

Working Paper 20

Governing peatlands in the Democratic Republic of Congo

Context, agents of change and policy making

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Abbreviations and acronyms

ACE	Congolese Environment Agency
ANBO	African Network of Basin Organizations
BDEAC	Development Bank of Central African States
CAFI	Central African Forest Initiative
CICOS	Commission Internationale du Bassin du Congo-Oubangui-Sangha
CODELT	Conseil pour la Défense Environnementale par la Légalité et la Traçabilité
COMIFAC	Commission des Forêts d’Afrique Centrale
COP	Conference of Parties
DCF	Department of Forest Cadastre/Direction du cadastre forestier
DDD	Department of Sustainable Development/Direction du développement durable
DRC	Democratic Republic of Congo
GHG	Greenhouse gas emissions
IUCN	International Union for Conservation of Nature
MEDD	Ministry of Environment and Sustainable Development/Ministère de l’environnement et du développement durable
NGO	Non-governmental organization
OCE	Congolese Water Office/Office Congolais des Eaux
OFAC	Central Africa Forest Observatory/Observatoire des forêts d’Afrique centrale
PMU	Peatland Management Unit/Unité de gestion des tourbières
REDD+	Reducing Emissions from Deforestation and forest Degradation
RoC	Republic of Congo
SWAMP	Sustainable Wetlands Adaptation and Mitigation Program
UNEP	UN Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
USFS	United States Forest Services
WWF	World Wildlife Fund

Executive summary

The Cuvette Centrale (which translates as the ‘Central Basin’ in French) is the largest contiguous wetlands ecosystem in Africa and plays an important role in ensuring biodiversity, climate regulation and hydrology equilibrium. This wetland has been investigated since the colonial period for its important biodiversity, then for its potential impact on the maintenance of water systems, and for the various ecosystem services it provides to environmental as well as human communities, including dissipating steam energy for flood control, reducing sediments, contaminants and nutrients, providing aesthetic services and recreational opportunities, and increasing water quality and quantity. Research revealed that since 2017 the 243,743.53 km² of wetlands on the DRC side of the Cuvette Centrale Basin also hosts an estimated 115,232.03 km² of peatlands. This discovery has alerted international and national stakeholders on the need to protect these important peatland ecosystems. However, there is limited information and understanding on peatlands in the DRC, including those peatlands which are located within mangroves, the Katanga Plateau and the Rift Valley. This creates a major challenge for policymakers and practitioners when it comes to the current status of the ecosystem, and what policy and project interventions can be designed and implemented to protect it. This report aims to address these knowledge gaps by reviewing the current status of peatlands in the DRC, exploring how they are currently governed, and highlighting both opportunities and challenges for policy making when it comes to their sustainable management.

Actors and agents of change

Peatlands in the DRC are under the management of the Peatlands Management Unit (PMU), a special section under the Department of Sustainable Development (DDD) within the Ministry of Environment and Sustainable Development (MEDD). The PMU is tasked to guide national actions to “conserve peatlands for people and nature”, the government’s vision for peatlands.

Sustainable peatland management in the DRC requires a strong sectoral framework that promotes the varied ecological, environmental, social and economic values of peatlands, as well as avoids reinforcing drivers of peatland loss and degradation, and sustainably managing it in the context of climate change. When it comes to about the relation between peat and climate change, policymakers in the DRC are not yet well enough informed to be able to anticipate policy options for the maintenance of the climate-related services they provide. Policies should also be developed in a participatory and inclusive manner, addressing the diverse needs and interests of national and global stakeholders. However, there is lack of funding to support the participation of local populations and Indigenous Peoples, who need to understand the value of peatlands for their livelihoods and share how they are using peatlands, and how their traditional knowledge may inform policies for the sustainable use of peatlands, in accordance with their local circumstances.

National government and non-governmental actors are still coping with the technicalities of existing research work on the topic. Situating their ideas, interests and priorities in context is, thus, still a work in progress.

Governing peatlands in the DRC: From policy to practice

The DRC has initiated a policy process to develop a legal framework for sustainable peatland management. Currently, the institutional framework for peatland management in the DRC is largely driven by international and regional, frameworks that include the Ramsar Convention, the Convention

on Biodiversity, and the 2018 Brazzaville Declaration signed between the DRC and the Republic of Congo. At national level, the most direct regulation impacting peatlands is the National Law on Water. However, wetlands in the DRC also fall under the Forest Law and national adaptation and mitigation climate change frameworks. A National Peatland Roadmap is currently being developed; this involves the alignment and integration of tools for projects and programmes, the mapping of carbon stocks, the design of a national peatlands strategy, the carrying out of multidisciplinary research on peatlands to complete the current knowledge gap, national capacity building, the implementation of pilot programmes with less impacts on peatlands, and the development of programmes that value peatlands, including payment for environmental services. However, this road map is constrained, both by the limited funding available to support roadmap-related activities, but also by the choice of the DRC government to consider synergies between peatlands and other ongoing processes, like Reducing Emissions from Deforestation and forest Degradation (REDD+), land-use planning, land tenure and agriculture.

Despite the absence of comprehensive data on peatlands and policy options for their management, there is growing consensus among governmental and non-governmental actors that peatlands in the DRC need to be protected. However, the political will expressed by the President of the Republic, the 2018 Brazzaville Declaration, and the second agreement signed with Central African Forest Initiative (CAFI), are challenged by difficult trade-offs between the conservation of these ecosystems, and the exploitation of natural resources within them; particularly given the important reserve of crude oil that is found within several peatland areas. The decision to auction these oil concessions for exploitation has raised significant concerns among actors. This led civil society organizations to form a coalition to advocate for a moratorium on the attribution of exploitation titles in the Cuvette Centrale, and call donors to condition their financial support to the DRC upon the freezing of industrial exploitation in the Cuvette Centrale.

Decentralized peatland management is not yet implemented in the DRC, and options are still under discussion. The country is discussing how peatland management aligns with the country's decentralization model, whereby responsibilities for natural resource management and land-use planning are distributed between central and provincial governments. This national peatland policy making process is running in parallel with actions like Central African Forest Initiative (CAFI) that supports national efforts for REDD+, NDC that sets framework for national climate change objectives, and planned oil and biomass exploitation. The implementation of other projects and programmes by national government and projects' holders for land-use planning, climate change mitigation, sustainable forest management, agriculture, mines and hydrocarbon will provide enabling conditions for peatland management by providing coordinated and integrated policy frameworks. However, less is known about peatland governance and how policy making can be more inclusive. More work is required to explore different ways in which peatland can be governed, considering stakeholders' interests and concerns, and the implication of governance arrangements on both environmental and socioeconomic outcomes. Further studies and inclusive policy processes are also needed to ensure that policies are effectively, efficiently and equitably implemented.

1 Introduction

Global wetlands store 225 billion metric tons of carbon, equivalent to the annual carbon emissions of 189 million cars (NRCD 2019). The growing scale of peatland drainage globally contributes to 3% of all greenhouse gas emissions (GHG) (Miles et al. 2017). Consequently, there are numerous calls to protect wetlands, as they create conditions for highly stable carbon content. Specific government actions are thus required to protect these ecosystems (Dargie et al. 2018), and these actions have to follow evidence-based policies (Murdiyarto et al. 2019).

Recent research by Dargie et al. (2017) has uncovered the importance of peatlands in the Congo Basin Cuvette Centrale wetlands, putting them at the centre of discussions around options for their sustainable management. The discovered peatlands cover 40% of the Cuvette Centrale depression in the Congo Basin, distributed between two countries: the Republic of Congo (RoC) and the DRC. This discovery gives the DRC the sixth largest peatlands in the world (UNEP 2022). The Democratic Republic of Congo (DRC) is the largest country in the Congo Basin. It holds 152 million ha of forests, representing 62% of total forest area in Africa (DRC 2021a). These forests are divided into several ecoregions, including the Cuvette Centrale wetlands. According to the DRC ecoregion distribution (based on WWF classifications), several areas of DRC forestland can be considered swamp and flooded forests. This includes the Western and Eastern Congolian ecoregions, within central Congolian lowland forests. These peatlands contribute to supporting human communities and biodiversity living in the area (Olson et al. 2001).

Until the discovery of the importance of these carbon-rich and undisturbed peatlands in the central Congo Basin in 2017 (Dargie et al. 2017), forested wetland ecosystems were not high on the climate change mitigation agenda in the DRC (Were et al. 2019). A growing need for information to support decision making on peatland protection and sustainable use has seen more research on peatlands' ecological characteristics (Dargie et al. 2017), potential threats to their sustainability (Miles et al. 2017), and governance options to support their protection and sustainable use (USAID 2021; Sonwa et al. 2022). Despite this, little is available about how peatlands are currently managed in the Congo Basin (Global Peat Initiative 2022) generally, and in the DRC more specifically.

This report is the first attempt at analysing the institutional setting, policy framework and decision-making processes on peatland governance in the DRC. Based on a literature review and discussions with seven organizations deeply involved in peatland governance in the DRC – including three governmental actors, one international governmental organization, and three national CSOs representatives – this paper analyses the context, actors and policy processes impacting peatlands in the country. The first section presents the socioecological context, followed by a review of the current institutional setting. The second section presents peatland-related actors and events, and how current efforts align to ongoing sectoral policy processes. The last section ends with a discussion on the opportunities and challenges for sustainable peatland management.

2 Peatlands in the Democratic Republic of Congo

2.1 From wetlands to peatlands: An overview of how knowledge has evolved

The Congo Basin's Cuvette Centrale has been key in the history of the DRC. In 1963, a province was named after the 'Cuvette-centrale'. The area, then became the Equateur province in 1966, and split in 2015 into five provinces, namely Equateur, Tsuapa, Mongala, Nord-Ubangi and Sud-Ubangi provinces. One of the main characteristics of the Cuvette Centrale is the presence of an important number of wetlands. Wetlands are defined by the Ramsar Convention on Wetlands as "areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six meters" (Ramsar 1994). These areas are highly important biodiversity hotspots, but poorly managed. Peatlands are also the largest natural source of methane, and sometimes offset the reported low-carbon benefits of hydropower (Ramsar 2018).

There is evidence that researchers' interest in the Cuvette Centrale dates back decades. Campbell (2005) suggests most existing publications on the wetlands of the Congo date back to colonial times and are buried in French and Belgian archives. In 1945, Bernard was already investigating the ecological climate of the Congolian Cuvette Centrale. Two years later, du Roselle was issuing research on the social impact of economic realization in the Congolian Cuvette (du Roselle 1947). Later works like those of Evrard (1968) were already exploring forest types in the hydromorphic soils of the Congo Basin Cuvette Centrale. However, as observed by Fraser and Keddy (2005), "in contrast to their striking size, these [congolian] swamps are poorly studied and understood. Older reviews of African wetlands ecology hardly mention them".

Recognition of the Cuvette Centrale's ecological importance led to the Congo Basin Forest Partnership (CBFP) and Central Africa Regional Program for the Environment (CARPE) working with the DRC and the Republic of Congo (RoC) to demarcate the Lac Télé-Lac Tumba Swamp Forest Landscape (LTLT), described as containing "the most extensive block of swamp and seasonally inundated forest in Africa" (CBFP and CARPE 2005). Since 2005, several studies have tried to fill the knowledge gap on wetlands in the Cuvette Centrale. Researchers have been working on mapping the Congo Basin wetland using optical and remote sensing since 2010 (Bwangoy et al. 2010; Betbeder et al. 2014) and have started investigating the methane emissions of flooded forests in central Africa (Tathy et al. 1992). Other studies have investigated carbon, biodiversity and land uses in peatlands (Miles et al. 2017); intact tropical peatlands; opportunities and priorities for conservation (Roucoux et al. 2017; OFAC 2018; Dargie et al. 2017 Davenport et al. 2020); a watershed classification for hydrological predictions and water management in the Congo River (Tshimanga 2022); the role of the Cuvette Centrale in the hydrology of the Congo watershed (Datok et al. 2022); and the vulnerability of peat carbon to hydroclimatic factors (Garcin et al. 2022). At country level, an overview of water resources has been undertaken (USAID 2021), and the legal framework for peatland management reviewed (USAID 2021). One research team focused on assessing current knowledge on Cuvette Centrale peatlands and explored future directions for research. This study concluded that "the need to understand the ecological value of these peatlands, beyond their role in carbon storage, also extends to understanding how peatlands support local livelihoods and cultures.... Uncertainty also surrounds the impact of climate change.... perhaps a bigger limitation is the uncertainty around how future climate change will impact precipitation patterns across the region." (Biddulph et al. 2021, 11).

The publication by Dargie et al. (2017) represents a milestone in knowledge generation around the characteristics of the Cuvette Centrale. Until this research revealed the importance of the amount of peat stored in Cuvette Centrale swampland, wetlands were considered important only for their water provision for lands, biodiversity and role for socioenvironmental balance. Peatlands are included in some wetlands, as is the case with the Cuvette Centrale, but they can also be found in other ecosystems. According to Sharma et al. (2022, 3), “peatlands can be marshes or swamps, depending upon the vegetation. Bogs are nutrient-poor peatlands since they are isolated from the groundwater. Whereas fens are peatlands rich in nutrients as they receive inputs from the groundwater. Peatlands covered at least 500 million hectares including bog, moor, fen, muskeg are some landscapes formed by peats”.

2.2 The socioecology of peatlands in the DRC

The DRC’s alluvial basin has a dense hydrography, composed of two main rivers – the Congo and the Shiloango – and about 30 rivers flowing towards and feeding the Congo River. This agroecological zone hosts the largest wetlands of the country – the Cuvette Centrale – and accounts for 243,743.53 km² of wetlands, which can be distributed into 10 subcategories (as proposed by Gumbricht et al. 2017), including an estimated 115,232.03 km² of peatlands.

Climate variability data in the DRC over the last 50 years reveals increasing temperatures in the country (see Figure 1). Tsalefac et al. (2015) assessed the impact of climate change on the hydrological regime of the Congo River watershed and concluded that there is increased evaporation because of climate change. As suggested by Dargie et al. (2019), “the Congo Basin peatlands appear to depend largely on rainfall to maintain a positive water balance”. Less rainfall may lead to less water, and consequently drought in the peatlands. To date, research shows that the DRC part of the Cuvette Centrale has low vulnerability to climate change (Ministry of Foreign Affairs of the Netherlands 2018; Dargie et al. 2019).

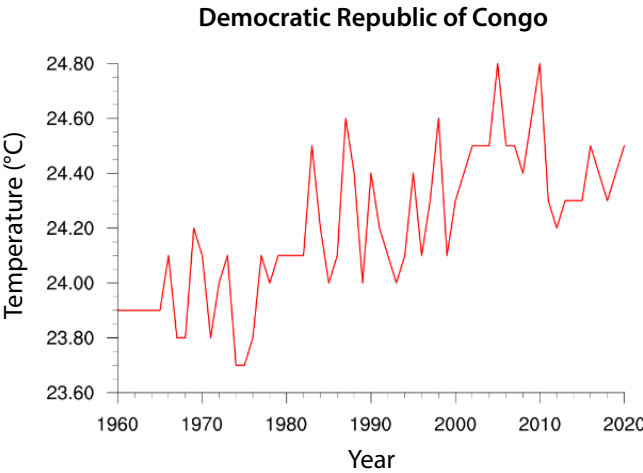


Figure 1. Temperature fluctuations in the DRC since 1960
 Source: Djiegni et al. 2021

Peatlands of the Cuvette Centrale in the DRC are distributed between six provinces: Mai Ndombe and all five provinces resulting from the split of the former province of Equateur (namely Equateur, Tshuapa, Mongala, Nord-Ubangi and Sud-Ubangi).

Despite the growing body of literature exploring peatlands in the Cuvette Centrale, very little is known about the distribution of peatland types in the DRC; even less is known about peatlands areas beyond

the DRC part of the Cuvette Centrale. It is anticipated that wetlands identified by International Union for Conservation of Nature (IUCN)'s 1992 study (see Table 1) in various provinces, including those not part of the Cuvette Centrale perimeter (Hughes and Hughes 1992), may also contain peat, meriting further investigation.

There are two main protected areas in the DRC peatland area. The Ntumba-Ledima Nature Reserve and the Lomako-Yokokala Fauna Reserve. These cover 39,625 km², around 16% of the DRC side of the Cuvette Centrale wetlands. Close to these two protected areas is the Salonga National Park which accounts for 3.6 million ha, and providing an additional buffer between the Cuvette Centrale and the DRC hinterlands (Sankiana Malankanga et al. 2021).

Table 1. Distribution of wetlands in the DRC

N°	Name and (current) province of wetland	Location	Size	Nearest towns
1	Wetlands of Bas-Zaïre (<i>Kongo Central</i>) province	4°00'-6°00'S/12°20'-16°00'E	65,227 km ²	No available data
2	Wetlands of South Bandundu (<i>Kwilu, Kwango, Mai-Ndombe</i>), Kasai Occidental (<i>Kasai central and Kasai</i>) et Oriental (<i>Lomami, Sankuru, and Kasai-Oriental</i>) provinces	4°15'-8°00'S/16°00'-26°00'E	401,175 km ²	No available data
3	Wetlands of Shaba Province (<i>Tanganyika, Haut-Limami, Lualaba, Haut Katanga, Lomami, Sankuru, Kasai-Oriental, Kasai-Central, Kasai</i>)	8°00'13°30'S/22°00'-29°40'E	321,120 km ²	No available data
	Lake Mweru	8°29'-9°28'S/28°23'-29°100'E	200,000 ha	Pweto (at N end of lake) and Lubumbashi (280 km SW)
	Luapula Floodplain	9°23'-12°00S/28°29'-28°47'	330,000 ha	Kasenga (on upper floodplain) and Lubumbashi (190 km SW)
	Lake Tshangalele and Lufira River	9°00'-13°13'S/26°40'-27°57'E	400,000 ha	Likasi (20 km W) and Lubumbashi (80 km S)
	Lake Delcommune	10°27'-10°55'S/25°24'-25°51'E	60,000 ha	Kolwezi (23 km W) and Lubumbashi (200 km SE)
	Upemba Lakes and Upper Lualaba River	4°00'-10°00'S/25°20'-28°45'E	1,444,000 ha	Kikombo (at N end) and Bukama (at S end)
4	Wetlands of the Central Zaïre Basin	3°00'N-4°00S/16°00'-26°00'E	774,562 km ²	No available data
	Riverine swamps and forests	4°20'S/20°35'E and 3°10'S/16°12'E	No available data	No available data
	Lake Tumba	0°37'-1°00'S/17°49'-18°09'E	75,500 ha	Mbandaka (80 km NE) and Kinshasa (480 km SE)
	Lake Mai Ndombe	1°32'-2°43'/18°03'-18°36'E	230,000 ha	Bolobo (225 km W) and Kinshasa (375 km SE)
5	Wetlands of the Eastern Highlands	4°41'N-8°27'S/28°00'-30°32'E	267,345 km ²	No available data

continued on next page

Table 1. Continued

N°	Name and (current) province of wetland	Location	Size	Nearest towns
6	<i>Lake Tanganyika and Ruzizi Plain</i>			
	Lake Tanganyika	3°21'-8°51'S/29°01'-31°12'E	3,290,000 ha	Kabalo (255 km W) and Lubumbashi (500 km SW)
	Ruzizi Plain	2°32'-3°21'S/28°56'-29°35'E	184,000 ha	Bukavu (47 km N) and Kongolo (350 km SW)
7	Lake Kivu	1°35'-2°31'S/28°49'-29°20'E	260,000 ha	Bukavu (at S end) and Kongolo (460 km SW)
8	Lake Edward	0°05'-0°56'S/29°16'-29°56'E	234,200 ha in total with 170,450 in the DRC	Lubero (28 km W) and Bukavu (225 km SSW)
9	Semliki River Valley	1°20'N-0°11'S/29°30'-30°30'E	375,000 ha	Bunia (25 km N) and Bukavu (300 km SSW)
10	Lake Albert	1°01'-2°07'N/30°23'-31°26'E	565,915 ha out of which 247,345 ha in the DRC	Kisangani (575 km WSW) and Bukavu (450 km SSW)

Source: Data compiled from Hughes and Hughes (1992)

Several DRC wetlands are considered of international importance under the Ramsar Convention on Wetlands. The Cuvette Centrale host the largest of these wetlands. Internationally, the Cuvette Centrale is now known as the Transnational Lake Télé-Grands Affluents-Lake Tumba complex (complex transfrontalier Lac Télé-Grands Affluents-Lac Tumba); this encompasses key sections of the overall peatland area (Miles et al. 2017). Part of this Ramsar landscape is located on the DRC side (see Figure 2).

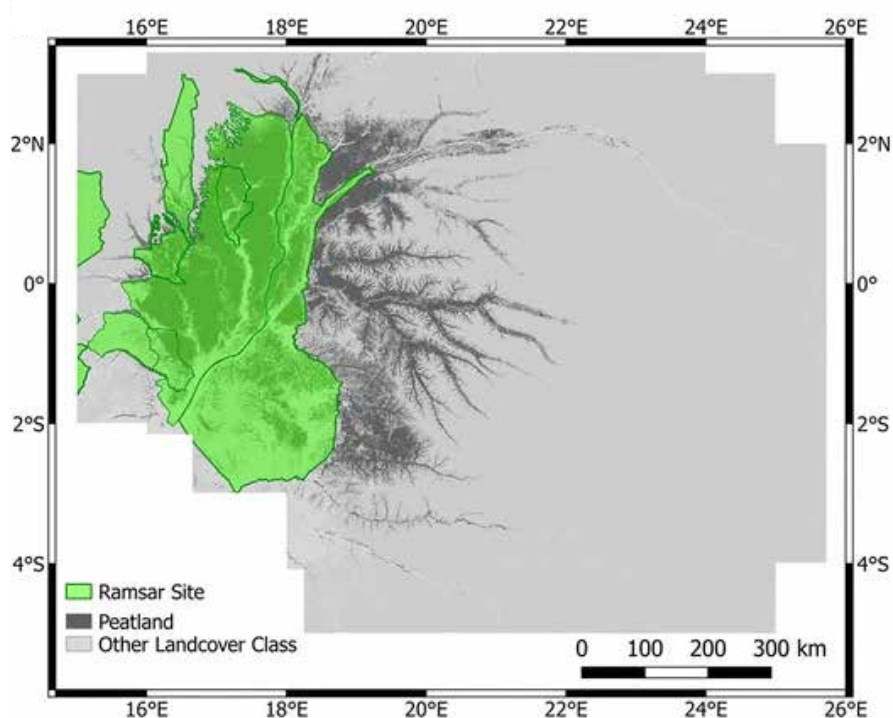


Figure 2. The transnational Ramsar site encompassing the Cuvette Centrale peatlands

Source: Dargie et al. 2019

In addition to this transnational site, other wetlands in the DRC have been classified under the Ramsar convention (see Box 1), adding to the hypothesis that the country may have additional peatlands. While some wetlands lie within the boundaries of the DRC, others are shared with neighbouring countries. To date, little research has investigated the existence of peatlands in these other wetlands, despite them being identified as of international importance.

Box 1. Profiles of Ramsar sites in the DRC

- Freshwaters of the cross-border basin of Lake Kivu and the Ruzizi River and Lake Tanganyika. The DRC, Rwanda and Burundi agreed to preserve the basin's freshwaters on 30 October 2014. The objective of these three countries is to ensure water provision in the basin's watersheds (Aruna Sefu 2019).
- Virunga National Park in North-Kivu Province (Ramsar site no. 787), which spans 8,000 km² and was designated a Ramsar site on 18 January 1996. Among others, the Park fringes volcanoes and two lakes as part of its biogeographical regions (Ramsar 1996a).
- The Parc Marin des Mangroves, in Kongo Central Province (Ramsar site no. 788), covers 660 km² and was designated a Ramsar site on 18 January 1996. In April 2000, it was also added onto the Montreux Record*. It includes coastal and riverine waters, inland ponds and swamps (Ramsar 1996b).
- Tumba-Ngiri-Maindombe is a transboundary Ramsar site located in Lake Tumba. The site has 6,569,624 ha surface area, distributed between the provinces of Equateur, Maindombe, Sud-Ubangi and Mongala.
- Bassin de la Lufira, located in the provinces of Haut-Katanga and Haut-Lomami and Lualaba (Ramsar site number 2318) spans 4,470,993.2 ha and was designated a Ramsar site on 31 October 2017. It consists of rivers and floodplains, artificial lakes, marshes, artificial ponds and marshy forests. It is mainly fed by the Lufira River (Ramsar 2017a).

*The Montreux record is a registry of Ramsar sites that are "either facing or likely to face large-scale changes in their ecological character as a result of unsustainable technological development, pollution or other human interference".

Peatlands in the DRC are a source of food, timber, domestic energy and amenities. Ignoring these varied services is risky, since the development of uncontrolled activities in peatlands could lead to their unsustainable management. Debate now concentrates on the Cuvette Centrale peatlands, but other peatlands in the country are largely ignored. This focus on only large wetlands could be explained by scientists believing that "wetlands function is a product of wetland size: hence, the larger the wetland the higher its functional capacity and the greater its importance" (Jean 2006). But this is not a clear argument for policymakers in a context where combined forest degradation from different sources is the main risk factor for peatland degradation.

No economic assessment of peatlands has yet been carried out in the Central Congo Basin (UNEP 2021). In January 2022, The Belgian Development Agency (ENABEL) issued a call for studies to evaluate the peatland degradation risks of rice cultivation in the lowlands of Mongala Province. The study results will inform what costs rice cultivation could have in this type of ecosystem, and what kind of responses could mitigate these risks. Further research could investigate these kinds of activities in other areas/ ecosystems in the country, so the government can anticipate appropriate responses.

For the most part, the ecosystem services provided by peatlands remain non-marketed, as can be seen in Table 2. The only ecosystem service marketed by most countries relates to fishing, hunting and foraging activities.

Discussion around peatland-dependent economic activities – or valuation of the ecosystem services peatlands provide – is largely absent in the DRC. This points to two possible things. The first is the country's confidence that no economic activities (except industrial extraction) will impact peatlands

in the short term, because of their remoteness. The second possible reason could stem from lack of information, resources or opportunities to value peatlands ecosystem services. In either case, it is risky to avoid discussing peatlands' economic value and the varied economic activities dependent on them, beyond discussing oil concessions to be auctioned in the Cuvette Centrale.

Table 2. Marketed and non-marketed ecosystem services rendered by wetlands

Ecosystem service	Description	Value
Carbon sequestration	Carbon sequestered and stored in peat layer and any aboveground biomass	Non-marketed, valued by social cost of carbon or the trading price of carbon
Water supply	Potable drinking water and non-potable water for domestic and industrial use	Non-marketed, valued by reduction in treatment costs or willingness to pay (WTP) for additional supply
Erosion control	Water retained in peatlands leads to less erosion and soil runoff	Non-marketed, valued by reduction in off-site costs of soil erosion
Flood control	Water retained in peatlands leads to less risk and severity of downstream flooding	Non-marketed, valued by reduction in risk and severity of flood damages.
Water pollution and sediment control	Increased retention and filtration of sediment, toxic substances and pollution by peatlands	Non-marketed, valued by reduction in downstream damages or WTP for reduction in health impacts
Supports fishing, hunting and foraging	Peatlands provide plants, animals and habitats for resources harvested for subsistence and commercial activities	Marketed and non-marketed, valued by surrogate market prices, production function and household production function methods
Tourism, recreation, education and research	Peatlands support diverse and unique species, some of which are rare or threatened	Non-marketed, valued by WTP for wildlife viewing and other recreational benefits, educational or scientific value
Religious, spiritual and other cultural values	Peatlands may have considerable spiritual, religious and cultural significance to nearby communities	Non-marketed, elicited through qualitative surveys
Existence and bequest values	Some may wish to preserve unique peatland ecosystems in their own right, especially for future generations	Non-marketed, valued by WTP for preserving peatlands irrespective of an individual's current or future uses of their services

Source: UNEP (2021)

2.3 Land uses and pressures impacting peatlands

Congo Basin swamps are in forested landscapes. In the DRC, most of these swamps are not accessible for forest exploitation activities because of remoteness (Dargie et al. 2017). However, activities in the surrounding terrestrial lands and watershed can significantly influence the accessibility of swamps by populations and communities living in nearest towns and villages. Dargie et al. (2019) identified six land uses and threats influencing the sustainable use of Congo Basin peatlands. These land uses include protected areas, Ramsar sites, logging concessions, mining, and oil/hydrocarbon concessions. Threats identified as putting pressure on wetlands include climate change, transport infrastructures, hydroelectricity, and combined degradation, in addition to all types of concessions previously mentioned.

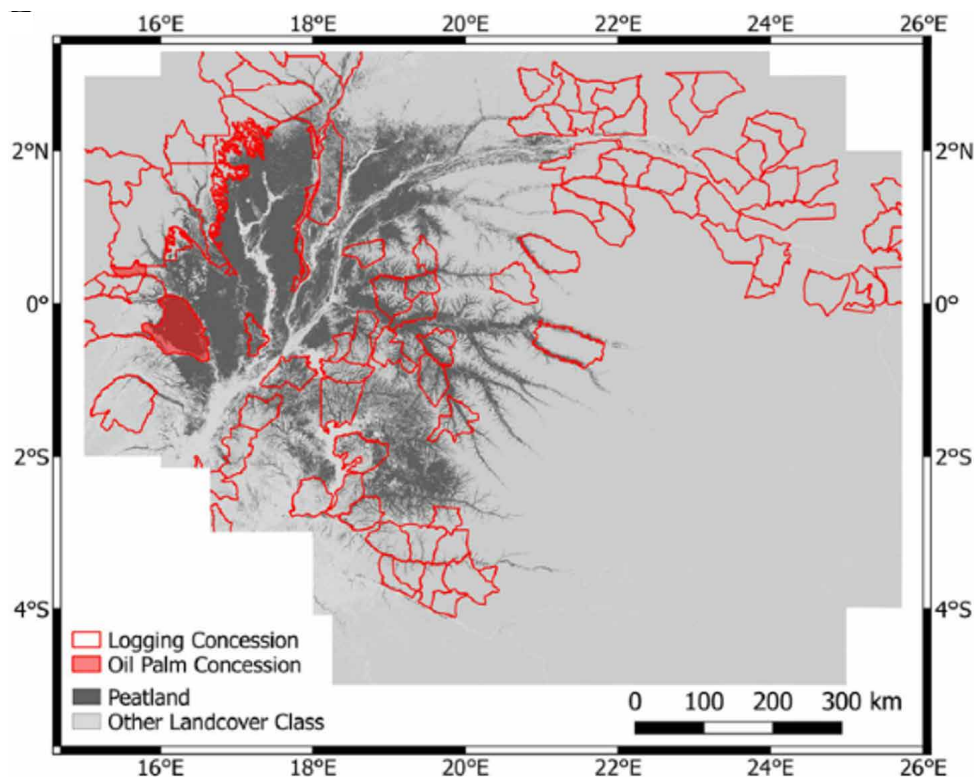


Figure 3. Logging concession, oil palm concession, and peatlands overlapping with the Cuvette Centrale

Source: Dargie et al. 2019

2.3.1 Logging concessions

There are around 77 logging concessions identified on the DRC side of the Cuvette Centrale (OFAC 2018). According to existing literature, these forest concessions are confined to *terra firme* forests that are not directly associated with peat. Consequently, they are limited in their extent within swamp areas, and include both primary and secondary vegetations (Dargie et al. 2019). According to data produced by the Central Africa Forest Observatory (Observatoire des forêts d’Afrique centrale, OFAC), three statuses of forest concessions overlap with the Cuvette Centrale in the DRC: 1) forest concessions with management plan; 2) granted forest concessions; and 3) forest concessions not granted (see in Table 3).

Table 3. Status of the forest concessions overlapping with peatlands in the DRC (according to OFAC)

Granted with management plan	Granted	Not granted
CCF039/11	CCF040/11	CCF052/14
CCF03511	CCF048/12	GA006/03
CCF034/11	GA022/03	CCF045/11
CCF025/11	GA026/03	CCF012/11
CCF024/11	CCF015/11	CCF013/11
GA027/03	CCF020/11	GA013/03
CCF009/11	CCF048/12	CCF023/11
	CCF057/14	CCF017/00
	CCF036/11	CCF016/11

Source: OFAC (2018)

Miles et al. (2017) stress that around 28,956 km² – representing 20% of the total surface of peatlands – are under a forest concession, and 53% of these concessions were thought to have been allocated for exploitation. Forest concessions in provinces sharing the Cuvette Centrale wetlands are distributed as presented in Table 4. In Mai-Ndombe, forest concessions are mostly owned by foreign companies, with Swiss companies predominating. These are principally located in the cities of Inongo, Oshwe, Bolobo, Mushie and Kwamouth (Omasombo Tshonda et al. 2019a). In Mongala, both industrial and artisanal forest exploitation exists. Industrial logging is less important in Nord-Ubangi and Sud Ubangi.

Table 4. The distribution of forest companies operating in the Cuvette Centrale

Province	Total area of forest concession	Operating companies	Source
Mai-Ndombe	3,222,537 ha	<i>Sodefor, siforco, ITB, Forestière du Lac, Compagnie du Bois, Somicongo, SCTP, Riba Congo, Tala Tina and Maison NBK Service</i>	Omasombo Tshonda et al. (2019a)
Equateur	No data available	Bakri Bois Corporation (BBC), Soexforco, Scibois, ITB, Soforma, Sodefor and CFT	Omasombo Tshonda et al. (2016)
Tshuapa	No data available	No data available	No data available
Mongala	No data available	Siforco, Sedaf, Sodefor, Soforma, Sicobois, Safo and Cotrefor	Omasombo Tshonda et al. (2015)
Nord-Ubangi	No data available	Sicotra	Omasombo Tshonda et al. (2019b)
Sud-Ubangi	No data available	No data available	Omasombo Tshonda et al. (2013)

2.3.2 Agriculture dynamics

To date, no agricultural concessions have been confirmed in the DRC part of the Cuvette Centrale, unlike in the Republic of Congo. However, local communities' agriculture activities are ongoing within villages. The literature provides an idea of the extent of area under permanent agricultural use, as well as agricultural complexes in some of the provinces that share the Cuvette Centrale peatlands. From available data (see Table 5), it appears that permanent agriculture is less expansive, covering between 0.1 and 0.45% of provincial land area, compared with the agricultural complexes that occupy between 6.5% to 24.6% of the provinces' surface area (Omasombo Tshonda et al. 2013, 2015, 2016, 2019a, 2019b). There is a lack of accurate data on the annual rate of expansion of these two categories of agriculture, and on what amount of the known surfaces are located within peatlands.

Table 5. Distribution of permanent agriculture and agricultural complexes in the Cuvette Centrale

Province	Permanent agriculture (% of the province)	Agricultural complexes (% of the province)	Source
Mai-Ndombe	7,528 (0.06%)	1,459,931 (11.43%)	Omasombo Tshonda et al. (2019a)
Equateur	1,421 (0.01%)	659,449 (6.52%)	Omasombo Tshonda et al. (2016)
Tshuapa	//	//	//
Mongala	299,404 (5.52%)	1,209,931 (22.31%)	Omasombo Tshonda et al. (2015)
Nord-Ubangi	7,696 (0.14%)	739,219 (13.73%)	Omasombo Tshonda et al. (2019b)
Sud-Ubangi	23,444 (0.45%)	1,273,287 (24.63%)	Omasombo Tshonda et al. (2013)

2.3.3 Mining concessions, oil and hydrocarbon

The DRC part of the Cuvette Centrale includes hydrocarbon blocks and mining concessions. Dargie et al (2019) stressed that, despite the existence of mining and hydrocarbon blocks in the DRC peatlands of the Cuvette Centrale, the presence of wetlands limits the number of investors interested in exploiting hydrocarbon in this area. According to these authors, based on the Oil and Gas Year (2017) report, “only four wells, all within the DRC and all of them dry, have previously been drilled in the Cuvette Centrale”.

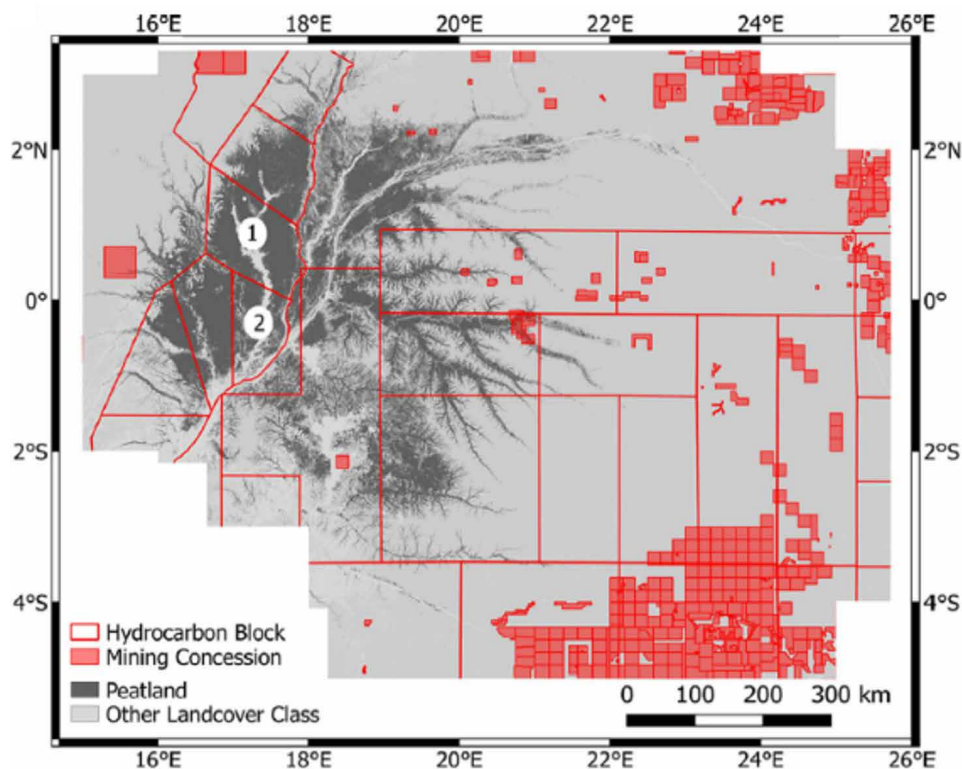


Figure 4. Hydrocarbon blocks and mining concessions in the Cuvette Centrale

Source: Dargie et al. 2019

This optimistic view is challenged by the recent decision of the DRC government. During the ministerial council held on 8 April 2022, the DRC government adopted a call for tender to grant 16 oil concessions, out of which 9 (Moero, Upemba, Block 4, Block 4b, Block 6, Block 18, Block 21, Block 22 and Block 25) are located in the Cuvette Centrale wetlands (Ministère de la communication et des médias 2022). It is not clear to date how many of these blocks to be granted are specifically located on peatlands. But media are raising alarm on the risks related to the decision to auction oil exploration in this area, where some of the blocks – estimated to contain 16 billion barrels of crude reserves – overlap with the biggest tropical peatlands (Sguazzin and Kavannah 2022); this makes the trade-off more difficult for decision makers to assess. This decision also challenges President Tshisekedi, who declared during COP26 that “with its forests, water and mineral resources, the Democratic Republic of Congo is a genuine ‘Solution Country’ to the climate crisis” (Mukpo 2022). Greenpeace’s office in the DRC (2022) has called the government’s attention to the potential impacts of this decision, and raised inconsistencies with the decision to auction these oil blocks that overlap not only with peatlands, as shown by Lawson et al. (2022), but also with several protected areas in the country:

- Block 22: Tumba Ledima Reserve
- Block 25: Bombo-Lumene Zoological and Forest Reserve
- Bombo-Lumene Hunting Estate

- Block 4: Lomako-Yokokala Forest Reserve
- Block 4b: Koko Lopori Bonobo Nature Reserve
- Luo Scientific Reserve
- Iyondji Bonobo Community Reserve
- Block 6: Yangambi Biosphere Reserve
- Upemba Block: Upemba National Park
- Block Matamba–Makanzi: Mangrove National Park
- Block 3: Fizi Hunting Area
- Ngandja Nature Reserve
- Block 11: Luama Katanga Hunting Estate
- Kabobo Wildlife Reserve

2.3.4 Transport infrastructure

The road network in the DRC is described as fractured, making river transport the most important in the overall transport network. The DRC is endowed with one of the largest river networks in the world (see Figure 5), and transport costs are lower in parts of the country serviced by tributaries of the Congo River (World Bank no date). Consequently, a river transport network dominates the Cuvette Centrale wetland area. However, despite the low population densities and extensive distances from

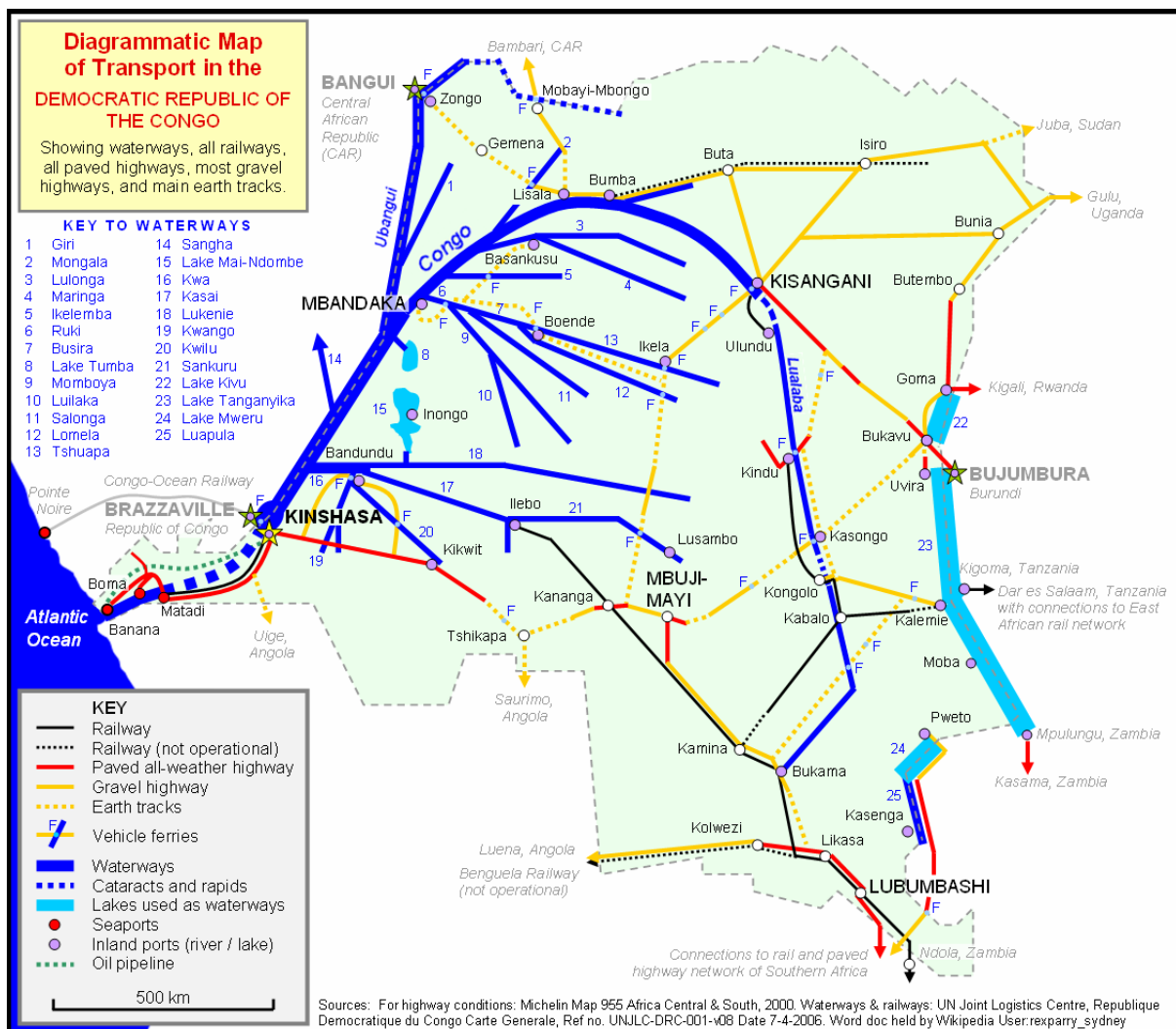


Figure 5. Diagrammatic map of transport systems in the DRC

Source: Michelin Map 955 Africa Central & South, 2000 (2006)

international ports that have spared the Congo Basin peatlands so far, it is anticipated that ongoing efforts to access peatlands for oil exploitation and other industrial land uses will have potential impacts on the DRC peatlands (Dargie et al. 2019). It remains unclear what road density will result from this, and how far this will impact the peatlands. But as Kleinschroch et al. (2016) highlight, an increase in road infrastructure facilitates access to intact forest landscapes through a process of fragmentation. The vast network of Congo River tributaries, when they open to navigable rivers, also offer opportunities for large- and small-scale forestry (Kengoum et al. 2020). And as globally observed by the World Bank (no date, 7), “*predicted effects of deforestation around improved roads corridors vary widely with prior road condition and locational economics, but increases in deforestation of 1%-20% are typical*”.

2.3.5 Hydroelectricity and energy

The Congo River flows at 42,000m³/s; it is the second largest river after the Amazon (ANAPI 2022). Several projects aim to rely on the Congo River to cover electricity both nationally and beyond national borders. This includes constructing a series of dams for hydroelectricity production, and diverting some of the water flow from the Congo River to replenish Lake Chad, through the construction of a dedicated canal.

Despite the country’s exploitable energy potential – estimated at 100,000 MW, which is 37% of total African capacity and 6% of the world’s energy potential – the DRC has just 2,516 MW installed to date, effectively producing 6000 to 7000 Gwh in the country. The country’s current electrification rate is 9.6% and the government aims to take this figure to 32% by 2030 (ANAPI 2022).

The DRC government’s 2018–2022 objectives for the electricity sector were fourfold:

- i. guarantee, by 2025, reliable access to electricity for all social groups, with emphasis on rural electrification
- ii. restructure National electricity company (SNEL) with a view to “transforming the electricity sector into a pillar of revitalization and growth of the Congolese economy”
- iii. develop subregional interconnections to facilitate the export of electricity
- iv. promote all renewable energy sources other than hydroelectricity, including the rational and sustainable use of wood, to replace diesel in thermal power plants in isolated networks.

Table 6. The energy situation across different provinces in the DRC

Provinces	Energy situation
Kinshasa	Solar potential: average sunshine varies between 3.22 and 4.89 kWh/m ² /d Wind potential: annual average wind speed (measured at 10 m) is 1.3 m/s Electrification rate: 44.1%
Ex-Katanga	Solar potential: 6.5 kWh/m ² /d Wind potential: average wind speed of more than 5m/sec Installed power is 567 MW, while current demand is estimated at nearly 900 MW (including 600 MW for the mining sector alone)
Kongo-Central	Hydroelectric potential is estimated at 64,000 MW (560,640 GWh) per year The Inga site alone represents 69% of this potential (i.e., 44,000 MW)
Ex. Province Orientale	The overall potential of the sites currently identified is estimated at 7200 MW Electrification rate: 3.6%
Kasaï Oriental	The electrification rate of the province is very low (0.5%) Energy needs (2012) are estimated at 264.774 MW, against a currently insignificant installed capacity (2012): 1.94 MW, highlighting a very significant gap which is weighing down all sectors Solar potential: 4.4 and 5.14 kWh/m ² /d

continued on next page

Table 6. Continued

Provinces	Energy situation
Kasaï Occidental	Hydroelectric potential amounts to 103 MW Electrification rate is very low: 1% with non-existent driving force Overall installed power amounts to 31.7 MW including 20.7 MW at shutdown, representing 65.2% of the installed power Solar potential oscillates between 5.16 kWh/m ² /d and 5.26 kWh/m ² /d
Nord-Kivu	Current electrification rate is estimated at 3.1% Installable power can reach 240.3 MW Biomass potential: the annual energy that can be produced can reach 76,583.74 MWh Solar potential: average sunshine varies between 4 and 5.5 kWh/m ² /d Natural gas: potential could reach 57.00 billion Nm ³
Sud-Kivu	Hydroelectric potential: Installable power can reach 1050.00 MW Biomass potential: annual energy that can be produced can reach 109,878.88 MWh/year Solar potential: average sunshine reaches 5 kWh/m ² /d Wind potential: annual average speed is less than 5 m/s Natural gas: potential could reach 57.00 billion Nm ³ Annual electrification rate: 7.9%
Maniema	The electrification rate is very low 3.0% Solar potential: located in a band between 3.5 and 6.75 kWh/m ² /d Production available is: 2.1MW
Kwilu, Kwango and Mai-Ndombe	Hydroelectric potential estimated at 104 MW Solar potential: sunshine varying between 4.5 and 7 kWh/m ² /day The electrification rate is 0.6%, penultimate at the national level The province has a huge gap of around 408.35 MW between supply and demand: the installed capacity of existing infrastructures amounts to 22.66 MW, against a capacity of 431.01 MW to cover current energy needs
Nord Ubangui, Sud-Ubangui and Equateur	Electrification rate: Very low ≈1.4%, while the province has several sites that could produce electricity are identified in its northern part High biomass potential (about 40,000,000 hectares of forest out of the 86 million in the DRC) The energy needs (2012) of the province are estimated at 426,085 MW (for all the territories of Ecuador), against an availability of around 26,770MW (2010) Solar potential: Good level of sunshine, between 5 and 5.5 kWh /m ² /d

Note: MW=Mega Watts; KWH= Kilowatts per hour

Source: ANAPI (2022)

There is a low electrification rate in the provinces of the DRC, particularly in those that overlap with the Cuvette Centrale, as shown in Table 6. As a consequence, the local population rely on biomass energy to cover most of their energy needs. As Jean Omasombo Tshonda (2013, 32) suggests of the Sud-Ubangi, “it is the agricultural needs for energy and infrastructures that are the main cause of the pressure on the environment, leading to river silting that lose their bed converted into *terra ferme*”. In the case of Mongala, the same author’s report relies on results from Defourny et al. (2011) and Tollens (2010), who confirmed that the majority of the population’s energy needs are fulfilled through the use of charcoal, which leads to the deterioration of forest cover near villages (Omasombo Tshonda 2015). In Equateur, nine out of ten people depend on firewood for domestic energy, which has led to the extinction of *Guibourtia demeusei* (also known as the Bubinga species) in the Mbandaka area (Omasombo Tshonda 2016). This low access to electricity and overreliance on biomass energy puts increasing pressure on natural resources and on forested areas around peatlands in the Cuvette Centrale, but to different extents in different locations.

2.3.6 Threats in Ramsar sites

Threats to wetlands are also identified in Ramsar sites. According to Ramsar, several pressures impact upon DRC wetlands that have been declared Ramsar sites. Common activities found in the various areas include gathering of medicinal plants, and subsistence cropping/farming. But the threats identified are mainly extensive fuelwood cutting (in Virunga and the Parc National des Mangroves), refinery pollution and uncontrolled urban development, as observed around the Parc National des Mangroves. In Lufira, Ramsar identifies threats as being the lack of controls and regulation around mining activities, and hydrometallurgical treatment plants (Ramsar 2016, 2017).

2.3.7 Population and urbanization

In 2020, the population of the DRC was estimated at 90 million inhabitants, unevenly distributed across provinces (Institut National de la Statistique (INS), 2021). With a total of 11,713,000 inhabitants, the six provinces hosting wetlands in the DRC portion of the Cuvette Centrale represent around 12% of the national population. According to these statistics, Sud-Ubangi, Mai-Ndombe and Mongala are the most populated of the six provinces. The remaining provinces put together were all above 1.4 million inhabitants in 2020.

However, the provinces of Sud-Ubangi, North-Ubangi and Mongala have the highest population densities (see Figure 6).

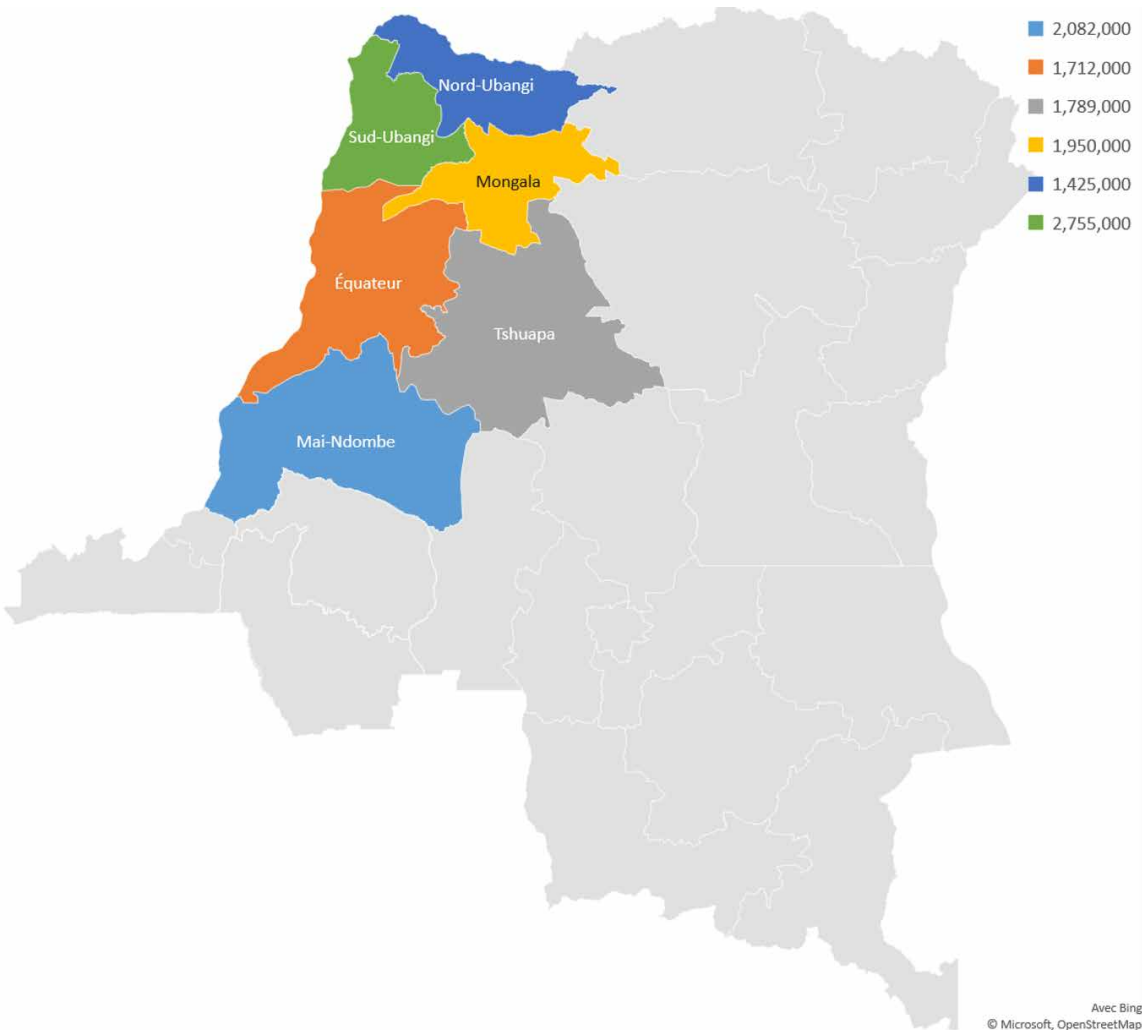


Figure 6. Population distribution in the provinces included within the Cuvette Centrale

Peatlands in the DRC can fall under three possible statuses: (1) those in pristine condition, (2) those which are threatened, and finally (3) those already in use for economic purposes. An evaluation of the existing status of peatlands in the DRC could support understanding of the dynamics leading to peatland degradation and destruction, and anticipate such processes for the Cuvette Centrale. As observed by Fraser and Keddy (2005), humans are now found in most areas and it is not possible to consider limiting human activities everywhere to protect the world's largest wetlands. Consequently, as highlighted by the UN Environment Programme (UNEP 2021, 15) "it is imperative that any decision to convert, degrade or drain peatlands includes an assessment of the various benefits that may be lost through such land-use changes".

There is no specific data when it comes to populations in the DRC living in or directly depending on peatlands for their livelihoods. However, in most cases the distance between the main cities and nearest wetlands are dozens or hundreds of km, as seen in Table 2. The World Bank differentiates five economic regions in the DRC that urbanize differently. According to this distribution, the Congo Basin economic region – which includes the former Equateur (Equateur, Tsuapa, Mongala and Nord-Ubangi), Bandundu (Kwango, Kwilu and Mai-Ndombe) and Orientale (Bas-Uele, Haut-Uele, Ituri and Tsopo) provinces – has the lowest urbanization rate with the largest territory, compared to the four other regions. With the exception of Kisangani, this region includes only small towns with less than 1 million inhabitants (World Bank 2018). It is therefore believed that urban demography has not directly influenced or threatened wetlands to date, but uncertainties remain around how that might change in future.

Despite their distance from the country's wetlands, urban cities in the DRC appear to be expanding rapidly as a result of rapid population growth and a rural exodus. The city of Kinshasa expanded by 30% in just a decade, for example, and it is anticipated that if the city's population reaches 16.9 million inhabitants, it will encompass an area of 687 km² (World Bank 2018). This expansion cannot be translated to other urban cities, however since cities are developing at the expense of rural towns and villages (DRC 2015), it is important to understand population dynamics in the small towns nearest to wetlands and peatlands, so as to best anticipate how demography changes could impact wetlands and peatlands in future.

2.4 Wetland biodiversity loss

The issue of protecting biodiversity in humid zones has gained traction globally, to the extent that in 2020 biodiversity was the theme of World Wetlands Day. Humid zones host 40% of the world's animal and vegetal species (UNEP 2020). In the DRC's Strategy and National Action Plan for Biodiversity for 2016–2020, the first objective was to promote scientific research around taxonomy, phytosociology, zoosociology, biotechnology, the effects of human activities on ecosystems, biological diversity and conservation. The strategy stressed that, over the last 70 years, taxonomy inventories have ceased to take place in the DRC; the only known efforts in this area over the last two decades are those of the US-funded Central Africa Regional Program for the Environment (CARPE), which has contributed additional information on new plants, animals and fishes. Among the threats the strategy identifies are pollution of aquatic systems by waste (particularly household waste), and pollutants from mining factories, both requiring observation around their impact on biodiversity. Another threat comes from imported invasive species due to absent or poor control systems at the borders. To date, there is no available valuation of biodiversity in the DRC, with the consequence that the DRC government is less motivated to protect wetland biodiversity (DRC 2016).

One of the aims behind designating Ramsar sites is to protect wetland biodiversity from threats. However, the link between wetland biodiversity and peat in the DRC remains to be answered; this is key to the country determining what role biodiversity-related institutions need to play in sustainable peatland management.

If further studies reveal there are peatlands in the DRC that are already in use or completely degraded, the government will need to decide whether to rehabilitate or restore these peatlands. This will require coordinated action between institutions in charge of land-use planning and other lands uses, including water management.

At least two cases – in South Africa and Rwanda – present examples of peatland restoration experience (Cris et al. 2014). In the case of Rwanda, it was reported that “the Rugezi mire has recovered well in the past 10 years. The water quality from the recovered area has improved remarkably compared to the northern sector still being cultivated, and the hydropower again has a sustained flow of water” (Cris et al. 2014, 38). This was the consequence of establishing a 20–50 m buffer zones around mires, to prevent human activities being implemented in affected areas.

Based on the experience of Indonesia, Dargie et al. (2019) hypothesize that high commodity prices, improved access to markets via roads and rivers, and drought due to higher temperatures, could collectively lead to peatland degradation. If the DRC government grants the oil concessions that were validated during the April 2022 Ministerial Council, as well as pending forest and mining concessions for the Cuvette Centrale, such activities could lead to easier access to peatlands, and may increase anthropogenic activities, leading to increasing degradation in the area (Lawson et al. 2022). Attention also needs to be paid to combined degradation; examining factors individually can mislead policymakers, as such factors are not always happening at high magnitude.

2.5 Peatland degradation and socioecological imbalances

Peatland degradation is the immediate consequence of wetland degradation. Patel et al. (2022, 277) offer a summary of how wetland degradation leads to ecological imbalance through reduced water quality, unregulated streamflow, decline in carbon sequestration, imbalance in nutrients cycling, and soil erosion that all contribute to loss in wildlife and biological diversity. This summary aligns with the detailed results produced by Dargie et al. (2019) who explored threats to Congo Basin peatlands. Hydrologic alterations, pollution inputs and vegetation damage appear here as the main anthropogenic causes of wetland degradation; however it is important to note that the summary focuses on ecological aspects, and does not include the socioeconomic imbalances that can result from these same dynamics. That said, this description provides basis for the understanding of how peatland degradation happens, how the consequences of this can be framed, and what dimensions can be considered when designing effective responses for their sustainable management, both at socioecological and policy levels.

The Ramsar Scientific and Technical Review Panel designed 11 technical reports, proposing guidelines and frameworks for wetland ecology conservation, wise use and management. These reports target: 1) ecological assessment of biodiversity in inland water, coastal and marine areas; 2) low-cost GIS software and data for wetland inventory, assessment and monitoring; 3) valuation of benefits derived from wetland ecosystem services; 4) a wetland inventory metadatabase; 5) assessment of the vulnerability of wetlands to climate change; 6) health of wetlands and peoples; 7) wetland diseases; 8) waterbird flyways; 9) environmental water requirements for estuaries; 10) earth observation for wetland inventories, assessment and monitoring; and 11) peatland rewetting and restoration¹.

1 Technical reports can be found here: <https://www.ramsar.org/resources/the-technical-reports>

3 Peatland actors and agents of change

To date, mapping of the actors and networks related to peatland management has been based on the premise that all key stakeholders are potentially part of the peatland management policy process. This section assesses the roles and importance; interests and incentives; power and resources; and key linkages, for each category identified as a potential actor in peatland policy processes.

3.1 Mapping and analysis of peatland actors

In their assessment of the institutional and legal framework governing peatlands in the DRC, the USAID, CODELT and USFS (2021) identified actors and how their current roles aligned to peatland management. Table 7, adapted from this work, proposes an updated summary of the clusters of actors, and their current and potential roles in peatland management in the DRC.

Table 7. Diverse actors and their potential roles in peatland management

Categories	Actors	Roles and responsibilities in peatland management
Political system/ government	Ministry of Environment and Sustainable Development (MEDD)	<p>Lead the definition of a national vision for peatlands and the inclusion of peatlands in relevant regulatory frameworks</p> <p>Propose peatland legislation (and/or revisions) to Parliament</p> <p>Provide institutional capacity building support for ministry divisions and units involved in peatland management</p> <p>Oversee the implementation of a national strategy for the sustainable management of peatlands</p> <p>In charge: Department of Sustainable Development (DDD)</p> <p>Monitor and report on the country’s performance in achieving international commitments (e.g., relating to wetlands, climate change, biodiversity, water management)</p> <p>Collect data and maintain the national GHG inventory and estimation of peatlands’ contributions to GHG emissions and removals</p> <p>In charge: Department of Forest Inventory and Zoning (DIAF)</p> <p>Implement the national forest inventory, including for peatlands</p> <p>Monitor and map land cover dynamics, including for peatlands</p> <p>In charge: Department of Forest Cadastre (DCF)</p> <p>Carry out the collection, delineation, measurement and demarcation of forest domain in the country</p> <p>Design and update forest cadastre plans</p> <p>Design and review the forest domain map</p> <p>In charge: Department of Water Resources</p> <p>Act as the focal point for the Ramsar Convention</p> <p>Contribute to ensuring peatland protection is part of the national water policy</p>

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Table 7. Continued

Categories	Actors	Roles and responsibilities in peatland management
	Deputy Prime Ministry of Interior, Security, Decentralization and Customary Affairs	Ensure the decentralized framework facilitates the role of decentralized institutions at provincial (e.g., provincial assembly, provincial governor, provincial Ministry of Planning, provincial Ministry of Land-use Planning) and local levels (e.g., chiefdom or sector council, sector or chiefdom chief) for effective peatland management
	Ministry of State; Minister of Planning	Coordinate and integrate the various sectoral programmes prepared by ministries, decentralized territorial entities, and economic and social actors, including those relating to peatlands
	Ministry of State; Minister of Rural Development	Ensure rural development activities align with the national peatland strategy
	Ministry of Communications and Media; Government Spokesperson	Contribute to communication around the national objectives for peatland conservation
	Ministry of Land Management	Coordinate the zoning process of different land uses and ensure arbitration of conflicting interests in zoning (including of wetlands and peatlands) for integrated decision making Contribute to decisions around the importance of peatlands in zoning processes
	Ministry of Mines	Ensure mining activities align with peatland protection activities
	Ministry of Hydrocarbon	Ensure hydrocarbon activities align with peatland protection activities
	Ministry of Regional Integration	Ensure actions in relation to peatland management are coordinated with regional initiatives
	Ministry of Agriculture	Ensure agriculture activities align with peatland protection activities
Core public agencies and ministry departments	Peatland Management Unit (PMU)	Develop and implement the national peatland strategy Ensure the coordination of peatland management in the Democratic Republic of Congo, with the main actors identified in the National Peatland Strategy and interested technical and financial partners, including linking with similar initiatives at Congo Basin level and elsewhere Encourage and ensure a participatory approach to peatland management through the involvement and consultation of various stakeholders, including forest communities and Indigenous Peoples Identify and collaborate with qualified national and international technicians to address peatland management issues on the ground Ensure effective integration of peatland policies with existing national climate change initiatives Monitor the evolution of peatland debates at international level, and facilitate the DRC's participation in international conversations Support the valuation of peatland carbon through REDD+ or other sustainable forestry programmes/initiatives
	Congolese Water Office (OCE, Office Congolais des Eaux)	Design water development and management plans for basin and/or sub-basin Support basin or sub-basin committees, as well as bodies set up by provinces and decentralized territorial entities for the management and development of water resources

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Table 7. Continued

Categories	Actors	Roles and responsibilities in peatland management
	Congolese Institute for Nature Conservation (ICCN)	Assess options for designating specific areas of peatlands as protected areas, to promote their conservation
	National REDD+ Coordination	Support to identify ways to harmonize interventions defined in the REDD+ framework strategy and pillars of the national peatland strategy
	Climate Change Division	Include peatlands in the revised Nationally Determined Contribution (NDC) and national GHG inventory for the DRC
	Congolese Environment Agency (ACE)	Provide a framework to facilitate social and environmental impact assessments and audits at national, provincial and local levels
	Biodiversity Division	Promote the protection of peatland biodiversity
	National REDD+ Fund (FONAREDD)	Build on existing mechanisms to facilitate the sustainable management of peatland forests (e.g., community forestry, conservation, management and customary community land tenure) through the coordination and monitoring of REDD+ initiatives in the DRC
National non-governmental actors	//	Participate in decision-making processes Participate in communication and capacity-building activities for local communities and Indigenous Peoples Independent monitoring of peatland management
International donors	//	Provide financial and technical support Provide financial support for the sustainable management of peatlands within the framework of REDD+
Institutions and organizations providing checks and balances	Parliament	Vote on, review and update legislation impacting the sustainable management of peatlands Parliamentary control over government actions in relation to the sustainable management of peatlands
	Ministry of Justice	Oversee respect of the rule of law in relation to peatland management
	Prime Minister's Office; Council of Ministries	Ensure arbitrations between competing decisions from sectorial ministries

Source: <https://medd.gouv.cd/dcf/> (accessed 20 March 2022)

Since the discovery of peatlands, actors' interests in Cuvette Centrale wetlands have shifted. This section identifies the stances of diverse actor groups on different aspects of wetland and peatland management at this stage in the policy process.

3.1.1 Governmental actors

In 2018, the DRC committed to protect and sustainably manage its share of the Cuvette Centrale by signing the Brazzaville Declaration. Since then, the government has been trying to build a long-term vision for peatlands in the country, as it considers them an important nature-based solution that can enhance its national contribution to global efforts to mitigate and adapt to climate change (DRC 2021b). A process has been initiated to design a national framework for peatlands; and within it a vision for the country's peatlands, with the aim to: "conserve peatlands for the people and the nature" (Bambuta 2021; Minelli 2021). According to the coordinator of the Peatland Management Unit (PMU), the objective behind this vision is to reconcile the ecological functions of peatlands with the income and benefits that can be generated through conservation activities. The argument is that natural resources

(like forest, oil and hydrocarbon resources) are inextricably interconnected with the country's peatlands (Bambuta 2021). MEDD considers that at this stage of discussion around the peatlands, generating knowledge, building capacity and communication are key for the country. Regarding knowledge, it is important to provide a national definition of peatlands, including what depth should be considered, to propose a definition that aligns with national interests and ambitions.

Peatland protection as announced in the revised NDC has also been integrated into the latest agreement between the DRC and CAFI, regarding ongoing national efforts to reduce emissions from deforestation and forest degradation (REDD+). However, the MEDD vision remains challenged by that of the Ministry of Hydrocarbon. In a letter sent responding to Greenpeace's alert over the auction of an oil concession that overlaps with protected areas, the Ministry stressed that "compared to hydrocarbon activities which are specific and selective, relating to the potentiality of the subsoil, it is those linked to forest exploitation on the surface and subsurface, which exert a strong and great pressure on ecosystems". But the ministry also reiterated that "no upstream hydrocarbon activity in particular can be carried out without prior presentation of the validation by the Congolese Environment Agency (ACE) of the Environmental and Societal Impact Study" (DRC Ministry of Hydrocarbon 2022).

3.1.2 National and international non-profit organizations

At international level, several organizations support the sustainable management of wetlands in the Cuvette Centrale.

The African Network of Basin Organizations (ANBO) is a 52-membership international non-profit organization, created in 2002 in Dakar with the aim to coordinate and strengthen cooperation among Africa's Basin Organizations. ANBO's first plan (2015–2019) was replaced by a second plan for 2020–2024. One of its main interests is mapping and overseeing the evolution of transboundary aquifers; and research has clearly evidenced the presence of a transboundary aquifer overlapping with the Cuvette Centrale (Nijsten et al. 2018).

The Cuvette Centrale includes a designated Ramsar site. Consequently, the Ramsar Convention secretary is involved in managing the DRC part of the Cuvette Centrale wetlands, as well as all other national wetlands whose international importance has been recognized.

At regional level, the DRC is part of both the Commission des Forêts d'Afrique Centrale (COMIFAC) and the Commission Internationale du Bassin du Congo-Oubangui-Sangha (CICOS). CICOS was born in 1978 from a tripartite commission between the Republic of Congo, the Central African Republic, and the former Zaire (now the DRC). Its objective was to coordinate navigation on the Congo River, followed by the Ubangui and Sangha rivers. Today, CICOS interests include the management of forested areas, including swamps; CICOS also chairs ANBO.

In 2019, a consortium of 19 NGOs from the DRC issued a position paper on Congo Basin peatlands. This paper is key to understanding actors' interests in Cuvette Centrale peatlands; including the concerns of Indigenous Peoples and local communities. These organizations are supportive of the idea that discovered peatlands must be protected. They also stress that despite the declaration of a transboundary Ramsar site by the DRC and the RoC in 2017, "the agreement has not been followed up with adequate management or policies by the governments of the Democratic Republic of the Congo (DRC) and the Republic of the Congo (RoC), making the agreement a weak instrument to protect the peatlands" (NGO Consortium 2019). These organizations advocate for "no industrial exploitation in the peatlands" and consequently believe that both governments should "cancel logging, agriculture, and mining concessions and oil blocks that overlap with the peatland complex or its surrounding protective ecosystem and declare the areas as a no-to-go zone for industrial development in binding legislation" as well as "respect national, regional, and global commitments (Brazzaville Declaration and Paris Agreement) for the protection of peatlands and CB forests." (NGO Consortium 2019, 4). These NGOs

appealed to the international community to put the cancellation of overlapping concessions and oil blocks forward as a condition for any further financial support relating to peatland protection, as well as donor-funded programmes related to peatlands in the DRC.

3.1.3 Private sector actors

Private sector interests in peatlands largely concern the civil society organization (CSO) stance on existing concessions that overlap with peatlands. For now, there are more questions around private sector interests than responses. The call for tender to auction oil concessions in the Cuvette Centrale will provide insight into how the private sector reacts to discourses advocating for the total protection of peatlands. At the time of writing this report, government concerns were around what framework is most appropriate to involve the private sector in peatland-related policy processes, considering that there are private forest concessions overlapping with peatlands.

3.1.4 Donors

Donors have supported the DRC's efforts to protect the fragile biodiverse-rich ecosystems of the Cuvette Centrale for decades. Specific to peatlands, the BMZ through the International Climate Initiative (IKI) is also funding peatland-specific projects in the DRC. This includes a EUR 15 million project implemented by UNEP and MEDD, under a partnership with the FAO. The project – entitled 'Securing crucial biodiversity, carbon and water stores in the Congo Basin Peatlands by enabling evidence-based decision making and good governance' – will last from 2021 to 2027 (IKI 2022). Beside this project is another – Global Peatlands Initiative – that aims at assessing, measuring and preserving peat carbon, for a total budget of nearly EUR 2 million for related costs between 2018 and 2023. Meanwhile the Japan International Cooperation Agency (JICA) is supporting studies to inform the peatland national policy process; as is The Restoration Initiative, known as "DRC Child project" by Global Environment Facility (GEF).

USAID and USFS have also shown early interest in supporting the DRC government to generate knowledge to inform peatland policy making. Both institutions provided support to put in place legal and institutional arrangements for peatlands management. Between October and December 2020, the two entities provided financial and technical support to review the legal framework for peatland management in the DRC, under the Sustainable Wetlands Adaptation and Mitigation Program (SWAMP).

To combat the impacts of climate change in the Lake Chad Basin, Congo Basin countries opened discussions around building a 2,400 Km long canal to use the Congo River to feed Lake Chad, which has lost more than 90% of its surface water over the last decades. For more than three decades, donors have been reluctant to fund the initiative (Caramel and Tilouine 2018); however, it has been reported that a Chinese group named Power China is willing to fund the project, and has signed a contract to do so with the Lake Tchad Basin Commission (CBLT) (Medinilla 2018). The impacts of the project on the Cuvette Centrale wetlands are poorly understood; and it remains unclear how far this process has advanced.

The 2nd generation of the National Programme for Environment, Forests, Water et Biodiversity (Programme National Environnement, Forêts, Eaux et Biodiversité, PNEFEB) provides an interesting framework for the coordination of peatland management alongside existing policy processes. The PNEFEB has five strategic axis that bring together environmental protection, management of forest resources, management of water resources, biodiversity conservation, and institutional development and capacity building (DRC 2016).

Central African Forest Initiative (CAFI) entered an agreement with the Government of DRC in November 2021 to support the country's efforts to reduce emissions from deforestation and forest degradation. For 2021–2030, the CAFI executive board approved an allocation of up to USD 500 million, to support the implementation of the Letter of Intent. However, the disbursement of this allocation is subject

to the fulfilment of CAFI’s standard administrative agreement, including conditions relevant to the availability of funds. The latest CAFI and DRC agreement includes protection of peatlands against potential forthcoming pressures that could harm the equilibrium of the ecosystem.

The CAFI framework – within which DRC peatlands are included in national REDD+ efforts – seems aligned with the Brazzaville commitments. By comparing and analysing how it is presented in the CAFI agreements of the DRC and Republic of Congo, can indicate the capacity of each country to effectively align regional-scale efforts with national-level objectives. Regional-level commitment, as seen in the Brazzaville agreement includes three aspects of protecting and sustainable managing peatlands:

1. Establishing and implementing land-use plans that support peatland conservation and protection.
2. Promoting best practice in the sustainable management of peatlands in which economic activities take place, so that these activities are managed sustainably and carefully in terms of climate; that is, so that peatlands are not drained or dried out.
3. Implementation of the principle of free, prior and informed consent with regard to the activities mentioned above.

In both countries (as presented in Table 8) the aim of the CAFI agreement is to either avoid, minimize or mitigate impacts, or compensate for the impacts of policies and sectoral activities on peatlands.

Table 8. Sectoral commitments of the DRC and Republic of Congo within the CAFI agreement

Commitments within the CAFI agreement		
Sector	DRC	Republic of Congo
Land-use planning	The systematic integration of peatlands into land-use planning processes with the goal to protect them	The non-conversion of high conservation status/ high conservation value (HCS/ HCV) forests, and the protection and sustainable management of peatlands to ensure they are not drained or dried out
Land tenure		The provision of appropriate tools to implement and monitor forest and peatland preservation, as well as the Cancun Safeguards for land and resource use projects in the agricultural, forestry, mining, hydrocarbon, and infrastructure sectors
Sustainable forest management	Peatlands will have been defined and identified through a participatory and multi-sectoral process, considering local, national and international best practices, and a protection and management status will have been assigned	Mapping and improved knowledge of peatlands and their protection and sustainable management to prevent them from being drained or dried out
Agriculture	Reduction of family-sized and intermediate-size agriculture impact on peatlands, through strict regulations of draining. Interdiction to grant agro-industrial concessions that are incompatible with peatland protection	Application of the principle of protection and sustainable development of peatlands, to prevent them from being drained or dried out by agricultural activities
Mines and hydrocarbon	REDD+ standards for mining and hydrocarbon investments in forest areas and peatlands are adopted, accompanied by an independent review of their implementation	Minimization of direct and indirect impacts of mining and hydrocarbon activities on carbon stocks as well as forest and peatland biodiversity

3.1.5 Research bodies

To date, research organizations' interests in the Cuvette Centrale have been to generate knowledge so as to support the conservation of wetland and peatland areas. In 2017, researchers took the important step of putting together a consortium of six universities, who together issued a landmark publication in the highly-reputed journal *Nature* (Dargie et al. 2017). The aim of this publication was to clearly describe the age, extent and carbon storage of the central Congo Basin Complex, that includes the DRC. Specific studies by Miles et al. (2017) further assessed carbon, biodiversity and land use in the Cuvette Centrale peatlands. These authors concluded that conserving Cuvette Centrale peatlands is key to meeting Sustainable Development Goal (SDG) objectives 13, 3, 6 and 15. However, they stressed the need for further research to document ecosystem services, biodiversity, drivers of peatland cover change, obstacles to their conservation, and to provide the key information needed by policymakers. In the same year, a publication by Roucoux et al. (2017) investigated threats to intact tropical peatlands at the global level, and opportunities for their conservation. These authors concluded that "conserving peatlands on a landscape scale, with their hydrology intact, is of international conservation importance to preserve their distinctive biodiversity and ecosystem services and maintain their resilience to future environmental change" (Roucoux et al. 2017, 1283). Dargie and the same initial research team then went on to explore what threats and conservation priorities exist in the Congo Basin, concluding that "at present, the Cuvette Centrale peatlands are relatively intact and many of the threats may appear somewhat distant. Now is therefore the time to take action to ensure their protection" (Dargie et al. 2019, 681). The authors suggested "conservation activities could be funded through a combination of climate, biodiversity and development funding, using the existing Ramsar designations that cover most of the peatlands as a framework for design and implementation of comprehensive management plans that protect the hydrology from modification." A specific study has since been carried out by a larger research group named the Congo Peat Early Careers Researchers Group, representing 12 research institutions. In 2021, this group assessed current knowledge on the Cuvette Centrale peatland complex and future research directions, concluding that "it is clear that a sustained, international effort is crucial to protect this globally important ecosystem" (Biddulph et al. 2021). Investigating governance is thus part of ongoing projects like Sustainable Wetlands Adaptation and Mitigation Program (SWAMP) and Strengthening and Institutionalization of the Central African Forest Observatory (RIOFAC), as well as the activities of Congo Basin Water Resources Research Center (CRREBAC), a University of Kinshasa laboratory unit that investigates peatland management options.

One note with regards to research is that the most visible research results are principally those carried out by European research teams, which have mostly focused on peatland ecology. Research carried out by national universities in Kinshasa and in Kisangani remain far less visible. This highlights the need for interdisciplinary research at both national and international levels, including collaboration with Republic of Congo research teams.

3.2 Links between actors

Collaborations in the ongoing peatland policy making process are still in their early stages. The DRC government works with the Global Peatland Initiative, founded by 13 members in 2016 during the United Nations Framework Convention on Climate Change (UNFCCC) Conference of Parties (COP) in Marrakech. The Initiative works at both global and national levels with the aim of saving peatlands. At the regional level, the DRC collaborates with the Republic of Congo to manage the transboundary Ramsar site both countries agreed to put in place; they also work together to achieve the objectives of the Brazzaville Declaration. At the national level, as seen in the DRC, the Initiative aims to identify and provide early responses to the needs of pilot countries, through building knowledge and developing options to reduce peatland degradation. The Initiative also supports the development and adoption of sustainable peatland strategies and action plans.

There is no formal consortium of CSOs for peatlands, as observed in other natural resource policy processes like FLEGT or REDD+. However, 19 NGOs have been able to coalesce in the DRC to issue a common letter advocating for early actions to protect peatlands.

4 Peatland policy making

4.1 The institutional backdrop for peatland management

In 2018, the DRC signed an agreement with the Republic of Congo and Indonesia to work together to protect peatlands with the support of existing and forthcoming institutions, as well as those already supporting ongoing efforts. To achieve this objective, the country must have an exhaustive understanding of the potential imbalances resulting from peatland degradation, and establish a framework that includes both managing institutions as well as strategic and legal tools to ensure good governance of the country's peatlands.

Peatland issues within the DRC are placed under jurisdiction of the Vice Prime Ministry of Environment and Sustainable Development (MEDD). Within this institution, the Department of Sustainable Development (DDD) oversees and coordinates climate and biodiversity initiatives, and monitors the country's environmental commitments at international level. The Peatland Management Unit was created under the DDD in 2017, through Order No. 10 of 27 July 2017, to oversee peatland-related developments in national and international debates and policy processes. This Unit oversees the process of developing a national peatland strategy. Box 2 offers an overview of the roles and tasks undertaken by the Peatland Management Unit.

Box 2. MEDD Peatland Management Unit (PMU) roles and tasks

Main roles

- Administration and finance
- Information and engagement with stakeholders
- Studies and planning
- Anticipated testing and implementation of strategy

Main tasks

- Mapping of peatlands
- Development of national peatland strategy
- Daily management of peatland issues
- National coordination and participatory management of peatlands with national and international stakeholders
- Link with other climate change initiatives
- Secretariat for the national-level stakeholders' platform (board structure with several institutions/members)

In 2022, the DRC government put in place Decree No. 22/06 of 1 March 2022, for the creation, organization and operation of a public body named the Congolose Water Office (Office Congolais des Eaux, OCE) (MEDD 2022). Article 2 gives the OCE responsibility to design water development and management plans at basin and/or sub-basin level; collect and analyze hydrometric and hydrological information; value water as an economic resource; participate in preparing water resource management tools; and finally support basin or sub-basin committees, as well as bodies set up by provinces and decentralized territorial entities to manage and develop water resources.

Several other institutions are also meant to participate in the management of peatlands, given their involvement in land-use planning, forest and biodiversity above ground, as well as oil and mining resources below ground. The sectorial ministries in charge of these issues are competing between themselves around intended use on wetlands, including those which have peatland.

Assessment of the legal and strategic framework for peatlands in the DRC was carried out with the support of USAID and USFS, with their report concluding that, “currently there is no peatland-specific strategy, policy or legislation in the Democratic Republic of the Congo (DRC)” (USAID 2021). Despite this, several national laws in the DRC involve peatlands (see Box 3).

Box 3. Legal and strategic framework relating to peatlands in the DRC

At international level

- The Ramsar Convention on Wetlands of International Importance, especially as Waterfowl Habitat
- The UN 2030 Sustainable Development Goals
- The Strategic Plan for 2011–2020 and Aichi Targets within the framework of the UN Convention on Biological Diversity (CBD)
- The Paris Climate Change Agreement within the framework of the UNFCCC
- Motion 46 securing the future of global peatlands, as promoted at the IUCN 2016 World Conservation Congress
- The Convention on International Trade in Endangered Species (CITES) Strategic Vision 2008–2020
- The UNEP/EA.4/RES.16: Resolution for the Conservation and Sustainable Management of Peatlands
- Sendai Framework for Disaster Risk Reduction
- The Brazzaville Declaration on Peatlands of 22 March 2018, and Resolution UNEP/EA.4/RES.16 on the Conservation and Sustainable Management of Peatlands of 15 March 2019, provide a global framework for the management of the Cuvette Centrale peatlands. Under these agreements, the DRC has committed to do the following:
 - Establish and implement a land allocation plan favouring the conservation and protection of peatlands
 - Promote sustainable management best practice in peatland zones in which economic activities are taking place, to ensure sustainable and judicious management of the peatlands, to prevent them from being drained or drying up
 - Implement free, prior and informed consent in the two above activities.

At national level, several laws are directly or indirectly related to peatlands, as seen in Table 9, compiled by USAID (2021). Specifically, Article 64.7 of Ministerial Decree No. 084/CAB/MIN/ECN-DD/CJ/00/RBM/2016*, which provides conditions and rules for timber exploitation, prohibits the felling of trees inside marshy areas.

* <http://www.leganet.cd/Legislation/JO/2016/jos.25.11.2016.bois.pdf>

Management of peatlands in the DRC is likely to be significantly influenced by the transboundary nature of the Cuvette Centrale. The RoC and DRC are working to jointly manage natural resources in the basin, and the Brazzaville framework is a step in this direction. To be effective, policymakers may need to learn from the experience of existing transboundary natural resource management processes and institutions, for example river basins, including that of the Congo; however, considering transboundary processes at all levels could avoid any mismatch between scale and function (Muller 2018), or the overlooking of existing management mechanisms at national and/or local levels (Merrey 2009). Medinilla (2018, 8) stresses that “real negotiation takes place at different scale, be it within

or between states, and management functions tend to be spread over local, national, regional institutions”. With this in mind, in addition to defining a national strategic framework for peatlands, the DRC could also explore opportunities for decentralized decision making around peatland protection and sustainable management.

The renewed DRC and CAFI agreement grants peatland protection a key role in the national framework to fight climate change. The agreement is clear about the country’s commitment to systematically integrating peatlands in land-use planning processes, as well as high-value forests and local community forest concessions.

Table 9. Key regulations and how they link to peatlands in the DRC

Regulation	Link to peatlands
Law No. 15/026 of 31 December 2015 on Water	<p>Peatlands are defined as wetlands and thus public water domains; as such they are governed by the national legal framework for water management.</p> <p>Their management as an aquatic ecosystem is entrusted to the Ministry of environment and sustainable development (MEDD)</p> <p>This is the only legislative text in the DRC to have defined wetlands, and have some provisions for them.</p>
Law No. 011/2002 of 29 August 2002 on the Forestry Code	<p>In addition to their status as wetlands, governed by the Law on Water, peatland forests are also, in the context of the DRC, natural forest ecosystems governed by the Forestry Code.</p> <p>Their soil, made up of organic residues from natural forests, is governed by the Forestry Code.</p> <p>They capture and sequester forest carbon resulting from the partial decomposition of organic matter from natural forests; this is also governed by the Forestry Code.</p> <p>They are in the heart of the Cuvette Centrale, an area of the forest estate governed by the Forestry Code.</p>
Law No. 14/003 of 11 February 2014 on Nature Conservation	<p>Peatlands are true biodiversity havens; they are home to many animal and plant species, most of which are rare and protected (birds, amphibians, reptiles, insects, plants) and/or endemic. All these species and their habitats are governed by the Law on Nature Conservation.</p> <p>In the case of specific peatlands becoming protected areas, the main legal framework of reference will be the Law on Nature Conservation, since this determines the modalities of creating and managing protected areas.</p> <p>If there is local traditional knowledge about peatlands and their sustainable use, it will be protected by the Law on Nature Conservation, both in terms of access and revenue sharing mechanisms.</p>
Law No. 11/009 of 9 July 2011 on the Fundamental Principles of Environmental Protection	<p>This makes all sector policies, plans, and programmes (at the level of central, provincial and decentralized territorial entities) likely to have negative ecological impacts on peatlands subject to environmental assessments.</p> <p>It submits all sectoral projects whose implementation is likely to have impacts on peatlands and local communities to an environmental and social impact assessment, and the submission of a corresponding environmental management plan.</p> <p>It allows for environmental audits to be carried out in peatlands with a view to determining potential impacts on peatlands as a component of the environment.</p> <p>It controls the installation of classified facilities and their exploitation of peatland areas.</p> <p>It provides benchmarks to establish in environmental matters the legal, administrative, civil and criminal liability of the responsible project holders or perpetrators of acts related to the destruction of peatland ecosystems.</p>

continued on next page

Table 9. Continued

Regulation	Link to peatlands
Decree of 20 June 1957 on Urban Planning	<p>This is the legal framework for coordinating the process of establishing inventories of the country’s natural capital; that is natural resources, both renewable and non-renewable, including peatland inventories and mapping.</p> <p>It allows for centralized analysis of inventory data and provides support for spatial allocation decisions, including peatland areas.</p> <p>It provides, through processes of elaboration and approval of land-use plans at different scales, a framework for the conduct of technical and institutional arbitrations between different ministries and sectoral actors, and for concerted decisions on spatial allocations; this reduces the risks of conflicts and overlapping rights and titles that can have a negative impact on peatlands.</p> <p>It allows, through management plans, to set management priorities in peatland areas that account for ecological and biodiversity functions, protecting them from potential encroachment by other sectors.</p> <p>It makes it possible to lay the foundations for irregularities in decisions or acts that affect the territory, including peatlands, and to have them sanctioned accordingly.</p>

Source: Authors’ own reflections

During the Glasgow COP26, a statement was made on behalf of Congo Basin donors European Union, Germany, France, Japan, Belgium, the Netherlands, Norway, Sweden, Korea, United Kingdom, United States, and the Bezos Earth Fund. In the statement, the donors announced an initial collective pledge of at least USD 1.5 million between 2021 and 2025, in support of efforts and results in the Congo Basin to maintain forests, peatlands and other carbon stores (UN Climate Change Conference UK 2021).

At regional level, the commitment taken by Congo Basin countries and expressed in the Brazzaville Declaration in 2018 was to “work to accelerate the operationalization of the Blue Fund for the Congo Basin and the Fund for the Green Economy in Central Africa to finance socioeconomic and ecological programmes and projects in the Lac Télé/Lac Tumba areas with the support of the Development Bank of Central African States (AfDB) and the Development Bank of Central African States (BDEAC)”.

4.2 Political and policy events relating to peatlands

Several regional and national-level events have taken place to consider how the DRC could address peatland-related challenges.

4.2.1 Regional-level events in the Congo Basin

At the level of the Congo Basin, two key policy events paved the way for protection of the Cuvette Centrale peatlands. In July 2017, an agreement and action plan were signed by the DRC and the Republic of Congo, aiming at the sustainable management of the Lac Télé/Lac Tumba landscapes. Following this, the Cuvette Centrale landscape was declared a Complexe Transfrontalier Lac Télé-Grands Affluents-Lac Tumba Transboundary Ramsar Site, together with Lac Télé/Likouala-aux-herbes (Ramsar Site No. 950) in the Republic of Congo and Ngiri-Tumba-Maindombe site (Ramsar Site No. 1784) in the Democratic Republic of Congo (Ramsar 2017b). In 2018, during the third meeting of the Global Peatlands Initiative held in Brazzaville on 21 to 23 June with the support of the UNEP, the Republic of Congo, the DRC and the Indonesian governments signed a declaration on peatlands that involves several commitments (see Box 4).

Box 4. Commitments of the DRC government within the framework of the 2018 Congo Brazzaville Declaration

- Implement cooperation between different government sectors to protect the benefits provided by peatland ecosystems. To this end, the two countries will establish multisectoral and multidisciplinary national frameworks to ensure the management of peatlands in the Central Basin (Cuvette Centrale) of the Congo Basin.
- Establish and finalize land-use plans that promote the conservation and protection of peatlands and prevent their drainage and dewatering. To this end, the two countries announce the establishment of a cross-border collaboration agreement to preserve the future of these precious natural peatlands and their ecosystem services, with the participation of communities and local stakeholders.
- Work for the development and promotion of a land-use planning model conducive to the sustainable management of peatlands, and the economic development of the territories bordering Lakes Télé and Lac Tumba.
- Work towards the economic growth of the Lac Télé/Lac Tumba area to ensure inclusive and sustainable development, to eradicate extreme poverty, and improve the well-being of local populations, by activating all the human, financial, technical, technological levers and opportunities offered by the green economy and the blue economy.
- Act without delay with the support of the African Development Bank for sustainable investment compatible with the conservation and sustainable development of the Lac Télé/Lac Tumba area, to promote and attract private partnerships.
- Encourage the Climate Investment Plans of the Republic of Congo and the Democratic Republic of Congo, as well as projects and programmes of all stakeholders, to reconcile the fight against climate change, and inclusive and sustainable economic development.
- Act without delay to develop ambitious diplomacy and aggressive marketing of the peatlands of the Cuvette centrale in the Congo Basin, to make known in Africa and beyond the socioeconomic and ecological stakes of these wetlands.
- Work to accelerate the operationalization of the Blue Fund for the Congo Basin, and the Fund for the Green Economy in Central Africa, to finance socioeconomic and ecological programmes and projects in the Lac Télé/Lac Tumba areas with the support of the Development Bank of Central African States (AfDB) and the Development Bank of Central African States (BDEAC).
- Promote good sustainable management practices in peatland areas covered by economic activities, so that they are managed in a sustainable and climate-sensible way, i.e., so that they are neither drained nor dried.
- Work without delay for the establishment of an Observatory for the collection, monitoring and dissemination of multi-purpose data by decision makers, scientists, journalists and all other stakeholders interested in the challenges of peatlands in the Congolese basin.
- Work without delay for the creation of a Centre of Excellence for Training, Research and Innovation, as well as qualifying intermediate training centres, to develop a capital in competent and quality human resources intended for the development and promotion of the eco-economy of the peatlands of Lac Télé and Lac Tumba.

4.2.2 National-level events in the DRC

At national level, the DRC designed a roadmap in 2017 for the setting of a legal and institutional framework for peatland valorisation and management. The six-year horizon plan aims at having programmes developed and implemented to value peatland ecosystems in the country.

In line with this roadmap, the very first national information workshop on peatlands took place in Kinshasa in July 2019, before a national roundtable on peatlands in December 2020, and a training for

women on the theme of peatlands in January 2022. On 27 May 2022, JICA collaborated with the PMU to organize a second national workshop on peatlands, during which stakeholders discussed the results of various studies already carried out to improve knowledge on peatlands.

On 2 November 2021, the DRC entered a second agreement with the Central African Forest Initiative (CAFI). Peatlands have taken more explicit place in this new agreement compared to the previous agreement signed by both institutions in 2016, in efforts to align with commitments agreed to under the 2018 Brazzaville Declaration. According to this new CAFI agreement, several actions are expected to be implemented at national level as part of national REDD+ efforts; these are based on a clearly defined timeline set by the DRC government, and see actions in land-use planning, agriculture, forest, mining and hydrocarbon sectors. While signing the agreement with the CAFI, the DRC committed to systematically integrating peatlands in land-use planning, with the goal of preventing their drainage and consequently the release of carbon stocks held inside peat. However, planning around peatlands as a specific ecosystem needs to be discussed by actors, to determine what type of activities could be authorized or forbidden within peatlands in a given area, considering the local circumstances of the communities whose livelihoods are depending, totally or partly, on peatlands. Achieving this requires decision making based on sound scientific knowledge. As stressed by Minasny et al. (2019) “mapping peats represent different challenges in different countries...[and] no one mapping will suit all nations”.

Actions pertaining to the national peatland roadmap and CAFI framework provide a global overview of what the peatland policy process in the DRC looks like to date. Figure 7 shows that the government’s calendar is ambitious in the short term. Of the anticipated objectives in the national peatland roadmap and second CAFI agreement, 3 mid-term objectives are to be completed in 2022, 6 in 2023 and 5 in 2026. The overall objective by 2031 is to have peatlands integrated in land-use planning processes and plans, and no concessions that are incompatible with granted peatland protections.

4.3 Peatlands in climate change policy making

Based on research data, it appears that the DRC has embraced the role of peatlands in national efforts to mitigate climate change. But the place of peatlands in the national climate change adaptation action plan designed for 2022–2026 is less visible. The document refers to water management, but within the perspective of ensuring communities have access to water in a changing climate (DRC 2021b). This absence is noteworthy in a context where the world has acknowledged the role of peatlands to support communities’ efforts to adapt to climate change.

Regarding climate change mitigation, discussion has always centred around how climate change is affecting wetlands. With peatlands, there is a shift in the narrative relating to wetlands that host peatlands. Literature acknowledges how peatlands’ potential is underappreciated in global climate change mitigation strategies (see Leifeld and Menichetti 2018); these authors concluded that “in the event that no further areas are exploited, drained peatlands [worldwide] will cumulatively release 80.8 Gt carbon and 2.3 Gt nitrogen”.

According to DRC government officials, the country is working to better understand its options around integrating peatlands in national mitigation efforts, including through REDD+. However, even though peatlands’ importance is reinforced in the second CAFI agreement, little is known about the consequences of potential peatland mismanagement. At this stage of peatland policy making, the absence of sound research on the links between DRC peatlands and climate change mitigation remains an obstacle for policymakers. This information is required for them to effectively frame national policy options so that peatland protection can be aligned with existing climate change frameworks.

ANTICIPATED MILESTONES FOR NATIONAL PEATLAND POLICY PROCESS

NATIONAL PEATLAND ROADMAP

Adaptation of tools for project and programme implementation in peatlands

Mapping, carbon stock assessment and monitoring of peatlands

Design of a peatland strategy

Multidisciplinary research on peatlands

National capacity building on peatlands

Implementation of pilot programmes with reduced impact on peatlands

Development of a programme valuing peatland ecosystems (i.e., PES)

TIMELINE

2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031

SECOND CAFI AGREEMENT PEATLAND-RELATED PLAN

Land-use planning

National, provincial and local level land-use plans finalized

Peatlands integrated in land-use planning processes and plans

Agriculture

Agricultural policy adopted, integrating the principle of peatland protection

National Agricultural Advisory Council operational

Map of potential agricultural production integrating peatland preservation is prepared

Revised Agricultural Law

Revised Agricultural Law adopted and text for priority application adopted

Agricultural registry (including agriculture concessions) implemented

Drainage of high value peatlands is strictly regulated, and no agro-industrial concessions incompatible with peatland conservation are granted

Forests

Forest policy prepared and adopted

Concept of peatlands is defined

Analysis of potential overlapping and impacts of mining and hydrocarbon titles on peatlands

Mining and hydrocarbon

Figure 7. Anticipated milestones for national peatland policy process

5 Conclusion

Design of a peatland management strategy in the DRC is still in its early stages. Considerations can be drawn from the current stage of this policy process. Peatlands are presented as a key component for global efforts to protect fragile wetland ecosystems, fight climate change and maintain human benefits of services they offer. If they are not protected, this could lead to loss of unique biodiversity, and the related GHG emissions could hamper global efforts to meet the UNFCCC objectives as far as limiting global warming is concerned. But peatland governance at both regional and national levels do not raise the same stakes. Beyond the robustness of the quality of the overall framework for managing peatlands in the DRC, managing them well involves choosing the right units or levels through which to manage, as well as effective coordination across ongoing policy processes.

The objective of this paper was to use a political economy approach to investigate the valorisation context, agents of change and policy process for peatland management in the DRC. It appears from results that – despite wetlands being a long-term issue for discussion in the Cuvette Centrale – since 2017, there has been renewed political interest in how to address the challenges of peatland management. Research is providing a growing body of knowledge around the biophysical conditions of the country's peatlands. However, there remains little knowledge on socioeconomic conditions, and on how the country is organizing the design of a national framework for sustainable peatland management. Actors are showing interest and strong stances regarding peatlands, but weak capacities are preventing core debates about peatland management to occur, particularly in a context where the policy process is still in its early phases. Actors' perceptions of – and visions for – peatlands are still largely influenced by global discourses around the Cuvette Centrale wetlands; this is diverting actors' attention from other wetlands in the country that may also host important amounts of peat. Ongoing processes for the design of a national strategy are still failing to consider all the issues needed so the country can address all aspects of management when it comes to these ecosystems. However, ongoing efforts show that the government has capacity, if the process is well informed and implemented, to avoid mistakes that could hamper national efforts to provide a sound legal and institutional framework for the sustainable management of peatlands.

Peatland restoration experiences across Africa highlight that human and institutional capacity – including the diffusion of information – is key for decision makers to achieve effective policy making. The success of peatland rehabilitation in South Africa, as described by Cris et al. (2014), was built on activities beyond simple engineering solutions; the project raised awareness and worked at influencing the behaviours and practices that impact wetland habitats. In Rwanda, meanwhile, government interventions were key to establishing a 20–50 m buffer zone around the mire, and to prohibit draining and cultivation in affected areas. Such interventions provide experiences for the DRC to draw on, given that peatland conservation is a new issue for the country. The role of institutional capacity also comes across as key in other peatland restoration experiences; this supports the direction of initial PMU work, which includes national capacity building on peatlands.

To ensure the sustainable management of peatlands in the DRC, decision makers also need to ensure that the safeguards of related processes are fully respected. A key component here is ensuring the participation of Indigenous Peoples and local communities, in both decision making, as much as in the implementation and monitoring of peatland management. As observed in the forest and climate change sector in the DRC, participation is considered effective if conditions or factors influencing it are addressed, and five conditions are fulfilled: 1) projects and initiatives define information and

consultation mechanisms; 2) free, prior and informed consent is respected; 3) legal and customary rights are secured; 4) local social cohesion and cultural specificities are reinforced; and 5) participation of women, youth and vulnerable categories is considered (Kengoum et al. 2022). For the government to engage and fully secure the participation of others in peatland protection, the same conditions or factors identified by Kengoum et al. (2022) could be applied in ongoing peatland policy processes. This involves financial support for the government so that it can organize consultations and administrative monitoring; build trust and partnerships with local NGOs, local communities and Indigenous Peoples; and ensure the intersectoral coordination of state agencies.

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