ASEAN Center for Biodiversity
ADB	Asian Development Bank
APMI	ASEAN Peatland Management Initiative
APMS	ASEAN Peatland Management Strategy
ASEAN	Association of South East Asian Nations
ATI	Agricultural Training Institute
BALS	Bureau of Alternative Learning Systems
BFAR	Bureau of Fisheries and Aquatic Resources
BFP	Bureau of Fire Protection
BSWM	Bureau of Soils and Water Management
EC-GAP	Coordinating Committee for Global Action on Peatlands
CHED	Commission on Higher Education
CI-Phils	Conservation International-Philippines
CLOA	Certificate of Land Ownership Agreement
CPPAP	Conservation of Priority Protected Areas Project
CSR	Corporate Social Responsibility
DAO	Department Administrative Order
DAR	Department of Agriculture
DAR	Department of Agrarian Reform
DA-RIARC	DA Regional Integrated Agricultural Research Center
DENR	Department of Environment and Natural Resources
DepEd	Department of Education
DOT	Department of Tourism
DTI	Department of Trade and Industry
EMB	Environmental Management Bureau
ERDB	Ecosystems Research and Development Bureau
FMB	Forest Management Bureau
GAA	General Appropriation Act
GEC	Global Environment Centre
GEF	Global Environment Facility



IACCC	Inter-Agency Committee on Climate Change
IPAS	Integrated Protected Areas System
IRA	Internal Revenue Allotment
KLIMA-MO	Climate Change Center-Manila Observatory
LGU	Local Government Units
LITWG	Local Inter-Agency Working Group
MTPDP	Medium Term Philippine Development Plan
NAMRIA	National Mapping and Resource Information Authority
NAP	National Action Plan
NCIP	National Commission on Indigenous Peoples
NGA	National Government Agency
NGO	Non-Government Organizations
NIA	National Irrigation Administration
NIPAS	National Integrated Protected Areas System
NITWG	National Inter-Agency Working Group
NMP	National Museum of the Philippines
NORMSIST	Northern Mindanao State Institute of Science and Technology
NWRB	National Water Resources Board
OIDCI	Orient Integrated Development and Consultancy Incorporated
PACAP	Philippine-Australian Community Assistance Programme
PAMB	Protected Area Management Board
PAO	Public Affairs Office
PAWB	Protected Areas and Wildlife Bureau
PIA	Philippine Information Agency
PNP	Philippine National Police
PTFCC	Presidential Task Force on Climate Change
SCPW	Society for the Conservation of Philippine Wetlands
UNCBD	United Nations Convention on Biological Diversity
UNFCCC	United Nations Framework Convention on Climate Change
VSU	Visayas State University

# **N**ATIONAL ACTION PLAN FOR SUSTAINABLE USE AND PROTECTION OF PHILIPPINE PEATLANDS

## **Part A. Background Information on Peatlands**

### **Extent and Status of peatlands**

Peatlands are wetland ecosystems that are characterized by the accumulation of organic matter called "peat" which derives from dead and decaying plant material under high water saturation conditions (CC-GAP, 2005). There are two sites in the Philippines where peatlands have been confirmed: the Agusan Marsh and the Leyte Sab-a Basin. However, information indicates that peatlands may be found in other areas. The location of these areas is shown in Figure 1.

The Sab-a Basin is a west-east elongated basin close to the north coast of Leyte separated by a metamorphic ridge. The total area is approximately 3,088 ha, about 44% of which has been reclaimed for agriculture. The remaining unutilized peatland (1,740 ha) in the eastern half of the basin consists of small remnant areas of swamp forest and sedge/grass peat swamp (ADB 2000). The two smaller peat basins in the area (Daguitan 210 ha) and Kapiwaran (430 ha) have mostly been converted to agricultural land.

The Agusan Marsh may hold the largest area of peatland in the Philippines. At present, there is no reliable estimate of the area as well as the distribution of peat within the marsh. Two areas of peatland within the marsh have been confirmed – the first one is found at the northern part of Bunawan, where most of the vegetation have been cleared and burned. The other is found at the west of Caimpugan and exhibits the characteristics of a peat dome where the forest is mostly intact except those



near the Gibong River. There may be other areas of peat within the marsh, especially in the *Terminalia copelandii*/*Metroxylon sagu* forests at the northwest portion of the marsh.

Peat is also probably present in the following areas:

1. Ligawasan Marsh in Mindanao, the largest marshland area in the Philippines;
2. Dolongan area in Basey, Western Samar (Bureau of Soils, 1975. Soil Survey of Samar Provinces, Philippines. Reconnaissance Soil Survey and Soil Erosion Survey);
3. Southern Leyte (Whitmore 1984) as cited in Draft Philippine Plant Conservation Strategy.;
4. Mt. Pulag in Northern Luzon (Leonard Co, pers. comm.);
5. Surigao del Norte, Northeastern Mindanao ( areas overlying ultramafic rocks) (Edwino Fernando, pers. comm.)
6. Naujan Lake Marshland
7. Pangasinan Floodplains

Figure 1: Areas of peatlands in the Philippines



## ***Values and Uses of Peatlands***

### ***Hydrology and Water Regulation***

Peatlands are very important for reducing flood peaks and for maintaining base flows in rivers during dry periods. The peat, acting as a sponge, absorbs water during wet periods and releases it slowly during dry period. This feature is important in the Agusan Marsh where the peat area is situated in the middle reaches of the Agusan River and not on the coastal plains. The contribution to dry season base flows in the Agusan River and maintenance of groundwater levels is high.

Likewise, the peatland in the Leyte Sab-a Basin has the capacity to absorb and hold lots of water during the rainy season. It slowly releases the water to maintain base flows in the outflow rivers. Both peatlands are most likely significant in preventing the penetration of saline water up rivers.

### ***Carbon Storage***

The Philippines has relatively little peatland compared to other countries, but still plays a significant role in the storage and sequestration of carbon from the atmosphere. Despite this small area, much of the peatland in the country is still intact and actively accumulating carbon.

### ***Biodiversity Values***

Available information suggests that biodiversity values of Philippine peatlands are high (Davies 2005 Assessment Report). Considering the Philippine flora's high level of endemism, the botanical survey of peatland areas may yield undescribed species. Moreover, at the ecosystem level of biodiversity, there seems to be a unique vegetation assemblage on the Caimpugan peat dome, which is different from the peat domes in nearby northwest Borneo.



There are no faunal surveys in Philippine peatlands, although wild boar and deer are found in the Agusan Marsh. The endemic Philippine Tarsier has been observed in the Leyte Sab-a Basin peatland together with the resident Egret population.

### ***Aesthetic Values***

High scenic values are found in identified Philippine peatlands, including the striking forests of Lanipao (*Terminalia copelandii*) in both the Agusan Marsh and the Leyte Sab-a Basin. Both peatlands are surrounded by uplands, from where impressive views of the peatlands can be gained.

### ***Socio-Economic Values***

Peatlands are also important to local communities as a source of wood like timber and firewood for domestic needs and non wood products like the *Frimbistylis globulosa*, locally known as "tikog" for mat making and other livelihood purposes. Important peatlands in both Agusan and Leyte Sab-a have been drained and converted to agriculture.

### **Problems on Peatland Management**

Since peat is a fairly rare soil type in the Philippines, there is a fundamental lack of awareness of what peat is, its properties and the appropriate management strategies for peatlands in all sectors (e.g local people, NGOs and government agencies). There is also very limited capacity for wisely managing peatlands and as well as a lack of a national institutional framework for peatland management.

This means that peatlands may be degraded through activities that do not take into account the special properties of peat. For example, some areas of peatland in the Leyte Sab-a Basin and the Agusan Marsh have been cleared for agriculture, but were abandoned after a few years due to poor yields. In addition, the Agusan Marsh faces

substantial migration from other parts of the Philippines, and farmers being familiar only with agriculture on mineral soils. Land clearance activities are also increasing in the Agusan Marsh and may pose a threat to intact peatlands. There is substantial clearing of land immediately to the west of the Caimpugan peat, which may threaten the unique vegetation communities due to fire and the lowering of the water table.

Large scale development projects, including irrigation components, also pose a threat to the Agusan Marsh and the Leyte Sab-a Basin. In the basin, some peatlands have been converted to agriculture by the defunct Leyte Sab-a Development Authority. Likewise, the Department of Agrarian Reform (DAR) continues to issue Certificate of Land Ownership Agreement (CLOAs) over the remaining peatlands. In the Agusan Marsh, 4,000 ha of the marsh could be declared as Alienable and Disposable for purposes of irrigation. It is not clear whether this is located in a peatland area.

With the two examples, it is clear that peatland may be converted to agriculture without any kind of land suitability assessment. This makes the characterization and mapping of peatland areas in the Philippines more urgent. These threats make it imperative that appropriate development strategies are implemented.

The Philippines can benefit greatly from the experience and knowledge gained by other countries in the sustainable management of peatlands. Information exchange and collaboration among relevant authorities in these other countries are also highlighted as a priority in this National Action Plan (NAP).

The above examples make the identification of peatland areas in the Philippines all the more urgent. These threats make it imperative that peatlands are identified, assessed and mapped so that appropriate development and sustainable use strategies can be implemented.



## **Existing Policies Relating to Peatland Management and Fires**

A recent review of Philippine Policy and Legislation related to wetlands emphasized the main points that may relate to peatlands as summarized below (Luna 2005):

1. There is no policy or legislation relating specifically to peatlands in the Philippines, although there are policies and laws aimed at wetlands in general that would include peatlands.
2. The Water Code of the Philippines (Presidential Decree No. 1067) declares wetlands as part of the public domain and cannot be alienated.
3. The multi-sectoral Protected Area Management Board (PAMB) has jurisdiction over peatlands within the National Integrated Protected Areas System (NIPAS), such as the Agusan Marsh.

## **Institutions or Agencies Responsible for or Actively Working on Peatlands**

At present, there are no institutions directly responsible for peatland management on a national basis. The Philippines is signatory to the Convention on Wetlands, more commonly known as the Ramsar Convention, since 1994. PAWB as its designated administrative authority is expected to provide guidance in the wise use and management directions over peatlands since by definition, peatlands are considered part of wetlands.

PAWB, in close coordination with other DENR units and offices, led the proposal development process for the IFAD/GEF Project on "Rehabilitation and Sustainable Use of Peatlands in Southeast Asia".

PAMBs would be responsible for conservation issues for individual peatlands within protected areas such as the Agusan Marsh Wildlife Sanctuary. One of the key activities recommended by the National Action Planning workshop held in Manila last 2 – 3 February 2006 is the setting up of an inter-agency working group which would oversee the development of an institutional framework for peatland management both at the national and local levels.



## **Part B. National Goal, Objectives and Strategies for Peatland Management**

### **National Goal and Objectives:**

**National Goal:** To promote the sustainable management and wise use of peatlands through awareness raising, capacity building and enhanced inter-agency cooperation for the conservation of biodiversity, climate change mitigation and the benefit of the local community.

### **Objectives:**

- (1) To raise awareness of peatlands at the national and local level;
- (2) To build capacity in relevant agencies/institutions on peatland management;
- (3) To protect existing peatlands with high functional and conservation values;
- (4) To set up appropriate institutional framework and enhance cooperation in the management of peatlands; and
- (5) To develop sustainable strategies in peatlands for local livelihood.

### **Proposed new policies and strategies for peatland management**

A National Policy for the sustainable use and protection of peatlands shall be developed. In the meantime, the following policy measures are considered urgent:

1. Declaration of peatlands with high biodiversity as protected areas;
2. Local level measure against the reclassification of peatlands as alienable and disposable lands;
3. Reversion of peatland areas covered by Certificate of Land Ownership Agreements (CLOAs) which are found to be unsuitable for agriculture back to forest land

### **Proposed Measures for Institutional Strengthening**

One of the key activities recommended by the National Action Planning workshop held in Manila from 2 – 3 February 2006 and affirmed during the NAP Validation Workshop in January 2008, is the setting up of an inter-agency working group which would oversee the development of an institutional framework for peatland management.

A multi-sectoral inter-agency working group on peatlands shall be created. This is going to build on, reactivate, strengthen and/or expand the Task Force on Wetlands under the Sub-Committee on Biodiversity of the Philippine Council for Sustainable Development (PCSD).

The ITWG is expected to perform the following functions:

1. Coordinate all efforts in the conservation and sustainable use of the country's peatlands and peatland resources;
2. Review and recommend policies, legislative and administrative measures and issuances relative to peatlands;
3. Recommend appropriate and sustainable use strategies to effectively implement the National Action Plan on Philippine Peatlands;
4. Establish linkage and networking with concerned local government units, national and international organizations to promote information exchange, sustained financing and synergies on the sustainable use and protection of Philippine Peatlands;

### **Proposed mechanism and allocation of resources for peatland management;**

1. Determine from current regular funding of National Government Agencies specific budget for activities that could include or subsume any of the activities in the NAP;
2. For concerned local government units to allocate funds from their Internal Revenue Allotment for peatlands within their jurisdiction;
3. Undertake feasibility studies on various modalities for use in generating sustainable funding mechanisms for peatlands (e.g. BOT agreements, tax incentives, MOA)



## PART C: National Action Plan Matrix

Focal Area	Operational Objectives	APMS Action	National Action	Priority	Time Frame	Implementing Bodies	Lead Agency(ies)	Existing Resources	Support Requirements			Linkages
									AT	ET	F	
-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13
1. Inventory and Assessment	1.1 Determine the extent and status of peatlands in the ASEAN region (including issues of definition)	1.1.1 Harmonize definition and classification of peatlands (e.g. type, depth, vegetation, water regime, extent) include flora and fauna	Adopt Ramsar definition as Philippine working definition until such time that the ASEAN comes up with its own definition	H	S	DENR, DA, Academic Institution, NGO's, and LGUs	DENR	Resource Persons	✓	✓	✓	GEC, Academic and Research Institutions
		1.1.2 Determine and update the extent and status of peatlands in the region through comprehensive national inventories (including status of protection, degradation, land use, fire risk, biodiversity values)	Identify peatland areas and conduct comprehensive profiling (including status of protection, degradation, land use, susceptibility to fire and biodiversity)	H	C	National Government Agencies & LGUs Acad. Institutions	DENR, DA/BSWM, NAMRIA and ITWG Member agencies	IRA from PLGU and MLGU, complimentary funds from regular funds of agencies concerned resource persons	✓	✓	✓	ADB's Agusan River Master Planning project, VSO in Agusan, Visayas State Univ Rainforestation Project, Samar Island Biodiversity Proj, GEF, ACB, CSR portfolio
		1.1.3 Ascertain the direct and indirect uses and values of peatlands and associated biodiversity	Ascertain the direct and indirect uses and values of peatlands and associated biodiversity water condition, indicator species, association and profile	H	C	LGUs and NGAs, academic institutions	DENR in close partnership with other NGAs and LGUs (e.g. Resource valuation: DENR)	IRA, regular funds of national agencies	✓		✓	NGOs and other funding agencies
	1.2 Assess problems and constraints faced in peatland management	1.2.1 Identify problems, constraints and opportunities faced in peatland management	Identify problems, constraints and opportunities faced in peatland management, offer possible solutions	H	S	LGUs and NGAs, NGO's Academic Institutions	National Agencies in close partnership with LGUs	IRA, regular funds of national agencies	✓		✓	Multisectoral
		1.2.2 Undertake assessment of issues related to peatland management to identify potential management options	Undertake advocacy/consultations on the problems/constraints identified	H	M	LGUs and NGAs	LGUs in close partnership with National Agencies	IRA, regular funds of national agencies	✓		✓	multisectoral
	1.3 Monitor and evaluate peatland status and management	1.3.1 Develop a guideline for monitoring of peatland areas for ecological change and management purposes	Implement/Maintain existing Biodiversity Monitoring System (BMS) in identified peatland areas	H	C	Protected Areas Mgt. Board (PAMB), LGUs for peatland outside PA's	DENR	Agency regular funds			✓	multisectoral

Time Frame: S – Short Term (2008-2010), M – Medium Term (2009-2015), L – Long Term (2008-2020);  
C – Continuous for actions that should be undertaken on a continuing basis/

Priority Level: L – Low, M – Medium, H – High  
Assistance Needed: (ASEAN/External/Technical/Financial) AT, ET, F



Focal Area	Operational Objectives	APMS Action	National Action	Priority	Time Frame	Implementing Bodies	Lead Agency(ies)	Existing Resources	Support Requirements			Linkages
									AT	ET	F	
-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13
		1.3.2 Undertake regular monitoring of peatland areas, including peatland water quality and physico-chemical conditions.	Conduct semi-annual monitoring of water regime and physico-chemical composition (baseline, pH and conductivity, dissolved O2 at min and max water level).	H	C	LGUs assisted by the DENR and DA	EMB-DENR, DA-BSWM, Academe and concerned LGUs	Agency regular funds			✓	NWRB, NIA, academic institutions
2. Research	2.1 Undertake priority research activities	2.1.1 Undertake research on appropriate techniques and practices for peatland management	Undertake research on appropriate techniques and practices for peatland management	M	C	DENR-ERDB and other research institutions (RDA Networks)	ERDB-DENR	Agency regular funds	✓		✓	All research institutions
		2.1.2 Undertake basic research on peatland ecosystems and species and hydrological processes to better understand peatland functioning	Undertake basic research on peatland ecosystems and species and hydrological processes to better understand peatland functioning	H	L	ERDB-DENR and other research institutions (Academe, Museums and local state universities and colleges)	ERDB-DENR, DA Reg'l Integrated Agricultural Research Center (DA-RIARC)	Agency regular funds	✓		✓	All research institutions
		2.1.3 Undertake R&D to enhance existing or develop new uses for peatland products and resources	Undertake R&D to enhance existing or develop new uses for peatland products and resources	H	C	ERDB-DENR and other research institutions	ERDB-DENR	Agency regular funds	✓		✓	All research institutions
		2.1.4 Undertake research to assess and support community development and livelihood activities building on indigenous knowledge and practices	Undertake research to assess and support community development and livelihood activities building on indigenous knowledge and practices	H	C	ERDB-DENR and other research institutions	ERDB-DENR	Agency regular funds	✓		✓	All research institutions
		2.1.5 Undertake economic valuation of peatland resources	Undertake economic valuation of peatland resources	H	M	ERDB-DENR and other research institutions	ERDB-DENR	Agency regular funds	✓	✓	✓	All research institutions, REECS

Focal Area	Operational Objectives	APMS Action	National Action	Priority	Time Frame	Implementing Bodies	Lead Agency(ies)	Existing Resources	Support Requirements			Linkages
									AT	ET	F	
-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13
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	3.1.1 Develop and implement a communication strategy for peatland management, including use of video, TV, media, schools, extension services, workshops, information exchange programmes and networks such as SEA-Peat Network	Implement IEC on peatlands (multimedia system)	H	C	DENR Public Affairs Office, DA-ATI / IEC clusters, Philippine Information Agency (PIA) and LGUs	LGUs in partnership with DENR, DA clusters	Agency regular funds	✓		✓	sponsorship from civil society, Society for the Conservation of Philippine Wetlands
		3.1.2 Develop appropriate local language awareness materials and activities to enhance understanding of peatland values, threats, impacts and sustainable management options	Develop localize information materials on peatlands	H	C	DENR Public Affairs Office, DA API/IEC clusters, and LGUs NGO's	LGUs in partnership with DENR, DA IEC cluster	Agency regular funds, IRA			✓	NGOs, DepEd, PIA
		3.1.3 Provide the general public and government agencies with information on the roles of peatlands, its ecology and economy	Provide the general public and government agencies with information on the roles of peatlands, its ecology and economy, through the media (print TV radio, internet media)	H	C	DENR Public Affairs Office, DA ATI/IEC cluster, and LGUs	LGUs in partnership with DENR, DA clusters	Agency regular funds			✓	Radio stations, TV, print media
			Integration of peatland concerns in school curriculum at TERTIARY levels	M	C	CHED, DepEd, Academe	DepEd	Agency regular funds			✓	Radio stations, TV, print media
	3.2 Build institutional capacity on management of peatlands	3.2.1 Support and enhance human resources and strengthen institutional capacity	Support and enhance human resources and strengthen institutional capacity	H	C	DENR with DA, DAR and LGUs Academic institutions	DENR in partnership with LGUs and NGAs	Agency regular funds	✓	✓	✓	ASEAN countries; ACB

Focal Area	Operational Objectives	APMS Action	National Action	Priority	Time Frame	Implementing Bodies	Lead Agency(ies)	Existing Resources	Support Requirements			Linkages
									AT	ET	F	
-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13
		3.2.2 Source expertise to train and develop a core group of local experts	Source expertise to train and develop a core group of experts at the national and local levels	H	C	DENR with DA, DAR and LGUs Academic institutions	DENR in partnership with LGUs	Agency regular funds	✓	✓	✓	ASEAN countries, ACB
		3.2.3 Establish mechanisms and organise training programmes, workshops, attachments and study tours	Establish mechanisms and organise training programmes, workshops, attachments and study tours	H	C	DENR with DA, DAR and LGUs	DENR in partnership with LGUs	Agency regular funds	✓	✓	✓	ASEAN countries, ACB, NEDA
		3.2.4 Support transfer of technology for peatland management including practical training	Support transfer of technology for peatland management including practical training	H	C	DENR with DA, DAR and LGUs	DENR	Agency regular funds	✓	✓	✓	ASEAN countries, ACB
		3.2.5 Provide necessary equipment and training to appropriate authorities in areas with high fire risk	Provide necessary equipment and training to appropriate authorities in areas with high fire risk	M	C	DENR with DA, DAR, DILG Bureau of Fire Protection and LGUs	DENR	Agency regular funds	✓		✓	ASEAN countries, NEDA
		3.2.6 Enhance coordination among stakeholders related to peatland management through networks or working groups	Enhance coordination among stakeholders related to peatland management through networks or working groups	H	C	DENR with DA, DAR and LGUs	DENR	Agency regular funds			✓	multisectoral
4. Information Sharing	4.1 Enhance information management and promote sharing	4.1.1 Establish or strengthen existing information systems or clearing houses to manage and make available information related to peatlands	Establish or strengthen existing information systems or clearing houses to manage and make available information related to peatlands at all levels	H	C	ITWG	DENR	Agency regular funds			✓	multisectoral



Focal Area	Operational Objectives	APMS Action	National Action	Priority	Time Frame	Implementing Bodies	Lead Agency(ies)	Existing Resources	Support Requirements			Linkages
									AT	ET	F	
-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13
5. Policies and Legislation		4.1.2 Strengthen regional sharing of experience and networking through use of mechanisms such as the ASEAN Haze Action Online, the SEA Peat Portal, workshops, documentation, network as well as strengthening national capacity for information sharing	Support the strengthening of regional sharing of experience and networking through use of mechanisms such as the ASEAN Haze Action Online, the SEA Peat Portal, workshops, documentation, network as well as strengthening national capacity for information sharing	H	C	ITWG	DENR	Agency regular funds	✓		✓	multisectoral
		4.1.3 Enhance regional information sharing on the extent, status and management of peatlands and develop handbooks for best management practices	Enhance regional information sharing on the extent, status and management of peatlands and develop handbooks for best management practices	H	C	ITWG	DENR	Agency regular funds	✓		✓	multisectoral
	5.1 Develop or strengthen policies and legislation to protect peatlands and reduce peat fire	5.1.1 Designate specific institutions for peatland management	Create an inter-agency technical working group for peatland	H	S	ITWG	DENR, DA, and LGUs	Host rotation by ITWG		✓	✓	ITWG
		5.1.2 Formulate or update national policies and strategies relating to peatland conservation and wise use, including facilitation of integrated land use planning and management for peatlands	Formulate specific policy to address issues regarding peatlands	H	S	ITWG at the national level/PAMB for protected areas and LGUs for non-NIPAS area	DENR, DA, and LGUs	DENR-GAA, LGU-IRA, DA-BSWM-GAA			✓	- Congress (long-term), - DAR Adjudication Board (short-term)
		5.1.3 Strengthen law enforcement	Review existing policies/laws and strengthen law enforcement	H	S	ITWG, PAMB, DILG and LGUs	DENR (include LGUs)	DENR, GAA and LGU-IRA			✓	Law enforcement agencies and deputized Environment and Natural Resources Protection (ENRP) Committees

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									AT	ET	F	
-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13
6. Fire Prevention, Control and Monitoring	6.1 Reduce and minimize occurrence of fire and associated haze	6.1.1 Identify peatlands in the region with high fire risk and develop and promote preventive measures	The APMS Action under Operational Objective 1.1.2 calls for the identification of peatlands and their comprehensive profiling. The profiling of peatlands would include items corresponding to whether fire is an identified threat to a particular peatland. Preventive measures would thus be designed according to the causal factor behind the occurrence of fire		S	DENR, LGU, DILG Bureau of Fire Protection	DENR Regional Office/LGU/ DA-BSWM	DENR-GAA, LGU-IRA, DA-BSWM-GAA			✓	
		6.1.2 Monitor weather conditions and hot spots in high-risk areas and issue alerts as appropriate	Monitor weather conditions and hot spots in fire-risk peat areas and issue alerts as appropriate		L	DENR, DOST, PAGASA and LGUs	DENR Regional Office and LGU	DENR-GAA, LGU-IRA			✓	
		6.1.3 Manage water tables in peatlands appropriately according to land use to prevent fire	Ensure that land-use do not contribute to lowering of water table. Incorporate FLUP and other site management plans into CLUP of LGUs		L	LGU DA-BSWM, NIA, DENR	LGU DA-BSWM, NIA	LGU-IRA, DA-BSWM, NIA - GAA			✓	
		6.1.4 Develop and promote appropriate techniques for fire control in peatlands	Develop and promote appropriate techniques for fire control in peatlands		C	DENR, (DILG / BFP	DENR, DILG / BFP	DENR, DILG / BFP regular funds		✓	✓	Academe and NGOs
		6.1.5 Strengthen coordination among and capacity of agencies involved in peatland fire prevention and control, including establishment of peat fire prevention units in agencies responsible for forestry and agriculture	Create peat fire prevention unit and develop fire preparedness/management plans		C	LGU, DENR	DENR, DILG-BFP, LGU	DENR, LGU, DILG-BFP regular funds	✓		✓	Academe and NGOs

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									AT	ET	F	
-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13
		6.1.6 Actively involve villagers and other local stakeholders in fire prevention and control	Actively involve communities and other local stakeholders in fire prevention and control, train local community to assist in fire fighting	H	C	DENR, LGU, NCIP	DENR, LGU, NCIP	NCIP, DENR, LGU regular funds			✓	
		6.1.7 Implement zero-burning strategies for all commercial agriculture and zero or controlled burning for local communities	Assess the practices on commercial agriculture and small farmers regarding the burning of areas identified as peatlands. The assessment would be part of the profiling called for in the National Action under Operational Objective 1.1.2.	L	L	DA, LGU	DA and LGUs	Regular funding			✓	
7. Conservation of Peatland Biodiversity	7.1 Promote conservation of peatland biodiversity	7.1.1 Identify peatlands in the region which are of regional or global importance for conservation of biodiversity	The profiling under Operational Objective 1.1.2 would take into consideration the importance of peatlands in the conservation of biodiversity, in short biodiversity assessment shall be made.	H	S	DENR	DENR	Regular GAA	✓		✓	Academe, NGOs
		7.1.2 Assess the status, gaps and threats within the network of protected areas for peatlands and peatland biodiversity and identify priority areas for conservation	From the identified peatlands, prioritize areas for conservation	H	C	DENR and LGUs	DENR	Regular Agency funds	✓	✓	✓	Academe, NGOs



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									AT	ET	F	
-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13
		7.1.3 Legally designate national, regional or globally significant peatland sites as conservation or protected areas	Set aside as protected areas or conservation areas by proclamation or by law those peatlands that have been identified to be nationally, regionally or globally important for biodiversity conservation or ecological services	H	C	DENR and LGUs	DENR-PAWB	Regular regular funds	✓		✓	Academe, NGOs
		7.1.4 Strengthen all aspects including 'institutional frameworks' of the management of peatland conservation areas	Strengthen mgt. and protection of peatland areas within PAs e.g. Agusan Marsh WS	H	C	ITWG at the national level PAMB for protected areas and LGUs for non-NIPAS area	DENR, PAMB and LGU				✓	Development Alliance of Agusan Marsh Wildlife Sanctuary and other site based NGOs
		7.1.5 Develop sustainable utilization of peatland resources for local communities within peatland conservation areas	Assess extent of sustainable use of peatland resources	H	C	DENR, DA and LGUs	DENR		✓		✓	Academe, NGOs, other NGAs (include DOT, BFAR)
8. Integrated Management of Peatlands	8.1 Promote multi-agency involvement in peatland management	8.1.1 Establish national inter-agency working groups to develop strategies for peatland protection and sustainable use	The inter-agency group proposed to be formed as called for under National Action corresponding to APMS Action 5.1.1 shall be tasked to develop strategies for peatland protection and sustainable use.	H	S	Multi-sectoral and agencies represented in the ITWG	DENR and DA				✓	Academe, NGOs, and NGAs
		8.1.2 Encourage sustainable management practices for all peatland users, including those from forestry, agriculture and plantations	Develop guide for wise utilization of peatland resources/development e.g. proper water mgt.	H	C	Multi-sectoral and agencies represented in the ITWG	ITWG		✓		✓	

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	8.2 Promote integrated water resources and peatland management using a basin-wide approach and avoiding fragmentation	8.2.1 Establish the fundamental importance of the natural water regime as the basis for best practice peatland management	The national action corresponding to APMS Action 5.1.2 that calls for the guides for wise use utilization of peatland resources and development shall address peatland users including those from forestry, agriculture and commercial plantations for forestry or agriculture.	H	S	ITWG	ITWG		✓		✓	
		8.2.2 Control or restrict further drainage and conversion (for agriculture, plantation, forestry, settlement, mining, infrastructure and other uses) of deep peat, peat domes, undisturbed peatlands as well as other ungazetted areas of conservation importance	Develop laws/policies restricting further conversion of peatlands. link to: 5.1.2	H	C	ITWG	ITWG	Agency regular funds			✓	
		8.2.3 Develop guidelines to assist the process to restrict the opening up and drainage of deep peat, peat domes and undisturbed peatlands	Develop guidelines to assist the process to restrict the opening up and drainage of deep peat, peat domes and undisturbed peatlands. This forms part of national action under 5.1.2	H	C	ITWG	DENR, PAMB or LGU (for non PA)	Agency regular funds	✓		✓	NIA
		8.2.4 Develop an appropriate water management regime for peat domes and surrounding peat areas, including the blocking of disused or illegal canals	Subsumed under: 8.2.1								✓	



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	8.3 Promote integrated forest and peatland management	8.3.1 Ensure the long-term designation and protection of peat swamp forest in reserves and take urgent measures to protect the remaining undisturbed peatlands	Set aside important peatlands as protected areas or conservation areas by proclamation or by law	H	C	DENR and LGUs	DENR-PAWB					Academe and NGOs
		8.3.2 Develop forest management plans and guidelines for production forest reserves *										
		8.3.3 Develop and promote sustainable forest management practices, including low-impact harvesting, zero-drainage harvesting, etc *										
		8.3.4 Develop and implement measures for post harvesting rehabilitation *										
		8.3.6 Control illegal harvesting practices and associated trading activities	Implement Wildlife Act (RA 9147)	H	C	DENR, LGUs	LGUs, DENR	Regular agency funds			✓	
		8.3.8 Document peatland biodiversity and socio-economic, cultural, and ecological uses	Document peatland biodiversity and socio-economic, cultural and ecological uses. This is closely tied up as an activity under 1.1.2 and 7.1.2	H	L	ITWG member agencies, NCIP and LGUs	NCIP and LGUs	Regular agency funds	✓		✓	Academe, and NGOs
	8.4 Manage agriculture in areas adjacent to the peatlands in integrated manner	8.4.1 Restrict future agricultural development to degraded shallow peat	Conduct land suitability assessment in shallow peat (less than 1 meter). If found feasible, confine agricultural activities in these areas	H	S, C	DA and LGU	DA and LGUs	Regular agency funds	✓		✓	Academe, and NGOs

\* May apply in Peatland previously released under IFMA

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		8.4.2 Document and promote indigenous knowledge and methodologies, such as techniques for prevention of subsidence and over-drainage, and low impact land-clearing and agricultural practices in existing peatland agricultural areas	Document and promote indigenous knowledge and methodologies, such as techniques for prevention of subsidence and over-drainage, and low impact land-clearing and agricultural practices in existing peatland agricultural areas	H	C	DA, NCIP and LGU	DA with NCIP and LGUs		✓		✓	Academe, and NGOs
		8.4.3 Develop best practice land clearing techniques affordable and appropriate for communities living in peatland areas	Develop best practice land clearing techniques affordable and appropriate for communities living in peatland areas after the conduct of land suitability assessment in shallow peat (less than 1 meter)	H	C	DA and LGU	DA		✓		✓	Academe, and NGOs
	8.5 Promote integrated community livelihood and peatland management	8.5.1 Enhance local community knowledge of peatlands through awareness and education	Enhance local community knowledge of peatlands through awareness and education. This is closely linked with national actions under 3.1	H	S	ITWG member agencies and LGUs, CSOs	LGUs	Agency GAA and IRA	✓		✓	
		8.5.2 Support the protection and sustainable use of peatlands through application of customary laws and traditional practices	Document indigenous knowledge system and practices and incorporate into mgt. strategies for peatlands (link with research)	H	C	ITWG member agencies and LGUs	NCIP and LGUs	Agency GAA and IRA	✓		✓	
		8.5.3 Promote and enhance market access for traditional products developed by local communities from peatlands	Determine the current marketing schemes and take actions to improve the system	H	C	DTI and LGUs, DA-AMAD	DTI		✓		✓	



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-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13
		8.5.4 Support and empower local communities to protect and sustainably use peatland resources to contribute to their livelihood and environmental security	Support and empower local communities to protect and sustainably use peatland resources to contribute to their livelihood and environmental security	H	C	ITWG member agencies and LGUs, DA-ATI	LGUs		✓		✓	
		8.5.5 Introduce and strengthen alternative livelihoods to minimize impacts or dependence on peatlands	Introduce and strengthen alternative livelihoods to minimize impacts or dependence on peatlands	H	C	ITWG member agencies and LGUs, DA-ATI	LGUs		✓		✓	
		8.5.6 Engage grassroots stakeholders in participatory management of peatlands	Engage grassroots stakeholders in participatory management of peatlands	H	C	ITWG member agencies and LGUs, DA-ATI	LGUs			✓	✓	
	9.1 Promote best management practices	9.1.1 Identify and promote demonstration sites for best management practices, for example, site for eco-tourism, livelihood options, restoration, etc.	Explore the possibility of promoting the following as possible pilot sites for best practice example for peatlands: <b>Leyte:</b> Barangays Tabangohay and Divisoria in Alangalang; <b>Agusan:</b> Barangay Calimpugan, San Francisco extended to Barangay Kauswagan and Calingayan and San Teodoro in Bunawan, Talacogon; <b>Liguasan:</b> Durguan	H	C	ITWG and LGUs, DA-ATI	Leyte: LGU Agusan, PAMB	283,000 sq m training center with corns traversed by barangay roads in Leyte. Existing Visitors center access is via river in Agusan Marsh	✓		✓	DA - DAR projects Agusan River basin Project ABD ZOPAD covers Liguasan (e.g. microfinancing for rebets)

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-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13
		9.1.2 Establish pilot project(s) in each country (according to local needs) to test new sustainable management and fire prevention approaches for peatlands	Establish pilot sites to test new sustainable management for peatlands	H	S	ITWG and LGUs	DENR and LGUs				✓	
		9.1.3 Promote the application of best management practices for peatlands through research and development	Documentation of the uses of wetlands. Periodic conventions, exchange/study tours.	H	S	LGU, DENR, DA, DAR, NIA and DOT	DENR, DA			✓		
		9.1.4 Establish multi-country technical working groups to work on issues of common concern, such as peatland water management, peatland silviculture or rehabilitation options	The inter-agency group proposed to be formed as called for under National Action corresponding to APMS Action 5.1.1 shall work on the issues of common concern such as peatland water, management, peatland, silviculture	H	S	ITWG member agencies, LGUs and NGOs	LGU at local level DENR at the National level	none	✓		✓	
10. Restoration and Rehabilitation	10.1 Develop appropriate techniques for the restoration or rehabilitation of degraded peatlands	10.1.1 Develop and promote widely proper guidelines and manuals on peatland restoration and rehabilitation based on local knowledge, regional experience and R&D findings	Develop and publish manuals and other written guides (e.g. popular versions Komiks) for rehabilitation of peatlands. Regional consultations/Symposia. Review existing/ related guidelines on peatlands	H	S	ITWG member agencies, LGUs and NGOs	LGU at local level DENR at the National level DENR, Ros and LGUs to coordinate closely	Technical reports of previous projects e.g. Conservation of Priority Protected Areas Project (CPPAP), OICDI report on wetland evaluation in Leyte Sab-a	✓	✓	✓	
		10.1.2 Establish pilot projects to test techniques	Same areas as in 9.1.1. Establish pilot project to test new techniques	H	C	ITWG and LGU	DENR and LGU, NCIP for applicable areas		✓	✓	✓	



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									AT	ET	F	
-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13
		10.1.3 Organize specific training programmes related to peatlands restoration and rehabilitation	Conduct training needs analysis. Several processes are involved before training can commence. This will be undertaken by the ITWG	H	C	LGU DENR and DA	LGU DENR, DA, and NCIP for applicable areas		✓	✓	✓	Academe
		10.1.4 Revise and update guidelines based on experience from local knowledge and findings from R & D	Review the existing related guidelines/policies	H	C	ITWG and LGUs	ITWG and LGUs	none	✓	✓	✓	
		10.2 Rehabilitate burnt, drained and degraded peatlands	10.2.1 Identify and classify degraded peatlands according to the rehabilitation options based on local knowledge, regional experience, R&D findings and appropriate technology	H	C	ITWG and LGU	LGU, DENR, DA and NCIP for Ancestral domains	none	✓	✓	✓	
			10.2.2 Develop national programmes to initiate peatland restoration and rehabilitation activities	H	L	ITWG	ITWG	none	✓	✓	✓	
		10.2.3 Implement programmes for peatland rehabilitation	Implement programmes for peatland rehabilitation	H	C	ITWG	ITWG and LGUs		✓	✓	✓	
11. Peatlands and Climate Change	11.1 Protect and improve function of peatlands as carbon sequestration and storage	11.1.1 Quantify the above and below ground carbon content in peatlands in ASEAN countries and its role in mitigating climate change	Quantify the above and below ground carbon content in peatlands and its role in mitigating climate change	M	L	DENR (EMB, ERDB and FMB)	DENR		✓	✓	✓	Academe and NGOs working on Climate Change, KLIMA Climate Change Center - Manila Observatory (KLIMA-MO), World Agroforestry Center/International Center for Research on Agro-Forestry (ICRAF)

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									AT	ET	F	
-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13
		11.1.2 Identify degraded peatlands and explore the possibility for restoration through the Clean Development Mechanism (CDM) under the Kyoto Protocol	Identify degraded peatlands and explore the possibility for restoration through the Clean Development Mechanism (CDM) under the Kyoto Protocol	M	L	DENR(EMB, ERDB and FMB)	DENR		✓	✓	✓	Academe and NGOs working on Climate Change, klima-MO, World Agroforestry Center (ICRAF)
		11.1.3 Facilitate support for peatland management and restoration from other climate change-related funding mechanisms	Facilitate support for peatland management and restoration from other climate change-related funding mechanisms	M	L	DENR (EMB, ERDB and FMB)	DENR		✓	✓	✓	Academe and NGOs working on Climate Change e.g. KLIMA, World Agroforestry Center (ICRAF)
	11.2 Support peatland adaptation process to global climate change	11.2.1 Assess the impact of climate change scenarios on peatland ecosystem in ASEAN countries	Assess the impact of climate change scenarios on peatland ecosystem in the country	H	L	DENR-EMB	DENR-EMB		✓	✓	✓	Academe and NGOs working on Climate Change e.g. WWF, KLIMA, World Agroforestry Center (ICRAF, Philippine Atmospheric Geophysical and Astronomical Services Administration (PAGASA)
		11.2.2 Identify management strategies applicable to minimising peatland vulnerability on global climate change	Identify management strategies applicable to minimising peatland vulnerability on global climate change	M	L	DENR-EMB	DENR-EMB		✓	✓	✓	Academe and NGOs working on Climate Change (e.g. WWF, KLIMA) and World Agroforestry Center
		11.2.3 Integrate peatland issues into national or regional climate change adaptation plans	Integrate peatland issues into national and regional climate change adaptation plans	M	L	DENR-EMB	DENR-EMB		✓	✓	✓	Academe and NGOs working on Climate Change WWF, KLIMA World Agroforestry Center (ICRAF), Presidential Task Force on Climate Change (PTFCC), Inter-Agency Committee on Climate Change (IACCC)

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		11.2.4 Source support for peatland management from adaptation funds linked to the UNFCCC	Source support for peatland management from adaptation funds linked to the UNFCCC	M	L	DENR-EMB	DENR-EMB		✓		✓	Academe and NGOs working on Climate Change (e.g. WWF, KLIMA, PTFFC, IACCC)
12. Regional Cooperation	12.1 Promote exchange of expertise in addressing peatland management issues	12.1.1 Develop regional collaborative research projects and other activities involving experts from ASEAN countries	Support the development of regional collaborative research projects and other activities involving experts from ASEAN countries									Regional activity
		12.1.2 Strengthen the SEA Peat Network to include all experts on peatland in the ASEAN region										Regional activity
		12.1.3 Organise regional workshops to strengthen cooperation and exchange of experience	Organise national workshops and cross visit to strengthen cooperation and exchange of experience	M	C	ITWG	DENR, DA		✓	✓	✓	
	12.2 Establishment of 'centres of excellence' in the region for peatland assessment and management	12.2.1 Designate appropriate 'centres of excellence' in the region on specific aspects related to peatland management	Utilize the existing training facilities of the Agricultural Training Institute of Region 8 as a possible centre of excellence on certain aspect of peatland management	H	L	ITWG	DA- ATI in close coordination with the diff. ITWG member agencies and LGUs	Agency regular funds	✓		✓	ASEAN-ACB and external organizations
		12.2.2 Support the strengthening and selected activities of selected centres										Regional activity
		12.2.3 Enhance linkage and cooperation between centres								✓		Regional activity



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	12.3 Contribute to the implementation of other related agreements and regional cooperation mechanisms	12.3.1 Incorporate peatland issues into ASEAN frameworks related to Nature Conservation and Biodiversity, Multilateral Environment Agreements, Water Resource Management, Forestry and Agriculture, and Education	Ensure that peatland management issues and concerns in the Philippines are reflected in our commitments to relevant environmental agreements and conventions. Also ensure that peatland issues are incorporated in the NBSAP, NAP on Desertification and Land Degradation, and UNFCCC future iterations	M	M	ITWG	DA, DENR		✓		✓	
		12.3.2 Ensure contribution of regional strategy to the implementation of the ASEAN Agreement on Transboundary Haze Pollution	Support 12.3.2									Regional activity
		12.3.3 Support input on peatland issues into related global convention deliberations (including Ramsar Convention, Convention on Biological Diversity, Convention to Combat Desertification, and UN Framework Convention on Climate Change)	Support 12.3.3									Regional Activity
	12.4 Enhance multi-stakeholder partnerships to support peatland management	12.4.1 Strengthen partnership among stakeholders through the APMI and related activities	Support regional actions							✓		Regional activity

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		12.4.2 Forge or strengthen partnerships at local and country level among key stakeholders, including government agencies, NGOs, community and private sector to implement sound peatland management and development	Forge or strengthen partnerships at local and country level among key stakeholders, including government agencies, NGOs, community and private sector to implement sound peatland management and development Promote information exchange e.g forum, consultations, etc.	H	C	DENR, ITWG and other stakeholders	- do -	- do -	✓	✓	✓	ASEAN-ACB and external organizations
13. Financing of the Initiative	13.1 Generate financial resources required for the programmes and activities to achieve target of the strategy	13.1.1 Develop a financing strategy for implementation of the APMS including cost benefit analysis	Develop a financing strategy for implementation of the NAP including cost benefit analysis using as basis resource valuation studies	H	S	ITWG	DENR, DA, LGU		✓	✓	✓	ASEAN and external organizations
		13.1.2 Undertake a feasibility study to explore use of polluter-pay and user-pay schemes, tax incentives or other options to generate sustaining resources to support the implementation of the strategy	Undertake feasibility studies on various modalities for use in generating sustainable funding mechanisms for peatlands (e.g. BOT agreements, tax incentives, MOA)	H	S	ITWG	DENR DTI with Academe, LGUs		✓		✓	
		13.1.3 Establish or enhance funding mechanisms to support the strategy implementation	Establish, enhance and promote private-public sector partnerships in generating sustainable funding mechanisms for peatlands	H	S	ITWG	LGU in partnership with DENR and ITWG members agencies		✓	✓	✓	ASEAN-ACB and external organizations

Focal Area	Operational Objectives	APMS Action	National Action	Priority	Time Frame	Implementing Bodies	Lead Agency(ies)	Existing Resources	Support Requirements			Linkages
									AT	ET	F	
-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13
		13.1.4 Develop specific budgets and proposals for funding of activities by national governments, external supporters and other sources to generate resources to support the implementation of the strategy	Develop specific budgets and proposals for funding of activities by national governments, external supporters and other sources to generate resources to support the implementation of the strategy			ITWG and LGUs	DENR and other ITWG member agencies		✓	✓	✓	Agency initiative
		13.1.4 Develop specific budgets and proposals for funding of activities by national governments, external supporters and other sources to generate resources to support the implementation of the strategy	Develop specific budgets and proposals for counterpart funding by local governments (e.g. from IRA)	H	C	ITWG	ITWG member agencies and LGUs		✓	✓	✓	
		13.1.5 Organise regular forums among donors and supporters to facilitate coordinated funding of activities	Organise regular fora among donors and supporters to facilitate coordinated funding of activities	H	C	DENR and other stakeholders	LGU in partnership with ITWG and other stakeholders		✓	✓	✓	
		13.1.6 Establish funding mechanisms related to payments for peatland environmental services to generate funds for peatland conservation and management	Establish funding mechanisms related to payments for peatland environmental services to generate funds for peatland conservation and management	H	S	LGU in partnership with ITWG and other stakeholders <i>Protected Area Management Bureau (PAMB) (for applicable areas)</i>	LGU in partnership with ITWG and other stakeholders		✓	✓	✓	
		13.1.7 Establish appropriate mechanisms to channel resources to local government or community groups to support sustainable management and rehabilitation activities (e.g. micro credit)	Establish appropriate mechanisms to channel resources to local government or community groups to support sustainable management and rehabilitation activities (e.g. micro credit)	H	C	LGU in partnership with ITWG - FAMB (for applicable areas) and other community groups	LGU in partnership with ITWG and other stakeholders		✓		✓	



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**Review of the National Action Plan for the Sustainable Use  
and Protection of Philippine Peatlands (NAPP) Implementation**

**COMMENTS/SUGGESTIONS FORM\***

1. Matrix of additional accomplishments (of concerned Office)

<i>Focal Area (FA)</i>	<i>Comments/Additional Inputs</i>
1. Inventory and Assessment	
2. Research	
3. Awareness and Capacity Building	
4. Information Sharing	
5. Policies and Legislation	
6. Fire Prevention, Control and Monitoring	
7. Conservation of Peatland Biodiversity	
8. Integrated Management of Peatlands	
9. Establishment and Promotion of Demonstration Sites for Peatland Management	
10. Restoration and Rehabilitation	
11. Peatlands and Climate Change	
12. Regional Cooperation	
13. Financing of the Initiative	

2. What focal areas should be prioritized? Why? (rank the first five focal areas)

3. Matrix of Issues and Challenges on NAPP implementation

<i>Issues/Challenges</i>	<i>Recommendation/s to Address the Issue/Challenge</i>

(Add more rows, as needed)

4. What other agencies should be consulted?

\*Kindly accomplish and send to [cawed@bmb.gov.ph](mailto:cawed@bmb.gov.ph) cc'd to [zoisane.lumbres@bmb.gov.ph](mailto:zoisane.lumbres@bmb.gov.ph) on or before **April 1, 2022**.



## **REVIEW ON THE IMPLEMENTATION OF THE NATIONAL ACTION PLAN FOR SUSTAINABLE USE AND PROTECTION OF PHILIPPINE PEATLANDS (NAPP) 2008-2020**

### **BACKGROUND**

The National Action Plan for the Sustainable Use and Protection of Peatlands in the Philippines (NAPP) was first developed in 2008. It was initiated by then Protected Areas and Wildlife Bureau in collaboration with other concerned government agencies, local government units, academe, and non-government organizations.

The national goal of the NAPP is to promote the sustainable management and wise use of peatlands through awareness raising, capacity building and enhanced inter-agency cooperation for the conservation of biodiversity, climate change mitigation and the benefit of the local community.

Within the framework of the ASEAN Peatland Management Initiative (APMI) and consistent with the operational focal areas of the ASEAN Peatland Management Strategy (APMS), the National Action Plan focuses on multi-stakeholder partnership and collaborative approaches to attain the following objectives:

- To raise awareness on peatlands at the national and local level;
- To build capacity in relevant agencies/institutions on peatland management;
- To protect existing peatlands with high functional and conservation values;
- To set up appropriate institutional framework and cooperation in the management of peatlands; and
- To develop of sustainable strategies in peatlands for local livelihood.

The NAPP spells out operational objectives and serves as the guide for the implementing agencies and collaborating partners on specific actions that must be undertaken to ensure the protections and sustainable use of peatlands in the Philippines.

### **REVIEW PROCESS OF THE NAPP**

The review of the NAPP implementation was initiated in July 2020, in parallel with the review of the ASEAN Peatland Management Strategy 2006-2020. Inputs to the accomplishment of the NAPP from the concerned institutions were solicited through a questionnaire. The annual updates on the implementation of the NAPP, submitted to the ASEAN Task Force on Peatlands (ATFP), were also consolidated and included in the review of the NAPP.

Aside from the accomplishments, issues, and challenges in the implementation of the NAPP were also identified. Likewise, recommendations to strengthen sustainable management of peatlands in the Philippines in the next 10 years (2021-2030) were identified.

### **ACCOMPLISHMENTS**

Matrix of the Philippine National Action Plan on Peatlands (NAPP)

Focal Area	Operational Objectives	APMS Action	National Action	Accomplishments	Challenges
1. Inventory and Assessment	1.1 Determine the extent and status of peatlands in the ASEAN region (including issues of definition)	1.1.1 Harmonize definition and classification of peatlands (e.g. type, depth, vegetation, water regime, extent) include flora and fauna	Adopt the Ramsar definition as Philippine working definition until such time that the ASEAN comes up with its own definition	<p>The Philippines adopted the FAO definition with modification. Using the following definitions:</p> <ul style="list-style-type: none"> <li>•Peat refers to dead and partially decomposed plant material that have accumulated under high water saturation or waterlogged conditions. Peat soil is defined using the definition of histosol (organic soil) which are soils with cumulative organic layer(s) comprising more than half of the upper 80cm of the soil surface containing 35% or more organic matter (35% or more loss on ignition) or 18% or more organic carbon;</li> <li>•Peatlands refers to wetland ecosystems characterized by the accumulation of peat at the surface. Major characteristics of peatland are the presence of peat and permanent water logging. Peatlands may have vegetation in the form of trees, shrubs, grasses and mosses and are likely found in swamps and marshes;</li> </ul>	

		<p>1.1.2 Determine and update the extent and status of peatlands in the region through comprehensive national inventories (including status of protection, degradation, land use, fire risk, biodiversity values)</p>	<p>Identify peatland areas and conduct comprehensive profiling (including status of protection, degradation, land use, susceptibility to fire and biodiversity)</p>	<p>Since 2006, assessment of possible peatlands was conducted starting from Caimpugan PSF and Leyte Sab-a Peatland. Other peatland areas in the country were also assessed. In 2016, the Atlas of Philippine Inland Wetlands and Caves published by the BMB had recorded nine (9) peatland areas. As of 2019, a total of 24 possible peatlands areas all over the country had been reported. The peatland coverage in the country is estimated to be 20,000 hectares, to wit:</p> <ul style="list-style-type: none"> <li>• Peatlands in Agusan del Sur: <ul style="list-style-type: none"> <li>§ San Teodoro Peatland in Bunawan;</li> <li>§ Kalingayan-Consuelo in Bunawan;</li> <li>§ Pag-asa Peatland in Veruela and Sta. Josefa;</li> <li>§ San Vicente Peatland in Prosperidad;</li> <li>§ Rosario Peatland (Noveleta and Barangay Bayugan-3) in Rosario;</li> <li>§ Talacogon (Lake) Peatland;</li> <li>§ La Paz Peatland.</li> </ul> </li> <li>• Naujan Lake in Oriental Mindoro;</li> <li>• Kisloyan Peatland (small) in Oriental Mindoro</li> <li>• Kisloyan Peatland (big) in Oriental Mindoro</li> <li>• Tan-ag Ilaya Peatland in Lopez, Quezon;</li> <li>• Mount Pulag Lakes (Letep-Ngapos, Inkolos, and Ambulalacao) in Benguet</li> <li>• Leyte Sab-a Peatland</li> <li>• Nalukaban Peatland in Pambujan, N. Samar</li> <li>• Dolongan Peatland in Basey, Samar</li> <li>• San Miguel Peatland (Brgy. San Roque) in Surigao del Sur</li> <li>• Hibusong in Dinagat Island</li> </ul>	<p>Reported new record of peatlands are not yet assessed due to limited technical staff who can do the peatland assessment. There is a need to capacitate the technical staff of DENR field offices in terms of peatland assessment. Equipment mapping and assessment is very limited.</p>
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				<p>• Liguasan Marsh</p> <p>There are also reported peatlands in Sta. Teresita in Cagayan, Maydolong in Eastern Samar, and Tabau Natural Stand in Tinago, Siquijor.</p> <p>Peat swamp forest is now considered as one of the forest types in the Philippines. Publication of a book on Forest Type of the Philippines with a separate section on Peat Swamp Forest (University of the Philippines at Los Banos College of Forestry and Natural Resources (UPLB-CFNR and AKECOP).</p>	
		1.1.3 Ascertain the direct and indirect uses and values of peatlands and associated biodiversity	Ascertain the direct and indirect uses and values of peatlands and associated biodiversity water condition, indicator species, association and profile	Flora assessment of Caimpugan PSF was conducted by the National Museum.	
	1.2 Assess problems and constraints faced in peatland management	1.2.1 identify problems, constraints and opportunities faced in peatland management	identify problems, constraints and opportunities faced in peatland management , offer possible solutions	<p>One of the major problems assessed is the rampant conversion due to inadequate knowledge on peatlands prior to the development of the ASEAN Peatland Management Strategy and NAPP.</p> <p>In Agusan Marsh, there is an ongoing cleansing of data on overlapping land claims such as CLOA, CADT and patents from DENR. In Leyte Sab-a peatland, ongoing legal research of Environmental Legal Assistance Center, Inc. (ELAC) reveals that only 15% of the total awarded land through</p>	

				<p>CARPed are being cultivated. The agrarian beneficiaries disclosed that most of the lands awarded are either submerged in water or unproductive. A considerable number of lots (around 60) were already transferred, either sold or leased out. The legal study also revealed that one mother CLOA has not been cultivated or has actually never been occupied. This is a candidate for possible reversion process. For the lots with occupants/claimants, ELAC has proposed for participatory conservation and protection strategy rather than CLOA cancellations.</p> <p>(BSWM) is doing spatial mapping in the general context of wetlands to determine the trends in change in wetlands from 2003-2010.</p>	
		1.2.2 Undertake assessment of issues related to peatland management to identify potential management options	Undertake advocacy/consultations on the problems/constraints identified	<p>Dialogues with the local communities were in and surrounding peatland areas with a fuller understanding of peatlands and issues affecting them. Likewise, consultations with local government units, national government agencies, and civil society are being conducted to address the identified problems and threats in our peatlands.</p> <p>Specifically, in Leyte Sab-a, consultation at the community level has started with the aim to ensure all concerned Agrarian Reform Beneficiaries (ARB) are notified, well-informed and are part of the decision process. ARBs especially those in Lot 290 (137 hectares Mother CLOA) were informed of the result of the legal research and</p>	

				recommendations. In general, they are supportive of the plan for reversion as long as they their rights are not totally disregarded and their participation is still prioritized in any initiative in regards to Lot 290.	
	1.3 Monitor and evaluate peatland status and management	1.3.1 Develop a guideline for monitoring of peatland areas for ecological change and management purposes	Implement/Maintain existing Biodiversity Monitoring System (BMS) in identified peatland areas	Peatlands are being monitored under the Inland Wetlands Conservation Program/regular activities of the DENR. Currently, the detailed guidelines for the conduct of Biodiversity Assessment and Monitoring System (BAMS) for inland wetlands is being drafted and will be used as standard guidelines in assessment and monitoring of wetlands including peatlands.	
		1.3.2 Undertake regular monitoring of peatland areas, including peatland water quality and physico-chemical conditions	Conduct semi-annual monitoring of water regime and physico-chemical composition (baseline: pH and conductivity, dissolved O2 at min and max water level)	<p>Monitoring of peatlands through the regular activities under the inland wetland conservation program of the DENR field offices is being conducted.</p> <p>Regular monitoring of Caimpugan PSF and other peatlands within Agusan Marsh Willdlife Sanctuary (AMWS) is being conducted by Protected Area Management Office of the AMWS. Permanent plots for biodiversity assessment and monitoring system (BAMS) were established. An organized Bantay Danao Group volunteers conducted monthly patrolling/monitoring activities. They also assisted the PASu-AMWS, PENRO-LGU, MENRO San Francisco and CENROs during ground surveillance operations.</p>	



2. Research	2.1 Undertake priority research activities	2.1.1 Undertake research on appropriate techniques and practices for peatland management	Undertake research on appropriate techniques and practices for peatland management		
		2.1.2 Undertake basic research on peatland ecosystems and species and hydrological processes to better understand peatland functioning	Undertake basic research on peatland ecosystems and species and hydrological processes to better understand peatland functioning	<p>For Caimpugan PSF these are the ff.:</p> <ol style="list-style-type: none"> <li>1. "Carbon Storage and the Role in Climate Change Mitigation of the Caimpugan Peatland by Dr. Van Leeah Alibo</li> <li>2. Plant Diversity and Forest Structure of the Caimpugan Peat Swamp Forest in Mindanao, Island Philippines by Dr. Lowell Aribal</li> </ol> <p>Visayas State University are conducting the ff. researches in Leyte Sab-a Peatland:</p> <ol style="list-style-type: none"> <li>1. Assessment of black water, peat soil, carbon stock and physical characteristics of the Leyte Sab-a Peatland Forest</li> <li>2. Assessment of Biodiversity (flora, fish and micro-invertebrate communities, and selected fauna species)</li> <li>3. Hydrological Characterization of the Leyte Sab-a peatland</li> <li>4. Assessment of the Socio-political and ecological systems and its influence to land cover degradation</li> <li>5. Economic Valuation for the restoration and conservation of Leyte peatland</li> <li>6. Community dependence on peatland resources;</li> <li>7. Geoinformatics studies.</li> </ol> <p>Research conducted by DENR-ERDB:</p> <ol style="list-style-type: none"> <li>1. Bio-ecological Assessment of Suspected Peatlands. (2014) [Project sites: Lalaguna</li> </ol>	

				Marsh in Lopez, Quezon; Victoria, in Oriental Mindoro; and Talacogon & La Paz in Agusan del Sur;] 2. Greenhouse gas flux measurements and carbon stock assessment of peatlands" (on-going) [Project sites: Caimpugan Peatland in Agusan del Sur and Bambanin Peatland in Oriental Mindoro  (PAGASA) initiated R&D activities on FDRS.	
		2.1.3 Undertake R&D to enhance existing or develop new uses for peatland products and resources	Undertake R&D to enhance existing or develop new uses for peatland products and resources		
		2.1.4 Undertake research to assess and support community development and livelihood activities building on indigenous knowledge and practices	Undertake research to assess and support community development and livelihood activities building on indigenous knowledge and practices		
		2.1.5 Undertake economic valuation of peatland resources	Undertake economic valuation of peatland resources		

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	3.1.1 Develop and implement a communication strategy for peatland management, including use of video, TV, media, schools, extension services, workshops, information exchange programmes and networks such as SEA-Peat Network	<p>[Include CEPA on peatlands in DENR Communication Plan]</p> <p>Implement CEPA on peatlands (multimedia system) at the national and subnational levels</p>	<p>From zero knowledge on peatland there is a significant increase on awareness raising, both at the local and national level, of the importance of peatlands in the country. Information on peatland and its importance were disseminated in through various forms modules, pamphlets, posters, comics, exhibits, videos, websites, mobile peatland caravan, social media.</p> <p>[Check the DENR and BMB Communication Plan if peatland activities are mentioned]</p>	
		3.1.2 Develop appropriate local language awareness materials and activities to enhance understanding of peatland values, threats, impacts and sustainable management options	Develop localize information materials on peatlands	<p>Some of the assessment and researches conducted was translated into IEC collaterals. The flora assessment in Caimpugan PSF was later published as A Pictorial Handbook on the Peat Swamp Flora of Agusan del Sur, Philippines.</p> <p>Localized information materials were produced. Some of these are the following:</p> <ul style="list-style-type: none"> <li>- Peatland Brochures/Leaflets in Waray and Bisaya version</li> <li>- 2 sets (w/ 5 tarpaulins each) of posters, one in Bisaya and one Waray version</li> <li>- Pictorial Handbook on Peat Swamp Flora of Agusan Marsh, Mindanao</li> <li>- Comics "Juan Meets the Least Famous Forest"</li> <li>- in-house print of San Miguel Peatland (Surigao del Sur) and its importance in Bisaya version</li> <li>- Three video documentaries:</li> </ul>	



				<p>a. "Saving the Philippine Peatlands" (9 mins.)</p> <p>b. "Protecting the Philippine Peatlands" (18 mins.)</p> <p>c. ASEAN Peatland Forest Project Philippine Component: An Accomplishment Report – (11 min)</p>	
		3.1.3 Provide the general public and government agencies with information on the roles of peatlands, its ecology and economy	Provide the general public and government agencies with information on the roles of peatlands, its ecology and economy, <b>through the media (print TV radio, internet media</b>	<p>Awareness raising campaign on peatland was made possible through the use of social media and virtual platform for information sharing specifically during the celebration of World Wetlands Day and World Peatlands Day in February 2 and June 2, respectively. Some of these are the following:</p> <ol style="list-style-type: none"> <li>1. Social Media Cards (5 socmed cards) about peatlands in Agusan Marsh and partnership its conservation and protection;</li> <li>2. Kakai Kalikasan Episode 1: Peatland (c/o PLDT Sustainability Office) in Facebook</li> <li>3. Radio Program of RMN DZXL "Ang Tinig Klima" featured Conserving Peatlands and Climate Change</li> <li>4. Local radio guesting of DENR Region Offices re peatlands (e.g., Radyo Bombo in Leyte)</li> <li>5. Various press release on peatlands conservation and protection</li> </ol> <p>[Peatlands were highlighted as one of the special ecosystems in the Biodiversity Toolkit, an academic elementary school reference book being developed by CHED and BCSP]</p>	
			Integration of peatland concerns in school	Inclusion of peatland ecosystem in the curriculum of BS Environmental	

			curriculum at <b>TERTIARY levels</b>	Management in Visayas State University Alangalang Campus	
	3.2 Build institutional capacity on management of peatlands	3.2.1 Support and enhance human resources and strengthen institutional capacity	Support and enhance human resources and strengthen institutional capacity	<p>Concerned government agencies such as DENR, Dept. of Agriculture, Bureau of Fire Protection, DOST-PAGASA, National Museum of the Philippines were capacitated through series of trainings and cross visit to other ASEAN countries to learn more about peatland. Lectures, trainings, presentations for government agencies, local government units, and member of civil society were conducted during the implementation of the APMS-SEApeat projects.</p> <p>Various webinars conducted by different institutions and projects were conducted to share lessons learned.</p>	
		3.2.2 Source expertise to train and develop a core group of local experts	Source expertise to train and develop a core group of experts at the national and local levels	<p>40 technical staff from various government agencies (DENR national and field offices, NRB, BSWM, BFP, National Museum, etc.) concerned LGUs (LGU Sta. Fe, Alangalang, Agusan del Sur), and academe attended and underwent training on Peatland Assessment and Management in November 22-26, 2010. DENR-BMB sourced out peatland expert who prepared the Training module on Peatlands Assessment and Management and trained the participants.</p> <p>Philippine representatives were also trained/sent in cross visits/ exchange programs. Some of these were the following: 1. (2) Phil representatives attended the Training on Peatland Assessment &amp; Management for Regional Training of</p>	There is a need to retrain technical staff since most of the technical staff that has been trained were already retired in government service and/or transferred to other offices. In the next training, reecho of the training should be imposed for sustainability and knowledge transfer.

				<p>Trainers at Kuala Selangor, Malaysia on February 22-26, 2011</p> <p>2. (4) Phil representatives attended the Technical Workshop on the Best Management Practices for Sustainable Peatland Management in Central Kalimantan, Indonesia on 15-18 June 2011</p> <p>3. (6) Phil representatives attended the Peer Learning Programme on Best Management Practices on Peatlands for Community Groups Nakhon Si Thammarat Province, Thailand on May 16-18, 2012</p> <p>4. (2) Phil representatives attended Learning workshop on Sustainable Agriculture in Peatlands in Central and East Kalimantan Indonesia on June 2013</p> <p>5. (14) participants attended a five(5)-day international Study Tour conducted in Malaysia (North Selangor Peatland Forest and Klias Forest Reserve) last 3-7 October 2011</p> <p>Some of the lessons learned in these trainings had been replicated/modified in the country, such as the Sorjan Farming (Diversified System), Buying Living Tree System, and Fire Danger Rating System as early warning monitoring system.</p>	
		3.2.3 Establish mechanisms and organise training programmes, workshops, attachments and study tours	Establish mechanisms and organise training programmes, workshops, attachments and study tours	<p>The first Peatland Summit was held on October 24-26, 2012 in Leyte attended by 45 participants representing concerned National Government Agencies, Local Government Units of identified Pilot Sites, NGOs, POs, academe, and other stakeholders from Agusan and Leyte. It served as a platform for</p>	There is a need for follow up activities.



				experience sharing of best management practices among the participants especially from national agencies, local government units concerned and the communities around peatlands.	
		3.2.4 Support transfer of technology for peatland management including practical training	Support transfer of technology for peatland management including practical training	<p>Technical staff who participated in trainings and cross-visits/technical tour reechoed this by conducting community trainings. Some of these trainings to the communities were:</p> <ul style="list-style-type: none"> <li>• On-the-Job Training/ Workshop for Communities (Agusan and Leyte) around the Pilot Sites on Participatory Assessments to Improve Local Knowledge of Sustainable Use of Peatlands in 2012</li> <li>• Peer Learning Programme on Best Management Practices on Peatlands for Community Groups in May 2012</li> <li>• Learning workshop on Sustainable Agriculture in Peatlands in Central and East Kalimantan Indonesia in June 2013</li> </ul> <p>Some of the local communities from these two peatlands were also able to join in peer-learning activities on community-based best management practices on peatlands in other ASEAN countries like in Indonesia and Thailand. After these peer-learning activities, they were able to replicate or modify what they have learned in the study tour, like the Sorjan Farming which they learned in Thailand.</p>	
		3.2.5 Provide necessary equipment and training to appropriate authorities	Provide necessary equipment and training to appropriate authorities in areas with high fire risk	The Bureau of Fire Protection organized three (3) Training Workshops on Sustainable Use of Peatlands through the Prevention and Suppression of Wildland Fires on April 12-	

		in areas with high fire risk		15, 2010 (Davao City); Oct. 10-14, 2011 (Agusan del Sur); and Dec. 10-12, 2012 (Leyte); These were attended by a total of 100 firefighters.	
		3.2.6 Enhance coordination among stakeholders related to peatland management through networks or working groups	Enhance coordination among stakeholders related to peatland management through networks or working groups	Coordination among stakeholders related to peatland management was initially established through the National and Local Technical Working Groups for the APFP-SEApeat project in 2010. With the ending of the project, the National TWG has subsequently been subsumed into the national committee for Inland Wetlands. At the local level, the Protected Area Management Board of the AMWS, and the Consortium of the Leyte Sab-a project, became the coordination mechanism for the peatland- related activities in Agusan Marsh and Leyte Sab-a, respectively.	
4. Information Sharing	4.1 Enhance information management and promote sharing	4.1.1 Establish or strengthen existing information systems or clearing houses to manage and make available information related to peatlands	Establish or strengthen existing information systems or clearing houses to manage and make available information related to peatlands at all levels	(Relevant to 4.1.2)	
		4.1.2 Strengthen regional sharing of experience and networking through use of mechanisms such as the ASEAN Haze Action Online, the SEA Peat Portal, workshops, documentation,	Support the strengthening of regional sharing of experience and networking through use of mechanisms such as the ASEAN Haze Action Online, the SEA Peat Portal, workshops, documentation, network as well as strengthening	The Philippines has significant accomplishments in terms of information sharing. Some of these are the following: • In the 28th and 29 <sup>th</sup> Philippine Biodiversity Symposia - the Leyte Sab-a peatland has been featured. Researches on peatlands of the Visayas State University were presented during this event. • AMWS Ramsar Site 1009: Celebrating Platinum Anniversary and Facing the Future	



		network as well as strengthening national capacity for information sharing	national capacity for information sharing	<p>- Caimpugan peatland was featured. Aside from the researches, the local livelihoods of the community were also showcased during this event.</p> <p>Participation to various regional Webinars on peatlands:</p> <ul style="list-style-type: none"> <li>• Biodiversity in Peat Swamp Forest in Southeast Asia, 5 June 2020 by GEC</li> <li>• Peatland Management in Philippines, 6 Aug 2020 by PFP</li> </ul>	
		4.1.3 Enhance regional information sharing on the extent, status and management of peatlands and develop handbooks for best management practices	Enhance regional information sharing on the extent, status and management of peatlands and develop handbooks for best management practices	Handbook on Peat Swamp Flora of Agusan Marsh, Philippines is one of the publication recognized as best management practice in the region (as identified through the APMS Review)	
<b>5. Policies and Legislation</b>	5.1. Develop or strengthen policies and legislation to protect peatlands and reduce peat fire	5.1.1 Designate specific institutions for peatland management	Create an inter-agency technical working group for peatland	Coordination among stakeholders related to peatland management was initially established through the National and Local Technical Working Groups for the APFP-SEApeat project in 2010. Subsequently, the National TWG has been subsume to the National Committee for Inland Wetland of the BMB. At the local level, the Protected Area Management Board of the AMWS and the Consortium of the Leyte Sab-a become the coordination mechanism for the peatlands related activities in Agusan Marsh and Leyte Sab-a, respectively.	



		<p>5.1.2 Formulate or update national policies and strategies relating to peatland conservation and wise use, including facilitation of integrated land use planning and management for peatlands</p>	<p>Formulate specific policy to address issues regarding peatlands</p>	<ul style="list-style-type: none"> <li>• The whole area of Caimpugan PSF is now included in the expansion of the Agusan Marsh Wildlife Sanctuary Protected Area under the Republic Act 11038 (Expanded National Integrated Protected Areas System Act of 2018 (ENIPAS)).</li> <li>• Wetland policies in which peatland is included, has been lobbied in the Congress and Senate. These included the following: <ul style="list-style-type: none"> <li>o HB No. 3460 – National Wetlands Conservation Act filed in August 2019</li> <li>o HB No. 8925 – National Wetland Policy filed in Marsh 2021</li> <li>o HB No. 7206 – National Peatland and Peatland Resources Management, Conservation and Protection Act filed in July 2020</li> <li>o SB No. 2036 – National Wetland Policy filed in February 2021</li> </ul> </li> <li>*HB Nos. 3460 and 8925 have been reviewed by the Technical Working Group of the</li> <li>• Draft guidelines for sustainable development planning and management of peatlands (pending in PTWG).</li> <li>• A unified ordinance from LGU San Francisco and Talacogon has been approved for the protection and sustainable use of the Caimpugan PSF in Agusan del Sur. Issuance of Municipal Ordinances, identification and zoning of peatlands for inclusion in their respective Comprehensive Land Use Plans</li> </ul>	
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				<p>(CLUP), and declaration of peatland areas as local conservation areas: Two (2) Municipal Ordinances were passed to protect peatlands. (a) Municipality of San Francisco, Agusan del Sur - MO# 01-2013 ("Ordinance for the Protection of the Unique Stunted Peat Swamp Forest in the Barangays Caimpugan and New Visayas, all of San Francisco, Agusan del Sur"); (b) Municipality of Talacogon, Agusan del Sur - MO# 203-2014 ("An Ordinance for the Protection of the Unique Stunted Peat Swamp Forest within the Municipal Jurisdiction of Talacogon, Agusan del Sur and Providing Funds Thereof").</p> <p>• LGU Alanglang, Leyte issued a Municipal Ordinance for the protection and conservation of Leyte Sab-a peatland within its jurisdiction.</p>	
		5.1.3 Strengthen law enforcement	Review existing policies/laws and strengthen law enforcement	<p>Review of policies relevant to peatland was conducted by the BMB in 2012. Through this policy review BMB crafted a draft Guidelines for Sustainable Development Planning and Management of Peatlands. [The draft DAO had been deliberated in the DENR Policy Technical Working Group several times.]</p> <p>Strengthen law enforcement in peatlands within AMWS. 200 Bantay Danao volunteers are deputized by the RED of Caraga to help</p>	

				in monitoring and enforcement activities in AMWS.	
6. Fire Prevention, Control and Monitoring	6.1. Reduce and minimize occurrence of fire and associated haze	6.1.1 Identify peatlands in the region with high fire risk and develop and promote preventive measures	The APMS Action under Operational Objective 1.1.2 calls for the identification of peatlands and their comprehensive profiling. The profiling of peatlands would include items corresponding to whether fire is an identified threat to a particular peatland. Preventive measures would thus be designed according to the causal factor behind the occurrence of fire.	Peatlands identified as hotspot (high fire risk) in Agusan Marsh has been mapped by the PENRO Agusan del Sur.  - Bureau of Fire Protection provided fire trucks and other fire suppression equipment to peatland municipalities (San Francisco and Talagon in Agusan del Sur; Alangalang, Leyte) . Continuous procurement of firefighting tools and equipment in Regions 8 and 13 particularly for peatland areas	
		6.1.2 Monitor weather conditions and hot spots in fire-risk peat areas and issue alerts as appropriate	Monitor weather conditions and hot spots in fire risk peat areas and issue alerts as appropriate	Memorandum of Agreement between BFP and PAGASA re: Establishment of Fire Danger Rating System was initiated on December 14, 2016. Currently, the plan to establish early warning device for forest fire prevention is being revived by the DENR, PAGASA and BFP. The MOA will be amended to include DENR. This is being facilitated by FMB.	
		6.1.3 Manage water tables in peatlands appropriately according to land use to prevent fire	Ensure that land-use do not contribute to lowering of water table, incorporate FLUP and other site management plans into CLUP of LGUs		



7. Conservation of		6.1.4 Develop and promote appropriate techniques for fire control in peatlands	Develop and promote appropriate techniques for fire control in peatlands	A series of trainings/seminars for fire fighters on Wild land Fire Protection, Management and Control including Peatland Areas has been conducted in Regions 4, 5, 6,8 and 12.	
		6.1.5 Strengthen coordination among and capacity agencies involved in peatland fire prevention and control including establishment of peat fire preventions units in agencies responsible for forestry and agriculture	Create fire prevention unit and develop fire preparedness/management plans		
		6.1.6 Actively involve villagers and other local stakeholders in fire prevention and control	Actively involve communities and other local stakeholders in fire prevention and control		
		6.1.7 Implement zero-burning strategies for all commercial agriculture and zero or controlled burning for local communities	Assess the practices on commercial agriculture and small farmers regarding the burning of areas identified as peatlands. The assessment would be part of the profiling called for in the National Action under Operational Objective 1.1.2.		
	7.1 Promote conservation of peatland biodiversity	7.1.1 Identify peatlands in the region which are of regional or global importance	The profiling under Operational Objective 1.1.2 would take into consideration the	The updating of the Ramsar Information sheet (RIS) and management plan of AMWS included the peatlands within AMWS and	

		for conservation of biodiversity	importance of peatlands in the conservation of biodiversity, in short biodiversity assessment shall be made.	applicable conservation/management interventions.	
		7.1.2 Assess the status, gaps and threats within the network of protected areas for peatlands and peatland biodiversity and identify priority areas for conservation	From the identified peatlands, prioritize areas for conservation	<p>Promotion of the conservation of peatland biodiversity is integrated in the Philippine Biodiversity Strategy and Action Plan (PBSAP) 2015-2028.</p> <p>Identified peatlands are considered as priority wetlands under the PBSAP and PDP. Degraded peatlands are being prioritized for wetland rehabilitation/restoration. In AMWS, peatlands are included in the strict protection zone of the Protected Area under the NIPAS.</p>	
		7.1.3 Legally designate national, regional or globally significant peatland sites as conservation or protected areas	Set aside as protected areas or conservation areas by proclamation or by law those peatlands that have been identified to be nationally, regionally or globally important for biodiversity conservation or ecological services.	<p>The whole Caimpugan PSF and Talacogon (Lake) Peatlands are now included in the expansion of the AMWS through the enactment of the ENIPAS Act.; Aside from its designation as a Ramsar Site, it becomes an ASEAN Heritage Park highlighting its biological features and ecosystem types.</p> <p>For Leyte Sab-a, there are ongoing discussions on the declaration of peatland areas as local conservation area and critical habitat. Its management plan will be updated in 2022 to include other assessed areas under the Leyte Sab-a Peatland Forest Restoration Initiative.</p>	

		7.1.4 Strengthen all aspects including 'institutional frameworks' of the management of peatland conservation areas	Strengthen mgt. and protection of peatland areas within PAs e.g. Agusan Marsh WS	<p>Management and protection of peatlands areas within AMWS has been strengthened. Aside from the strengthening the Protected Area Management Board, community volunteers - Bantay Danao are deputized to help in the protection and conservation of the area.</p> <p>[Check LSPFRI project recommendation on institutional sustainability]</p>	
		7.1.5 Develop sustainable utilization of peatland resources for local communities within peatland conservation areas	Assess extent of sustainable use of peatland resources	Initial demonstration of sustainable agricultural practices suitable to degraded peatland areas has been initiated such as Sorjan Farming (diversified system farming), raised bed and floating gardens, fish farming diversification. However, its success is still challenging. There is a need to invest more on these areas to find out additional practices that will be sustainable and will not compromise the main ecosystem services of peatlands which is carbon sequestration.	
<b>8. Integrated Management of Peatlands</b>	8.1 Promote multi-agency involvement in peatland management	8.1.1 Establish national inter-agency working groups to develop strategies for peatland protection and sustainable use	The inter-agency group proposed to be formed as called for under National Action corresponding to APMS Action 5.1.1 shall be tasked to develop strategies for peatland protection and sustainable use.	<p>The National Action Plan for Sustainable Use and Protection of Philippine Peatlands (NAPP) has been developed and implemented by the DENR and various government agencies with peatland-related mandates, research/academe, NGOs, and LGUs.</p> <p>Peatland concerns as part of ongoing discussions through the National Convergence Initiative for Sustainable Rural Development formed with the Dept. of Agriculture, Dept. of Agrarian Reform, Dept. of Interior and Local Government, Local</p>	



				<p>Government Units and the DENR.</p> <p>Peatland conservation and sustainable use are integrated to various plans:</p> <ul style="list-style-type: none"><li>- Philippine Biodiversity Strategy and Action Plan (PBSAP)</li><li>- National Inland Wetlands Conservation Program (National Wetlands Action Plan)</li><li>- National Action Plan to Combat Desertification, Land Degradation and Drought</li><li>- Philippine Development Plan (Chapter 20)</li><li>- National Climate Change Action Plan 2011-2028 (Chapter 3: Ecological and Environmental Stability)</li></ul> <p>Peatlands are now included in the Comprehensive Land Use Plan of LGU San Francisco, Agusan del Sur and LGU Alangalang, Leyte.</p> <p>[Mention NTWG and LSPFRI consortium]</p>	
		8.1.2 Encourage sustainable management practices for all peatland users, including those from forestry, agriculture and plantations	Develop guide for wise utilization of peatland resources/development e.g. proper water mgt.	<p>Management plans to promote peatland conservation and sustainable use were prepared through multi-stakeholder consultation. These plans are adopted and being implemented through Memorandum of Agreement with the ff. LGUs:</p> <ul style="list-style-type: none"><li>• BLGU Pag-asa (Pag-asa Peatland)</li><li>• BLGU Consuelo (Kalingayan Peatland)</li><li>• MLGU Talacogon (Talacogon Peatland)</li><li>• MLGU San Francisco (Caimpugan Peatland)</li></ul> <p>Other peatlands with management plan</p>	

				prepared includes Leyte Sab-a Peatland and Kisloyan Peatland in Occidental Mindoro.	
8.2 Promote integrated water resources and peatland management using a basin-wide approach and avoiding fragmentation	8.2.1 Establish the fundamental importance of the natural water regime as the basis for best practice peatland management	The national action corresponding to APMS Action 8.1.2 that calls for the guides for wise use utilization of peatland resources and development shall address peatland users including those from forestry, agriculture and commercial plantations for forestry or agriculture.	Peatland is incorporated in the updating of the Master Plan for Agusan River Basin.		
	8.2.2 Control or restrict further drainage and conversion (for agriculture, plantation, forestry, settlement, mining, infrastructure and other uses) of deep peat, peat domes, undisturbed peatlands as well as other ungazetted areas of conservation importance	Develop laws/policies restricting further conversion of peatlands; link to 5.1.2	As stated in 5.1.2		
	8.2.3 Develop guidelines to assist the process to restrict the opening up and drainage of deep peat, peat domes and undisturbed peatlands	Develop guidelines to assist the process to restrict the opening up and drainage of deep peat, peat domes and undisturbed peatlands. This forms part	Partly mentioned in the Draft DAO on Peatland		

			of national action under 5.1.2		
		8.2.4 Develop an appropriate water management regime for peat domes and surrounding peat areas, including the blocking of disused or illegal canals.	Subsumed under 8.2.1		
	8.3 Promote integrated forest and peatland management	8.3.1 Ensure the long-term designation and protection of peat swamp forest in reserves and take urgent measures to protect the remaining undisturbed peatlands	Set aside important peatlands as protected areas or conservation areas by proclamation or by law	Caimpugan PSF and other peatlands in AMWS have been set aside as strict protection zone under the ENIPAS Act (RA 11038). Other peatland areas outside the Protected Area is being protected through local conservation area by the LGU Agusan del Sur.	
		8.3.2 Develop forest management plans and guidelines for production forest reserves			
		8.3.3 Develop and promote sustainable forest management practices, including low-impact harvesting, zero-drainage harvesting, etc.			
		8.3.4 Develop and implement measures for post harvesting rehabilitation			



		8.3.6 Control illegal harvesting practices and associated trading activities	Implement Wildlife Act (RA 9147)	Implementation and enforcement of RA 9147 (linked to law enforcement)	
		8.3.8 Document peatland biodiversity and socio-economic, cultural, and ecological uses	Document peatland biodiversity and socio-economic, cultural and ecological uses. This is closely tied up as an activity under 1.1.2 and 7.1.2	Linked to 1.1.2. Assessment of peatlands includes profiling/documentation of ecological and socio-cultural and economic uses of the peatland.	
	8.4 Manage agriculture in areas adjacent to the peatlands in integrated manner	8.4.1 Restrict future agricultural development to degraded shallow peat	Conduct land suitability assessment in shallow peat (less than 1meter). If found feasible, confine agricultural activities in these areas.	Land suitability evaluation on degraded peatland in Agusan Marsh was conducted on April 10-14, 2012 by BSWM in April 2012 for possible demonstration sites of sustainable agriculture.	
		8.4.2 Document and promote indigenous knowledge and methodologies, such as techniques for prevention of subsidence and over-drainage; and low impact land-clearing and agricultural practices in existing peatland agricultural areas	Document and promote indigenous knowledge and methodologies, such as techniques for prevention of subsidence and over-drainage; and low impact land-clearing and agricultural practices in existing peatland agricultural areas		

		8.4.3 Develop best practice land clearing techniques affordable and appropriate for communities living in peatland areas	Develop best practice land clearing techniques affordable and appropriate for communities living in peatland areas after the conduct of land suitability assessment in shallow peat (less than 1meter)	<p>Demo projects for degraded peatland was piloted in Leyte Sab-a and Agusan peatlands.</p> <p>Demo project through raised bed method in San Teodoro peatland (Bunawan, Agusan del Sur) was piloted by the PASAKK, Inc. (indigenous community). It provided them potential livelihood opportunities.</p> <p>Leyte Sab-a demonstrated Organic Agriculture for Livelihood Production Project thru: Natural Farming Systems in Peatland (Sorjan Farming).</p>	
		8.4.4 Promote haze-free agriculture through incentive and disincentive measures in areas adjacent to the peatlands			
	8.5 Promote integrated community livelihood and peatland management	8.5.1 Enhance local community knowledge of peatlands through awareness and education	Enhance local community knowledge of peatlands through awareness and education This is closely linked with national actions under 3.1	<p>Some of these are the following:</p> <ul style="list-style-type: none"> <li>• Society for the Philippine Wetlands organized a Wetlands Caravan: Mobilizing Communities for the Conservation of the Agusan Marsh and Wildlife Sanctuary on June 20-24, 2011.</li> <li>• Caraga Young Artists conducted Peatland Nature Appreciation Walk at Brgy. Caimpugan, San Francisco, Agusan del Sur on June 16, 2012</li> <li>• Art Exhibit and Comic Launching in Butuan National Museum on October 1, 2012. The paintings of peatlands by the Caraga Young Artist were displayed in the museum for one week</li> <li>• Creation of Facebook page</li> </ul>	

		8.5.2 Support the protection and sustainable use of peatlands through application of customary laws and traditional practices	Document indigenous knowledge system and practices and incorporate into mgt. strategies for peatlands (link with research)	[Check COSERAM outputs]	
		8.5.3 Promote and enhance market access for traditional products developed by local communities from peatlands	Determine the current marketing schemes and take actions to improve the system		
		8.5.4 Support and empower local communities to protect and sustainably use peatland resources to contribute to their livelihood and environmental security	Support and empower local communities to protect and sustainably use peatland resources to contribute to their livelihood and environmental security	<ul style="list-style-type: none"> <li>• Peatland communities around Caimpugan PSF undergone series of trainings on ecotourism.</li> </ul>	
		8.5.5 Introduce and strengthen alternative livelihoods to minimize impacts or dependence on peatlands	Introduce and strengthen alternative livelihoods to minimize impacts or dependence on peatlands	<ul style="list-style-type: none"> <li>• Caimpugan Peatland Adventure: Ecotourism Development Plan was developed.</li> <li>• Caimpugan PSF is now included in the ecotourism loop of Agusan Marsh Wildlife Sanctuary.</li> <li>• Water hyacinth weaving is another identified livelihood in Caimpugan which is being operated by the Caimpugan Native Farmers and Fisherfolks Multipurpose Cooperative. They produced slippers, bags and place mats made from water hyacinth. Meanwhile, peanut butter production is the alternative livelihood of Brgy. La Flora.</li> </ul>	



9. Establishment and Promotion of Demonstration Sites for Peatland Management				<ul style="list-style-type: none"><li>• Jams, cookies, pasta noodles made from Libas and Katmon trees, native fruit-bearing trees abundant in Agusan Marsh is another biodiversity-friendly livelihood being promoted and supported.</li></ul>	
		8.5.6 Engage grassroots stakeholders in participatory management of peatlands	Engage grassroots stakeholders in participatory management of peatlands	A bottom-up approach ensures effective participation at the grassroots level. The support and approval of stakeholders for peatland projects were easier to generate with their involvement even from the preparation phase. Since the communities have a sense of ownership on the project, they can help bring the program/project to success.	
	9.1 Promote best management practices	9.1.1 Identify and promote demonstration sites for best management practices, for example: site for eco tourism, livelihood options, restoration, etc.	Explore the possibility of promoting the following as possible pilot sites for best practice example for peatlands <b>Leyte:</b> Barangays Tabangohay and Divisoria in Alangalang <b>Agusan:</b> Barangay Caimpugan, San Francisco extended to Barangay kauswagan and Calingayan and San Teodoro in Bunawan, Talacogon <b>Liguasan:</b> Dunguan	The sustainable farming techniques, raised-bed, floating garden, and Sorjan farming, demonstrated in the pilot sites have provided the local communities with potential livelihood opportunities. Although there is still a lot of improvement needed, the community could already start using this farming technique in building their own sustainable agriculture through learning-by-doing.	A lot of improvement is still needed (i.e. selection of planting materials, making the farm/garden typhoon resilient) and the strategy is still being developed.
		9.1.2 Establish pilot project(s) in each country (according to local needs) to test new sustainable management and fire prevention approaches for peatlands	Establish pilot sites to test new sustainable management for peatlands	Linked to 9.1.2	

10. Restoration and Rehabilitation		9.1.3 Promote the application of best management practices for peatlands through research and development	Documentation of the uses of wetlands. Periodic conventions, exchange/study tours.		
		9.1.4 Establish multi-country technical working groups to work on issues of common concern, such as peatland water management, peatland silviculture or rehabilitation options	The inter-agency group proposed to be formed as called for under National Action corresponding to APMS Actgion 5.1.1 shall work on the issues of common concern such as peatland water, management, peatland, silviculture .		
	10.1 Develop appropriate techniques for the restoration or rehabilitation of degraded peatlands	10.1.1 Develop and promote widely proper guidelines and manuals on peatland restoration and rehabilitation based on local knowledge, regional experience and R&D findings	Develop and publish manuals and other written guides (e.g. popular versions Komiks) for rehabilitation of peatlands; Regional consultations/Symposia; Review existing/ related guidelines on peatlands.		
		10.1.2 Establish pilot projects to test techniques	Same areas as in 9.1.1. Establish pilot project to test new techniques	Action Plans for rehabilitation measures in Agusan Marsh and Leyte Sab-a were developed by the community members in respective sites during the APFP implementation. Subsequently, these rehabilitation plans were piloted in the identified degraded peatland areas. Indigenous tree species found in Agusan Marsh and are known to survive in perennially water logged areas such as	There is a need to identify planting materials that is both indigenous and typhoon resilient. These can be done through the learning-by-doing experiences of the local communities.

				Lanipao tree ( <i>Terminalia copelandii</i> ), Bangkal ( <i>Nauclea orientalis</i> ), and Tiga tree ( <i>Tristanopsis micrantha</i> ) were used as planting materials. In Leyte Sab-a, Lumbia ( <i>Metroxylon sagu</i> ) was also used in the rehabilitation.	
		10.1.3 Organize specific training programmes related to peatlands restoration and rehabilitation	Conduct training needs analysis; Several processes are involved before training can commence. This will be undertaken by the ITWG.		
		10.1.4 Revise and update guidelines based on experience from local knowledge and findings from R & D	Review the existing related guidelines/policies.		
	10.2 Rehabilitate burnt, drained and degraded peatlands	10.2.1 Identify and classify degraded peatlands according to the rehabilitation options based on local knowledge, regional experience, R&D findings and appropriate technology	Identify and classify degraded peatlands according to the rehabilitation options based on the local knowledge, regional experience, R&D findings and appropriate technology		
		10.2.2 Develop national programmes to initiate peatland restoration and rehabilitation activities	Develop national programmes to initiate peatland restoration and rehabilitation activities		



		10.2.3 Implement programmes for peatland rehabilitation	Implement programmes for peatland rehabilitation	80 ha of watershed of Leyte Sab-a basin and 200 ha of degraded peatlands in Agusan Marsh was included in the DENR's National Greening Program.	Peat fire occurrence and super typhoons are the major constraints on the sustainability of the reforestation efforts in degraded peatland.
11. Peatlands and Climate Change	11.1 Protect and improve function of peatlands as carbon sequestration and storage	11.1.1 Quantify the above and below ground carbon content in peatlands in ASEAN countries and its role in mitigating climate change	Quantify the above and below ground carbon content in peatlands and its role in mitigating climate change	Caimpugan PSF is documented to be the only remaining known intact peat swamp forest in the Philippines. Based on the study conducted in 2012, it is estimated to store 22.9 M tons of carbon, within its 5,487 hectares. The peat dome with the highest stored carbon of 6,207 tons carbon/ha was found to be a substantial and space-efficient Carbon storage compared to other forest types in the country. (Alibo, V.L.B. & Lasco, R.D. 2012. <i>Journal of Environmental Science and Management</i> 15(2): 50–58. Carbon storage of the Caimpugan peatland in Agusan Marsh, Philippines and its role in greenhouse gas mitigation.)	
		11.1.2 Identify degraded peatlands and explore the possibility for restoration through the Clean Development Mechanism (CDM) under the Kyoto Protocol	Identify degraded peatlands and explore the possibility for restoration through the Clean Development Mechanism (CDM) under the Kyoto Protocol	Degraded peatlands are identified and explored for possible restoration both in Agusan and Leyte.  [Check the PLDT-Smart Project if this is applicable]	

		11.1.3 Facilitate support for peatland management and restoration from other climate change-related funding mechanisms	Facilitate support for peatland management and restoration from other climate change-related funding mechanisms		
	11.2 Support peatland adaptation process to global climate change	11.2.1 Assess the impact of climate change scenarios on peatland ecosystem in ASEAN countries	Assess the impact of climate change scenarios on peatland ecosystem in the country		
		11.2.2 Identify management strategies applicable to minimising peatland vulnerability on global climate change	Identify management strategies applicable to minimising peatland vulnerability on global climate change		
		11.2.3 Integrate peatland issues into national or regional climate change adaptation plans	Integrate peatland issues into national <b>AND</b> regional climate change adaptation plans	Development of management strategies for peatlands has been recognized in the Monitoring and Evaluation Report 2011-2016 of the Philippine National Climate Change Action Plan.	Still work on progress
		11.2.4 Source support for peatland management from adaptation funds linked to the UNFCCC	Source support for peatland management from adaptation funds linked to the UNFCCC		
12. Regional Cooperation	12.1 Promote exchange of expertise in addressing peatland	12.1.1 Develop regional collaborative research projects and other activities involving experts from ASEAN countries	Support the development of regional collaborative research projects and other activities involving experts from ASEAN countries	APFP, APMS	



	management issues	12.1.2 Strengthen the SEA Peat Network to include all experts on peatland in the ASEAN region			
		12.1.3 Organise regional workshops to strengthen cooperation and exchange of experience	Organise national workshops and cross visit to strengthen cooperation and exchange of experience		
	12.2 Establishment of 'centres of excellence' in the region for peatland assessment and management	12.2.1 Designate appropriate 'centres of excellence' in the region on specific aspects related to peatland management	Utilize the existing training facilities of the Agricultural Training Institute of Region 8 as a possible centre of excellence on certain aspect of peatland management		
		12.2.2 Support the strengthening and selected activities of selected centres			
		12.2.3 Enhance linkage and cooperation between centres			
	12.3 Contribute to the implementation of other related agreements and regional cooperation mechanisms	12.3.1 Incorporate peatland issues into ASEAN frameworks related to Nature Conservation and Biodiversity, Multilateral Environment Agreements, Water	Ensure that peatland management issues and concerns in the Philippines are reflected in our commitments to relevant environmental agreements and conventions; Also ensure that peatland issues are incorporated in the	Peatland conservation and management issues and concerns in the Philippines are reflected in the strategic plans of relevant multilateral environment agreements such as the Ramsar Convention, CBD, UNFCCC, and UNCCD. Peatlands issues are incorporated into the PBSAP.	



		Resource Management, Forestry and Agriculture; and Education	NBSAP, NAP on Desertification and Land Degradation, and UNFCCC future iterations		
		12.3.2 Ensure contribution of regional strategy to the implementation of the ASEAN Agreement on Transboundary Haze Pollution	Support 12.3.2		
		12.3.3 Support input on peatland issues into related global convention deliberations (including Ramsar Convention, Convention on Biological Diversity, Convention to Combat Desertification, and UN Framework Convention on Climate Change)	Support 12.3.3		
	12.4 Enhance multi-stakeholder partnerships to	12.4.1 Strengthen partnership among stakeholders through the APMI and related activities	Support regional actions		

	support peatland management	12.4.2 Forge or strengthen partnerships at local and country level among key stakeholders, including government agencies, NGOs, community and private sector to implement sound peatland management and development	Forge or strengthen partnerships at local and country level among key stakeholders, including government agencies, NGOs, community and private sector to implement sound peatland management and development Promote information exchange e.g forum, consultations, etc.		
13. Financing of the Initiative	13.1 Generate financial resources required for the programmes and activities to achieve target of the strategy	13.1.1 Develop a financing strategy for implementation of the APMS including cost benefit analysis	Develop a financing strategy for implementation of the NAP including cost benefit analysis using as basis resource valuation studies		
		13.1.2 Undertake a feasibility study to explore use of polluter-pay and user-pay schemes, tax incentives or other options to generate sustaining resources to support the implementation of the strategy	Undertake feasibility studies on various modalities for use in generating sustainable funding mechanisms for peatlands (e.g. BOT agreements, tax incentives, MOA)		
		13.1.3 Establish or enhance funding mechanisms to support the strategy implementation	Establish, enhance and promote private-public sector partnerships in generating sustainable funding mechanisms for peatlands	DENR has entered into a partnership with PLDT-Smart for the protection and conservation of Caimpugan Peatland. This is the very first public-private partnership project that focuses on peatland conservation. PLDT -Smart is a telecommunication	

				company that promotes and participates in sustainability programs and initiatives. It targets to become a carbon neutral company by 2030 through overall reduction in its carbon emission and investing environmental project for carbon offsetting including mangroves and the newest – in peatlands. The project covers restoration and protection, CEPA and livelihood.	
		13.1.4 Develop specific budgets and proposals for funding of activities by national governments, external supporters and other sources to generate resources to support the implementation of the strategy	Develop specific budgets and proposals for funding of activities by national governments, external supporters and other sources to generate resources to support the implementation of the strategy	The Forest Foundation Philippines (FFP) is funding the Leyte Sab-a Peatland Forest Restoration Initiative project in Leyte to support conservation, protection and rehabilitation activities of the Leyte Sab-a Peatland. The said project is being implemented by the International Institute of Rural Reconstruction (IIRR).	
		13.1.4 Develop specific budgets and proposals for funding of activities by national governments, external supporters and other sources to generate resources to support the implementation of the strategy	Develop specific budgets and proposals for counterpart funding by local governments (e.g. from IRA)	The provincial LGU of Agusan del Sur allocate funds for the protection and conservation and Agusan Marsh including the peatlands within.	



		13.1.5 Organise regular forums among donors and supporters to facilitate coordinated funding of activities	Organise regular fora among donors and supporters to facilitate coordinated funding of activities		
		13.1.6 Establish funding mechanisms related to payments for peatland environmental services to generate funds for peatland conservation and management	Establish funding mechanisms related to payments for peatland environmental services to generate funds for peatland conservation and management		
		13.1.7 Establish appropriate mechanisms to channel resources to local government or community groups to support sustainable management and rehabilitation activities (e.g. micro credit)	Establish appropriate mechanisms to channel resources to local government or community groups to support sustainable management and rehabilitation activities (e.g. micro credit)	For Protected Area like Agusan Marsh Wildlife Sanctuary, one of the mechanisms used is through the Integrated Protected Area Fund (IPAF).	

## MAJOR ISSUES AND CHALLENGES

The following are the identified major challenges in managing peatlands in the Philippines.  
(Score: 1= easiest, 5= hardest)

No.	Challenge	Score	Remarks
1.	Climate change	4	There is a significant awareness on peatland and its role in climate change mitigation. Hence, this is now being highlighted in the plans and programs of the government in relation to climate change. However, the adverse effect of climate change (e.g. super typhoon and El Niño) makes it difficult to sustain the pilot activities for rehabilitation of peatland and sustainable agriculture.
2.	Land and forest fire control	5	While peat fire was not an issue during the first years of the APMS implementation, occurrence of peat fire in the latter part has become a threat. BFP capacitated its field fire suppression teams through series of trainings on wild land fire suppression but there is a need to capacitate the community for immediate response in case wild land fire happens again.
3.	Peatland assessment and mapping	4	Tools and equipment needed for assessment and mapping is one of the limiting factors in conducting these activities. There is also lack of technical staff and logistics to conduct the assessment and mapping of peatlands.
4.	Housing and infrastructure on peatland	4	Peatlands under the Protected Areas of ENIPAS Act are protected for being converted into land conversion for housing and infrastructure projects. However, wise peatlands in non-Protected Areas like in the case of Leyte Sab-a, have less protection.
5.	Poverty reduction and sustainable livelihoods in peatland areas	4	Ecotourism and community livelihood for peatland communities have been initiated. However, there is a need to enhance the promotion of peatland for ecotourism for it to be sustainable. Native products made from water hyacinth becomes the livelihood of the Brgy. Caimpugan but there is a need to enhance their product and networking. Another challenge also in sustainable livelihood in peatland areas is identification of appropriate intervention or strategy to stop destructive fishing in peatland area.
6.	Subsidence and water management in peatlands	5	There is still a need to study peatland in terms of its physico-chemical and hydrology of peatland for suitable water management of peatland
7.	Oil palm plantations in peatlands	5	Still a challenge in peatland conservation especially in Liguasan Marsh area.
8.	Agriculture in peatlands	5	Still a challenge in peatland conservation.
9.	Sustainable forest management	4	Extreme weather conditions such as typhoons and El Niño are one of the challenges in sustainable forest management.



No.	Challenge	Score	Remarks
10.	Restoration of peatlands	4	Suitable strategy for peatland restoration needs to identify.
11.	Integrated peatland management	3	Partnership and inter-agency cooperation have been established for peatland conservation and sustainable use.
12.	Biodiversity conservation	3	Biodiversity conservation in peatlands is included in the PBSAP and is being mainstreamed. Other government offices, LGUs, NGOs and academe acknowledge the importance of peatland in biodiversity conservation. LGUs, specifically in Agusan del Sur and Leyte initiated its effort in the conservation of peatlands.
13.	Research and Development	4	Since basic information on peatland has been disseminated particularly in the 2 documented peatlands in the country, R & D on peatlands are being conducted by research/academe specifically Visayas State University for Leyte Sab-a peatland and Caraga State University for Caimpugan PSF. Peatland has been included in the curriculum of VSU. ERDB which is the research arm of the DENR are also conducting R & D on peatlands. While R&D on peatlands started to progress, data sharing on the results on these R&D are still a challenge. There is still lack of R&D when it comes to hydrology and physico-chemical aspects of peatlands which are necessary in integrated management of peatlands particularly in rehabilitation.
14.	Others (Peatlands in remote areas and has issue on Peace and Order)	5	Liguasan Marsh is suspected to have a larger area of peatland compared to Agusan Marsh. However, due to peace and order issue, the government and research institutions cannot have assessed the status of peatlands in Liguasan.

## SWOT Analysis

The following are the identified strengths, weaknesses, opportunities, and threats to the protection and sustainable management of peatlands in the Philippines:

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> <li>• Peatland has been included in the curriculum in the university</li> <li>• Many research/ scientific evidence established to support policy, advocacy work and management scheme</li> <li>• Mainstreaming of biodiversity conservation into local and national</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of tools, equipment, technical support and logistics for peatland assessment and mapping activities which cause a slow progress in this activity</li> <li>• Several issues in peatland such as water regulation, agriculture and</li> </ul>	<ul style="list-style-type: none"> <li>• Research and Development in peatland for Carbon Storage, Assessment of Flora and Fauna population and extensive Hydrology Study, Flood Risk Assessment and Impact including</li> </ul>	<ul style="list-style-type: none"> <li>• Extreme weather conditions and long duration of dry months faced by Philippines could increase possibility of forest fire/peat degradation</li> <li>• Intensifying typhoons can impact peatlands</li> </ul>



<p>planning process is being conducted</p> <ul style="list-style-type: none"> <li>• Close partnership/collaboration between National government, local government unit, research institutes and NGOs in peatland related matters</li> <li>• Intensifying the role of the peatland as a carbon sink through CEPA/ information drive.</li> <li>• Peat inventory incorporated in Work and Financial Plan under Inland Wetland Conservation Activities</li> <li>• Creation of the Caves, Wetlands and other Ecosystems Division (CAWED) of BMB, has given focus on wetlands conservation and management and regular funds for inland wetlands, including peatlands, has been provided.</li> <li>• Partnership with private sector to strengthen and enhance the information dissemination on peatland conservation. This also provides an opportunity to expand networks in terms of fund sourcing for peatlands conservation.</li> </ul>	<p>plantation are being managed by different agency</p> <ul style="list-style-type: none"> <li>• Lack of funds for work on peatlands</li> <li>• Lack of specific policy for conservation and protection of peatlands</li> <li>• Lack of understanding of value and vulnerability of peatlands</li> <li>• Peatlands classified as "<i>Alienable and Disposable</i>" as "flat land"</li> </ul>	<p>Mitigation Measures.</p> <ul style="list-style-type: none"> <li>• To improve community involvement and knowledge through CEPA activities in peatland management</li> <li>• Ecotourism and community livelihood for peatland communities have been initiated with an opportunity to promote sustainable activity</li> <li>• Identification and mapping of peatland areas. Soil analysis of peatlands. Follow incorporation in Philippine Geoportal</li> <li>• Protection of remaining intact peatland by promoting several peatland areas as Protected Area, Ramsar Site or Center for Peatland Study and Management</li> <li>• To apply Best Management Practices on peatland such as introducing paludiculture or sustainable agriculture</li> </ul>	<ul style="list-style-type: none"> <li>• Intentional burning could happen and cause fire in the peat swamp due to fishing where fisherman burn sedges and grasses prior to fishing in the peat swamp</li> <li>• Land subsidence in peatland area due to drainage</li> <li>• Settlements and quarrying in peatland area</li> </ul>
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## RECOMMENDATIONS:

Implementation of the NAPP should be reviewed and evaluated through consultation with the involved partners and stakeholders. Subsequently, the NAPP should be updated based on learning experiences and their outcomes. Through its updating, it will provide the impetus for further steps in the conservation and sustainable use of peatlands throughout Philippines.

The following are the feedbacks from stakeholders on the updating of the NAPP:

1. Need for specific plans to review and evaluate the implementation of the NAPP
2. Awareness raising to various institutions and stakeholders especially policy makers should be scaled up and continued to affect the behavioral change;
3. Continue and strengthen the multi-stakeholder approach for the conservation and sustainable management of peatlands, involving private landowners, business sectors, and other relevant stakeholders;
4. A more comprehensive assessment, and ground-verified inventory of Philippine peatlands, with the aid of GIS-based approach should be prioritized. There is a need to establish a state-of-the-art knowledge management system which will be operable and accessible by field personnel and anchored with existing national databases and online mapping platform such as the Philippine Geoportal. Resulting information will be vital in identifying suitable sites for rehabilitation as well as in determining the hazard-susceptibility of peatland areas in the country. Having this comprehensive information on peatlands will also support a scientific- based decision making for managers and planners, as well as policy makers. However, to initiate this, re-orientation/continuous capacity building of agencies involved is necessary.
5. Research on peatland particularly in relation to carbon sequestration should be conducted in order to facilitate support for peatland management and restoration from other climate change funding mechanisms and private companies;
6. Support and prioritize local communities and stimulate community development through identification/ promotion of biodiversity friendly livelihood to overcome their opportunity costs and dependence on unsustainable use of peatland;
7. Continuous knowledge and information/experience sharing among ASEAN countries.
8. Linking/collaboration with other stakeholders for peatland management;
9. Fire prevention and detection.

The following are the suggested priorities for each focal to strengthen the sustainable management of peatlands in the Philippines in the next 10 years (2021-2030):

### Focal Area 1 – Inventory and Assessment

- High priority to increase capacity of trained personnel to conduct assessment;
- High priority to assess problems and constraints. Profiling and assessment of peatland area and inclusion of peatland in Permanent Protected Area;
- High priority on accounting and valuation of peatland ecosystem services (NEDA).

### Focal area 2 – Research

- High priority for research including the national research center (e.g. FWRDEC, WWRDEC, etc.), academe and local research. Support needed to local academe (financial, equipment, infrastructure) to conduct scientific R&D activities;



- High priority for R&D in peatland for carbon storage, flora and fauna population and extensive hydrology study, flood risk assessment and impact including mitigation measures;
- High priority for research on the change in ecological character of peatlands;
- High priority in the conduct of scientific R & D on drought and fire risk assessment. By giving high priority on R&D on drought and fire risk assessment, this will adjust the Focal Areas 4 and 6 since the said R&D topic is related to information sharing and fire prevention. This is also crucial in starting up values for different fire weather index-based data and eventually national FDRS.

#### Focal area 3 – Awareness and capacity

- Medium to High priority on scaling up awareness to various institutions, stakeholders and community especially policy makers, and local experts;
- Medium to High priority to enhance CEPA programmes in improving public awareness especially for local communities and through educational events with young generation.

#### Focal area 4 – Information sharing

- Medium/High priority to share peatland management related information (i.e. peat area, drought monitoring)
- Need continuity effort through publications, information centre, websites, workshops, conferences and field advisory, need media engagement
- Develop citizen science approach (i.e. communities, youth and school) so that they can take action on the conservation of peatland. Include in the curriculum the peatland conservation. (c/o SCPW)

#### Focal area 5 – Policy and regulation

- High priority to develop and strengthen policies and legislation;
- High priority to mainstreamed peatland in the Work Program of concerned government institutions as well as local government units with peatlands.

#### Focal area 6 – Fire prevention, control and monitoring

- High priority to have multi-stakeholder collaboration;
- High priority to link peatlands into climate change and NDC (GHG emission);
- High priority in strengthening enforcement and monitoring.

#### Focal area 7 – Biodiversity conservation

- High priority to promote biodiversity conservation for peatlands;
- High priority on the implementation of Philippine Biodiversity Strategy and Action Plan (2015-2028); Agusan Marsh acknowledged as a key biodiversity area in PBSAP;

#### Focal area 8 – Integrated Peatland Management

- High priority to promote Integrated Peatland Management;
- Enhance stakeholder engagement and support include delineate boundaries.

#### Focal area 9 – Best practices in peatland management

- High priority to identify and document best practices in peatland management (conservation and cultivation areas);



- To promote the best management practices (BMPs) and replicate the BMPs to other areas;
- Provide appropriate peatland-friendly livelihood support/trainings to the local organization/community to effectively manage the peatland;
- Enhancing sustainable livelihood opportunities for communities in peatland areas.

#### Focal area 10 – Restoration and Rehabilitation

- High priority to develop appropriate techniques include identify indigenous and typhoon-resistant species;
- A direct intervention program under the Philippine Biodiversity Strategy and Action Plan (PBSAP);
- To increase investment/ development fund for innovative technologies and application of tested techniques at the site (some available cost-effective techniques identified and to be replicated at site)
- Possible reinstatement and reversion of peatlands released and classified as agricultural land;
- Peatland restoration and management as a nature-based solution to climate change.

#### Focal area 11 – Peatland and climate change

- High priority to improve peatland function for carbon storage and incorporate into climate change adaptation processes;
- Mainstreaming climate change in biodiversity planning & management;
- To promote rehabilitation and restoration of degraded peatlands for carbon sequestration and storage.

#### Focal area 12 – Regional collaboration

- Medium/high priority to strengthen collaboration among AMS in peatland management
- Ongoing regional programmes/projects: EU-SUPA, IFAD-MAHFSA

#### Focal area 13 – Funding resources

- High priority to identify, search and attract financial support for peatland e.g. carbon projects, CSR, etc. (domestic and international funding)