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Needs and knowledge gaps on peatlands for climate action

Global survey results May 2020 – March 2021

TECHNICAL REPORT



Global
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Table of contents

List of figures	2
List of tables.....	2
Executive summary	3
1. Introduction.....	4
Objectives	5
Methods.....	5
2. Results.....	6
Information about the respondents	6
Activities of the respondents and their organizations	9
Institutional and knowledge needs	12
Challenges.....	18
Capacity development.....	22
Financing and cooperation mechanisms	26
Next steps and project expectations	30
3. Conclusions	37
Needs, knowledge gaps and challenges	37
Supporting peatlands Inclusion in national climate policies	38
Opportunities for synergies	38
Bridging gaps and addressing challenges	38
Next steps	39
References	40
Annexes	41

List of figures

Figure 1 – Regions where the survey respondents work (n=287).....	6
Figure 2 – Countries where the survey respondents work (n=287).....	7
Figure 3 – Type of ecosystems where the work of the respondents is focused (n=287).....	8
Figure 4 – Sectors in which respondents work (n=287)	8
Figure 5 – Main peatland related tasks and focus of the respondents (n=287)	10
Figure 6 – Respondents' organizations main area of work on peatlands (n=287).....	10
Figure 7 – Perception of the public's familiarity with peatlands (n=283)	12
Figure 8 – Priority given to different topics to disseminate to the public – part 1 (n=287).....	13
Figure 9 – Priority given to different topics to disseminate to the public: part 2 (n=287)	13
Figure 10 – Perception: familiarity of respondents and their organizations with peatlands (n=287)	15
Figure 11 – 1st priority topics for tools, sources of knowledge or methods for professionals (n=287)	16
Figure 12 – 2nd priority topics for tools, sources of knowledge or methods for professionals (n=287).....	16
Figure 13 – Respondents' main peatland-related challenges (n=287).....	18
Figure 14 – Best known media and information sources on peatlands (n=287)	23
Figure 15 – Perceived usefulness of activities to develop individual capacity (n=287)	25
Figure 16 – Peatland-related objectives of respondents' organizations in the next years (n=225)	30
Figure 17 – Next steps suggested for respondents and organizations (n=214)	31
Figure 18 – Thematic areas of the suggested next steps (n=214).....	32

List of tables

Table 1 – Actions proposed to face the most important challenges. (n=216)	20
Table 2 – International cooperation initiatives known by respondents	27

Executive summary

The Global Peatlands Initiative (GPI) assessed key stakeholders' needs and gaps when it comes to knowledge and capacity-development on peatland matters. Within the context of the Global Peatlands Initiative project, led by the United Nations Environment Programme (UNEP), the Food and Agriculture Organization of the United Nations (FAO) carried out an online survey globally, but with a focus on Indonesia, Peru, the Democratic Republic of the Congo and the Republic of the Congo. The purpose of the survey was to identify gaps and needs in knowledge and capacity and find good ways to address these gaps. The focus of the survey was to understand how to best strengthen capacity to integrate peatland mapping, protection, restoration, sustainable management and monitoring into national climate change policies and plans.

This report presents the analysis of the answers of 287 respondents received between May 2020 and March 2021, either in Spanish, English or French. The FAO prepared and disseminated the online survey with the support of the Ministry of the Environment of Peru (MINAM), UNEP, and other GPI member organizations.

The results of this assessment allow stakeholders to make informed decisions to design capacity development activities. The report results can help plan and implement actions e.g. for biodiversity conservation in peatlands that have the additional benefits of reducing greenhouse gas emissions and ensuring the provision of other ecosystem services. The information obtained from this global needs assessment survey revealed current practical and knowledge gaps that should be addressed to bolster sustainable peatland management worldwide. In this regard, a series of priority topics were identified among practitioners to address peatland-related management targeting the reduction of greenhouse gas emissions from peatland drainage and degradation and securing livelihoods through peatland ecosystem services.

Most respondents identified financial mechanisms, ecosystem services, climate change mitigation, and peatland restoration as key topics where capacity development is needed. Similarly, the main challenges identified in the development of peatland initiatives are: conducting coordinated multi-sectoral research, and the lack of human, knowledge, monetary and material resources.

Knowledge of peatlands lies primarily in a few dedicated individuals and organizations operating in countries where, according to their perceptions, the familiarity with peatlands is largely absent. Two recommendations arising from this report highlight first the need for promoting efficient and transparent financing opportunities, and second, the need to strengthen coordination, capacity development mechanisms and knowledge exchange efforts to ensure that stakeholders at all levels are aware of peatland issues and can take collective action. The respondents to this survey offer clear suggestions and guidance for the focus of capacity development activities on peatlands to public institutions from local to national level, as well as to FAO, the GPI members, and other experts. Identifying these key needs also helps responding to the needs of countries through the pursuit of an improved capacity to map, manage, monitor and further study these carbon-rich, enigmatic ecosystems.

Keywords: *peatlands; knowledge; capacity; assessment; needs; gaps; climate change; communication; finance; community of practice*

1. Introduction

Indonesia, Peru, the Democratic Republic of the Congo, and the Republic of the Congo are the four countries with the largest extension of tropical peatlands in the world (Page *et al.*, 2011). Therefore, these countries were selected as the pilot countries for “The Global Peatlands Initiative: Assessing, Measuring and Preserving Peat Carbon” project (“GPI project”). Notably, there are numerous actors and ongoing initiatives in these countries supporting the advances in the sustainable management of peatlands. Since 2019, the Food and Agriculture Organization of the United Nations (FAO), technical partner to the Global Peatlands Initiative Project, has offered support to the four project’s pilot countries jointly with United Nations Environment Programme (UNEP) and Greifswald Mire Centre (GMC).

In the context of the GPI project, this report is prepared by FAO to document the results of the “Peatlands needs assessment” survey. The survey was launched for actors working in Peru in Spanish in May 2020, and at a global level in English and French in July 2020.

This report considers all responses received regardless of where the respondents are located or in which languages they responded. To give more insights into one of world’s largest tropical peatland countries, the report reserves special focus sections on the main findings for Indonesia. The GPI project has also published a report in Spanish providing insights only of the answers of those stakeholders who indicated that they work in Peru. Finally, the survey will be conducted again at the end of the GPI project to assess the results of the capacity-development activities implemented in the project countries.

The Global Peatlands Initiative and project

The Global Peatlands Initiative (GPI), led by UNEP, is an international partnership formed in 2016 at the UNFCCC Conference of Parties (COP) in Marrakech, Morocco. The mission of the Initiative is to save peatlands as the world’s largest terrestrial organic carbon stock and to prevent it from being emitted into the atmosphere (Crump, 2017). In 5 years, it has grown to 46 international partner organizations and four major tropical peatland countries. Its partners work to improve the conservation, restoration and sustainable management of peatlands worldwide, while contributing to several sustainable development goals.

The GPI is currently carrying out the pilot project: “The Global Peatlands Initiative: Assessing, Measuring and Preserving Peat Carbon” (GPI project), led by UNEP, and implemented jointly with FAO, GMC and other partners. The GPI project is funded by the International Climate Initiative (IKI) of the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) of the Federal Republic of Germany. At the global level, the GPI project aims to provide an updated overall global assessment of the status of peatlands and their importance in the global carbon cycle in order to inform policy makers. At the national level, the project aims to enhance the pilot countries’ knowledge to integrate peatlands into relevant national planning and policy processes related to climate action.

OBJECTIVES

This report aims to support the GPI project and other key stakeholders engaged in the field of peatlands by identifying:

1. needs, knowledge gaps, and challenges for capacity-development;
2. priority topics that require support to incorporate peatlands in national climate change policies and plans;
3. opportunities of synergies among different stakeholders or initiatives; and
4. opportunities to bridge gaps and address identified challenges.

METHODS

The survey was designed by the FAO technical team in coordination with UNEP and the national focal points of the four GPI pilot countries. It was launched to the public through the “Google forms” tool, and the English version is available both in the Annex 1 and through this [link](#). The dissemination of the survey started in May 2020 to the stakeholders working in Peruvian peatlands. Towards the third-quarter of 2020, global dissemination of the survey began in English, French, and Spanish.

This report presents the analysis of the 287 responses received between May 2020 and March 2021. Of these, 138 responses were given in English, 122 in Spanish, and 27 in French. Specialized dissemination efforts were made in the focal countries of the project (Indonesia, Peru, the Democratic Republic of the Congo, and the Republic of the Congo). It should be noted, however, that the responses were also received from stakeholders working in other temperate or boreal countries (82 respondents) and other tropical countries (67 respondents) such as Australia, Brazil, Chile, Cameroon, Colombia, Ecuador, India, Nigeria, the Philippines, Rwanda and Thailand.

The quantitative results were analysed using Microsoft Excel. The qualitative responses were grouped by technical topic, combined and analysed.

It is important to note that the scale of the questions represented in figures 8, 9, 10, 11, 12, and 13 was changed from 0–5 to 0–10 on 28 June 2020. The scale 0–5 allowed better visualization of all the options to respondents while using a mobile device. Nevertheless, some of the reasons for changing to a 0–10 scale are:

1. more people are familiar with scoring from 0 to 10; and
2. scales with more options lead to fewer biased results by allowing more degrees of positive and negative responses (Dawes, 2008).

To rescale the responses obtained before 28 June 2020 from a 0–5 to a 0–10 scale, we used the method proposed by Dawes (2002), a simple arithmetic procedure that consists of matching the extremes and midpoints of both scales and establishing the remaining equivalences based on proportional intervals. Although those who responded on a 0–5 scale would not necessarily have expressed responses equal to the ones obtained after rescaling, Dawes (2008) concludes that the method used produces comparable results (in terms of the variables standard deviation, skewness, and kurtosis) with the responses originally obtained on other scales.

2. Results

The results of this report may be useful both for organizations and key stakeholders working on peatlands around the world. This report also aims to guide the Global Peatlands Initiative and the project team to better design the activities and knowledge products towards the protection and restoration of peatlands in order to achieve the Paris agreement. This assessment is also useful when developing recommendations related to sustainable peatlands management.

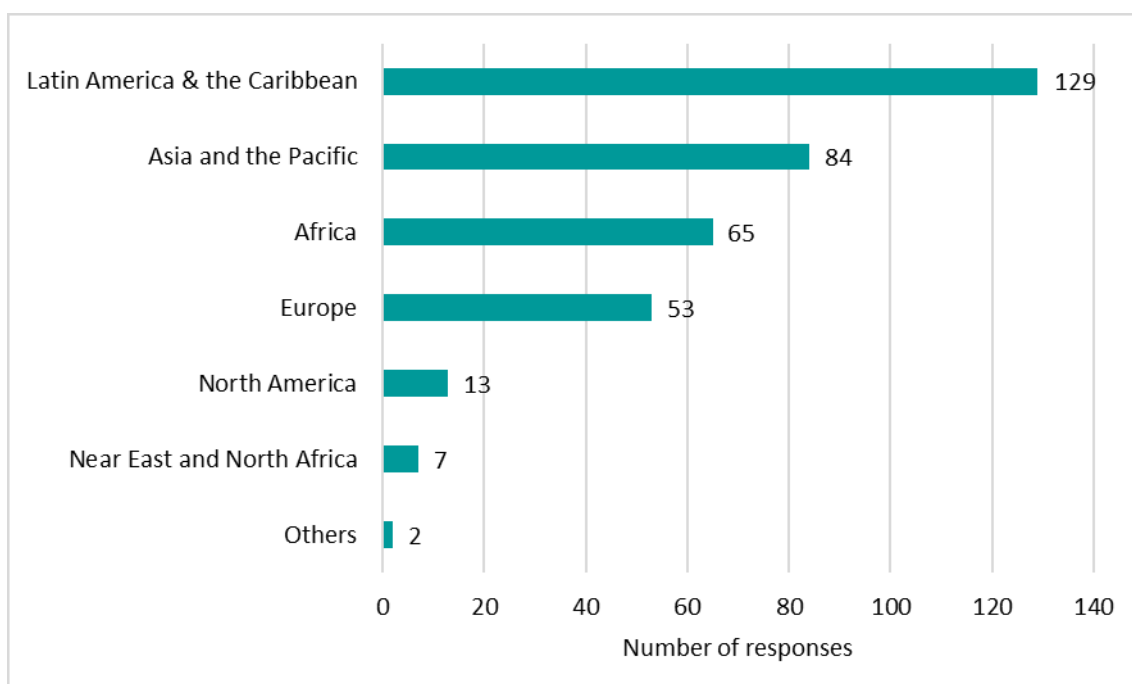
Indonesia is one of the key tropical peatland countries, and a pilot country of the Global Peatlands Initiative project. Given the importance of peatland restoration, and need for restoration and non-drainage based livelihood sources in Indonesia, this needs assessment highlights especially results from stakeholder working in that country. To note, a separate report in Spanish is being released for Peru. For the Democratic Republic of the Congo and the Republic of the Congo, efforts are being made to advance with collecting further inputs through other GPI project activities to complement the baseline data gaps (28 responses).

To conclude, these results establish a baseline for assessing the results at the end of the GPI project.

INFORMATION ABOUT THE RESPONDENTS

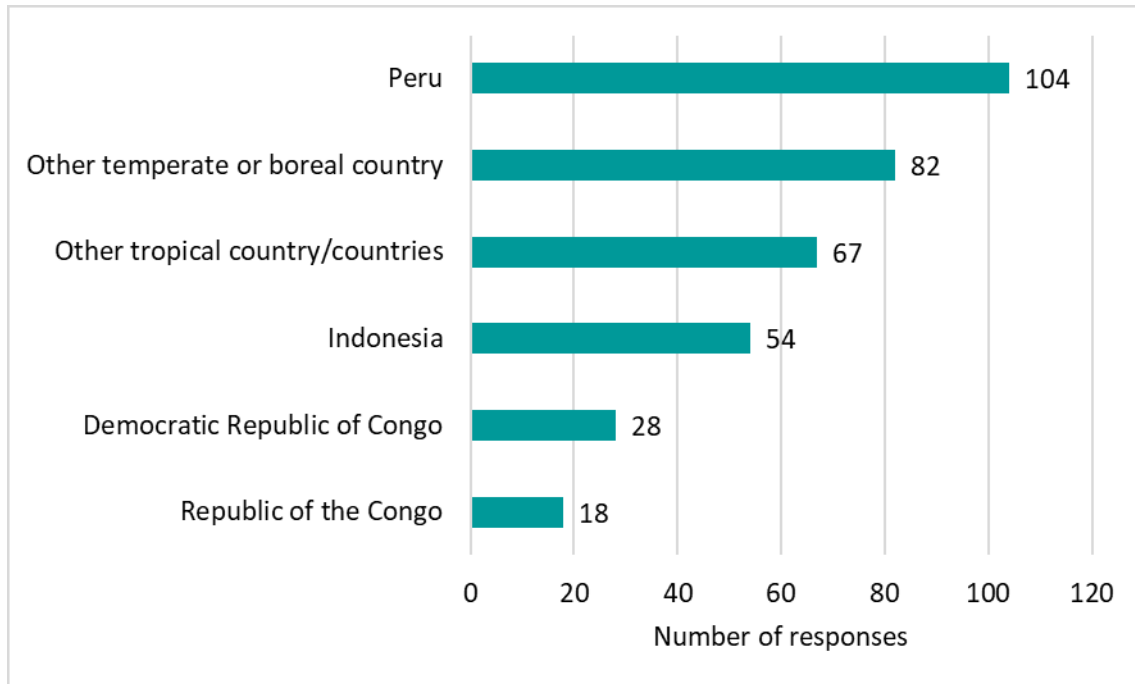
As of March 2021, 287 persons working on projects, initiatives, or strategies related to peatlands had responded to this survey. 45 percent of the respondents work in Latin America and the Caribbean region, and 29 percent in the Asia and the Pacific (Figure 1). Given the international nature of peatland work, many respondents work simultaneously in several regions, as demonstrated by the overall count in the Figures 1 and 2.

Figure 1 – Regions where the survey respondents work (n=287)



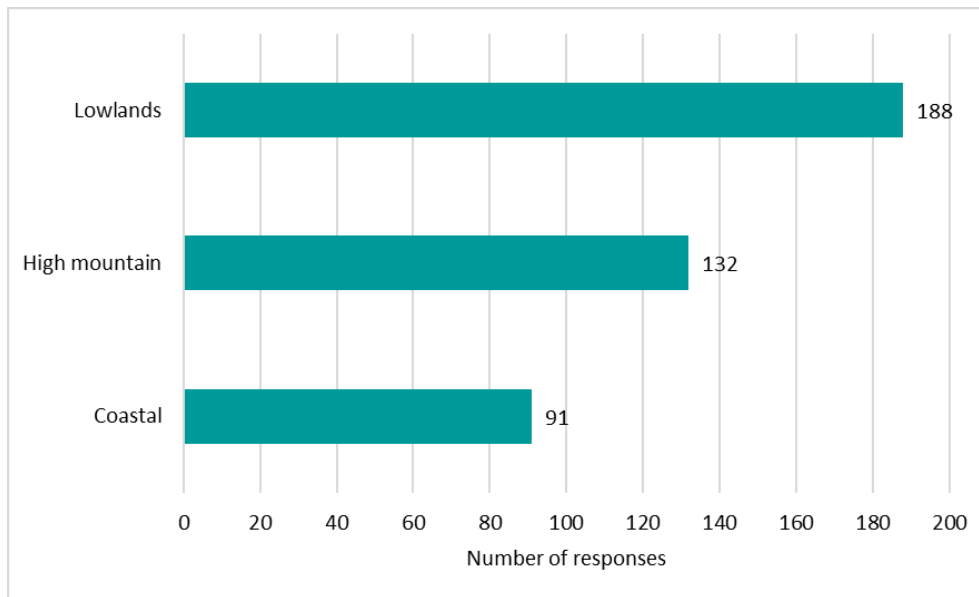
As Figure 2 shows, approximately 1/3 of the respondents' work is related to peatlands in Peru. This may be partly attributed to a longer survey's dissemination period as well as national entities' engagement in dissemination efforts in that country. People working in Indonesian peatlands represent the second biggest group within this survey with 54 respondents.

Figure 2 – Countries where the survey respondents work (n=287)



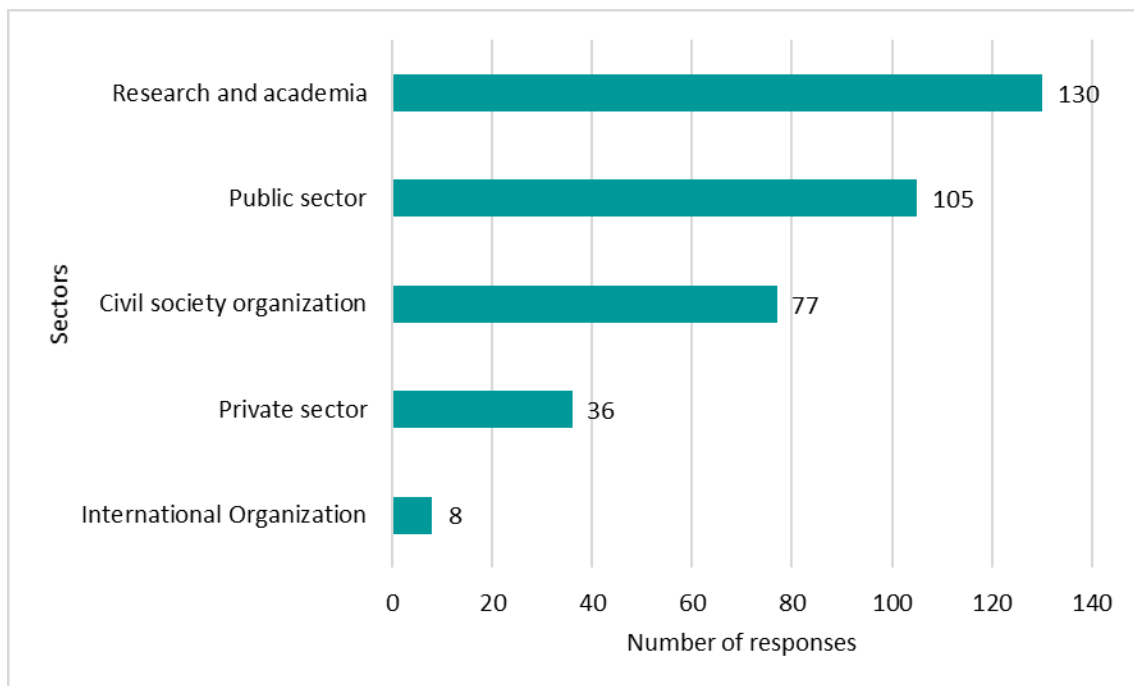
In addition, approximately 65 percent of respondents work in lowland peatlands, 46 percent in highland peatlands, and 32 percent in coastal peatlands (Figure 3). It is worth noting that up to one-third of the respondents work on two or three of these groups of peatland ecosystems simultaneously.

Figure 3 – Type of ecosystems where the work of the respondents is focused (n=287)



A bit less than half of the respondents work in research and academia, while respondents within the public (37 percent) and the third sector (civil society) (27 percent) form the next biggest groups (Figure 4). Given the relatively small number of peatland enthusiasts globally, it is good to note, however, that 44 percent of the respondents work simultaneously in two or more sectors.

Figure 4 – Sectors in which respondents work (n=287)



The respondents work for 170 different organizations. Research centers and national public entities have a high representation within the respondents. In contrast, there is a lower representation of the private sector,

subnational governments and local communities. In terms of gender, 65 percent of the respondents identify themselves as male, 34 percent identify themselves as female, and one percent prefers not to say. This result reflects that peatland issues are still dominated by male stakeholders, especially for the research and academia sector, as reported by Thornton *et al.* (2019).

Responses from Indonesia at glance

Out of the 54 respondents working on Indonesian peatlands, most work in lowlands (91 percent) and/or coastal peatlands (50 percent). The respondents work for 39 organizations, mainly from research and academia (54 percent), followed by employees of civil society organizations (28 percent).

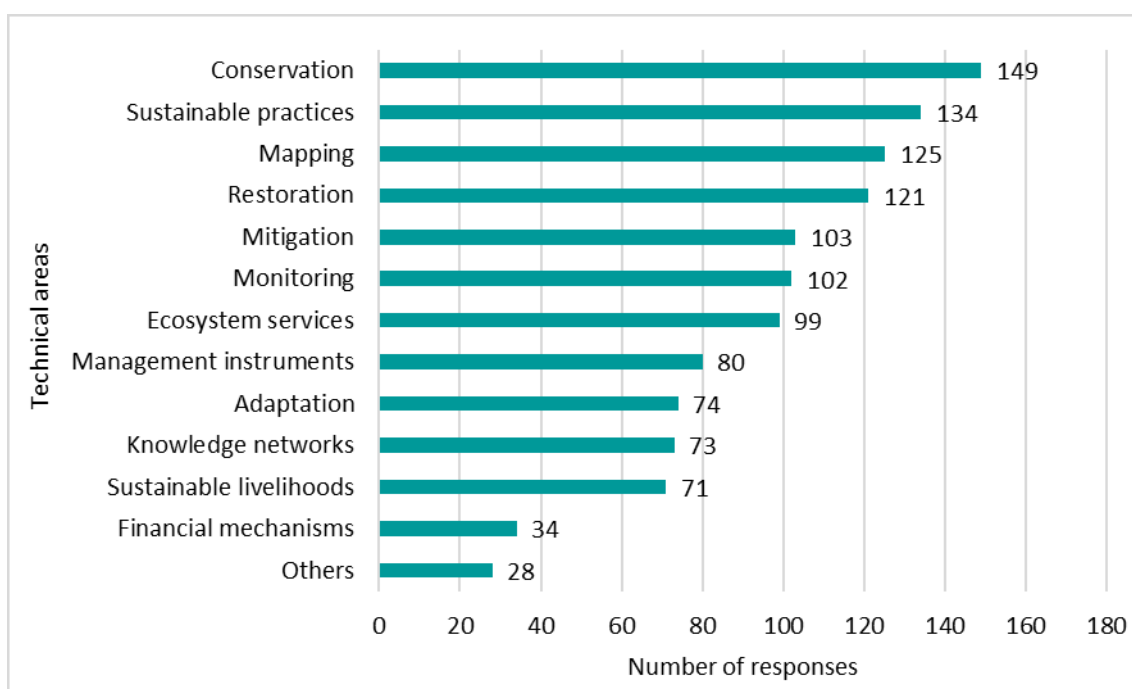
ACTIVITIES OF THE RESPONDENTS AND THEIR ORGANIZATIONS

People working on peatlands seem to be highly versatile, and their tasks touch upon a great variety of thematic areas. Approximately 52 percent of the respondents indicated that they develop activities related to biodiversity conservation, 47 percent on sustainable practices, 44 percent on mapping and 42 percent on restoration. On the other hand, only 12 percent of the respondents carry out activities related to financial mechanisms (Figure 5).

17 percent of the respondents dedicate to one work area, 16 percent to two work areas, 15 percent to three work areas and 52 percent to four or more work areas. The variety of activities may be partly due to the fact that relatively only a small number of people, for example, within an organization, focus on peatlands. In this case, they may need to also develop activities and knowledge in several fields of study.

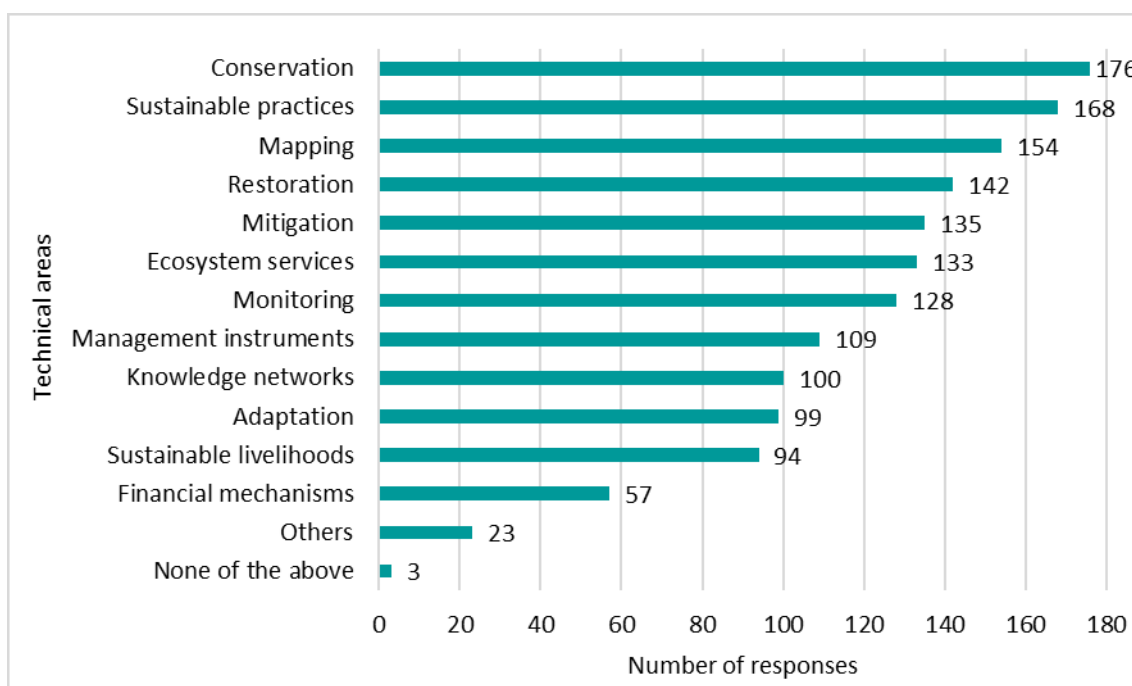
The survey inquired separately the work areas of respondents' organizations and the specific areas that they themselves work on. It should be noted that an organization and a respondent often work on various thematic areas. To see the detailed statements of the technical areas, please see the complete survey in Annex 1.

Figure 5 – Main peatland related tasks and focus of the respondents (n=287)



As further explored in Figure 6, more than 60 percent of the respondents indicated that their organizations conduct activities related to biodiversity conservation. Other common topics present on the organizations' activities are i) sustainable practices (59 percent), ii) mapping (54 percent), and iii) restoration (50 percent).

Figure 6 – Respondents' organizations main area of work on peatlands (n=287)



It should be noted that 20 percent of respondents indicated that their organizations work on financial mechanisms, potentially supporting also their peatland experts' work areas (Figure 6). The relatively low number of respondents and organizations with activities on financial mechanisms is consistent with the fact that, as can be seen later in this report, finding financial mechanisms and resources to carry out peatland activities is challenging.

Similarly, 25–34 percent of the respondents and their organizations worked on developing sustainable livelihoods and on adaptation to climate change. There are several factors that may influence the lower engagement on adaptation and livelihood activities. These work streams involve a strong social component and this result may indicate that further work and gathering experience with populations around peatlands is a requirement. In this regard, in the third-quarter of 2020, FAO added to the survey a question about the work on “the promotion of local and indigenous knowledge and practices on the preservation of peat bogs”. About 57 percent of the total respondents of the survey answered this question (164 respondents). Out of this 164 respondents, 41 percent indicated that they do work on it, and 7 percent do not currently work on it but have done it in the past, are planning or interested in doing it.

A high number of respondents and organizations work in the same thematic areas. Therefore, it is useful that coordination and exchange mechanisms, such as The International Tropical Peatlands Centre, and the Global Peatlands Initiative, or the SWAMP project (between CIFOR and USFS), exist. These initiatives act as umbrella mechanisms, connecting stakeholders, and enabling interdisciplinary research and multisectoral collaboration. Close coordination and collaboration help to avoid overlapping work among organizations, and ensure that resources are used more effectively.

Mapping is one of the thematic areas in which many respondents and organizations are currently involved. This is logical since it is mandatory to identify peatlands so that other actions and informed decisions can be later taken in those areas. However, in many tropical countries like Peru, the Democratic Republic of the Congo and the Republic of the Congo, nation-wide, consolidated peatlands maps are still lacking and this remains a key area that requires improvement (FAO, 2020). To help address knowledge gaps related to mapping, the GPI has started working with the Global Peatlands Assessment in July 2021 to bring the best available science together. The Assessment will provide a global overview of the state of the world's peatlands, and is expected for 2023. In addition, the global peatland map 2.0, launched by the GPI at the Peatland Pavilion during UNFCCC COP26, improves the base knowledge on the location and extent of peatlands worldwide. The map is an effort by the GPI partners to fill a critical knowledge gap, as decision makers urgently need to know where peatlands are to prevent their further drainage and degradation. Advances with peatland maps are helping achieve the global goals for climate (SDG 13) and life on land (SDG 15), as well as other the targets of the various multilateral environmental agreements.

Responses from Indonesia at a glance

Professionals and organizations in Indonesia are currently focused on the restoration of peatlands and sustainable practices actions. This is most likely due to the intense conversion and drainage of Indonesian peatlands in recent decades (Hergoualc'h *et al.*, 2018).

Other current focus areas in Indonesia are mapping and monitoring. These results differ from the ones for Peru, where respondents are currently engaged mainly in mapping and conservation actions. This is probably due to the relatively intact state of many peatland areas

in Peru, some areas where peatlands have not been mapped yet (Roucoux *et al.*, 2017), and the ongoing efforts to agree on the national peatland map.

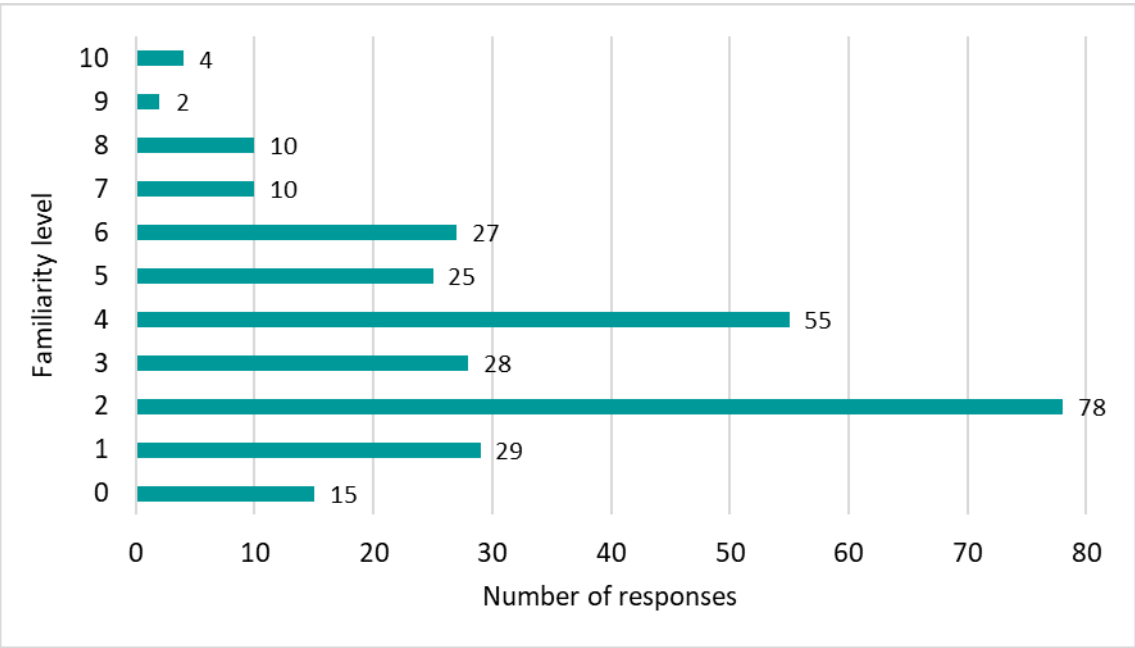
Regarding the question about the promotion of local and indigenous knowledge and practices, 39 respondents working in Indonesia answered this question. More than half of the persons who responded mention that they do work on indigenous knowledge and practices.

Forty-one respondents working in Indonesia indicated the main objectives of their organizations in the next years. Restoration, sustainable practices and livelihoods continue to be the work streams on which most of the respondents expect their organizations will focus in the future.

INSTITUTIONAL AND KNOWLEDGE NEEDS

To better serve the knowledge needs of the general public, the respondents’ organizations as well as those of the respondents, the survey inquired about the perceived level of understanding among these groups. The majority of the respondents perceive that the general public in the countries where they work is mostly unfamiliar with or has little knowledge about peatlands. On a familiarity scale from 0–10, 71 percent of the respondents estimated that the public’s familiarity is less than 5 (Figure 7).

Figure 7 – Perception of the public’s familiarity with peatlands (n=283)

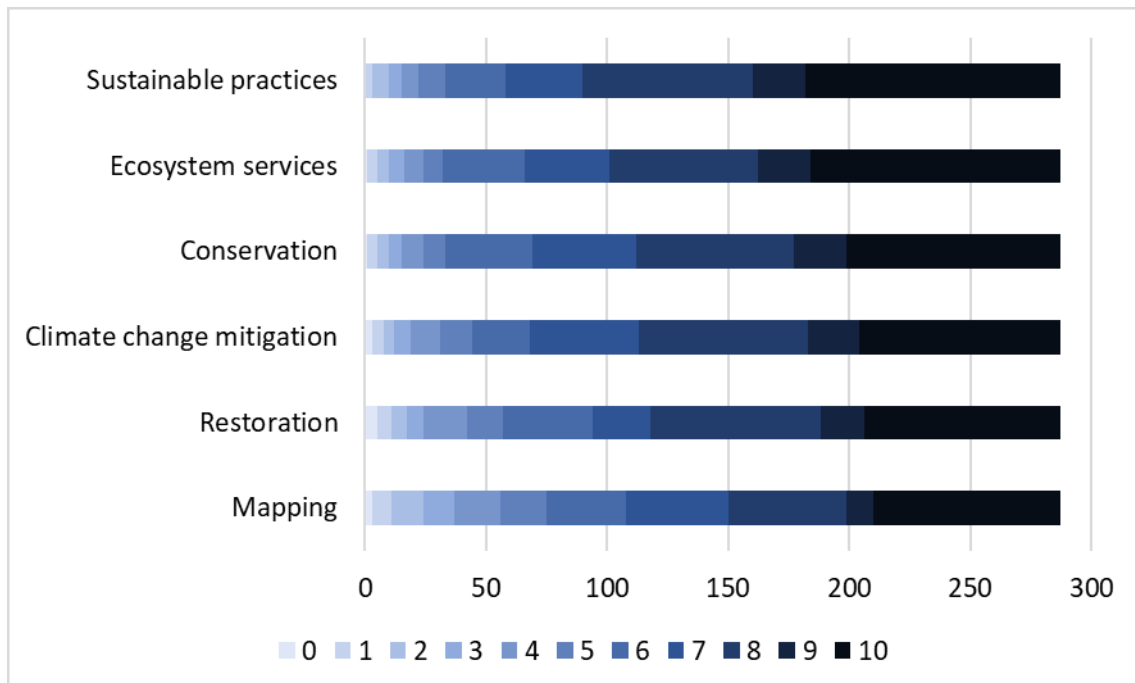


Scale: 0 = Not familiar at all; 10 = Very familiar.

The respondents were also requested to suggest a level of priority for different topics and information that should be shared with the general public. The respondents gave the highest priority to sustainable practices and ecosystem services, signalled by the larger area with darker shades of blue in the Figure 8 and Figure 9. The next highest priority was given to biodiversity conservation and climate change mitigation (Figure 9). It

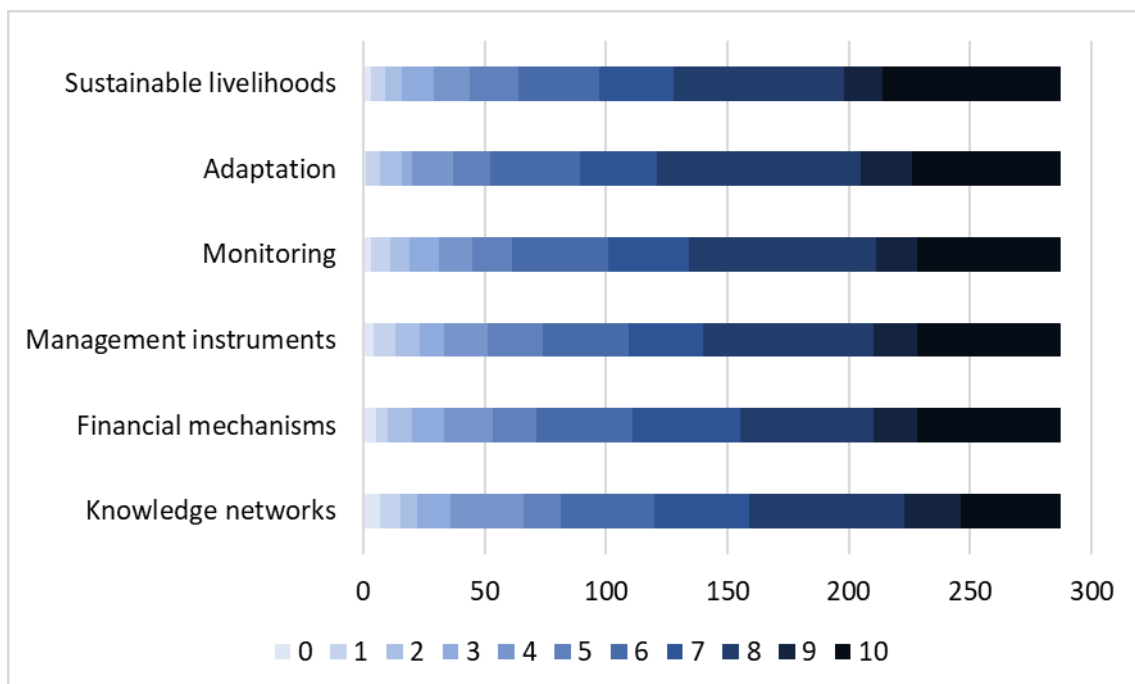
should be noted, though, that more than 40 percent of the respondents assigned a high priority level (8, 9, or 10) to all of the options presented in the survey.

Figure 8 – Priority given to different topics to disseminate to the public – part 1 (n=287)



Scale: 0 = Not important; 10 = Very important

Figure 9 – Priority given to different topics to disseminate to the public: part 2 (n=287)



Scale: 0 = Not important; 10 = Very important.

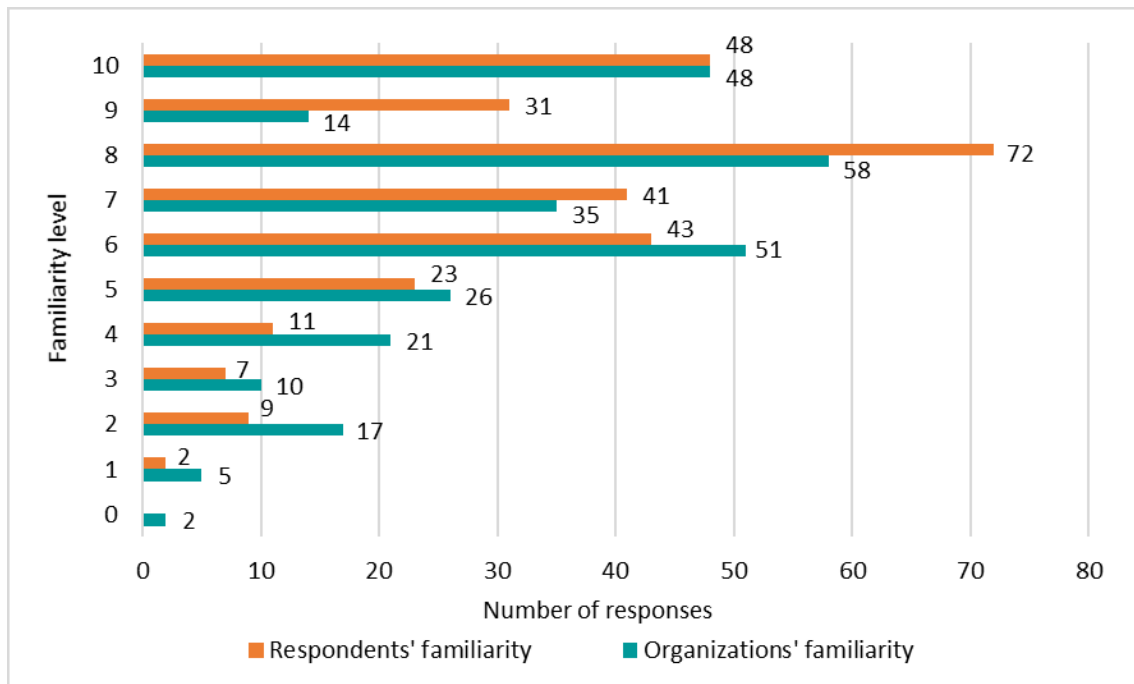
Specific topics suggested by respondents for general public

The respondents suggested disseminating information in particular on the following topics:

- what are peatlands and organic soils, their properties (functional ecology, hydrogeology), and importance (water supply and flows, biodiversity and carbon storage);
- the extent of Indonesian peatlands;
- “the role of indigenous people in the conservation of peatlands”, ancestral practices and knowledge, and the recognition of peatlands as “cultural landscapes”;
- demonstrating the status of peatlands and its changes and degradation due to human influence, for example due to extractive activities, for instance through monitoring, comparing past and present satellite images;
- ways of involving communities in peatlands restoration and conservation; and
- “successful experiences of sustainable peatland management” in different countries and good practices such as “river basin management”, “peat fire prevention and suppression”, as well as “landscape planning”.

Concerning the perceptions of the respondents about their own familiarity with peatlands, 53 percent of the respondents consider their knowledge of peatlands as good or excellent (8, 9 or 10 on a 0–10 scale). However, only 42 percent of respondents consider the familiarity of their organization to be good or excellent (8, 9, or 10) (Figure 10). This is also logical due to the relative novelty of the peatland issue in some countries: commonly, there are one or few people responsible for peatland matters within many organizations. A low or medium familiarity of organizations may still cause a lack of resources dedicated to work on peatlands. There may also be lack of support from the leadership if peatlands are not well known or considered as a priority.

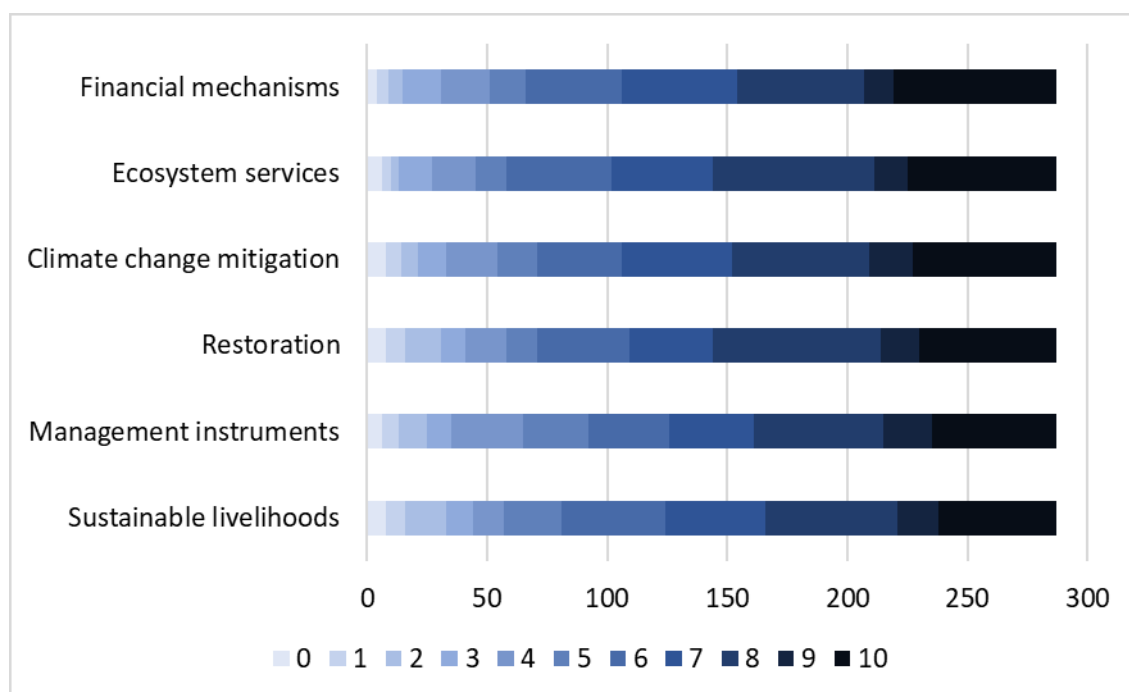
Figure 10 – Perception: familiarity of respondents and their organizations with peatlands (n=287)



Scale: 0 = Not familiar at all; 10 = Deep knowledge.

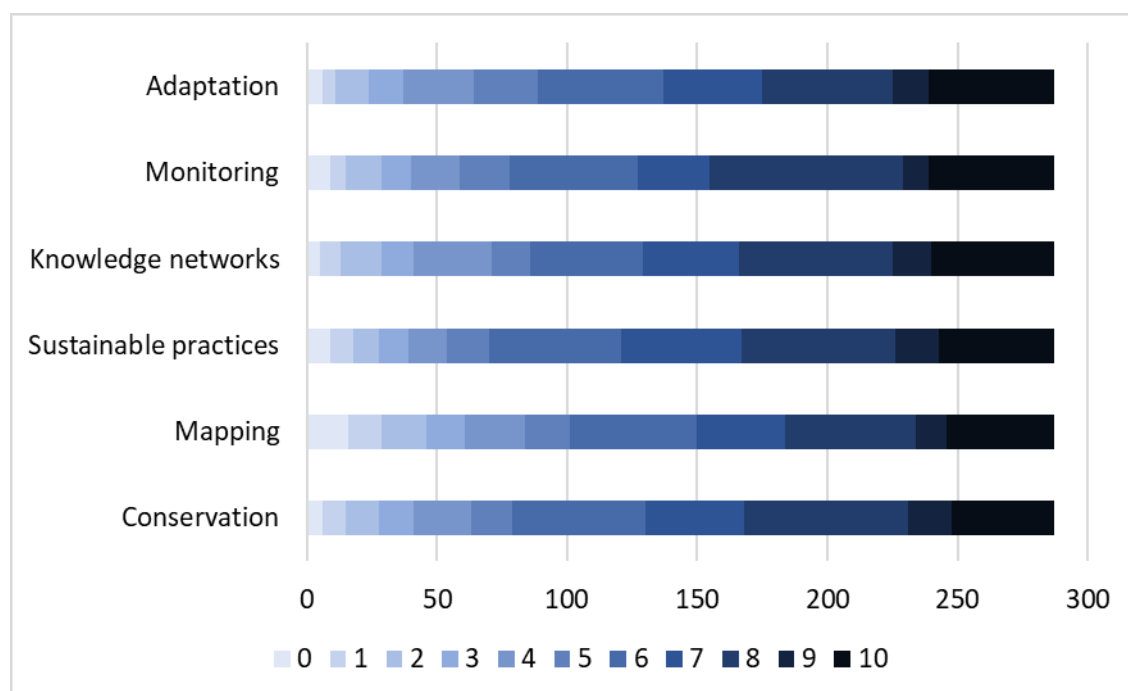
To identify respondents' needs for different tools, sources of knowledge or information for professionals, the survey contained a list of potential topics to choose from. Again, respondents estimated that there is a high level of needs on nearly all of the suggested topics. As shown in Figure 11, financial mechanisms and investments (ticked by 24 percent of respondents), ecosystem services (22 percent) and climate change mitigation (21 percent) are considered as the priority topics (10 in a 0–10 scale) for individual capacity-development. Other priority topics, to which respondents assigned 8, 9, or 10 (on a 0–10 scale), are restoration and monitoring. On the other hand, conservation (14 percent) and peatlands mapping (14 percent) are perceived to have a lower priority (Figure 12).

Figure 11 – 1st priority topics for tools, sources of knowledge or methods for professionals (n=287)



Scale: 0 = “There are already enough tools, knowledge, and methods”; 10 = “There are no tools, knowledge, or methods for its development, it is a priority issue for professionals.”

Figure 12 – 2nd priority topics for tools, sources of knowledge or methods for professionals (n=287)



Scale: 0 = “There are already enough tools, knowledge, and methods”; 10 = “There are no tools, knowledge, or methods for its development, it is a priority issue for professionals.”

Topics for tool generation

Among the specific topics that the respondents identified as priority areas where more tools, knowledge sources or information on methods for use of professionals are needed:

- characteristics of peatlands (hydrology, geography, functional ecology);
- peatlands' importance as water reserves, and “evidence of their conservation and restoration in the increase of water flow to support compensation mechanisms”;
- professionals’ knowledge on the “entities in charge of reporting information on peatlands”;
- “main threats to peatlands”;
- how to apply conservation measures;
- availability of study programs and other training and education opportunities;
- “socio-economic” factors, such as local and ancestral uses (for instance, collecting medicinal plants), and other livelihoods in peatland landscapes, such as tourism; and
- “validated methods for carbon measurements” and water table assessment, such as “installation of piezometers and electrical tomography”.

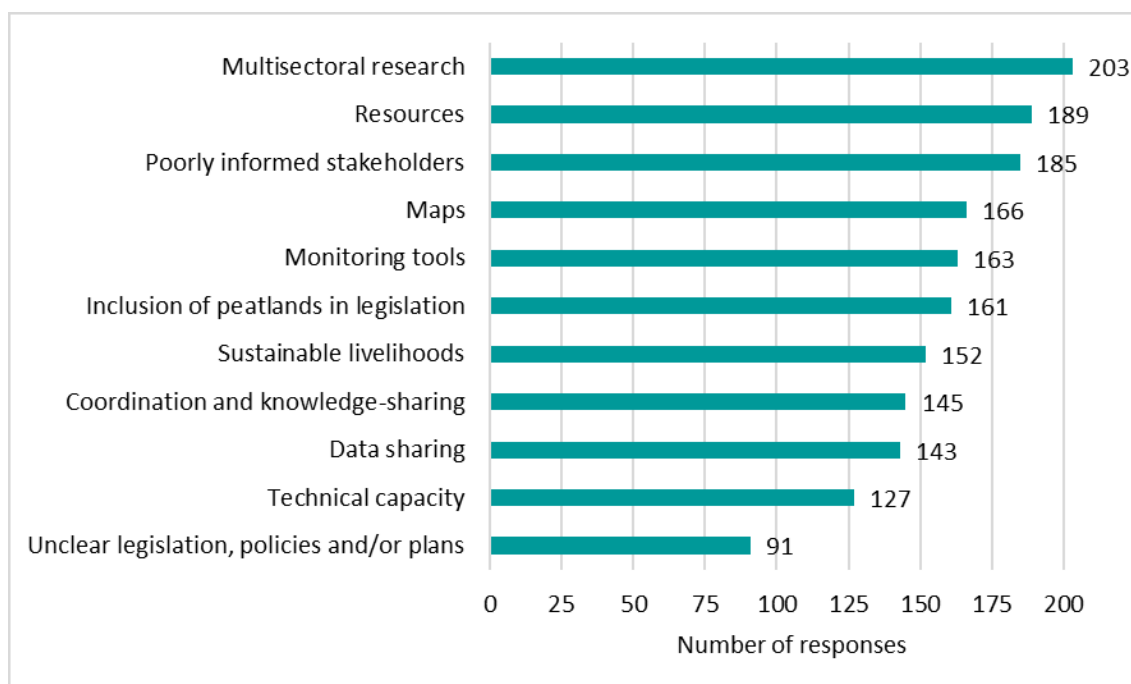
Responses from Indonesia at a glance

Half of the respondents working in Indonesia perceive a low public familiarity with peatlands (less than 5 on a 0–10 scale), similarly to the global trend of results of the survey. The topics considered more important for sharing with the general public are sustainable practices, restoration, climate change adaptation and mitigation, and sustainable livelihoods (in the order of perceived priority).

On the other side, more than 55 percent of the respondents consider themselves and their organizations to have a high familiarity with peatlands (8, 9, or 10 on a 0–10 scale), which is also a common result in the global analysis. Stakeholders working in Indonesia consider climate change mitigation and adaptation, as well as peatlands’ ecosystem services as priority topics for professionals when considering topics for additional tools, sources of knowledge, or information on methods.

CHALLENGES

Figure 13 – Respondents’ main peatland-related challenges (n=287)



This section aims to showcase impediments, to identify where further resources need to be deployed and existing challenges that need to be addressed. The main challenge identified by 71 percent of respondents in their professional work is related to issues with (or potentially need of) multi-sectoral research. 66 percent of the respondents feel also limited due to lack of resources (which may include human, knowledge, financial or material resources), and 64 percent perceive the fact that stakeholders are poorly informed as a challenge. Other challenges reported by 58 and 57 percent of the respondents are the lack of accurate maps and monitoring tools, respectively.

The challenges with the lowest number of responses, although still notable, include technical capacity (44 percent of respondents) and unclear legislation, policies and/or plans (32 percent).¹ All the suggested options are considered as challenges by at least 32 percent of the respondents.

¹ It should be noted that the option “Unclear legislation, policies and/or plans” (option “e”), appears in the English version of the survey as “Difficulties with integrating peatlands into existing policies” (option “f”). The 64 responses for option “e” of those who responded to the survey in English were counted for the option “f” (“Difficulties in integrating peatlands into existing legislation”).

Particular challenges perceived

Some of the challenges the respondents mention through the form's option "other" are related to:

- current "use of degraded peatlands as profitable farms", and difficulties to re-wet these areas, and other "land-use conflicts";
- lack of funding for various activities in peatlands, such as research and "sustainable community engagement and participation in project implementation";
- "old fashioned tools for monitoring" and limited work on peatland functions;
- "quantifying the value of ecosystem services" provided by peatlands;
- lack of "lead agencies" and "political will"; and
- lack of "working groups" and articulation to include peatlands in the political agenda and wetland frameworks.

The respondents proposed different actions to face the identified challenges, which have been grouped under thematic areas, and summarized in Table 1. The thematic areas of knowledge management, capacity building and communication received the most suggestions to face challenges (80 responses). It is worth emphasizing that this is not the sum of the answers received for each subtopic under a thematic area because the response of one person often fits into various subtopics.

The largest single number of answers refer to the promotion of financing and investments for management, research, and high-impact projects (18 percent of the 216 respondents who answered this question included this topic in their answer). Other subtopics with a high number of answers relate to the strengthening of joint work between different sectors, disciplines, and/or levels of government (15 percent) and technical, financial, and material support for the activities of decision makers (12 percent). These actions are aligned with the main challenges and knowledge gaps reported, especially with the lack of resources and difficulties to carry out multi-sectoral research.

Table 1 – Actions proposed to face the most important challenges. (n=216)

Proposed solutions	Number of answers per topic
Knowledge management, capacity building and communication	80
Technically, financially, and materially supporting the activities of decision makers , including "those in charge of evaluating and supervising" and " land use planners " for example through courses, training and visits to wetlands.	26
Strengthening scientific research and availability of scientific and user-friendly information (for example, publishing in open access journals, creating a knowledge hub), and resources (such as equipment).	15
Developing capacity of institutions and professionals (technicians, researchers, field officials, land managers, extension officers, and farmers) at the local level related to peatlands, organizing training and coordinating an "adequate knowledge transfer to local stakeholders" and including the subject in education systems.	30
Carrying out communication activities to "raise awareness among various audiences" on the characteristics, importance, and impacts of the conservation and destruction of peatlands on a large scale.	18
Developing programs and workshops for local communities (including children) regarding the characteristics, importance, and sustainable management of peatlands, and promoting the use of citizen science.	12
Launching an "interoperable, user-friendly information platform", among actors, agencies, and countries "for the exchange of information and reporting".	9
"Supporting communities to engage in project activities at all levels, and developing sustainability plans for peatland activities even after the end of the project".	2
Management instruments, governance and policy frameworks	56
Developing and ensuring the transparent implementation of national and subnational policies, legal frameworks, strategies and plans to "manage, restore and conserve peatlands" at landscape scales "based on scientific knowledge". "Reviewing" and "clarifying (...) laws and other regulatory framework including for harmonizing those, all in consultation with stakeholders".	28
Generating political will (through lobbying) to create "national peatland programs", "putting peatlands on the national and international agenda" (for example, "clearly integrate them in the UNFCCC negotiations") and "prioritizing peatlands" in regulatory frameworks.	13
Implementing longer and more comprehensive projects and programs to face peatlands challenges such as fires, and monitoring below-ground parameters.	9

Including peatlands in existing legislation, and in sectoral and multi-sectoral instruments for wetlands.	5
Defining strategies to develop complementary actions and "distributing responsibilities" "among the various actors" and "entities".	4
Requiring more from extractive companies in terms of environmental and social responsibility.	1
Better informed policy-makers with scientific information and involvement of more scientists in political discussion.	1
Financing	43
Promoting more efficient and transparent financing from all types of sources, and efficient use of these funds to 1) manage peatlands; 2) conduct research, generate and disseminate information; and 3) implement high-impact projects.	39
Quantifying the ecosystem services of peatlands to generate financing mechanisms for their conservation, such as "payment for ecosystem services to neighbouring communities" close to peatlands.	3
Including peatlands in the "existing financial mechanisms in the climate change framework".	1
Collaboration and networks	41
Strengthening collaboration mechanisms to establish multidisciplinary, inter-institutional, multi-sectoral, and multilevel teams that connect all types of stakeholders to advance with governance and research in peatlands.	32
Creating research groups and making connections between existing ones both at the national and international level to share information, experiences, articulate research, and identifying areas of action.	10
Sustainable practices, livelihoods, and ecosystem services	29
Conducting and documenting sustainable practices and livelihood systems (such as certificated forest concessions, wet management), and reducing the use of peat and forest as an energy source. Technical and financial support, for example, through incentives, to farmers and local population to spread the use of good practice. Disseminating good techniques and approaches	18
Pursuing peatland "rehabilitation/restoration research and actions" for example through "national initiatives with local authorities".	5
"Recovering the ancestral traditions of management and conservation of these ecosystems by indigenous communities and accompany them with new techniques", while advocating for the free, prior and informed consent (FPIC) and providing adequate resources for these type of activities.	3

"Showing the importance of peatlands as providers of ecosystem services " and carrying out an economic valuation of these services.	3
Implementing management plans.	1
Including peatlands within protected areas.	1
Mapping and characterization	23
Producing high-resolution maps of peatlands, improving spatial data, including land tenure information, and field data through more field-level sampling.	16
Conducting national, holistic peatland inventories to characterize them (also called 'peatland assessments'), and, building on them, estimating GHG emissions, and better understanding their biodiversity.	7
Defining suitable methodologies for mapping peatlands (developing algorithms, and enhancing remote-sensing techniques to classify and estimate the characteristics of peatlands, among others).	2
Agreeing on a definition of peatlands.	1
Monitoring	10
Implementing mechanisms and projects for evaluation and monitoring peatlands including their "deforestation, degradation, GHG emissions", "subsidence", and "water flow".	8
Establishing common or official methodologies for peatland monitoring.	1
Carrying out participatory, low-cost community monitoring of the ecological and hydrological aspects of peatlands in a network of intervention sites.	1

Perceived challenges and solutions: Indonesia

Multi-sectoral research is the most common challenge among respondents working in Indonesia. This is followed by the challenge of including peatlands in the national legislation and the lack of resources, in that order.

To face these challenges, respondents working in Indonesia propose mainly actions related to developing and implementing policies, strategies, and plans, as well as developing the capacity of decision-makers on peatlands issues; developing and disseminating good practices, and strengthening coordination mechanisms among stakeholders.

CAPACITY DEVELOPMENT

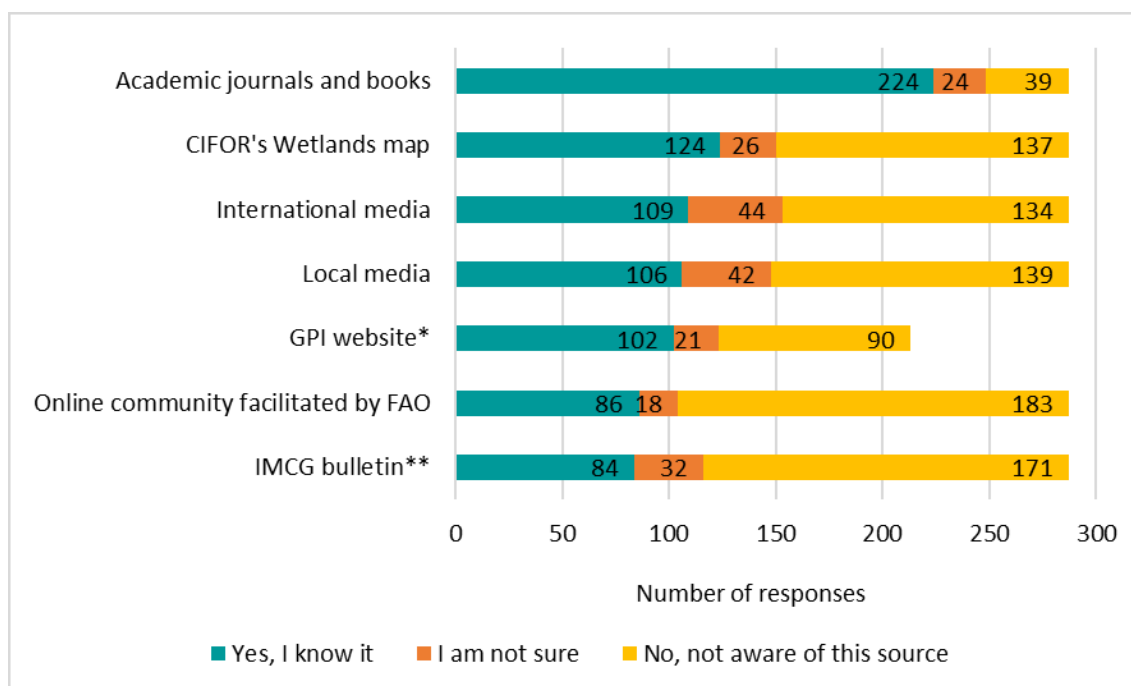
Besides the thematic areas for training, it is useful to know the media channels and platforms that stakeholders use for learning, and other capacity-development activities. Knowing the preferred media

channel and the most valued training activities will allow more effective communication and knowledge transfer.

Communication and dissemination

As shown in Figure 14, the most known sources of peatland-related information are the academic journals and books (78 percent of respondents know it), followed by the CIFOR's Wetland's map (43 percent) and international media (38 percent).²

Figure 14 – Best known media and peatland information sources (n=287)



* Global Peatlands Initiative; ** International Mire Conservation Group

National media mentioned

- Magazines, web sites, newsletters and bulletins of universities, civil society organizations, projects and others related to agriculture, forestry, natural history, and wildlife, such as Pôle relais tourbières (France) and Peruvian Society of Environmental Law (SPDA);
- newspapers, radio and television; and
- portals of public entities of the environment sector and related ministries.

² National media “operate within the boundaries of a specific nation-state and cover news (...) territorially” and culturally “defined” news, while international media cover news disengaged “from the symbolic spaces of national culture and are defined by the more universal principles of international consumer culture” (Dimitrakopoulou, 2015).

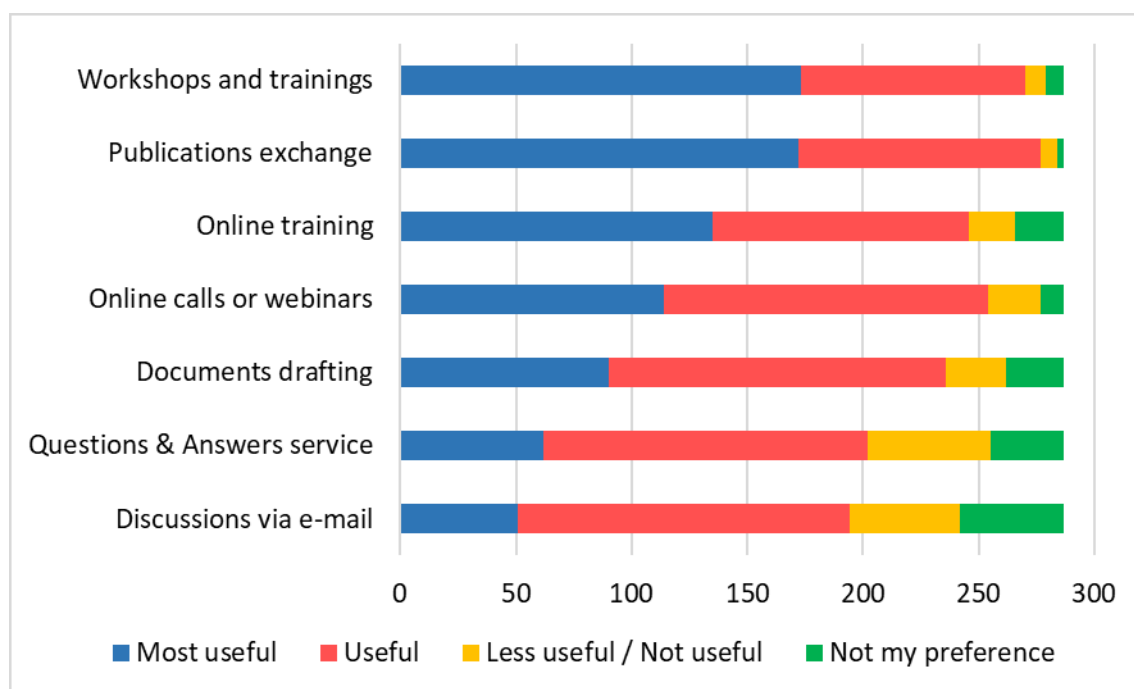
International media and websites mentioned

- News and opinion portals such as Aljazeera, BBC, CNA, Daily News, France24, Guardian, Google News, New York Times, SciDevNet and The Conversation;
- online communities such as “c-peat listserv”;
- portals of international conventions such as CBD, UNCCD, UNFCCC and the Ramsar Convention on Wetlands;
- repositories of scientific articles and journals such as Elsevier, JSTOR, Proceedings of the National Academy of Sciences of the United States of America (PNAS) and Springer;
- social media groups on peatlands and wetlands led by researchers, and
- other web portals and newsletters from organizations or specialized networks such as Center for International Forestry Research (CIFOR), CGIAR (formerly the Consultative Group for International Agricultural Research, which includes also e.g. CIFOR), Consortium for the Development of the Andean Ecoregion (CONDESAN), Eurosite, FAO, GMC, International Peatlands Society (IPS), International Soil Reference and Information System (ISRIC), International Tropical Peatlands Center (ITPC), International Union for Conservation of Nature (IUCN), International Union for Quaternary Research (IUQR), Japan International Cooperation Agency (JICA), Mountain Institute, National Aeronautics and Space Administration (NASA), National Geographic, Partnership for Environment and Disaster Risk Reduction (PEDRR), Past Global Changes (PAGES), UNEP, United Nations Development Programme (UNDP), Tropical Wetlands Consortium, Society for Ecological Restoration (SER), Wetlands International, Wildlife Conservation Society (WCS) and World Soil Survey Archive and Catalogue (WOSSAC).

As a conclusion from the media mentioned, the topic needs visibility in general in all media, not only those consumed by practitioners and decision makers, but also national broadcast services.

Activities to strengthen individual capacity

Figure 15 – Perceived usefulness of activities to develop individual capacity (n=287)



At least 68 percent of the respondents considered all the capacity-development activities proposed in the survey as useful for their work (Figure 15). Respondents prefer especially face-to-face workshops and training sessions. Other options considered “most useful” are online training and online calls or webinars, as well as joint document drafting. Most of the abovementioned options involve a real-time interaction, either virtually or in person. In addition, a high number of respondents found “useful” discussions via email and question-and-answer services, although these do not involve real time face-to-face interactions.

Furthermore, as shown in the box below, respondents suggested a wide range of specific capacity-development activities in addition to the ones presented in the survey. A high number of respondents highlighted field or in-situ training sessions, however, the use of virtual platforms, “knowledge-hubs” or discussions via social media are also important for respondents. Some of the suggested activities are already taking place, but invitations to join them may not have reached the respondents. For instance, there are email lists to exchange on peatlands, like the [online community on peatlands](#) facilitated by FAO. Though only 30 percent of the respondents know the online community of practice on peatlands of FAO, it is a space where over 1 370 stakeholders from over 90 different countries exchange news, information, and opportunities related to peatlands since 2012. These capacity-development spaces must be more widely disseminated to allow for more stakeholders to take advantage of them.

Activities to develop capacity

Other specific activities that the respondents proposed to develop their capacity are:

- “social media groups where actual topics can be discussed”;

- building “a society or a network that meets regularly”;
- offering spaces for exchanging with decision-makers;
- exchanging experiences in the field between national and international experts;
- organizing field visits, which involve practical fieldwork with practitioners;
- developing “guidance documents in a centralized, open repository” or “knowledge hub”;
- providing short term courses, conferences, workshops, diploma programs (short- to medium-term courses focused on a specific topic, which complements formal education), networking events; and
- organizing professional training programs, for example, through “affordable and widespread mentorship program by wetland and peatland practitioners”, “staff exchange” for “collaborative projects” and post-graduate programs; and
- offering PhD dissertation opportunities and other further research grants, scholarships, fellowships and “professional internship grant within land-use monitoring organizations”.

Indonesia: sources of information

Among stakeholders working in Indonesian peatlands, academic journals and books, and CIFOR’s Wetlands map are the two best-known sources of information. It is worth noting that, different from global responses, the online community on peatlands and climate change facilitated by FAO is the third best-known source of information for respondents working in Indonesia (68 percent of the respondents know the platform).

Sharing publications and other knowledge resources, as well as workshops and training sessions are considered the most useful activities for capacity development. Other activities considered useful are discussions via e-mail, and questions-and-answers services.

FINANCING AND COOPERATION MECHANISMS

Financing mechanisms

Activities for the benefit of peatland landscapes require resources and sustainable finance. Fifty percent of the survey respondents indicated that they were not aware of any financing mechanisms to carry out conservation, restoration, or sustainable management activities in peatlands. 136 respondents detailed the financial mechanisms they know, which are summarized in Annex 2 and Annex 3. The respondents know 48 financing mechanisms that provide with resources for national level activities within a specific country (Annex 2). Most of them, 33, are public (managed by a governmental agency or organization) while the rest, 15, are offered by the private sector. The respondents also know 31 international financing mechanisms (Annex 3). Most of the mechanisms known by the respondents are not specific for activities in peatlands, but rather

finance activities in research, development, environment, climate, or related sectors, and have or could fund activities on peatlands.

The lack of experts on finance in institutions working on peatlands (see [Figure 5 – Main peatland related tasks and focus of the respondents \(n=287\)](#) and the chapter [Activities of the respondents and their organizations](#)) may partly explain also the perceived lack of finance. Some respondents indicated public entities, international initiatives, projects, and programs that are mainly receivers or channel resources but do not provide funds, as their main goal, consequently they were not considered in Annex 2. These include international actors such as FAO, German Society for International Cooperation (GIZ), Global Green Growth Institute (GGGI), and United Nations Development Programme (UNDP), as well as international networks such as the GPI.

Cooperation and coordination initiatives

Coordination and collaboration mechanisms between governments, civil society organizations, or scientists from different countries were perceived important to enable knowledge transfer to advance sustainable peatland management. Only 30 percent of the survey respondents indicated that they knew regional or bilateral cooperation mechanism dedicated to exchange information and manage peatlands, including for transboundary peatland landscapes.

Table 2 summarizes the responses of the 82 respondents who listed 29 familiar cooperation and exchange mechanisms and initiatives. Not all of these initiatives or mechanisms are dedicated to peatland matters, but may cover e.g. landscapes aspects, such as the Global Landscapes Forum. Although many of the cooperation initiatives mentioned by the respondents do not focus exclusively on peatlands or wetlands, they are spaces in which governments and other stakeholders could potentially address peatlands issues because they are oriented to biological conservation, climate change, or other areas that can also be related to peatlands.

Out of these 29 mechanisms, the majority, 19 mechanisms, are regional, meaning that they operate between neighbour countries. Six of the regional mechanisms function in Asia, and Europe, Africa, and Latin America host four mechanisms each. In addition, there is one supporting exchanges across the Latin and Northern America. Also, three of the mechanisms have a global scope, three thematic ones cover countries from three continents, two cover countries from two continents, one is between Peru and Bolivia, and one covers only Peru but involves international partners. The information of the geographic scope of each mechanism shown in Table 2 was obtained from the websites of each initiative.

Table 2 – International cooperation initiatives known by respondents

Cooperation initiative	Geographical scope
Agreements between IIAP, CIFOR, and University of Leeds	Peru with international partners
Andean Mountains Initiative (IAM)	Andean countries: Argentina, Bolivia, Chile, Colombia, Ecuador, Venezuela and Peru

Cooperation initiative	Geographical scope
ASEAN Agreement on Transboundary Haze Pollution (AATHP)	ASEAN member countries: Brunei Darussalam, Cambodia, Indonesia, Myanmar, Lao People's Democratic Republic, Malaysia, the Philippines, Singapore, Thailand and Viet Nam
ASEAN Peatland Management Initiative (APMI)	ASEAN member countries: Brunei Darussalam, Cambodia, Indonesia, Myanmar, Lao People's Democratic Republic, Malaysia, the Philippines, Singapore, Thailand and Viet Nam
Asian Forest Cooperation Organization (AFoCO)	Bhutan, Brunei Darussalam, Cambodia, Indonesia, Kazakhstan, Lao People's Democratic Republic, Mongolia, Myanmar, the Philippines, Republic of Korea, Thailand, Timor-Leste and Viet Nam
Bolivia-Peru common work framework	Bolivia and Peru
Commission of Central African Forests (COMIFAC)	Central Africa: Burundi, Cameroon, Chad, Gabon, Equatorial Guinea, Central African Republic, Rwanda, Sao Tomé and Príncipe, the Democratic Republic of the Congo, the Republic of the Congo
Coastal Wetlands Initiative	Chile, Ecuador and Peru
Environmental Governance Program	Australia and Indonesia
European Union-LIFE	European Union
Eurosite Wetlands and Climate Change (WCC) Working Group	Europe
Global Landscapes Forum (GLF)	Global
Global Peatlands Initiative (GPI)	Global
Growing Media Europe	Europe
International Centre for Integrated Mountain Development (ICIMOD) – an intergovernmental knowledge and learning centre	Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal and Pakistan
International Congo-Ubangui Sangha Commission (CICOS)	Angola, Cameroon, Central African Republic, Gabon, the Democratic Republic of the Congo and the Republic of the Congo
International Peatlands Society (IPS)	Global
International Tropical Peatland Center (ITPC)	Founding members: Indonesia, Peru, Republic of the Congo and the Democratic Republic of the Congo
Interreg Europe policy learning programme	European Union

Cooperation initiative	Geographical scope
Measurable Action for Haze-Free Sustainable Land Management in Southeast Asia (MAHFSA) Programme	Southeast Asia
Nile Basin Wetlands Forum	Nile Basin
Organization of the Amazon Cooperation Treaty (ACTO)	Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname and Venezuela
Ramsar Convention	Global
Ramsar Regional Center for the Western Hemisphere (CREHO)	Latin America and the Caribbean, North America
Regional Initiative for the conservation and sustainable use of high Andean wetlands within the framework of the Ramsar Convention	Andean countries: Argentina, Bolivia, Chile, Colombia, Ecuador, Venezuela and Peru
Regional Postgraduate School of Integrated Tropical Forest Planning and Management (ERAIFT)	Francophone and Portuguese-speaking countries in Africa
Sustainable Use of Peatland and Haze Mitigation in ASEAN (SUPA) project	Indonesia, Malaysia, Thailand, Vietnam, the Philippines, Lao PDR and Myanmar
Sustainable Wetlands Adaptation and Mitigation Program (SWAMP)	Africa, Asia and Latin America
Tropical Wetlands Consortium	Congo Basin and Peru

Responses from Indonesia at a glance

Approximately 63 percent of the respondents working in Indonesian peatlands indicate that they are aware of any funding mechanism for peatland activities. This is a much higher percentage than the global average (50 percent).

Regarding the known cooperation mechanisms, a similar pattern was found. A bigger share of stakeholders, 48 percent, working on Indonesian peatlands indicated that they know at least one cooperation mechanism for the work on peatlands. Whereas among the global stakeholders approximately 1/3 were familiar with similar mechanisms, and only 21 percent of stakeholders working in Peru. This may be related to the fact that the work on peatlands has started earlier in Indonesia than in Peru, as wide use of drainage-based practices, an associated large-scale fires, started in the 1980s (FAO, 2014). Peatlands are a relatively new in topic many tropical countries, like Peru.

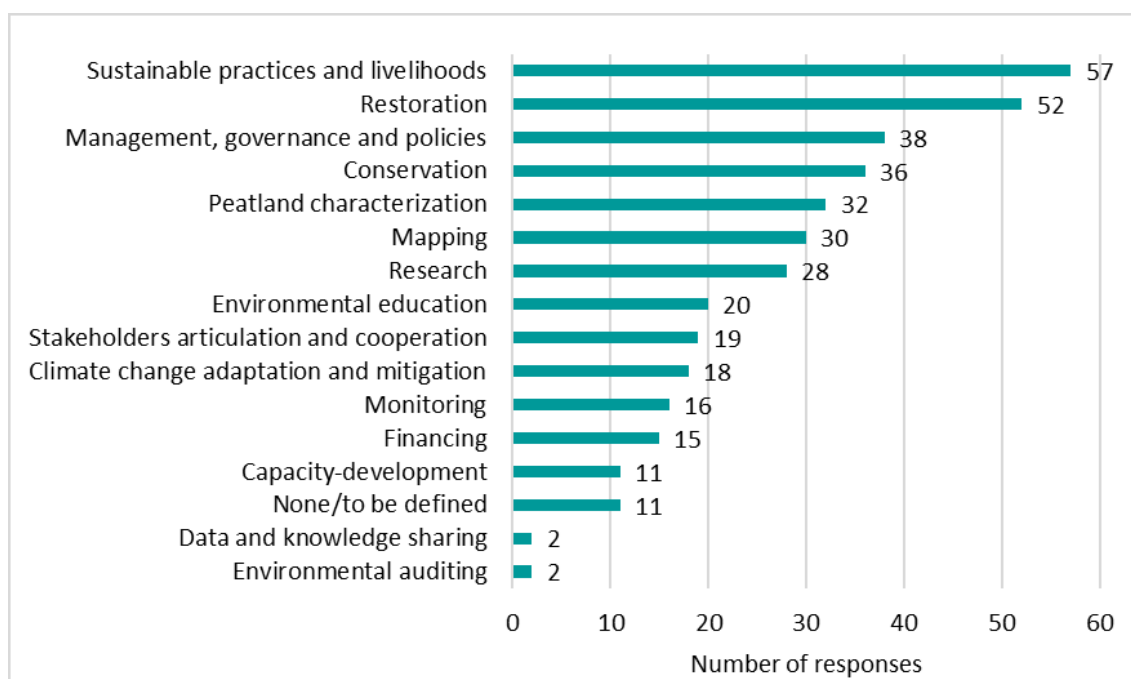
NEXT STEPS AND PROJECT EXPECTATIONS

The respondents were also requested to assess how both their organizations and the GPI project could support improved peatland management. Of the 287 survey respondents, 78 percent described the main peatland objectives of their organizations in the next years, and 74 percent proposed some next steps their organizations could take. The respondents also listed some expectations toward the GPI project.

Respondents next steps

FAO asked respondents to describe “the main objectives of your organization for advancing sustainable peatland management in the next years” through an open question (C1). The responses were grouped in various thematic areas (Figure 16). It is worth noting that a thematic area of “management, governance, and policies” arises as an additional area of work, different from the options provided in the survey’s other questions. 225 respondents provided an answer to this question. The thematic areas with the biggest number of responses are: sustainable practices and livelihoods (25 percent of the respondents) and restoration (23 percent) as potential focus activities of their organizations in the upcoming years. Interestingly, climate change mitigation and adaptation seem to be the key work objectives only for eight percent of the respondents’ organizations in the coming years. This analysis reflects future objectives scattered through different thematic areas, where only up to ¼ of respondents were expecting their organizations to work on.

Figure 16 – Peatland-related objectives of respondents’ organizations in the next years (n=225)



The thematic pillars of FAO’s work within the GPI project are i) development of capacity and materials on mapping and monitoring, ii) information on sustainable management practices, and iii) governance instruments to improve peatlands management in particular through integration of peatlands into national climate plans and strategies. Under these thematic pillars, the results in Figure 6 (chapter [Activities of the](#)

respondents and their organizations) show a significant contribution to mapping and monitoring. However, it seems that according to the results of the Figure 16, these topics will not be the main task of focus of the organizations in the next years. The respondents estimate that their organizations' tasks will focus more on practices and restoration.

In addition, 213 respondents suggested next steps that they or their organizations could take to advance on the sustainable peatland management. As shown in the Figure 17, the thematic area related to knowledge management, capacity building and communication address the biggest number of responses (37 percent), followed by sustainable practices, livelihoods and ecosystem services (25 percent). Regarding the financing thematic area, it presents a low number of responses both for the objectives of organizations in the next years (Figure 16) and for suggestions of next steps for respondents and their organizations (Figure 17). Also, few survey respondents mentioned monitoring actions amongst their planned next steps. This may be related to the fact that stakeholders still need to develop and disseminate monitoring tools, as well as work on the institutional arrangements and regulatory frameworks to make this task possible. The Figure 18 presents some examples of the actions suggested as next steps for the different thematic areas.

Figure 17 – Potential next steps of respondents and organizations (n=213)

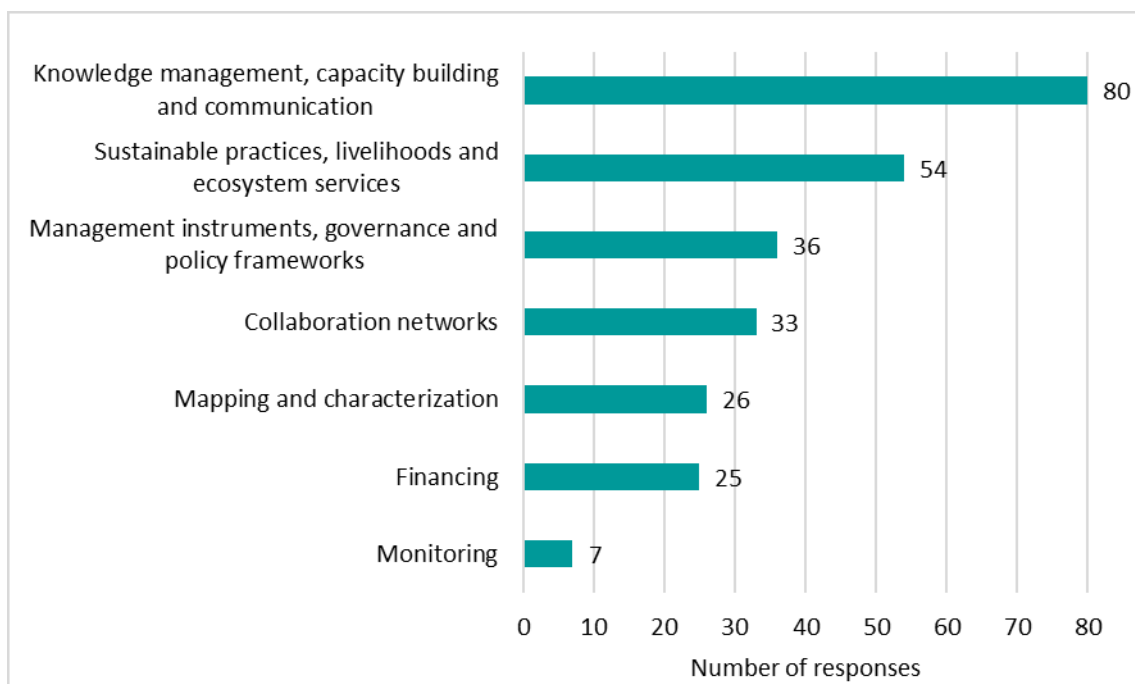


Figure 18 – Thematic areas of the potential next steps (n=214)

Collaboration networks	<ul style="list-style-type: none"> • Establishing contacts, exchange and alliances between stakeholders; and • improvement of balance between ethnic groups, geographical representation, and gender in peatland activities.
Financing	<ul style="list-style-type: none"> • Applying for funds to continue their activities or developing new financial mechanisms.
Knowledge management	<ul style="list-style-type: none"> • Conducting awareness-raising activities; • continued research and development project efforts; • knowledge transfer, publishing research results; and • strengthening of information systems.
Management instruments, governance and policy frameworks	<ul style="list-style-type: none"> • Consolidating regulatory frameworks and institutional arrangements; • lobbying activities; and • supporting plans, strategies and policies.
Mapping and characterization	<ul style="list-style-type: none"> • Characterizing peatlands; and • continuing peatlands mapping and up-dating existing maps.
Monitoring	<ul style="list-style-type: none"> • Analysing data from already existing monitoring systems; and • developing rapid assessment tools, spatial monitoring, and wide scale below ground monitoring.
Sustainable practices, livelihoods and ecosystem services	<ul style="list-style-type: none"> • Advocating for special conservation status of peatland areas; • research on ecosystem services, sustainable peat harvesting and restoration; and • working on good practices and sustainable livelihoods with indigenous peoples and local communities.

Expectations toward the Global Peatlands Initiative project

204 respondents' expectations are grouped below by thematic area. While the GPI project and Initiative can support a variety of thematic areas, it is important to emphasize that neither the budget (EUR 2 million) nor the current scope of the project can provide all the expected support. The feedback has been taken into account, and activities shaped to better support the Initiative's objective, "to save peatlands as the world's largest terrestrial organic carbon stock and to prevent it being emitted into the atmosphere". It should also be noted that these results could be useful when designing future activities outside the scope of the current GPI project and for possible expansion of the GPI project in the future.

Expectations related to collaboration networks

- Organizing face-to-face meetings for the peatland online community of practice facilitated by FAO;
- empowering and supporting stakeholders, especially community-led organizations, local initiatives, and activities;
- encouraging and supporting multi-level (subnational, national, regional, and international) and multi-disciplinary stakeholder collaboration and cooperation, undertaking a coordinator and mediator role for common goals regarding peatlands;
- exchanging experiences;
- generating or facilitating a platform or a hub for constant dialogue, networking, alliances, synergies, and larger-scale projects coordination; and
- greater linkage or communication amongst the global peatlands research community, for example, through a research network to facilitate international and multidisciplinary research collaborations on conservation and restoration.

The GPI project aims to facilitate this cooperation and collaboration, informing stakeholders of existing exchange opportunities to avoid overlapping initiatives. The project also aims to involving stakeholders in existing networks, such as the Community of practice on peatlands and climate change facilitated by FAO. The GPI project has also established a Peatlands Research Working Group in collaboration with Scotland's Rural College that is open for all research participants from around the world. The Initiative hosts an active schedule of targeted peer-to-peer exchanges, which have been adapted to the COVID environment, however, face to face exchanges are still sought after.

Expectations related to financing

- Sharing funding opportunities for projects and communities, especially for developing countries;
- identifying and disseminating information, as well as facilitating connections to access financing mechanisms, including grants to governments, and carbon-market mechanisms; and
- supporting and incentives for protection and restoration.

In terms of expectations toward financing and material support, the expectations are multiple. It should be noted that the project partners are not funding agencies, and cannot provide grants or funds to other organizations. The ones listed above are feasible within the GPI's current scope and funding. Still, the GPI has and will carry on disseminating information on funding opportunities, including helping to enable inter-disciplinary research funding proposals through the GPI Research Working Group. The GPI also works to support interested partners in the coordination of joint peatland project proposals upon request. In addition, support was requested to provide funds and materials to peatland pilot inventories, data collection,

surveillance, monitoring, the establishment of research units, or creation of funding frameworks. For these types of activities, the respondents' organizations can be helped in their efforts to apply for funds from other sources and to join efforts with existing GPI partners and collaborators already undertaking such efforts so as to avoid any duplication and resource wastage.

Expectations related to knowledge management

- Complementing and sharing wetland and peatland-related knowledge;
- creating summary documents (in particular about Andean peatlands);
- strengthening capacity; and
- supporting the generation of technical information for decision-making processes.

Regarding the knowledge management support expected, the project is able to cover activities related to synthesizing and disseminating information through relevant stakeholders. As part of the forward-looking information and knowledge-sharing, UNEP updates and upgrades the [GPI website](#) to a full-fledged, global Peatlands Knowledge and Networking Hub. At the country level, FAO's efforts are focused on producing brief documents useful for policy makers and practitioners. Within the GPI community there are a number of knowledge products and resources available – and more information can be found on the [GPI Virtual Peatland Pavilion](#).

Expectations related to management instruments, governance and political frameworks

- Contributing to the UNFCCC Paris Agreement;
- influencing government policies and programmes; and
- integrating and disseminating peatland matters in legal and political instruments, such as the NDCs, peatland maps and protected areas.

Some expectations towards the project include a direct contribution to international commitments and the implementation of national plans, strategies, amongst other governance tools. In this regard, it is necessary to highlight that the FAO national project activities seek to support the GPI pilot countries in integrating considerations of peatlands' sustainable management into national and international commitments. Globally, the GPI partners support all countries technically to pursue national peatland policy and planning – including toward appropriate international environmental goals.

Expectations related to mapping and characterization

- Sharing mapping methodologies and generated maps;
- supporting estimation of organic carbon in the soil in peatlands (of the Amazon);

- generating methodology for peatland assessment; and
- compiling global and national peatlands inventory.

Regarding the mapping expectations, the result of the survey in Peru included suggestions to map coastal, Andean and Amazonian peatlands. The Project is currently undertaking a Global Peatlands Assessment, which will include an improved global peatland map, but support to national maps at appropriate scales need to be developed in collaboration with GPI partners and agreed upon by the countries. The project also aims at contributing to the dissemination and harmonization of existing information, while contributing to technically support the nationally led efforts to define and map peatlands.

Expectations related to monitoring

- Monitoring that allows quantifying the carbon fluxes;
- projection of peatlands under various scenarios of conservation practices and use of natural resources; and
- supporting the inclusion of high Andean peatlands in integrated monitoring systems.

The expectations about monitoring refer to directly implement monitoring actions and support the inclusion of peatlands in monitoring systems. The GPI project and partners will contribute to tool and capacity development, and to disseminating monitoring tools and approaches adequate for the pilot countries. The Initiative continues promoting South–South and Triangular exchanges on how to complement and get further support for national monitoring systems, such as the National Forest Monitoring Systems (e.g. under the REDD+ framework), the early-warning, early action systems, or others.

Expectations related to sustainable practices, livelihoods and ecosystem services

- Conservation of peatlands in upper basins and securing sustainable use by the communities;
- managing and making visible the importance of peatland ecosystem services;
- treating the topic of paludiculture with caution; and
- showcasing restoration and conservation experiences.

Although the project will not be able to directly contribute to communities in the field, as expected by some respondents, it does contribute in making good practices of peatland management visible and disseminating those amongst stakeholders. The paludiculture terminology and approach is new in some countries, and often associated only with agriculture on peatlands. Although paludiculture involves any type of biomass extraction from peatlands in wet condition including ancestral forms of peatland usage (GMC, 2017), other local terms and approaches could be promoted by the project if considered good practices.

Other expectations of the respondents relate to the inclusion of other countries or geographic areas such as Chile, the Nile Basin and the Philippines within the scope of the project. While the project, funded by the International Climate Initiative (IKI) is not able to change or broaden its geographic scope in its current phase, FAO needs to focus its direct supports to Indonesia, Peru, the Democratic Republic of the Congo and the Republic of the Congo. However, at the global level the GPI project supports all countries through partners' technical support and also links to the Initiative's partners' work around the world. The GPI global work brings together partners with the aim to contribute to the exchange on peatland issues without geographical limits, enabling countries to increase their ambition for climate and nature action in line with the [Resolution on Peatlands \(2019\)](#) of the fourth session of the United Nations Environment Assembly (UNEA4).

3. Conclusions

This peatland capacity needs assessment enables implementers of activities in the field of peatlands, including the GPI project, to find inspiration and data, which can help in focusing the work in particular on capacity-building activities. The assessment is based on a sample size of 287 survey respondents, and has, therefore some limitations when interpreting its results. Still, the report helps the project partners, FAO, UNEP and Greifswald Mire Centre, to better understand the work and plans of the participating organizations and professionals, in particular within two GPI pilot countries: Indonesia and Peru. It is good to note that the quantity of respondents working in the other two GPI pilot countries were relatively low: 18 in the Republic of the Congo and 28 in the Democratic Republic of the Congo. The responses from stakeholders working on Peruvian peatlands are analysed more in detail in a separate [report](#), even if they are also included in this report.

The respondents work for a wide range of sectors, and 44 percent of them carry out their work in two or more sectors at the same time. The survey respondents work in 170 organizations, dealing mainly with conservation, sustainable practices, mapping, and peatland restoration. Analysing the rich qualitative responses, many respondents are deeply passionate about the topic of peatlands. They also are willing to invest in developing their and their organizations capacity to advance with improving peatland management.

The collected information allowed to satisfy the main [Objectives](#) in the project plan, namely a) needs, knowledge gaps and challenges, b) requirements for countries to include peatlands in national climate policy frameworks, c) identification of synergies, including for finance and cooperation, and d) most promising ways to address identified challenges. Finally, e) the assessment was able to dig deeper on what stakeholders are planning to focus on next – that is also giving indication how the GPI project or other initiatives could support them.

NEEDS, KNOWLEDGE GAPS AND CHALLENGES

The respondents perceive that the general public is unfamiliar or has little knowledge of peatlands. They consider it is important to disseminate information in particular on sustainable practices in peatlands and the ecosystem services they provide amongst the general public.

Although most of the survey respondents consider themselves knowledgeable on the peatlands topics, 85 percent of the respondents are suggesting to improve the availability of knowledge and information, mainly on the topics they are currently working on. The most commonly selected topics to boost tools, knowledge and methods include “financial mechanisms” and “ecosystem services”, followed by “climate change mitigation actions” and “peatlands restoration”.

In addition to prioritizing topics that need to be strengthened amongst professionals, respondents identified challenges that hinder their professional practice. The three main challenges faced when working on peatlands are “multi-sectoral research”, “the lack of resources”, and “poorly informed stakeholders”. Although “lack of resources is an important challenge”, only a low number of respondents perceive the search for financing as an objective or next step in the coming years.

SUPPORTING PEATLANDS INCLUSION IN NATIONAL CLIMATE POLICIES

More than a half of the respondents indicated that the “difficulties in integrating peatlands into existing legislation” is a challenge for their work. Also, some mentioned the “lack of articulation to include peatlands in the political agenda and wetland frameworks” as a challenge. This may reflect also in the reasons why only a relatively low number of NDCs enhanced in 2020 and 2021 specifically mention peatlands or wetlands.

Priority topics were identified on which the respondents feel that they would require support, for example when integrating peatlands in national climate change policies and plans. The proposed solutions to face challenges on management, governance and policy frameworks include various types of “support and capacity development for the activities of decision makers”, and “influence decision makers to put peatlands in national and international agendas”. Other solutions refer to “enhancing the availability of science-based information”, “reviewing and harmonizing existing regulations”, and finally, “defining roles and responsibilities of stakeholders”.

OPPORTUNITIES FOR SYNERGIES

The respondents were keen on developing joint opportunities, and identifying synergies between different stakeholders and initiatives. Respondents were also willing to invest in increasing coordination and collaboration with others, including actors in other sectors.

Although few respondents identified as key next steps for them or their organizations the mobilization for further resources, and the development of payments for ecosystem services, this may be a potential field for synergies between stakeholders, taking into account that the respondents found that spreading information on currently available financing mechanisms is necessary. Moreover, application to funds as consortiums can increase the opportunities to access additional resources.

BRIDGING GAPS AND ADDRESSING CHALLENGES

The two main challenges identified: “engagement in multi-sectoral research” and “lack of resources”, could partly be addressed by increasing stakeholders’ awareness and utilization of financial and cooperation mechanisms. Only 50 percent of respondents indicated that they are aware of any financial mechanisms available for peatland action. Likewise, only 30 percent of the respondents are familiar with international cooperation mechanisms.

Considering the identified challenges, the respondents proposed a series of solutions, ranging from very specific actions, such as “participatory community monitoring”, to general ones like “strengthening coordination and dialogue between sectors, disciplines, and parts of national institutions”. In terms of closing the capacity and knowledge gaps, the respondents expressed a preference for “face-to-face workshops and training”, “publication exchange” and “online training sessions” among the given options.

NEXT STEPS

The objectives of the respondents' organizations, according to 80 percent of the respondents, will focus on "sustainable management of peatlands" and their "restoration" in the coming years. Consequently, the GPI project work on capacity development and materials on sustainable management practices is highly relevant both for the present and future work of the stakeholders.

Expectations from stakeholders in the countries need to be adjusted toward the project inline with its combined budget of USD 2 million, and based on the activities that can be realized. During the next project activities, the team will highlight the scope of the project and how it will contribute to strengthening the stakeholders' capacity through concrete actions.

Building on the existing information sources and platforms managed by the project partners, the [Global Peatlands Initiative website](#), known by 36 percent of the respondents, can continue to be used for disseminating news concerning the GPI project. A full-fledged, global Peatlands Knowledge and Networking Hub is expected to be released by UNEP in 2022. In the meantime, the GPI partners' sites provide with a multitude of knowledge products and resources available. Likewise, the promotion of the [online community on peatlands](#) facilitated by FAO will need to be stepped up since it is a useful tool for dissemination, discussion and capacity-development, but less than 1/3 respondents know it.

The gaps and needs documented in this report are useful for the GPI project, the governments of the pilot countries, and other sectors interested in continuing developing professionals' capacity for peatlands sustainable management. This survey will be repeated during the last phase of the GPI project to update the progress in sustainable peatlands management and its integration into policy frameworks, in particular for climate action. Similarly, GPI's members and the International Tropical Peatland Centre partners can take these results, such as diversifying the participation, into account in their future endeavours.

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Annexes

Annex 1: Survey “Peatland needs assessment”

Greeting and context

“Dear Colleague,

Thank you for taking the time to answer this survey. The objective of this survey is to understand the institutional and knowledge needs identified by you, to help us advance with improving peatlands management.

Para los hispanohablantes, gracias por responder la encuesta aquí: <https://bit.ly/PeatSPA>

Pour les francophones, merci d'avoir répondu à l'enquête ici: <https://bit.ly/PeatFRE>

The results are processed anonymously, and only project colleagues at the Food and Agriculture Organization of the United Nations (FAO), United Nations Environment Programme (UNEP), and the Greifswald Mire Centre (GMC) will have access to the data recorded here for the sole purpose of contributing to the development and evaluation of the Global Peatlands Initiative Project.

We welcome your contribution by filling out this survey by Monday 15 February 2021. Only questions marked with * are mandatory. If using a mobile device/tablet please make sure to angle it horizontally to see the full scale of 0-10 on some multiple-choice questions.

Thank you very much in advance!

The Global Peatlands Initiative Project,

FAO, UNEP, and GMC”

Background information

A1 - Region(s) where you work, e.g. through projects. Please choose all that apply.

- a) Africa;
- b) Asia and the Pacific;
- c) Europe;
- d) Latin America and the Caribbean;
- e) Near East and North Africa;
- f) North America;
- g) Other:

A2 - Country or countries where you work for peatlands. *

- a) The Democratic Republic of the Congo;
- b) Indonesia;
- c) The Republic of the Congo
- d) Peru;

- e) All of the above;
- f) Other tropical country or countries;
- g) Other temperate or boreal countries;
- h) None of the above;
- i) I wish not to tell;

A.2.1 - With which of the following peatland ecosystems have you worked? *

- a) Lowlands;
- b) High mountain ecosystems;
- c) Coastal ecosystems;

A3 - Have you already responded to this survey previously? *

- a) Yes
- b) No
- c) Maybe

A4 - Your sector (work, study, or interest). Please choose all that applies

- a) public sector;
- b) civil society organization;
- c) private sector;
- d) research and academia;
- e) Other:

A5 - Voluntary: Your organization or affiliation

A5.1 - Please indicate institutions with which your institution has established partnerships (if any) for peatland work.

A6 - Which of the following peatland activities are part of your organization's activities and/or mandate?*

- a) Definition, peatland mapping;
- b) Sustainable management practices;
- c) Development of livelihoods;
- d) Peatland restoration;
- e) Peatland biodiversity and conservation;
- f) Peatland ecosystem services and its economic valuation;
- g) Land-use and land-use change monitoring and reporting;
- h) Land-use planning, policies and/or legal frameworks;
- i) Financial mechanisms and investment;
- j) Action for reducing greenhouse gas emissions (climate change mitigation);
- k) Fire, flood or other disaster risk reduction and climate change adaptation actions;
- l) Multidisciplinary knowledge networks;
- m) Other:

A7 - Briefly describe your organization's current main task to work on peatlands. Please add any additional topics to complete the options selected above.

A8 - Which of the following peatland work areas are part of your own activities? Please select all that apply. *

- a) Definition, peatland mapping;
- b) Sustainable management practices;
- c) Development of livelihoods;
- d) Peatland restoration;
- e) Peatland biodiversity and conservation;
- f) Peatland ecosystem services and its economic valuation;
- g) Land use and land-use change monitoring and reporting;
- h) Land use planning, policies and/or legal frameworks;
- i) Financial mechanisms and investment;
- j) Action for reducing greenhouse gas emissions (climate change mitigation);
- k) Fire, flood or other disaster risk reduction and climate change adaptation actions;
- l) Multidisciplinary knowledge networks;
- m) Other:

A9 - Briefly describe your own current main task and focus when working on peatlands. Please add any additional activities to complete the options selected above.

A10 - Are you working on the promotion of local and indigenous knowledge and practices on the preservation of peat bogs?

Knowledge and institutional needs

B1 - Your environment: How familiar do you think your organization is with peatland ecosystems? *

	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Not at all	0	1	2	3	4	5	6	7	8	9	10	Deep knowledge and practical experience

B2 - Self-assessment: How familiar are you with peatland ecosystems? *

	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Not at all	0	1	2	3	4	5	6	7	8	9	10	I have deep knowledge and practical experience

B3 - On average, how familiar are the people in your country with peatlands? *

	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Not familiar at all	0	1	2	3	4	5	6	7	8	9	10	Very familiar

B4 - What would be, in your opinion, currently the most important thing for the general public in your country to know about peatlands? (0 not important; 10 very important) *

[illegible]

B4.1 - If you marked a value different than 0 in the option "other", please specify here what would be the most important thing for the general public in your country to know about peatlands?

B5 - Which of the following do you think needs more tools, sources of knowledge, or information on methods available to professionals working in the field of peatlands? (0 = Sufficient tools, knowledge, and methods already exist; 10 = No tools, knowledge, or methods available, it is a priority issue for professionals).

[illegible]

- b) Drainage for land-use change;
- c) Changes to the ground-water table;
- d) Infrastructure development;
- e) Vegetation;
- f) Biodiversity;
- g) Altitude;
- h) Rainfall;
- i) Fire;
- j) Fertilization;
- k) Selective logging; and/or
- l) Peat extraction.

Knowledge and guidance

D1 - What kind of support do you think you or your organization would benefit from to tackle the challenges you mentioned above?

D2 - Are you familiar with, or use the following peatland knowledge sources? *

	Yes	No	I am not sure
a) Academic journals and books	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) IMCG Newsletter - International Mire Conservation Group's Bulletin http://www.imcg.net/pages/publications/bulletin.php	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Online community on peatlands https://dgroups.org/fao/peatlands/join	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Global Peatland Initiative website www.globalpeatlands.org	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) CIFOR's Wetlands map https://www.cifor.org/global-wetlands/	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Local newspapers and other media	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) International media	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

D2.1 - In case you marked "yes" in option f, specify here the local media:

D2.2 – In case you marked "yes" in option g, specify here the international media:

D3 - Which of these activities would you find most useful to your work? Please choose all that apply. *

	Most useful	Useful	Less useful	Not my preference
a) Structured discussions via email list between practitioners;	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Regular online calls or webinars with experts;	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

c) E-learning courses and other online training opportunities;	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Joint drafting of summary documents;	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Questions and answers service;	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Workshops and training;	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Sharing of publications and other knowledge resources;	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

D3.1 - Please indicate other relevant activities for your capacity building that are not covered in the previous question:

Financial and cooperation mechanisms

E1 - Do you know of any public or private funding mechanism aimed at developing projects for the conservation, restoration and sustainable management of peatlands? *

- A) Yes
- B) No

E1.2 - If your answer to the above question was "Yes", please specify which one:

E2 - Do you know of any regional or bilateral cooperation initiatives for the exchange of information for the purpose of managing peatlands that are transboundary? *

- A) Yes
- B) No

E2.1 - If your answer to the above question was "Yes", please specify which one(s):

Next steps

F1 - What could be your or your organization's next step to advance sustainable peatland management?

F2 - What are your 2 main expectations of the Global Peatlands Initiative project?

F3 – Your gender: *

- a) Female;
- b) Male;
- c) Prefer not to say;
- d) Other:

F4 - Thank you! Any feedback to the survey organizers? Please add here or email: Kai.Milliken@fao.org; Maria.nuutinen@fao.org; Dianna.kopansky@un.org; Julie.vanoffelen@un.org

F5 - If you wish, you can share your email.

F6 - Please confirm your email.

Annex 2: National financing mechanisms known by respondents

Public financing mechanisms

- Academy of Finland;
- Argentine Economic Development Agency (CORFO)
- Australian Centre for International Agricultural Research (ACIAR);
- Budget program 144 y 057 – Peru;
- Carbon Certificates – the Netherlands;
- Chilean Economic Development Agency (CORFO);
- Department of Environment and Natural Resources (DENR) – the Philippines;
- Different types of Public Investment Projects (PIP), such as ecosystems, species, sustainable use of biodiversity, green, water – Peru;
- Guidelines for the development of investment projects for the recovery of ecosystems – Peru;
- Internal university funds;
- IOARR investments – Peru;
- Max.moor standard – Switzerland;
- MoorFutures – Germany;
- National Council for Science and Technology (CONCYTEC) – Peru;
- National Council for Scientific and Technological Development (CNPq) – Brazil;
- National Fund for Scientific, Technological Development and Technological Innovation (FONDECYT) – Peru;
- National Just Transition Fund – Ireland;
- National Mission on Himalayan Studies – India;
- National Science Foundation (NSF) – the United States of America;
- North American Wetlands Conservation Act (NAWCA) – the United States of America;
- Payment for Environmental Services Mechanisms (PSA) – Ecuador (Quito) and Colombia (Bogota);
- Peat and Mangrove Restoration Agency (BRGM) – Indonesia;
- Peatland ACTION funding – Scotland;
- Peatlands Community Engagement Scheme – Ireland;
- Peru Natural Heritage Initiative (led by MINAM and SERNANP) – Peru;
- Project grants of the Water Research Commission (WRC) – South Africa;
- Quiroz-Chira Water Fund – Peru;
- Reward for Ecosystem Services Mechanisms (MRSE) with Service Providers Enterprises (EPS) – Peru;
- The "Valuta voor veen" (Paying for peat) initiative – the Netherlands;
- The National Lottery Heritage Fund – England;
- The National REDD+ Fund (FONAREDD) – Democratic Republic of Congo;
- The Nature for Climate Peatland Grant Scheme (NCPGS) – England; and
- Working for Wetlands Programme – South Africa.

Private financing mechanisms

- Forest Trends MRSE Incubator - Natural Infrastructure for Water Security Project (INSH), CONDESAN – Peru;
- Girley Bog Meitheal – Ireland;
- Gowing Outcomes in Watersheds (GROW) Trust – Canada;
- Grupo AJE drinks – Peru;
- Internal university funds;
- Investment Funds in Green Infrastructure – Peru;

- Irish Peatland Conservation Council;
- Landscape Lab – Peru, Germany;
- PLDT–Smart’s program for wetlands conservation – the Philippines;
- Regenera – Peru;
- Riau Ecosystem Restoration Program (APRIL Group) – Indonesia;
- Samdhana Institute - Indonesia, the Philippines;
- The Peatland Code – the United Kingdom;
- TorvForsk – Sweden; and
- Tropical Landscapes Finance Facility – Indonesia.

Annex 3: International financing mechanisms known by respondents

- Althelia Climate Fund;
- Bio-Bridge Initiative;
- Biodiversity Finance Initiative (BIOFIN);
- Central African Forest Initiative (CAFI);
- Commonwealth Scientific and Industrial Research Organisation (CSIRO);
- European Green Deal Call;
- European Investment Bank;
- European Regional Development Fund (ERDF);
- European Union Interreg VA Programme;
- European Union Red Natura 2000;
- European Union LIFE programme;
- Forest Ecosystem Restoration Initiative (FERI);
- Global Challenges Research Fund (GCRF);
- Global Environment Facility (GEF);
- Grants of the International Peatlands Society (IPS);
- Green Climate Fund (GCF);
- Horizon 2020 – the European Union (EU) Research and Innovation programme;
- Horizon Global Sustainable Equity Fund;
- International Fund for Agricultural Development (IFAD);
- International Climate Initiative (IKI);
- Lestari Capital;
- Norway's International Climate and Forest Initiative (NICFI);
- Ramsar Convention Grant Programmes (Wetlands for the Future, The Nagao Wetland Fund, Swiss Grants for Africa);
- REDD + carbon credits;
- Responsibly Produced Peat (RPP) certification;
- The Forest Carbon Partnership Facility (FCPF) ;
- The United Kingdom Climate Change Unit (UKCCU);
- The United States Agency for International Development (USAID);
- The United States Department of Energy;
- Verified Carbon Standard (VCS) Program; and
- World Bank (WB).

Needs and knowledge gaps on peatlands for climate action

Global survey results May 2020 – March 2021



INTERNATIONAL
CLIMATE INITIATIVE (IKI)

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