

Strategy for Responsible Peatland Management

Donal Clarke and Jack Rieley (Ed.) 6th, edited edition

Strategy for Responsible Peatland Management

First Edition adopted at a Stakeholder Seminar in Amsterdam in October 2010

Sixth, edited edition revised by members of Commissions and Expert Groups of the International Peatland Society and many of its members and stakeholders in 2019

Publisher: International Peatland Society Nisulankatu 78 B 40720 Jyväskylä, Finland phone: +358 40 418 4075 email: info@peatlands.org web: www.peatlands.org

Edited by: Donal Clarke Jack Rieley Members of IPS Executive Board

Cover photo: Dan Meyers Printed at: Siirtopaino, Jyväskylä, October 2019 Copyright 2019 by International Peatland Society. All rights reserved

Citation format: Clarke, D. & Rieley, J.O. (2019) Strategy for Responsible Peatland Management. 6th Edition, International Peatland Society, Jyväskylä, Finland.

ISBN 978-952-99401-4-1 (Paperback) ISBN 978-952-99401-5-8 (PDF)

Strategy for Responsible Peatland Management



3

TABLE OF CONTENTS

SUMMARY

- 1. INTRODUCTION
 - 1.1 Extent of peatlands
 - 1.2 Ecological importance and uses of peatlands and peat
- 2. OBJECTIVES OF THE STRATEGY
 - 2.1 Peatland management
 - 2.2 Structure of the Strategy
 - 2.3 Vision for responsible peatland management

3. STRATEGIC OBJECTIVES

- 3.1 Biodiversity
- 3.2 Hydrology and water regulation
- 3.3 Climate and climate change processes
- 3.4 Economic activities
- 3.5 After-use, rehabilitation and restoration
- 3.6 Human and institutional capacity and information dissemination
- 3.7 Engagement of people
- 3.8 Good governance
- 4. FOLLOW-UP
- 5. ACRONYMS
- 6. GLOSSARY
- 7. REFERENCES
- 8. ANNEXES

8.1 Development of the Strategy for Responsible Peatland Management 8.2 Organisations consulted or involved in the development of the Strategy

LIST OF FIGURES

Figure 1 Extent and location of global mires and peatlands (PEATMAP) Figure 2 Global estimate of areas used for different uses of peatland Figure 3 Structure of the Strategy for Responsible Peatland Management

Strategy for Responsible¹ Peatland Management

Summary

1) Peatlands and their ecological and social services are unique biological, environmental and economic resources.

2) The aims of the Strategy for Responsible Peatland Management are to:

- Undertake peatland management according to the principles and within the framework of 'Wise Use of Mires and Peatlands'¹ by safeguarding their environmental, social and economic functions and respecting their local, regional and global services.
- Ensure that
 - ✓ high conservation value peatlands are identified and conserved,
 - ✓ utilised peatlands are managed responsibly, and
 - ✓ drained, degraded or otherwise changed peatlands are rehabilitated to reinstate as many ecological and landscape functions and services as possible.
- Provide those involved in or responsible for peatland management with strategic objectives and actions for implementation.

3) Peatlands are used and managed for many different purposes. Undrained peatlands are valuable habitats for a wide range of biodiversity and ecosystem services, and many are managed as nature reserves. Drained peatlands are used mostly for agriculture and forestry, but a relatively small area is harvested to provide peat for energy, growing media and other products. Peatlands are also affected indirectly as a result of other landscape activities, for example, mining and mineral extraction, recreation, reservoir construction, urbanisation and wind farms.

4) The **Strategy** is directed to everyone responsible for or involved in the management of peatlands, or in the peat supply chain, and is applicable to all types of peatland under every use or impact. It should be applied in every country in which this biological, hydrological and landscape resource occurs or in which peat products are processed or used. To deliver the **Strategy**, peatlands should be managed responsibly by focusing on the following priority issues.

5) **Biodiversity:** Pristine peatlands are unique natural resources forming distinct ecosystems of importance for maintenance of biodiversity at genetic, species and habitat levels. The **Strategy** provides guidelines for peatland biodiversity conservation, according to Wise Use principles² and recommendations of the International Convention on Biological Diversity (CBD) (1992), to be included in landscape planning and management procedures.

¹ See page 126 of Joosten and Clarke 2002

² The 'Guidance Principles' (section 5.4. of Joosten and Clarke 2002, esp. principles 9-14).

After-use plans for peatlands used for economic purposes should include best practice measures for the rehabilitation or restoration of an optimal range of ecosystem and landscape services.

6) *Hydrology and water regulation:* Peatlands are water catchments and regulators. They maintain and modify water quality and quantity, act as sinks for some substances (e.g. carbon and water and aerial and waterborne pollutants), produce others (e.g. dissolved and particulate organic matter), and influence the temporal pattern of water supply to rivers and lakes. The role of peatlands in water regulation depends on maintaining or restoring the integrity of their unique hydrology. Management activities should avoid unnecessary deterioration in the quality and quantity of peat water and ground water in the surrounding landscape.

After use, peatland water levels and flow regimes should be restored to as close to the natural reference conditions as possible.

7) *Peatlands and climate change:* Peatlands are dependent on climate, especially rainfall and temperature, for their formation and maintenance. Some peatland plants sequester carbon from the atmosphere and store large amounts in peat. Peatlands globally are the largest terrestrial store of carbon, exceeding that of the world's forests. Under certain conditions peatlands may contribute to climate change processes by releasing carbon dioxide or methane to the atmosphere. Greenhouse gas exchange between the atmosphere and peatlands exhibits much spatial and temporal variation related to differences in climate, ecology, hydrology and management.

Peatland management should avoid increasing and, wherever possible, reduce human-induced greenhouse gas emissions and protect their carbon store.

8) *Economic activities on peatland:* Peatlands provide livelihood opportunities to local communities and national economies. They are a source of food, medicines, timber, amenity and domestic energy in some countries. Peat is a major constituent of growing media, a valuable soil improver and is used in a range of other products.

Intact peatlands provide economic benefits through environmental services such as carbon capture, water regulation and biodiversity maintenance.

Economic use of peatlands should

- Avoid damaging peatlands of high conservation value and prioritise the use of peatlands that have been degraded by human intervention.
- Prevent development of any part of pristine peatlands because this activity will impact negatively on the ecohydological character of the entire peatland.
- Promote, where possible the use of appropriate peat substitutes in growing media and for non-essential uses of peat.

9) *After-use, rehabilitation and restoration:* The Wise Use of peatlands for economic purposes requires planned after-use, for example, agriculture, forestry, recreation and wildlife habitat and biodiversity provision (nature conservation). The exact nature of after-use will likely be determined by the landowner in consultation with the relevant planning authority and specified in the planning consent and license to operate. This will probably require some form of mitigation, restoration or rehabilitation, and may involve rewetting to raise the water table.

Peatland restoration should aim to return degraded peatlands to conditions in which ecosystem functions (e.g. carbon, energy and nutrient dynamics, decomposition of organic matter,

biodiversity and production of biomass and water regulation) are as close as possible to natural conditions within the constraints of practicality and at reasonable cost. After-use plans should include best practice measures for rehabilitation or restoration of an optimal range of ecosystem and landscape services based on sound science.

10) *Human and institutional capacity and information dissemination:* It is important to increase the knowledge, skills and understanding of all stakeholders to promote the actions needed to bring about the desired results of responsible peatland management. Stakeholders (e.g. government administrations, research institutes, the private sector, NGOs, local communities and individuals) need to understand the various issues, respect each other's views and work together. Objectives should include the

- Facilitation of information dissemination and communication with all stakeholders, including local communities, individuals and the public.
- Promotion of better understanding of peatland environmental functions and ecological and landscape services and their responses to climate change and management operations by collating and assessing data on different types of peatland and by sharing information.

11) **Engagement of people:** Promote local community engagement and participation in the decision-making and implementation processes involved in peatland management to help local people understand the key issues and priorities.

Responsible peatland management will provide livelihood opportunities for local people, respect their rights, heritage and traditions, and promote gender equality.

12) **Good governance:** 'Good governance' means responsible management of peatlands in a manner that is open, transparent, accountable, equitable and responsive to people's needs.

Regulatory frameworks and legislation need to be in place at international, regional, national and sub-national levels to ensure responsible management of peatlands and voluntary mechanisms (for example, funds, certification, payments for ecosystem services) that complement these.

13) **Peatland planning and management**: should be based on rigorous and verifiable scientific knowledge and practical experience.

Strategy for Responsible Peatland Management

1. INTRODUCTION

The **Strategy for Responsible³ Peatland Management (SRPM)** applies commonly agreed principles for the *'Wise Use of Peatlands⁴⁴* to the management of all peatlands and provides objectives and actions for implementation. The SRPM is directed to everyone responsible for or involved in the management of peatlands, or in the peat supply chain, and is applicable to all types of peatland under every use. It should be applied in every country in which this biological, hydrological and landscape resource is found or in which peat products are processed and/or used. 'Use' is employed in a wide sense and includes both conservation and non-use¹.

On a global basis, responsible management of peatlands includes the conservation of the majority of pristine or semi-natural peatlands, most especially those of high conservation value. The SRPM acknowledges there are adverse impacts of many peatland uses and proposes mitigation measures to redress these, but it does not make value judgements regarding different uses of peatlands.

The initiative to develop the SRPM was taken by the IPS in collaboration with a range of stakeholders. The Strategy was developed through a series of meetings and consultation phases, as outlined in Annex 1. The Strategy is a global document and provides an overall context within which to deal with specific local, national or regional issues. It is applicable to certification, conservation, restoration, utilization and after-use. All uses of peatlands and peat require their own specific guidelines for practical implementation.

1.1 Extent of Peatlands

Peatlands cover an estimated area of more than 400 million hectares in some 180 countries (Figure 1), equivalent to 3% of the Earth's land surface. Detailed estimates of the extent of peatlands are given in Lappalainen $(1996)^5$ and Appendix 1 to Joosten and Clarke 2002.

³ Responsible: Different parties have differing opinions on how to apply the term 'sustainable' to uses of peatlands. This has led to the use of the terms 'wise use' and 'responsible management'. During consultations leading to the original SRPM (2008-2010) discussions took place on the appropriate term to define the proposed Strategy. Words such a 'wise use' and 'usutainable' were considered but the consensus was to use the word 'responsible'. The Wise Use book defines a responsible decision as: "Any decision should consider its effects on other individuals and entities. Decisions at one level should reflect the interests of other levels^{3*}. A responsible approach to managing a peatland is one which acknowledges the effect on other people and ecosystem services, and balances environmental, social and economic priorities.

⁴ This strategy is inspired by the IMCG/IPS book "The Wise Use of Mires and Peatlands – Background and Principles including a Framework for Decision-making" published in 2002 and referred to in this document as Joosten & Clarke 2002. The terms used in this document rely strongly on commonly accepted definitions and their interpretations used in previous publications, principally those in Joosten & Clarke 2002. Some are explained in the Glossary. Wise Use of peatlands is defined as those uses for which reasonable people, now and in the future, will not attribute blame (Joosten & Clarke, 2002 p 19).

⁵ Lappalainen, E. (1996) Global Peat Resources, International Peat Society, Jyväskylä, Finland, 359pp

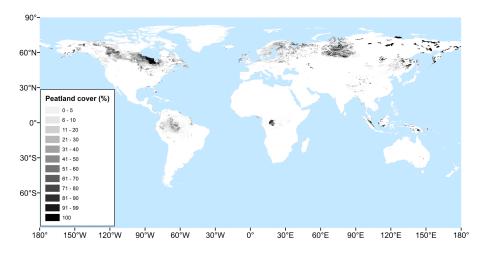


Figure 1. Global peatland distribution derived from PEATMAP⁶.

(The colour classes indicate percentage peatland cover in Canada, where the source data were provided as grid cells rather than shape files; and regions where peatland cover was estimated from histosols of HWSD v1.2. Elsewhere, where shapefiles are freely available, individual peatlands and peat complexes are shown in solid black.)

1.2 Ecological Importance and Uses of Peatlands and Peat

Globally, undrained, natural peatlands are habitats for a wide range of biodiversity and provide important ecosystem services that are of benefit to human societies.

Key peatland ecosystem services include biodiversity maintenance, carbon and water storage, solute detention, and water regulation. Peatlands are managed and used for many different purposes, including nature conservation (Figure 2).

Drained peatlands are used mostly for agriculture and forestry⁷ and to a much lesser extent are harvested to provide peat for energy, growing media and chemical processes.

Peatlands are also 'used' or managed indirectly because of other landscape activities, for example, mineral extraction, mining, recreation, reservoir construction, urbanisation, and wind farms.

Historically, peatlands have fulfilled many human needs including food, domestic energy, house construction material, and livestock bedding; they have contributed to arts, culture, music, health and religion.

Peatlands are archives of environmental change and human history, containing records of climate, landscape change and preserving artefacts from past societies.

⁶ Xu et al (2018) Catena, 160: 134-140

⁷ Joosten and Clarke 2002 p33.

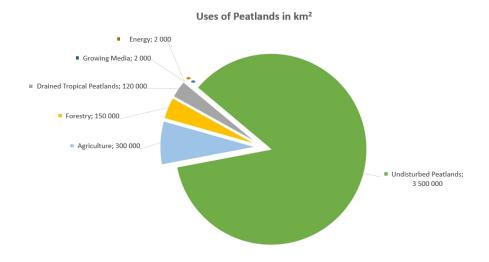


Figure 2: Global estimate of areas used for different uses of peatland (Based on information from: Strack (2008); Page et al (2011))

(This diagram does not include the area of peatland affected by indirect peat uses such as flooding for reservoir construction or extraction of minerals underneath the peat. Data for peatlands abandoned after economic uses are not available. Other specific uses which are not included are conservation (i.e. areas with a protected area status), reed culture, tourism, fisheries, and traditional uses by indigenous people. "Drained tropical peatlands" includes peatlands used for oil palm and pulp wood plantations, forestry (including illegal logging), agriculture, infrastructure, etc.)

In some parts of the world, the use of peatland has been intensive, altering completely the ecosystems of mires and impacting landscapes. In others, the use has been more extensive, or non-existent, causing less change or damage. Most Arctic and Subarctic peatlands are still intact. In Europe peat has ceased to accumulate in over 50% of the former mire area and almost 20% no longer exists as peatland⁸. Over 50% of Indonesia's peat swamp forests have been deforested and drained for agriculture and plantations since 1980⁹. Approximately 80% of the original area of both tropical and non-tropical mires is still in largely pristine condition (undeveloped) although in about 25% of this peat accumulation may have stopped because of natural processes and recent climate change. It is estimated, therefore, that peat is still actively accumulating on 50% of the original global mire area⁵.

2 OBJECTIVES OF THE STRATEGY

The objectives of the Strategy for Responsible Peatland Management (SRPM) are to:

- Inform those involved in or responsible for managing peatlands of commonly
 accepted principles for the 'Wise Use of Peatlands' and actions to implement these.
- Improve peatland management within the framework of 'Wise Use of Mires and Peatlands'¹.

⁸ Joosten and Clarke 2002

⁹ Hooijer et al. 2005

• Ensure that high conservation value peatlands are identified and conserved, 'utilised' peatlands are managed responsibly; and drained, degraded or otherwise changed peatlands are rehabilitated to restore as many ecological and landscape services as possible.

2.1 Peatland Management

Management involves the organisation, regulation and administration of a peatland and its use for specified purposes. Management should be appropriate to the peatland type, use and socio-economic, cultural, and environmental conditions.

2.2 Structure of the Strategy

The Strategy (Figure 3):

- begins with a vision statement (Section 2.3);
- identifies strategic objectives for responsible management categorised into eight priority areas under three major themes ('Importance', 'Objectives' and 'Actions') (Section 3);
- sets out specific actions for each priority to achieve the objectives.

2.3 Vision for Responsible Peatland Management

Peatlands are unique biological, ecological, societal and economic resources. The vision for responsible peatland management is:

Promoting Wise Use of peatlands through safeguarding their environmental, social and economic functions and respecting their local, regional and global values.

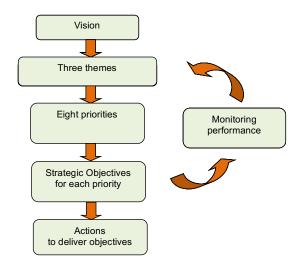


Figure 3: Structure of the Strategy for Responsible Peatland Management

3 STRATEGIC OBJECTIVES

To deliver the vision, peatlands must be managed in accordance with strategic objectives. These objectives are grouped into eight priorities, under three major themes¹⁰, as follows:

Ecological services provided by peatlands:

- Biodiversity maintenance
- Hydrology and Water regulation
- Climate stabilisation and climate change mitigation

Activities related to peatlands:

- Socio-Economic
- After-use: rehabilitation, restoration and other management activities.

Means of promoting Wise Use:

- Human and institutional capacity, education and information dissemination
- Engagement of people
- Good governance

Under each priority an 'introduction' explains why it has been selected; the 'objectives' indicate how it should be addressed; and the 'actions' outline how responsible management can be achieved.

3.1 Biodiversity

3.1.1 Importance of peatlands for biodiversity

Peatlands are unique biological resources forming distinct ecosystems of local, national, regional and global importance for biodiversity maintenance at genetic, species and habitat levels. They contain species that are found only or mainly in peatlands and are home to some of the rarest species of plants and animals many of which are highly adapted to the specific peatland environmental conditions. There are many different peatland types¹¹ globally with great variation in biodiversity between them. For example, tropical peatlands are amongst the most biodiverse ecosystems on the planet. The importance of habitat and biodiversity management and the protection of ecological functions and services processes are recognised internationally through the Convention on Biological Diversity (CBD) 1992.

3.1.2 Objectives

Peatland management should:

- 1. Maintain, through government legislation and conservation designations and actions, the biodiversity and natural resource functions of representative examples of important mire types and semi-natural peatland ecosystems.
- Recognise the importance of peatlands as important reservoirs of biodiversity, and ecosystem services at the landscape level and integrate them within land use planning and management procedures.

¹⁰ These headings were identified from stakeholder discussions. The order in which they are listed does not imply their relative importance.

¹¹ Joosten and Clarke 2002 pp25-31

- 3. Include actions to safeguard peatland ecosystem functions when planning and implementing management interventions for specific sites.
- 4. Include biodiversity protection and enhancement in after-use plans for peatlands used for peat extraction, forestry, agriculture and other uses.
- 5. Take actions to maintain and/or enhance biodiversity on drained, cut-over and degraded peatlands through appropriate planned management during and after use.
- 6. Maintain as much peatland biodiversity as possible in areas adjacent to those where peatlands may be lost forever (e.g. flooding for hydro-electricity generation, water supply, urbanisation or removal of the peat for sub-surface mineral extraction).

3.1.3 Actions

It is recommended to:

- Formulate guidelines for peatland biodiversity conservation according to Wise Use principles¹² and recommendations of the International Convention on Biological Diversity (CBD) (1992).
- Review, synthesise and integrate where appropriate available local knowledge and national and international research findings and data on biodiversity of peatlands.
- Specify in management plans referring to the protection or conservation of peatlands, activities necessary to ensure ongoing maintenance and enhancement of biodiversity and ecosystem functions and consider the ecologically and hydrologically linked surroundings.
- Monitor peatland biodiversity regularly to provide feedback on changes in relation to baseline values and information for improving management decisions.
- Include guidelines for after-use that employ best practice measures for the restoration of an optimal range of biodiversity and ecosystem services when planning for the rehabilitation or restoration of peatlands drained for economic uses (see Section 4.5).
- Support the compilation of "Red" lists of peatlands of high conservation value which are endangered and should be reserved for conservation.

3.2 Hydrology and Water Regulation

3.2.1 Importance of peatlands in peatland and landscape hydrology

The role of peatlands in water regulation depends on maintaining the integrity of their unique hydrology that may be independent of but linked to the hydrology of the adjacent peatland and the wider landscape. Peatlands modify water quality and quantity, act as sinks for some substances and sources of others and influence the temporal pattern of water delivery to rivers and lakes. Thus, the extent and condition of peatland within a river basin influences the habitat conditions for aquatic biota and the ecological status of water bodies. Depending on their position within the hydrological and landscape system, many peatlands also provide 'unseen' water regulation functions with considerable direct value to human society. Except under extreme weather conditions, headwater peatlands receive water from rainfall and release it

¹² The 'Guidance Principles' (section 5.4. of Joosten and Clarke 2002, esp. principles 9-14).

gradually with beneficial effects on river flows downstream. Peatlands situated in lower parts of river basins act as transition areas for water, providing temporary storage for both rainfall and runoff, smoothing flow regimes over time. Peatlands located on floodplains can attenuate flood peaks of water moving downriver thereby providing natural flood protection to downstream human settlements.

3.2.2 Objectives

Peatland management activities that influence the level, quantity and quality of water both on site and in the surrounding landscape should:

- 1. Keep or restore water levels and flow regimes as close to the natural reference conditions as possible.
- Carry out drainage and other management practices only to the extent required and avoid unnecessary deterioration in the quality and quantity of ground and surface waters.
- Ensure that impacts of long-term drainage, peat removal and/or subsidence management activities will be limited to an extent that hydrological management can be implemented in a cost-effective way as part of an after-use strategy.

3.2.3 Actions

It is recommended that:

- Drainage of peatland considers the importance of water quality, quantity and flow dynamics in the peatland itself and in adjacent and downstream locations.
- Water management on peatlands is based on best available knowledge and techniques and carried out according to international conventions and regional and national legislation and priorities.
- Effective flood and sediment control are part of all drainage activities.
- Water quality and quantity standards are measured against, and set in terms of, baselines of recognised standards on site and in surrounding areas.
- The minimum drainage necessary to enable current and future land use and maintenance are implemented.
- Peatland use does not result in the creation of vastly different surface levels that would make hydrological restoration difficult to achieve in a cost-effective way.
- Regular re-evaluation is carried out to ensure that best water management outcomes are achieved, using up-to-date practices and based on the results of continuing water quality, quantity and catchment monitoring.

3.3 Climate and climate change processes

3.3.1 Role of peatlands in climate change processes

Peatlands are dependent on climate, including rainfall and temperature, for their formation and maintenance. Greenhouse gas exchange between the atmosphere and peatlands exhibits much spatial and temporal variation related to differences in climate, hydrology and management. Mires sequester carbon dioxide from the atmosphere and peatlands have been major global carbon stores for millennia. Peatlands also emit CO₂ and CH₄, the amounts of which are influenced by land use, temperature, and water level; the latter two factors are likely to be affected by removal of vegetation, drainage, fire and future climate change. Peatlands drained for agriculture and forestry emit substantial amounts of carbon dioxide and, in the case of the former, also nitrous oxide (N2O). Peatland under extraction releases relatively small amounts of CO₂ compared to peatland used for agriculture or forestry. However, carbon in peat extracted needs to be accounted for Appropriate management can protect the carbon store in peatlands and suitable after-use methods, deploying re-wetting and re-vegetating can decrease net greenhouse gas emissions and create conditions for future carbon sequestration and peat formation although methane emissions may increase for a time. The impacts of peatlands and their management on climate change and vice versa are not fully understood, but it has recently become clear that the degradation of peatlands is contributing to global greenhouse gas emissions.

3.3.2 Objectives

Peatland management should avoid increasing and, wherever possible, reduce human-induced greenhouse gas emissions from peatlands and protect their carbon stores through:

- 1. Planning and adopting management strategies, regimes and technologies that protect carbon stores and minimise greenhouse gas emissions from peatlands.
- 2. Planning and implementing peatland management and after-use actions that achieve lower greenhouse gas emissions than from current or previous use and increase the potential for greenhouse gas sequestration.
- 3. Preventing unnecessary¹³ and illegal expansion of peatland utilisation.
- 4. Monitoring carbon stores and greenhouse gas emissions from peatlands in order to obtain information on the impacts of different management regimes and promote 'best practice'.
- 5. Ensuring that carbon accounting of peatlands is included in peatland management planning.
- 6. Obtaining further information on the impact of peatland management on climate change processes and *vice versa*.

¹³ Joosten and Clarke 2002 §5.6.5 (2) p135.

3.3.3 Actions

It is recommended that:

- The most recent scientific information on greenhouse gas fluxes should be considered in the formulation of peatland management plans.
- The carbon stores and carbon sequestration functions of peatlands should be protected and conserved in accordance with the requirements of international conventions and regional and national statutory requirements and management plans should include mitigation measures to maximise peat carbon stores and minimize greenhouse gas emissions.
- Peatland managers should carry out carbon 'life cycle' analyses, or work with scientists to obtain them, and use this information when designing management activities.
- Peatland after-use should have low CO₂ emission rates and increased carbon sequestration potential, considering the long timescale required for sequestration and the other services provided by peatlands.
- Scientific information, awareness and understanding of the relationship between peatlands and climate change should be increased and relevant knowledge contributed to responsible management planning through:
 - providing accessible information on the importance of peatland management in relation to climate change to public, corporate and government decision makers
 - encouraging the research community to provide clear science-based information on their findings
- The potential of peatland rehabilitation (rewetting) and other after-use activities for reducing emissions from peatland degradation (e.g. mitigation actions) must be investigated to compensate for carbon emitted elsewhere (e.g. in the peatland-based and peat-based industry, agriculture and forestry). Carbon offsets could be a means for the peat-based and peatland-based industries to reduce the carbon footprint of their products.

3.4 Economic Activities

3.4.1 Reasons for economic activities

Peatlands, in addition to undertaking important ecosystem functions and providing ecosystem services, are valuable economic resources in many countries where they have been used and valued for centuries for different purposes. They have been a source of fuel, food and refuge to local communities where accessible. Where relatively inaccessible a large proportion have remained intact. Significant changes have taken place in the uses of peatlands during the last century. Increased demand for regional development, housing, energy, forestry, horticulture and agriculture have been among the causes of these changes. Peatlands provide livelihood opportunities and welfare to local communities and are a source of domestic energy in some countries. Peat is a major constituent of growing media worldwide, a valuable soil improver and is used in other practices and products, including for human health.

3.4.2 Objectives

Peatland management for economic purposes¹⁴ should:

- 1. Prioritise degraded peatlands and avoid development of all or parts of peatlands of high conservation value (for their biodiversity or ecosystem services).
- 2. Recognise the economic benefits provided by largely intact peatlands through environmental services such as carbon capture, water regulation and biodiversity maintenance.
- 3. Adopt planning procedures for economic uses of peatlands that consider the interests and incorporate the views of all stakeholders equitably and are in accordance with relevant international legislation and conventions, national laws and regulations and reflect the Wise Use principles set out by Joosten & Clarke 2002.
- 4. Proposals for peatland after-use (see Section 3.5) should be mandatory in the initial planning stage for economic use and provide not only specifications of the work programme but also financial provision to enable this to be carried out, monitored, and maintained.
- Economic activities on degraded peatlands should avoid negative impacts on hydrologically or ecologically linked pristine peatlands or peatlands that are of high conservation value.
- 6. Consider use of degraded peatlands to produce timber or agricultural crops and livestock production only when these are economically viable and socially necessary and if appropriate and effective mitigation of adverse impacts will be undertaken.
- Consider use of peat and peatlands¹⁵ for energy generation when it can be derived from degraded peatlands and where it is a necessary part of domestic energy policy, increases the efficiency of burning renewables or provides a crucial element in regional development.
- 8. Consider use of peat for horticulture, bedding and other purposes (for example, medical and health products, and activated carbon) when it can be derived from degraded peatlands and processed in an efficient manner that achieves high quality outputs and minimises negative impacts on the environment.
- 9. Strive to develop suitable replacement constituents (in part or in whole) for peat in growing media and for other uses of peat.
- 10. Avoid deforestation and drainage of tropical peatlands for agriculture, infrastructure or plantations.

¹⁴ Although some specific economic uses are listed in this section, the objectives should be implemented in relation to all economic uses of peatlands (see Joosten and Clarke 2002 pp48-72)

¹⁹ Peatland can be used for energy generation even if peat is not a fuel, for example, flooding for hydroelectric schemes, excavation for mineral extraction (e.g. tar sand in Canada), and installation of wind farms.

3.4.3 Actions

If not regulated by national law, it is recommended to:

- Carry out environmental and social impact assessments at the planning stage of economic use and it should be a requirement of those responsible for developing and managing peatlands to:
 - Commission and pay for environmental and social impact assessments, including
 off-site impacts of the activity proportionate to the size of the area and the
 impact of the development.
 - Prepare comprehensive plans for peatland utilisation including after-use.
 - Select peatlands for future commercial utilisation that have already been drained or in other ways degraded.
 - Apply best available practices, not entailing excessive cost¹⁶, to minimise negative environmental impacts and increase economic efficiency.
 - Undertake consultation with key stakeholders.
 - Ensure consideration of both short- and long-term impacts.
- Ensure the use of peat and peatlands for energy and heat generation only takes place in areas/regions where it is a necessary part of the local energy supply and where the use of peat is most economically and/or socially beneficial.
- Ensure the use of peat in horticulture and other applications is based on its suitability for the purpose intended and is used only when other technically, economically and environmentally suitable alternatives are unavailable.
- Promote research on the development of alternative and complementary growing media constituents including cultivation of *Sphagnum* (peat moss).
- Ensure the use of peatlands for agriculture (including paludiculture), forestry (including plantations), recreation and other purposes is in accordance with Wise Use principles and contained in a plan for responsible management and after-use.
- Review the profitability or productivity of agriculture and forestry on peatlands and consider more environmentally appropriate alternative uses.
- Support establishment and implementation of independent certification systems (for example, the certification systems 'Responsibly Produced Peat' (RPP) and the Veriflora certification system) to provide evidence of responsible management of peatlands to satisfy market demand for products and services originating from responsibly managed peatlands.

¹⁶ BATNEEC - Best Available Technology Not Entailing Excessive Cost

3.5 After-use, rehabilitation and restoration

3.5.1 Importance of planning for after-use

The Wise Use of peatlands for economic purposes requires planned after-use and funding to implement it. There are different options for after-use of peatlands following economic use, including agriculture, forestry, paludiculture, recreation and wildlife habitat and biodiversity provision (nature conservation). The specific after-use chosen will likely be determined by the relevant planning authority and specified in the planning consent and license to operate.

Peatlands used for nature conservation may also require rehabilitation measures to restore them to a condition in which they can support maximum biodiversity and reduce net greenhouse gas emissions. Some degraded peatlands, especially in Europe, were drained centuries ago for agriculture (upland grazing), animal bedding (lowland raised bogs), water supply (filling reservoirs) and game sports (grouse shooting). Some of these activities also included burning as part of management. These peatlands emit large quantities of CO₂ and many are being rewetted to reduce these emissions.

The choices suitable for after-use will depend on peatland type and former management as well as the condition of the 'used' peatland. In terms of after-use options, peatlands may be managed to protect their carbon and water stores by maintaining high water tables at or near the surface. Meadows on peatland can be re-wetted after long-term agricultural use as can forest land after deforestation. Re-wetting and revegetating with indigenous species can also be achieved in tropical peatlands after deforestation, drainage or fire. Planned after-use should be an integral part of mineral extraction beneath peatlands which causes degradation of the overlying peatland ecosystem (for example, tar sands oil extraction in Canada).

3.5.2 Objectives

- 1. Peatland rehabilitation or restoration should return degraded peatlands to conditions in which ecosystem functions are as close as possible to natural conditions within the constraints of practicality and at reasonable cost.
- 2. Efficient procedures should be adopted to ensure that peatlands are not abandoned in a degraded state when their economic use ceases. Procedures may include, for example, obligations to implement rehabilitation, restoration or other after-use plans, including contingency provisions.
- Prevent further drainage and degradation of abandoned peatlands and target them for restoration with either government initiatives or as government projects with industry support.

3.5.3 Actions

It is recommended to:

• Prepare mandatory after-use plans during the initial planning process of peatland management and in enough time for a wide range of opinions and options to be incorporated.

- Identify the parties that will be responsible for the implementation of after-use plans during the planning process and ensure they have access to the required financial resources to achieve success.
- Ensure that when peatland use ceases the landscape conditions are suitable for restoration and after-use.
- Use the latest scientific knowledge of peatland ecosystem functions to derive acceptable and tested after-use management practices for the restoration of peatlands.
- Consider stakeholder views on the after-use of peatlands as well as local peatland ownership issues in order to help ensure the sustainability of the measures taken.
- Monitor and review the implementation of after-use programmes over a realistic timescale and modify procedures if objectives are not being realised; consult stakeholders on their effectiveness, considering land ownership issues and traditional rights.

3.6 Human and Institutional Capacity and Information Dissemination

3.6.1 Importance of disseminating information among stakeholders and the public

For the successful adoption and implementation of the SRPM, stakeholders (e.g. government administrations, research institutes, the private sector, NGOs, local communities and individuals) need to understand the various issues, respect each other's views and work together. To promote this, education, training and information dissemination are required that focus on the objectives and actions of the Strategy. It is important to increase the knowledge, skills and understanding of all stakeholders and to promote the consensus needed to bring about the desired results of responsible management.

3.6.2 Objectives

- 1. Improve the knowledge and expertise on peatlands of all stakeholders involved in their management and facilitate information dissemination and communication with other stakeholders, including local communities, individuals and the public.
- Promote better understanding of peatland functions and their responses to climate change and management operations by collating, assessing and summarising data on different types of peatland practices and by sharing information¹⁷.
- 3. Promote better understanding of the cultural, archaeological and palaeoecological value of peatlands.

¹⁷ E.g. databases and meetings

3.6.3 Actions

It is recommended to:

- Invest in education, training and information dissemination on:
 - Peatland management plans
 - Environmental, social and economic impacts and values of peatland management and peat-based products
 - Peatland biodiversity, habitats and natural resource functions
 - Peatland conservation
 - Interactions between greenhouse gas emissions and peatland management
 - Rehabilitation, restoration and after-use management.
- Share best practice information and expertise amongst stakeholders involved in peatland management, including conservation organisations and the peat industry, for example, via the Internet.
- Support provision of institutional training facilities to provide specific programmes focused on peatlands as a natural resource comparable to current provisions for forestry, fish and wildlife.
- Involve stakeholders in awareness raising activities.

3.7 Engagement of People

3.7.1 Importance of understanding key issues

The goal of local community engagement in the decision-making and implementation processes involved in peatland management is to provide a sense of participation and ownership which in turn helps local people understand the key issues and priorities. As a result, other stakeholders, especially private sector and government agencies, will discover, understand and appreciate better, local knowledge, viewpoints, skills and practices.

3.7.2 Objectives

Responsible peatland management will improve local economies and may change environmental and social structures. In all peatland management the objectives should be to:

- 1. Promote livelihood opportunities for local people, respect their rights, heritage and traditions, and consider gender issues.
- 2. Respect and implement the principle of free, informed and prior consent.
- 3. Provide:
 - information on peatland management to landowners and local people
 - encouragement to landowners and local people to undertake responsible management of peatlands in their ownership and abide by common law and respect traditional rights.

- 4. Hold meetings with local communities and people to discuss how they can contribute to the implementation of responsible peatland management.
- 5. Encourage the provision of societal benefits including culture, education and recreation.

3.7.3 Actions

It is recommended to:

- 1. Integrate peatland management into the larger context of landscape- and communitybased land use planning and show how:
 - Stakeholders¹⁸ can contribute to the decision making and implementation processes.
 - Managers can provide stakeholders with opportunities to contribute to the planning and management processes under existing frameworks for land use planning in the region and strive to improve these.
- Apply open and transparent planning and management procedures, including dissemination of information, early in the planning process and stress the significance of peatlands to local people and the importance of considering and including their views.
- Consider possible alternatives for peatland after-use that provide the best possible advantages for local people and the environment.

3.8 <u>Good Governance</u>¹⁹

3.8.1 Importance of good governance and law enforcement

'Governance' is the exercise of power or authority – political, economic, administrative or otherwise – to manage resources and affairs. It comprises the mechanisms, processes and institutions through which stakeholders and individuals articulate their interests, exercise their legal rights, meet their obligations and reconcile their differences. 'Good governance' means competent management of a resource and affairs in a manner that is open, transparent, accountable, equitable and responsive to people's needs. Good governance and law enforcement contribute to responsible management of peatland natural resources.

3.8.2 Objectives

Objectives for the good governance of peatland management should include the following:

- 1. Regulatory frameworks and legislation at international, regional, national and subnational levels to ensure responsible management of peatlands.
- 2. Policies on peatland management that follow the principles of Wise Use, including, for example, transparent and open processes for decision making.
- 3. Peatland planning and management based on sound scientific knowledge.

¹⁸ Stakeholders include landowners and land users, indigenous and other local people, and others who are interested in or affected by peatland management. See definition 27 in the Glossary.

¹⁹ See definition 10 in the Glossary.

- 4. Voluntary mechanisms (for example, funds, certification, payments for ecosystem services) that complement legislation, regulatory frameworks and statements of responsible management principles in relevant international agreements.
- 5. Principles, criteria, or guidance that provide greatest guarantee for maintaining biodiversity, peatland ecosystem services and social/cultural values if the actions proposed in the SRPM overlap with those of other voluntary mechanisms of industry/sectors involved in peatland use (e.g. Round Table on Sustainable Palm Oil).
- 6. Guidance on protecting man-made artefacts preserved in peatlands.

3.8.3 Actions

It is recommended that:

- Governments provide updated legislation governing peatlands and enforce it appropriately.
- Peatland managers act in accordance with national legislation, international agreements and Wise Use principles in each country of operation.

4. FOLLOW-UP

- 1. The parties to this Strategy for Responsible Peatland Management are those who indicate their adherence to it. They undertake to operate in accordance with its objectives and actions, believing that this Strategy provides a viable framework within which the Wise Use of peatlands can be implemented and improved. Parties that do not have responsibility for managing peatlands should accept that the provisions of the SRPM are appropriate to them if they process, distribute, sell or regulate peat-containing products. Parties that have responsibility for peatland management and the supply chain should incorporate the provisions of the SRPM into their own peatland management activities and plans. The parties that support this Strategy undertake to improve their peatland management in accordance with it.
- The Strategy has been developed as a stand-alone instrument and should be used to improve standards of peatland management and to increase knowledge of good peatland management among governments, regulatory bodies and peatland managers.
- Implementation of the Strategy is the responsibility of the stakeholders named in Annex 2 who contributed to its development. The Strategy will be distributed by the IPS to these stakeholders and to other international, regional and national governmental and non-governmental organisations and other appropriate bodies and individuals.
- 4. The IPS will convene meetings of, or organise a consultation process involving, the stakeholders to the Strategy every four years to review how it has been implemented and if it should be further revised. A report shall be given by the IPS Secretary General to the General Assembly of Members at the subsequent Quadrennial International Peatland Congress.

5. ACRONYMS

AISBL:	International non-profit organisation
BATNEEC:	Best available technology not entailing excessive cost
CBD:	Convention on Biological Diversity
CH ₄ :	Methane
CO _{2:}	Carbon dioxide
CSPMA:	Canadian Sphagnum Peat Moss Association
EPAGMA:	European Peat and Growing Media Association. It has subsequently separated its activities into Energy Peat Europe (EPE) and Growing Media Europe AISBL (GME).
EPE:	Energy Peat Europe
GHG:	Greenhouse gas
GME:	Growing Media Europe
IMCG:	International Mire Conservation Group
IPS:	International Peatland Society: The IPS is an international, non-governmental and non-profit organization with approximately 1,400 members from 39 countries. It is dedicated to fostering the advancement, exchange and communication of scientific, technical and social knowledge and understanding for the wise use of peatlands and peat. Further information is available at www.peatlands.org
MEA:	Millennium Ecosystem Assessment framework
NGO:	Non-governmental Organisation
N ₂ O:	Nitrous oxide
SRPM:	Strategy for Responsible Peatland Management
UNFCCC:	United Nations Framework Convention on Climate Change

6. GLOSSARY

1. After-use of peatland: The planned rehabilitation, restoration or conversion of a peatland following drainage for economic use. After-use may include restoration of peatland ecosystem functions including biodiversity, rehabilitation of peatland processes and/or services or changing the management of a peatland for other purposes, e.g. agriculture, forestry, birdwatching areas, angling, nature walks or construction development.

2. Biodiversity: The variability of living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and adherent ecosystems. Synonym to Biological diversity. *(Source: United Nations Convention on Biological Diversity (1992)).*

3. Certification: An attestation by an independent body that a product or process meets specified criteria: the system whereby such a statement is audited, verified and communicated. In the case of peatlands certification would give assurance that a peatland was managed to meet the social, economic and ecological needs of present and future generations and that products or services originating from the peatland also met those needs.

4. Conservation: The act of keeping something entire, keeping unchanged, preservation from loss. Used in the sense of a deliberate or political decision to preserve. *(Cf Joosten and Clarke 2002 p164.)*

5. Degraded peatland: A peatland which had lost its original functions, whose peat-forming and/or ecosystem functions have been damaged or destroyed. (After Joosten and Clarke 2002 p165.)

6. Ecology: (a) The science of the relationships between organisms and their environments; (b) the relationship between organisms and their environment. (*Joosten and Clarke 2002 p165*.)

7. Economic use: Any use of a peatland which contributes to economic benefits. (*After Joosten and Clarke 2002 p165.*)

8. Ecosystem services: services provided by the natural environment that benefit people. These benefits include:

- Resources for basic survival, such as clean air and water;
- A contribution to good physical and mental health, for example through access to green spaces, both urban and rural, and genetic resources for medicines;
- Protection from hazards, through the regulation of our climate and water cycle;
- Support for a strong and healthy economy, through raw materials for industry and agriculture, or through tourism and recreation; and

Social, cultural and educational benefits, and wellbeing and inspiration from interaction with nature.

While there is no single, agreed method of categorising all ecosystem services, the Millennium Ecosystem Assessment MEA) framework is widely accepted and is seen as a useful starting

point. The MEA identifies four broad categories of ecosystem service which all lead to different benefits:

- Provisioning services: we obtain products from ecosystems such as food, fibre medicines
- Regulating services: we benefit from the results of ecosystem processes such as water purification, air quality maintenance and climate regulation
- Cultural services: we gain non-material benefits from our interaction with the natural environment such as education and well-being
- Supporting services: functions that are necessary to produce other ecosystem services from which we benefit, such as soil formation and nutrient cycling

(www.defra.gov.uk/environment/policy/natural-environ/ecosystems/index.htm)

9. Environmental: The interaction of a peatland with the surrounding area, including the peatlands' biodiversity value, ecosystem services and climate impacts. As used in this document the word includes 'ecological'.

10. Good governance: This term is used by the United Nations to describe how public institutions conduct public affairs and manage public resources in order to guarantee the realisation of human rights. According to the UN, good governance has eight characteristics:

- 1. Consensus orientated
- 2. Following the rule of law
- 3. Effective and efficient
- 4. Accountable
- 5. Transparent
- 6. Responsive
- 7. Equitable and inclusive.

11. Greenhouse gas (GHG): Any gas in the atmosphere that contributes to the greenhouse effect. These include carbon dioxide, methane, ozone, nitrous oxide, CFCs, and water vapour. Most occur naturally as well as being created by human activity. (*See also http://unfccc.int/resource/cd_roms/na1/ghg_inventories/english/8_glossary/Glossary.htm*)

12. High Conservation Value peatland: The High Conservation Value approach is designed to maintain environmental and social values in production landscapes. It is based on values covering species diversity, landscape-level ecosystems, rare ecosystems/habitats, critical ecosystem services, community livelihood needs and cultural values. HCVs are those values considered to be outstandingly important at the national, regional or global level for the first four and locally for the last two.

13. Interested party: A person or group having an interest in the policies and operations of an activity or business with a willingness to participate in related decision-making and/or implementation at an appropriate level. Interested parties include peatland managers, industry, non-governmental organizations (NGOs), social groups, relevant government bodies, etc.

14. Local people: Local people are any individuals or groups of people in the area in and around a peatland who are affected directly or indirectly by peatland management decisions.

15. Mire: A peatland where peat is currently being formed and accumulating. (*Joosten and Clarke 2002 p170.*)

16. Mitigation: Any process which seeks to reduce negative environmental consequences of an intervention in a peatland.

17. Monitor: To periodically review whether the plan for a peatland has been followed, compare the actual outcomes with those planned, and to take remedial action where necessary.

18. Paludiculture: The cultivation of biomass on wet and re-wetted peatlands.

19. Peat: Sedentarily accumulated material consisting of at least 30% (dry weight) of dead organic material. *(Joosten and Clarke 2002 p172.)*

20. Peatland: An area with or without vegetation with a naturally accumulated peat layer at the surface. (*Joosten and Clarke 2002 p172.*)

21. Peatland Management: Organising, controlling, regulating, and administering a peatland for specified purposes. Management should be appropriate to the peatland type, use and socio-economic, cultural and environmental conditions.

22. Peatland rehabilitation: The reparation of ecosystem processes, productivity, and services of the former peatland, but does not imply the re-establishment of the pre-existing biotic integrity in terms of species composition and community structure. *(Source: SERI 2004)*

23. Peatland restoration: The process of assisting the recovery of peatland that has been degraded or damaged to as near as possible its original natural condition. *(Source: SERI 2004)*

24. Pristine Peatland: See Mire

25. Protection: Preservation, maintenance, and enhancement of specific biological, social, or cultural value.

26. Public consultation/participation: A regulatory process by which the public's input on matters affecting them is sought, a consultation process in which all stakeholders can actively participate. (*After Joosten and Clarke 2002 p173.*)

27. Rehabilitation: See Peatland Rehabilitation.

28. Responsible peatland management: Responsible peatland management is the implementation of the Wise Use of peatlands principles: safeguarding their environmental, social, and economic functions and respecting local, regional, and global rights and values.

29. Resource: An available supply that can be drawn on when needed. (*Joosten and Clarke 2002 p. 174*)

30. Restoration: See Peatland Restoration.

31. Re-wetting: Raising the water table in a drained peatland, usually by blocking drains.

32. Semi-natural peatlands: Peatlands that have been used and/or drained in the past or that are partially drained, but which retain some peat-forming characteristics or potential and/or peatland ecosystem functions.

33. Stakeholders: All persons and organisations having a direct interest. (*Joosten and Clarke 2002 p175.*)

34. Uses of peatlands: Covers all uses including conservation and non-use. (*Joosten and Clarke 2002 p23.*)

35. Wise use of peatlands: Use of peatlands for which reasonable people now and in the future will not attribute blame. Use includes non-use (e.g. conservation). (Joosten and Clarke 2002 p19.)

7. REFERENCES

- Hooijer, A., Silvius, M., Wösten, H. and Page, S. 2006. PEAT-CO2, Assessment of CO2 emissions from drained peatlands in SE Asia. Delft Hydraulics report Q3943
- Joosten, H. & Clarke, D. 2002. Wise Use of Mires and Peatlands Background and Principles including a Framework for Decision-Making. International Mire Conservation Group and International Peat Society, Jyväskylä, Finland

Lappalainen, E. 1996. Global Peat Resources, International Peat Society, Jyväskylä, Finland

Page, S.E., Rieley, J.O. & Banks, C.J. 2011 Global and regional importance of the tropical peatland carbon pool. Global Change Biology (2011) 17, 798–818,

Strack, M. 2008 Peatlands and Climate Change. International Peat Society, Jyväskylä, Finland

Xu, J., Morris, P.J., Liu, J. & Holden, J. 2018 PEATMAP: Refining estimates of global peatland distribution based on a meta-analysis, Catena, 160: 134-140.

8. ANNEXES

8.1 Development of the Strategy for Responsible Peatland Management

The process leading to the 'Strategy for Responsible Peatland Management' can be traced back to 1997 when members of the IPS and IMCG met in Surwold, Germany to identify and discuss activities for mutual action. Several potential topics were identified but priority was given to 'Guidelines for Wise Use of Peatlands'. Progress on the guidelines and a range of other issues were reviewed at subsequent meetings of IPS and IMCG, culminating in publication in 2002 of the book 'Wise Use of Mires and Peatlands – Background and Principles including a Framework for Decision Making', authored by Hans Joosten and Donal Clarke. This has become the 'standard' against which to measure whether peatlands are being managed 'responsibly' in order to provide various goods or services. It provides a framework for implementation of wise use of peatlands within which conflicts between different ecological services and uses of mires and peatlands can be resolved together with a set of 'principles' to guide this process.

The initiative to develop the SRPM was taken by the **International Peatland Society** (IPS). The first steps in preparing a Strategy for responsible peatland management were taken in 2008. At a meeting in Brussels in March 2008 the CSPMA and the EPAGMA encouraged the IPS to prepare a plan of how to create

- 1) a global peatland strategy
- 2) following that a peatland management certification scheme.

The plan was prepared by the IPS and it was presented during the 13th International Peat Congress in Tullamore, Ireland in June 2008 and was further advanced at a meeting in Helsinki in November 2008. A plan and timetable were established in 2008 and early 2009. In February 2009 a meeting was held in Amsterdam which was attended by a representative group of participants from the IPS, other NGOs and other organizations. This meeting initiated the drafting of the Strategy. A second meeting was held in Belfast in April 2009 and following this a draft document was prepared by the consultants INDUFOR and was circulated. This was followed by a period of consultation.

Many submissions were received, and the consultants attempted to consider the suggestions made. However, the strict timetable which had been adopted inhibited full consideration of some of the suggestions received. Following a period of consultation and reflection, some twenty-five organisations agreed to sign the Strategy which had resulted from the Amsterdam and Belfast meetings and the subsequent consultation periods. As provided for in the original plan, a seminar was convened in Brussels in October 2009 to explain the document and to arrange for its signature.

At this point it became clear that several IPS members and NGOs who had participated in the process were not satisfied with the document, and it was decided that the Brussels seminar would be changed into a meeting to chart a way ahead. A re-drafting group was appointed to take account of all the submissions received and prepare a plan for the preparation of a new draft Strategy. A re-draft was prepared and circulated in January 2010 for final comment and this considered and accepted at an Open Forum in Amsterdam in October 2010.

It was decided that acceptance and use of the SRPM would be monitored and reassessed every two years. This was done and a detailed discussion was held at the 14^{th} International Peat

Congress (IPC) in Stockholm in 2012. Subsequent, IPS Executive Board changed the review period to four years with reports given at each International Peat(land) Congress.

In preparation for the 2020 review of the SRPM at the Tallinn IPC a consultation process was initiated in 2018 to determine if changes were necessary. Following this, re-editing and updating took place, and a second consultation took place on the revised text. The changes suggested in this second consultation were circulated in May 2019 and a revised version agreed.

8.2 Organisations consulted or involved in the development of the Strategy

The following organizations or their individual employees have actively contributed to the Strategy by attending meetings and/or giving written feedback:

Non-government Organizations

Ducks Unlimited Canada International Mire Conservation Group (IMCG) International Society for Horticultural Science (ISHS) Irish Peatland Conservation Council (IPCC) Wetlands International (WI)

IPS Commissions (1-9)

The nine Commissions, as they then existed in 2009/2010, were consulted. The three newer Commissions have been consulted in 2018 on the revised text.

National Committees of IPS

Canadian Society for Peat and Peatlands Estonian Peat Association Finnish Peatland Society German Peatland and Peat Society Indonesian Peat Society Irish Peat Society Latvian Peat Producer's Association Lithuanian Peat Producer's Association Malaysian Peat Society IPS National Committee of the Netherlands IPS Polish National Committee IPS Swedish National Committee IPS National Committee of the UK IPS National Committee of the UK

Research institutes

All-Russian Institute of the Peat Industry, St. Petersburg, Russia Alterra Research Institute, Wageningen University and Research Center, the Netherlands

Department of Natural Resources, Canada Natural Resources Institute Finland Geological Survey of Finland Geological Survey of Lower Saxony, Germany Greifswald University, Germany Helsinki University, Finland Humboldt Universität zu Berlin, Germany Institute of Botany, Vilnius, Lithuania James Cook University, Australia Peatland Ecology Research Group, Université Laval, Canada **Polish Academy of Sciences Russian Academy of Sciences** Swedish University of Agricultural Sciences Tropical Peat Research Laboratory, Malaysia University of Applied Sciences Zittau/Görlitz, Germany University of Dundee, United Kingdom University of Eastern Finland University of Latvia University of Life Sciences Warsaw, Poland University of Malaysia Sarawak University of Nottingham, United Kingdom University of Pannonia, Hungary University of Warmia and Mazury, Poland University of Waterloo, Canada University Putra Malavsia VTT Technical Research Centre of Finland Wageningen University and Research Centre, the Netherlands

Industry Associations

Association of Finnish Peat Industries Canadian Sphagnum Peat Moss Association Chambre Synd. des Améliorants Organiques et Supports de Culture France EPAGMA (as it was in 2009). Industrieverband Garten, Germany Sarawak Oil Palm Plantation Owners Association Swedish Peat Producer's Association

Peat Producing Companies

AS Kraver, Estonia Bord na Móna Plc, Ireland Florentaise, France Griendtsveen AG, Germany Klasmann-Deilmann GmbH, Germany Neova AB, Sweden Northern Peat and Moss Co., United Kingdom Peltracom, Belgium (now Agaris) Rostopprom, Russia Sphagnum Products B.V., the Netherlands Turveruukki Oy, Finland Vapo Oy, Finland

Other organizations

Agri-Food and Biosciences Institute (AFBI), United Kingdom Biopterre's Bioproducts Development Center, Canada Center for International Cooperation in Sustainable Management of Tropical Peatland, Indonesia Department of Agriculture and Rural Development, United Kingdom Department Water Affairs, Lesotho Forest Carbon Offsets, USA Ministry of Agriculture, the Netherlands Ministry of Environment, the Netherlands National Parks and Wildlife Service, Ireland Natural Resources and Environment Board, Sarawak, Malaysia RHP Foundation, the Netherlands Sarawak State Government, Malaysia United Nations Environment Programme (UNEP)

IPS Executive Board IPS Scientific Advisory Board

Other organizations contacted:

CARE International Consultative Group on International Agricultural Research (CGIAR) Convention on Biological Diversity Convention on Int. Trade in Endangered Species of Wild Fauna and Flora (CITES) Food and Agriculture Organization of the United Nations (FAO) Global Environment Centre Malaysia (GEC) International Commission of Agricultural and Biosystems Engineering (CIGR) International Commission on Irrigation and Drainage (ICID) International Labour Organization (ILO) International Union for Conservation of Nature (IUCN) International Union of Forest Research Organizations (IUFRO) International Water Association (IWA) International Water Management Institute (IMWI) International Water Resources Association (IWRA) **Ramsar Convention on Wetlands** Society for Ecological Restoration International (SER) Society of Wetland Scientists (SWS) United Nations Conference on Trade and Development (UNCTAD) United Nations Development Programme (UNDP) United Nations Division for Sustainable Development (CSD) United Nations Educational, Scientific and Cultural Organization (UNESCO) United Nations Framework Convention on Climate Change (UNFCCC) United Nations Research Institute for Social Development (UNRISD)

World Energy Council (WEC) World Water Council (WWC) World Wide Fund for Nature (WWF)

In addition

All IPS members consulted by email, about 1,000 peat and peatland experts Visitors to the IPS website

The Strategy for Responsible Peatland Management is a joint document of stakeholders involved in peat and peatland matters, initiated by the International Peatland Society (IPS).

The first steps in preparing the Strategy for Responsible Peatland Management were taken in 2008 when the IPS presented a plan for a global peatland strategy and a peatland management certification scheme at the 13th International Peat Congress in Ireland.

During 2008 - 2010, meetings of representatives of scientific institutes, industrial corporations and international non-government organisations were held in Helsinki, Amsterdam, Belfast, Brussels and Jyväskylä to finalize and further advance the Strategy. Each was followed by a period of consultation and reflection. The final document was edited by a steering group of the IPS President and Chair of the IPS Scientific Advisory Board and finally adopted at a seminar in Amsterdam in October 2010.

The Strategy was re-assessed and updated at Congresses in Stockholm in 2012 and Kuching in 2016; it was subject to in-depth revision in 2019, followed by widespread consultation after which it was republished.

About the IPS

The IPS is an international, non-governmental and non-profit organisation with approximately 1,400 members from 39 countries. It is dedicated to fostering the advancement, exchange and communication of scientific, technical and social knowledge and understanding for the wise use of peatlands and peat.

To achieve its goals, the IPS via its Commissions and National Committees regularly organises conferences, symposia and workshops, publishes research results from science and industry and serves in general as a forum to bring together experts from different fields of business, science, culture and regulatory bodies dealing with peatlands and peat. Further information: www.peatlands.org