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A REVIEW OF ICELAND'S WETLAND MANAGEMENT APPROACHES: KEY LESSONS FOR UGANDA

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ABSTRACT

Wetlands, often referred to as the "kidneys of the earth," among other functions, help in protecting ecosystem biodiversity and mitigating climate change by sequestering and storing CO2. Due to these advantages, humans have been altering wetlands, and as of 2019, about 85% of all wetlands worldwide had been lost globally. A multilateral agreement known as the Ramsar Convention (RC) was adopted in 1971 to combat the global decline of wetlands by fostering their sustainable management. As part of RC obligations, contracting parties are required to promote wise use of wetlands and to designate at least one wetland to be included in the list of Wetlands of International Importance. Both Uganda and Iceland ratified the RC. In this study, a systematic review of the implementation of RC obligations by Iceland was undertaken. The intention was to generate key lessons for Uganda. The findings indicate that Iceland is implementing wise use principles by prioritizing stakeholder collaboration, wetland research, and publications. Additionally, adequate time and resources are invested in stakeholder consultations during the preparation of wetland management plans. On the negative side, Iceland lacks a wetland policy and yet there is increasing pressure to develop areas that are near or within Ramsar sites. Conclusively, this study has demonstrated the significance of international legal frameworks. However, for effectiveness, both strong management systems and decision-makers are required. I recommend, among other things, a study on the effectiveness of RC in Iceland, and for Uganda, a national discussion at all levels is required to recognize the value of wetlands and the implications of conservation measures not being prioritized. Additionally, Uganda could customize the use of RC-wise concepts into its local wetland policies and strategies.

Keywords: Ramsar Convention, protected areas, wetlands, stakeholder consultation, Iceland

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TABLE OF CONTENTS

ABBREVIATIONS

CBD	Convention on Biological Diversity
COP	Conference of Parties
CPs	Contracting Parties
EAI	Environment Agency of Iceland
GIS	Geographical Information Systems
GOU	Government of Uganda
IUCN	International Union for Conservation of Nature
MWE	Ministry of Water and Environment, Uganda
PAs	Protected Areas
RC	Ramsar Convention
SDGs	Sustainable Development Goals
UBOS	Uganda Bureau of Statistics
UNESCO	United Nations Educational, Scientific and Cultural Organization

1. INTRODUCTION

Wetlands, often referred to as the "kidneys of the earth" due to their chemical and biological functions, are one of the most valuable ecosystems, providing several benefits to the global population (Bruneau 2017). In addition to filtration of water and mitigation of climate change through CO2 sequestration and storage (Damm 2022), wetlands support dry season agriculture and animal grazing, protect ecosystem diversity, and support cultural and ecotourism activities (IPCC-IPBES [Intergovernmental Panel on Climate Change-Intergovernmental Platform on Biodiversity and Ecosystem Services] 2020; Adekola et al. 2012; De Groot et al. 2012). Because of these benefits, human beings have been manipulating and transforming wetlands to gain access to all that they have to offer (Pörtner et al. 2021; Jana and Majumder 2006) a factor that is putting serious strain on wetland quality and ecosystem services in many parts of the world (Manda et al. 2022; Mittal et al. 2016; McCartney et al. 2015).

Ramsar reported in 2015 that nearly 64% of global wetlands had been lost since 1900, and by 2019, the Global Assessment of the Intergovernmental Platform on Biodiversity and Ecosystem Services [IPBES] noted that this loss had increased to more than 85% (IPBES 2019). Climate change, human population growth, increased economic activities such as the conversion of wetlands into agricultural fields, and pollution among other factors, have all contributed significantly to these declines (MEA [Millenium Ecosystem Assessment] 2005; Ramsar Convention on Wetlands 2021).

Due to this pattern, various governmental and non-governmental organizations have been compelled to re-evaluate their relationship with nature and, as a result, they have adopted sustainability tenets by shifting their strategies from the simple extraction of services from natural resources, like wetlands, to more robust, comprehensive conservation and protection measures (Kim 2010).

As early as 1933, when wetland decline started being experienced, the concept of protected areas (PAs) as a governance system was initiated as one of the fundamental steps in reducing global biodiversity loss through sustainable use of wetland resources (Petursson 2021; Pörtner et al. 2021; Phillips 2004). To strengthen this further, in 1971, the Ramsar Convention (RC) was adopted and entered into force in 1975 as an intergovernmental treaty aimed at the conservation and sustainable management of wetlands (Ramsar Convention Secretariat 2016). To meet the above objectives, the convention requires contracting parties (CPs) to nominate at least one wetland within its jurisdiction to be included in the list of Wetlands of International Importance and to promote its conservation. Additionally, CPs are required to support and promote international collaboration on wetland management through the adoption of national policies, strategies, and laws that encourage "wise use" of wetlands within their jurisdictions (Ramsar Convention Secretariat 2016).

The European Commission acknowledged in 1998 that wetland management is extremely complex; thus, the success of its protections and wise use advocated for by the RC necessitates a transparent decision-making process (European Commission 1998). Furthermore, Bohensky and Maru (2011) stated that when deciding on wetland management, scientists should always do whatever it takes to combine indigenous knowledge with scientifically-driven knowledge.

Iceland is a 103.000 km^2 island located in the North Atlantic Ocean. As of 2021, around 25 percent of its total land surface is categorized as protected through legal obligation (Government of Iceland n.d.*a*). This includes national parks, nature monuments, and nature reserves such as wetlands. The Environment Agency of Iceland (EAI) is responsible for most of these protected areas. In recent years, the EAI has been managing these areas in conformity with provisions from international frameworks such as the World Heritage Convention and the Ramsar Convention as well as using guidelines from the International Union for Conservation of Nature (IUCN) (Government of Iceland n.d.*b*). Additionally, stakeholder participation through consultations has been improved and is regarded as a cornerstone for success in protection efforts (Ásgeirsson 2021). This is because stakeholder engagement reduces tension, builds confidence amongst stakeholders, and promotes acceptability of the project (Jeffery 2009).

Uganda is a landlocked country in East Africa with a total area of 241,555 km^2 (Uganda Bureau of Statistics 2020). By 2016, distinct types of wetlands accounted for 11% of the total land area (GOU [Government of Uganda] 2016). Following the ratification of the Ramsar Convention in 1988, Uganda has designated 12 sites as Wetlands of International Importance (Ramsar Sites) covering 454,303 hectares (Ramsar Convention n.d.*a*.). This is in addition to the first wetland policy, which was developed in 1995 (Turyahabwe et al. 2017), and other strategies aimed at integrating wetland issues into various national sectors (Namaalwa et al. 2013). Despite all these wetland management interventions, Turyahabwe et al. (2017) noted that there was still limited knowledge about the value of wetland conservation. In some areas, there were perceptions among communities that they owned all wetlands within their locality and that the government has no control over them, a factor that is strongly linked to encroachment and unregulated activities on wetlands (Omagor and Barasa 2018).

Uganda's wetlands declined by more than 35% between 1990 and 2016, and if this trend continues, close to 60% of Uganda's wetlands will be lost by 2040 (MWE [Ministry of Water and Environment] 2017). Several studies have been conducted in Uganda to address the challenges of wetland loss. However, most of them have focused on the causes and effects of wetland degradation, degradation assessment (Barasa et al. 2021), wetland ecosystem services and functions (Turyahabwe et al. 2017; Namaalwa et al. 2013) and wetland policies (Rwakakamba 2009; Kabumbuli & Kiwazi 2009). In addition to these studies, comparative analyses that consider the experiences of other countries may also help improve understanding and action on sustainable wetland management. In this study, I examine the implementation of two RC obligations by Iceland, which, like Uganda, is a party to the RC.

1.1 Goal, objectives and research questions

The goal of this study was to understand key lessons that Uganda can learn from Iceland to improve and strengthen its current wetland management strategies. This goal was achieved through the following:

Specific objectives:

1. To assess the adoption and implementation of Ramsar Convention obligations by Iceland
2. To understand different approaches used by Iceland to engage with stakeholders in the management and protection of wetlands

Research questions:

1. How has Iceland adopted the obligations of the Ramsar Convention?
2. How does the Environment Agency of Iceland carry out stakeholder engagement during the preparation of management plans for protected areas such as wetlands?
3. What lessons can Uganda learn from the above approaches and strategies?

2. CONTEXTUAL BACKGROUND

2.1 The concept of protected areas

Globally, protected areas (PAs) have become one of the best approaches to conservation and sustainable management of different ecosystems and their associated services (Soliku & Schraml 2018). Over 200 years ago, the establishment of the royal decree which set aside areas in India that were valued as important, such as hunting grounds, was the beginning of modern-day protected areas (Phillips 2004). Ogundere (1972) studied the development of international laws on the environment in Africa and found that uncontrolled hunting by rich colonial masters quickly caused loss of certain wild African wild species.

Jepson and Whittaker (2002) reported that the realization of these extinctions changed the global perceptions of nature. This was the beginning of conservation values amongst the elites of the 19th century, leading to several meetings and coordinated actions to conserve wildlife sanctuaries amongst Europeans, led by the British. This coordination led to the initiation of the 1933 London convention, which marked international agreement on flora and wildlife conservation in Africa, establishing mainly protected areas for the conservation of wildlife and important bird species (UNESCO 1972; Jepson & Whittaker 2002). The London convention of 1933 created more desire for conservation by different countries, leading to the establishment of the first international conservation body, the International Union for Conservation of Nature (IUCN), in 1948 under the auspices of UNESCO, charged with the responsibility of preserving the world biotic community (Ogundere 1972).

The IUCN defines a protected area as “an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and natural and associated cultural resources, and managed through legal or other effective means” (IUCN 1994, p.7). On the other hand, according to the Convention on Biological Diversity (CBD) a protected area “means a geographically defined area which is designated or regulated and managed to achieve specific Conservation objectives.” (Article 2 of the Convention). These definitions are slightly different. While the IUCN follows a sectoral approach to implementing conservation measures, the CBD was founded based on the need for the conservation of biological diversity through the promotion of biological resources sustainability. According to the CBD (n.d.*a*), the IUCN has been involved in the CBD's operation since its inception, providing much needed technical assistance related to conservation

As pointed out by Phillips (2003), different countries have different objectives for their PAs, and as such most of them refer to PAs by different names. Because of the different objectives, some countries have changed their policy strategies and implementation in the management of protected areas (Dudley et al. 2014). For instance, in Iceland, the combination of direct and indirect factors, like competition between land uses, has been one reason behind policy changes (Petursson et al. 2016). Whereas sheep grazing was the main activity on wetlands and

mountainsides many years ago, Eggertsson (1992) noted that the adoption of wise-use concepts has introduced sustainable sheep grazing strategies which have contributed profoundly to the reduction of sheep stocks in the country.

Because of this, Arnalds (2011) noted that the reduction in sheep stocks has equally reduced pressure on wetlands and mountain sides, thus creating opportunities for restoration strategies. Iceland has had a significant increase in nature-based tourism in recent years (OECD 2021) and this is now one of the biggest contributors to Iceland's gross domestic product (GDP). Petursson et al. (2016) noted that this has had a significant impact on the management of protected areas in Iceland, which previously focused only on nature conservation.

To harmonize the different definitions and objectives of PAs, in 1994, the IUCN generated various categories (Table 1) with both primary and secondary objectives of PAs, selection criteria, and management structures that fit within IUCN's definition of PAs.

Table 1. IUCN categories of protected areas. (Source: Adapted from IUCN 1994).

Category	Key objectives
1 A Strict Nature Reserve	To conserve at all levels outstanding ecosystems that would otherwise be easily destroyed by minor human activities
1 B Wilderness Area	To protect the ecological integrity of natural areas for the benefit of both the current and future generation
II National Park	To protect natural biodiversity and promote education and recreation
III Natural Monuments	To protect special natural features and their habitats
IV Habitat/Species Management Area	To conserve, maintain and restore habitats and special species
V Protected Landscape/Seascape	To protect, manage and conserve areas with special landscape/ seascape for their biological diversity and values
VI Managed Resource Protected Area	To protect natural ecosystems and promote sustainable use of natural resources in situations where wise use can be beneficial

2.1.1 Paradigm shifts in protected area concepts

It is worth noting that the establishment of the CBD strengthened shifts in the concepts and approaches of PAs (Table 2) with attention moving from conservation alone to the need for involvement of communities and an understanding of the value of ecosystems. By 2010, the focus and objectives included recognition of the roles of protected areas in mitigating climate change impacts (CBD 2010).

While studying the history of paradigm shifts in the notion of protected areas is outside the scope of this study, it is worth emphasizing that the causes driving these changes in natural resource conservation methods, especially through protected areas, are exceedingly wide. From Phillips (2003, p.21), it can be summarized that shifts in conservation directions can be explained by some of the following fundamental factors: the evolution of science, for instance technological advancements such as the use of Geographical Information Systems (GIS) in environmental management (Premalatha et al. 2010); global awareness of human rights; increased awareness of social and cultural values; paradigm shifts in politic; and the evolution of new management approaches and skills.

Table 2. Paradigm shifts in protected area concepts. (Source: Adapted from Phillips 2003).

Key Aspects	Protected areas were…	Protected areas are now….
Objectives	Protection focused and managed as wilderness mainly for tourists and other visitors The focus was mainly on wildlife and unique scenery	Restoration and rehabilitation focused, with special interest in social, cultural, and economic values Local people are important
Governance	Controlled by the Central government	Controlled and run by many partners
Perception	Known as a government asset	Recognized as an international, national, and local asset
Management techniques	Technically managed	Managed with due future considerations with lots of political considerations
Management skills	Scientist/ expert-led	Involve multi-skilled personnel with a lot of local knowledge incorporated
Local people	Not considerate of local people's opinions and interests	Run, managed by or for local people's benefits
Finance	Financed by taxpayers	Financed from various sources
Wider context	Developed in isolation and managed like an island	Planned, developed as a network, and incorporated as an international, national, and local system

2.2 The Ramsar Convention

Following global recognition that wetlands and their ecosystem services were disappearing, the Ramsar Convention (RC) was formed as a means of drawing international attention to the need for action. It came into effect in 1975, as one of the international treaties whose major objective is the conservation of wetland ecosystems (Ramsar Convention 2016). As of 2021, 172 nations had ratified the RC, and there are 2,439 Wetlands of International Importance (Ramsar Sites) covering 254,689,116 hectares around the world (Ramsar 2021). Joining the Convention represents a country's willingness to commit to reversing the recent trend of

wetland loss and deterioration (Ramsar Convention 2016). These commitments include the following:

1. Listed sites

In Article 2 of the RC, at the time of joining, a party's first duty is to designate at least one wetland for inclusion on the list of internationally significant Wetlands, known as the Ramsar lists. The designated wetland must have a clear boundary delineated on a map (Ramsar convention 1971) and chosen based on the importance of the wetland in terms of its ecology, botany, zoology, limnology, or hydrology (Ramsar Convention 2016).

2. Wise use

Article 3 of the RC requires CPs to establish and execute physical planning, development planning, and water resource management plans in a manner that supports the wise use (conservation) of wetlands within their jurisdictions (Ramsar Convention 1971). Similarly, to promote wetland conservation, CPs are also required to support training and research on wetland management.

3. Reserves and training

According to Article 4 of the RC, "Each Contracting Party shall promote the conservation of wetlands and waterfowl by establishing nature reserves on wetlands, whether they are included in the List or not, and provide adequately for their wardening" (Ramsar Convention 1971, p.247).

4. International cooperation

Article 5 provides that CPs shall coordinate, consult, and support each other during the implementation of these obligations: "They shall at the same time endeavor to coordinate and support present and future policies and regulations concerning the conservation of wetlands and their flora and fauna" (Ramsar convention 1971, p.248).

Both Uganda and Iceland are contracting parties. Uganda presently (2022) has 12 Wetlands of International Importance spreading across the country and supporting local communities with grazing and cultivation sites among other benefits (Ramsar n.d.) while Iceland has 6 Wetlands of International Importance (Ramsar n.d.).

Since its inception, the RC has become one of the global biodiversity-related conventions with decisions made by a conference of parties (COPs). These COPs meet every three years to set and determine the strategic direction that will enable the Convention to achieve its objectives (Mthiyane 2020). These strategic directions are normally translated into guidelines that are distributed to CPs to facilitate the implementation of their obligations.

The original concept behind the RC was the recognition that wetlands are indispensable and thus national policies, strategies, and international collaborations are required to protect them (Ramsar Convention 1971). This has since evolved to include the recognition that wetlands are critical components of biodiversity conservation (Crockford & Piersma 1987). Currently, the RC's mission, as adopted by the Parties in 1999 and refined in 2002, is: "the conservation and wise use of all wetlands through local and national actions and international co-operation, as a contribution towards achieving sustainable development throughout the world" (Ramsar Convention 2016 p.9).

Though there are currently very divergent views on the proper definition of wetlands, the most universally used definition is the one adopted by the RC in 1971 where wetlands are defined 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 metres. (Ramsar Convention 1971, p. 246-247).

Furthermore, to protect coherent sites, Article 2.1 requires that wetlands of international significance "may incorporate riparian and coastal zones adjacent to the wetlands, and islands or bodies of marine water deeper than six meters at low tide lying within the wetlands" (Ramsar Convention 2016 p.9).

Under the RC, there are five major types of wetlands (Ramsar Convention 2016). These include:

1. Coastal wetlands (coastal lagoons, rocky shores, seagrass beds, and coral reefs)
2. Estuarine (which includes deltas, tidal marshes, mudflats, and mangrove swamps)
3. Lacustrine (wetlands associated with lakes)
4. Riverine (which includes wetlands along rivers and streams)
5. Palustrine (marshy-marshes, swamps, and bogs)

2.2.1 Benefits of joining the Ramsar Convention

According to Ramsar (2016), joining the convention demonstrates a country's commitment to the convention's fundamental goals, which encourage nations to develop various policies, strategies and actions for the sustainable use of wetlands. The implementation of the Ramsar convention is undertaken through the cooperation between nations that meet every three years to generate and adopt strategic action plans related to the objectives of the convention. Nations take advantage of the opportunities provided to them through these meetings to express their opinions on the global conservation and responsible use of wetlands (Matheus 1993).

One of the obligations of Ramsar nations is the designation of at least one Wetland of International Importance. This helps countries to increase publicity of their nations as well as the possibility of receiving financial and technical support for their conservation actions, either through convention grant assistance programs or bilateral partners (Hails 2000).

The Ramsar convention facilitates the sharing of information and experience among contracting parties on different management approaches that may work for one or more countries. Similarly, research results are also distributed freely to parties to improve their knowledge of the sustainable management of wetlands (Matheus 1993).

Collaboration, cooperation, and coordination are fundamental for a successful intergovernmental relationship when fighting for a common objective (Castañer and Oliveira 2020). Over the years, the Ramsar convention, through the Biodiversity Liaison Group (BLG), has succeeded in creating a strong working relationship with several other environmental-related international conventions such as the Convention on the International Trade in Endangered Species (CITES), the Convention on Biological Diversity (CBD), the

Convention on conservation of Migratory Species of Wild Animals (CMS) and the UNESCO World Heritage Convention (CBD n.d.*b* ; Ramsar Convention Secretariat 2016).

2.2.2 The Ramsar strategic plan 2016-2024

During the 12th meeting of the conference of the contracting parties to the Ramsar convention on wetlands (COP12), which was held in Punta del Este, Uruguay in 2015, a resolution was adopted to have the fourth strategic plan in place to serve as a guiding document for all CPs in implementing the RC obligations for the period 2016-2024. The current vision of this strategic plan is, "Wetlands are conserved, wisely used, restored and their benefits are recognized and valued by all." (Ramsar Convention 2016 p.16). To achieve this vision, four specific goals were set:

1. Addressing the causes of wetland loss and degradation by increasing stakeholder involvement and collaboration.
2. Conserving and managing Ramsar sites effectively through establishing wetland committees and striving to designate more wetlands to the Ramsar lists.
3. Promoting the wise use of all wetlands including those not in the Ramsar lists.
4. Improving implementation through increased communication, participation, research, awareness creation, and increased financing.

2.3 Stakeholder engagement in natural resources management

Worldwide, the concept of stakeholders and stakeholder engagement and communication has been widely incorporated in both organizational and natural resources management because of its ability to increase project acceptability (Knapp et al. 2014). In wetland management, for example, decision-makers or experts sharing information with local communities, such as the scientific meanings of the current state of wetlands and predicted future conditions, has proven to be one of the best approaches for promoting sustainability (Wondie 2018).

Different authors define stakeholders from different perspectives. In the context of wetlands, Darradi et al. (2005) define stakeholders as people, individuals, and groups:

I. That are likely to be affected by wetland management approaches, strategies, interventions,
II. That will be involved both directly and indirectly in the implementation of management activities.
III. They are likely to agree or disagree with the implementation of management activities for the wetland.

To identify stakeholders, stakeholder analysis has been introduced as a practice aimed at getting the best out of participation and engagement. Reed et al. (2009, p.1933) defined stakeholder analysis as a, "process that:

i. defines aspects of a social and natural phenomenon affected by a decision or action,
ii. identifies individuals, groups, and organizations who are affected by or can affect those parts of the phenomenon (this may include non-human and non-living entities and future generations); and
iii. prioritizes these individuals and groups for involvement in the decision-making process"

Hein et al. (2006) asserted that stakeholder analysis helps in reducing conflicts over natural resources and promotes wetland sustainability. Wetland sustainability refers to the ability of wetlands to supply all their ecosystem services to the present users while keeping their potential for the generation to come (Horwitz et al. 2012). In this instance, wetland users' livelihoods and wetland functions are considered when evaluating sustainability. Stakeholder analysis also provides the project initiators with a detailed understanding of different stakeholders, their influence on the project, as well as how best to communicate with them (Reed 2008).

The evolution of stakeholder involvement and participation has gone through several stages. First was the involvement for purposes of creating awareness, especially in the 1960s (Van et al. 2003), and adoption of participation as a culture in sustainable development objectives in the 1990's (UNCED 1992) until emphasis was shifted to learning from success stories and mistakes in wetland management (Hickey & Mohan 2005).

Throughout these evolutionary stages, stakeholder involvement has become packed with different ideological and methodological understandings which have led to a wide range of different interpretations, especially on how to carry out involvement, the type of involvement, and the degree of involvement (Lawrence 2006). Reed (2008), for example, proposed that stakeholders should be involved in the project from its inception to its completion if its benefits are to be realized.

Because engagement goes as far as incorporating local knowledge and values into project decisions (Talley et al. 2016), non-involvement of stakeholders has been regarded as one of the biggest reasons for unsustainable utilization of natural resources across the globe (Herath 2004). However, stakeholder involvement still falls short of the intended goals because of the difficulties involved, such as finding the right participants, the significant amount of resources required to carry out engagements, and difficulties in defining the relative value of each stakeholder input (Motu'apuaka et al. 2015).

3. METHODS

The data collection involved a literature review supported by two interviews.

The review assessed the Ramsar Convention on Wetlands in the context of its adoption and implementation of obligations by Iceland. The wetland areas in Iceland that are designated as Ramsar sites are categorized as protected areas in Iceland, so the review equally covered the origin of protected areas concepts. In this regard, a systematic literature review was conducted by searching different databases such as google scholar, science direct, and different websites.

The following Boolean search terms were used: title= ("Ramsar Convention on wetlands") AND title= ("Ramsar sites in Iceland"), ("IUCN categories of protected areas" OR "history of protected areas"), ("Management approaches for protected areas" OR "management approaches for wetlands" OR "Sustainable management of wetlands/protected areas") AND title=("Ramsar convention and Wise use" OR "wise use approaches") AND title =(Community participation OR "Stakeholders Consultations in Natural resource management") to search for peer-reviewed articles, review papers, conference papers, theses and dissertations, policy documents, and reports.

Based on title, the search resulted in 125 publications, which were further reduced to 47 after the abstracts of the publications were read and found to be directly related to the study goal. 14 of the 47 publications chosen were further excluded because they were only title and abstract pages and not complete documents. In addition, some publications were discovered by combing through the reference lists of previously selected papers. Six publications resulted from this. This study examined 39 documents in total (Fig. 1). In addition, websites of various organizations, such as the Icelandic Parliament and the Convention on Biological Biodiversity, were visited to extract grey literature, i.e. documents that have not been published in academic journals (Adams et al. 2016).

Because the study used Iceland as a case study, two field trips were made to two different protected areas: The Andakíll Ramsar site and the Vatnajökull national park. This was followed by a semi-structured interview with the ranger in Andakíll and a manager in the Vatnajökull park. The field observations and interviews assisted in validating literature findings, which ultimately shaped the answers to the research questions.

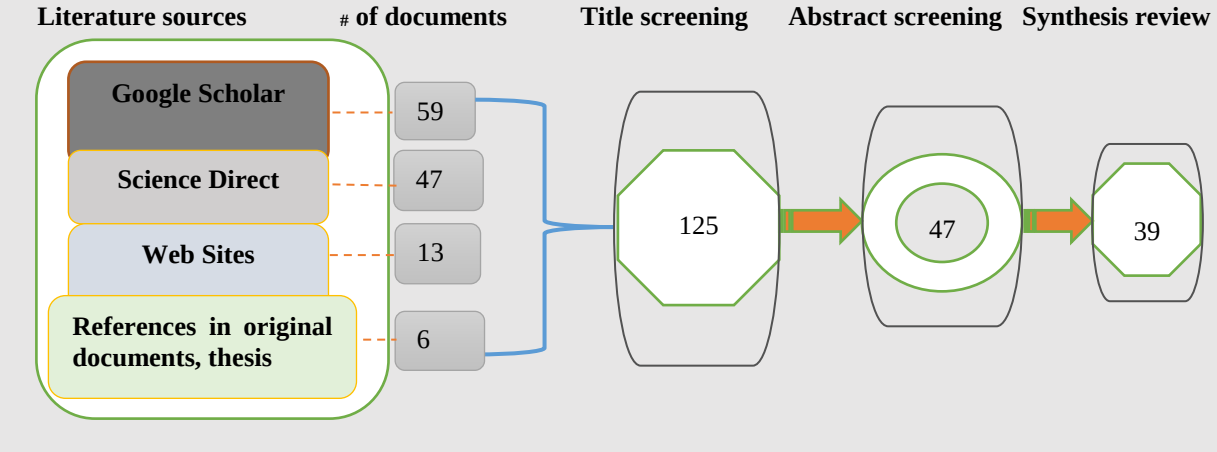

Figure 1. Flow of information during the systematic review.

4. FINDINGS

4.1 How has Iceland adopted the obligations of the Ramsar Convention?

The Environment Agency of Iceland (EAI) which operates under the direction of the Ministry of Environment is the main government body charged with the responsibility of promoting the protection and sustainable use of Iceland's natural resources, including wetlands (Kristinsson 2015). One of its major areas of operation is the preparation of documents for the declaration of a protected area and demarcating the boundary of the protected area.

According to Iceland's COP reports (Ramsar n.d.*a*), while Iceland does not have a national wetland policy, the number of wetland management programs, inventories, and conservation strategies have increased significantly. This is demonstrated by the implementation of a number of Ramsar convention obligations after it became a contracting party in 1978. By joining the RC, Iceland, like the other contractual parties, agreed to engage in certain defined activities.

4.1.1 Identification of Ramsar sites of international importance

As of July 2022, there are six designated wetlands of international significance (Fig. 2) in Iceland, totalling 128,666 hectares (Ramsar Convention n.d.*b*). These include:

- The **Andakíll Protected Habitat Area** is 3,086 hectares in size and was designated as Ramsar site number 2121 in 2013 (Ramsar Sites Information Service n.d.*a*). The site is dominated by freshwater lakes, wet heath, and other peatland areas, as well as both natural and managed marshes. It is also the home to the greenland white-fronted geese (*Anser albifrons flavirostris*), particularly during the winter months. Waterbirds use the presence of mud, sand, and gravel as breeding sites. This wetland supports sediment retention, flood control, and shoreline stabilization because it is fed by two rivers (Hvítá and Andakilsá) and one lake (Vatnshamravatn).

  The major land use activities are grazing and farming, and the site is also bordered by the Agricultural University of Iceland (Ramsar Sites Information Service n.d.a) The Hvtá river hydrological system accounts for around 20% of Iceland's total wild salmon harvest. Andakíll is classified as a class IV protected area by the International Union for Conservation of Nature (IUCN), a protected area with sustainable use of natural resources.

  The area was significantly expanded in 2011 to incorporate critical bird sites of the farms around the original ecological area (Ramsar Sites Information Service n.d.a).
  Current education and communication strategies include the creation of nature trail maps and the publication of the Ramsar site information in the Icelandic language.

  According to the Andakill ranger, this site is managed using a management plan which is revised after 10 years. A management plan is a document which specifies the goals, objectives, and decision making framework of a given protected area for a specified period of time (Lee & Middleton 2003)

- **Gudlaugstungur Nature Reserve**, covering 40,160 hectares, was designated as Ramsar site number 2130 in 2013 (Ramsar Sites Information Service n.d.b). This is one of the most extensive wetlands recognized as a nature reserve under Icelandic law. The site consists of sedge fens, palsa mires, and drier heathland, intersected by several streams, glacial rivers, and ponds. Because of its abundance of mosses and lichens, this wetland provides a habitat for a variety of animals and birds, including the pink-footed goose (*Anser brachyrhynchus*).

  The primary land uses in this area are fishing, sheep grazing, and tourism (Ramsar Sites Information Service n.d.b). As a management practice, during the summer, the region is controlled by an Environment Agency ranger who checks traffic in the area, such as hikers, automobiles, and horse riders. From the first of May until the twentieth of June, no traffic is permitted in the area of goose breeding sites. The reserve prohibits bird hunting, though fox and mink hunting is permitted.

- The **Snæfell and Eyjabakkar** Area (Ramsar Site: 2131) was designated in 2013 and categorized as a protected area in the Nature Conservation Act of Iceland. (Ramsar Sites Information Service n.d.*c)*. The site is a at for the pink-footed goose and land use includes grazing and tourism. Additionally, the site offers grazing space for wild reindeer. These reindeer are hunted under strict regulations and guidance by local guides. As part of the

communication strategy, an information booklet about Eyjabakkar and Mt. Snaefell was created and is now available in both Icelandic and English.

As a conservation measure, this Ramsar site is located within Vatnajökull National Park, which is under special protection, managed according to its management plan and the physical planning of the area. Act No. 60/2007 laid the legal groundwork for the creation of Vatnajökull National Park, which was followed by Regulation No. 608/2008 on Vatnajökull National Park in June 2008 (Ramsar Sites Information Service n.d.).

- **Grunnafjördur** is a 1,470-hectare nature reserve under Icelandic law, and it was designated as Ramsar site number 850 in 1996 (Ramsar Sites Information Service n.d. d). It is an important habitat for several water bird species. The main economic activities surrounding the site are salmon fishing and recreation.

- **Þjórsárver Nature Reserve,** covering 37,500 hectares, was approved in 1990 as Ramsar site number 460 (Ramsar Sites Information Service n.d.e). The site is a tundra complex dominated by marshland, rivers, and lakes with depths of less than one meter, surrounded by volcanic sand and supporting traditional grazing in some areas (Ramsar Sites Information Service n.d.e).

- The **Mývatn and Laxá** Ramsar site covers 20,000 hectares (Ramsar Sites Information Service n.d.f). It was the first Icelandic wetland to be added to the Ramsar list when Iceland submitted its instrument of accession to the RC on December 2nd, 1977. Taking this step was a commitment that Iceland had accepted to comply with all the obligations of the RC (Ramsar Convention 1992. Under Icelandic law, the Mývatn and Laxá Ramsar site is designated as a protected area that supports freshwater marshes and abundant invertebrate fauna. The site feeds several species of waterbird in the area. The main land uses are fishing, farming, tourism, and geothermal energy generation

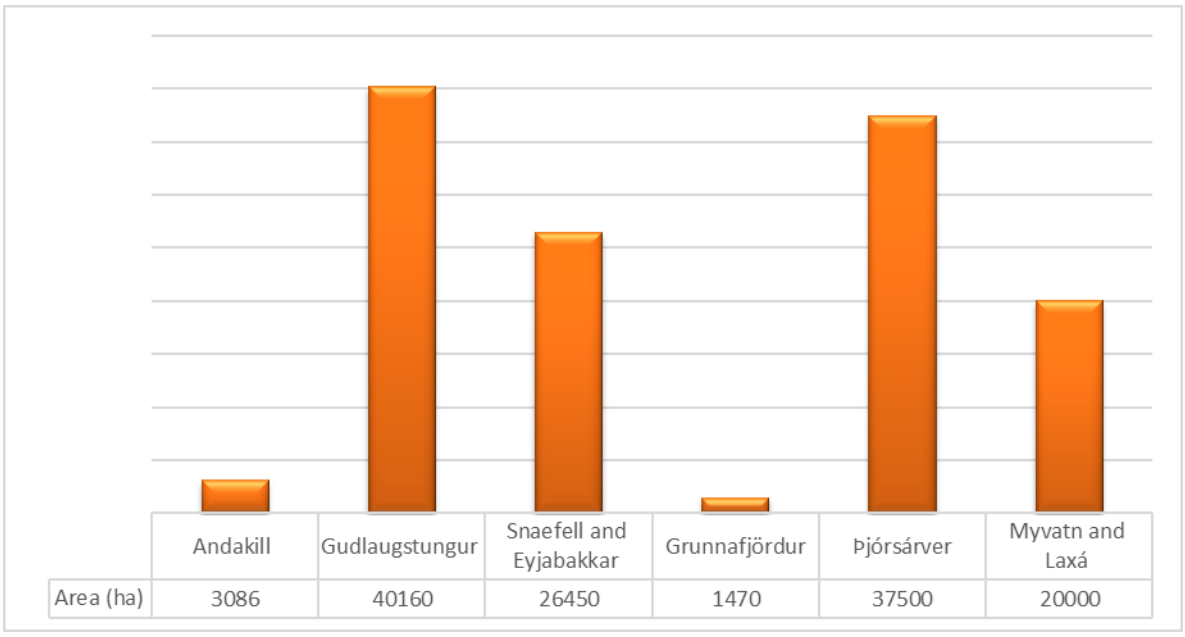

Figure 2. Size in hectares of Ramsar sites in Iceland as of July 2022. (Sources: Ramsar n.d.*b;* Ramsar Convention n.d.).

4.1.2 Wise use

Under Article 3.1 of the Ramsar Convention, contracting parties (CPs) are required to promote wetland conservation to the greatest extent possible by employing a wise use approach (Ramsar convention 1971). The wise use use concept, which applies to all wetland ecosystems, is defined as the "maintenance of their ecological character, achieved through the implementation of ecosystem approaches within the context of sustainable development" (Ramsar Convention Secretariat 2007, p. 12). Ecological character is "the combination of the ecosystem components, processes and benefits/services that characterize the wetland at a given point in time" (Ramsar Convention Secretariat 2005, p. 5). Davidson et al. (2020) noted that since the RC adopted wise use concepts, the ecological characters of global Ramsar sites have greatly improved in comparison to other wetlands.

To empower wetland users to implement wise use approaches, all CPs are encouraged to develop and implement all possible wetland management measures in collaboration with local communities (wetland users). This is seen as a way of combating poverty while also assisting the community in adapting to climate change (Ramsar Convention Secretariat 2005). For some time now, the IUCN has been the primary organization promoting comprehension of the concept of wise use on behalf of the Ramsar convention secretariat (IUCN 2015). In 2007, the Ramsar Convention Secretariat (2007) recommended that wise use concepts should be implemented at the national level, starting with the following steps:

a) Review of existing wetland policies to incorporate 'wise use concepts'
b) Raising awareness of the benefits that wetlands provide
c) Documentation of individual wetland status, values, and priorities for long-term management
d) Building institutional capacity so that wetland issues are integrated into all sectors that rely on wetlands

One of the key messages has been that priority actions to support wetland sustainability should be clearly defined and implemented on a spatial and temporal scale appropriate for each wetland (Joshi et al. 2021). By considering the above recommendations, and recommendations for implementation of the RC strategic plan 2016-2024, it was found out that the following actions have been taken in Iceland.

1. Incorporating wetland conservation into other laws

In Iceland, there are several laws enacted to govern activities that will or are likely to have significant impact on the ecological character of wetlands. Some are created in fulfilment of Ramsar obligations which require that contracting parties should create laws and policies related to wetlands in accordance with local conditions. They include the following:

- *Nature Conservation Act no. 60/2013.* The recognition and adoption of IUCN categories of protected areas are one of the key provisions for protected areas in the Nature Conservation Act, which came into force in November 2015. This step was intended to aid in the planning and management of protected areas, such as wetlands. Additionally, the Nature Conservation Act makes the disturbance of wetlands larger than 20,000 square meters illegal.

During the interview, the Andakill ranger said that ever since the Act's introduction in 2015, relationships with various government entities in charge of nature protection have improved substantially. For example, one of the requirements in the act is that, for every decision on protected areas, the EAI must consult stakeholders as extensively as possible.

- *The Planning Act*. The Act is used to guide, and promote efficient use of land resources, and prevent environmental destruction through spatial plans. It advocates effective stakeholder consultations and participation throughout the physical planning process. Municipalities in Iceland also use the planning Act to guide decision-making on development applications that do not support wise use principles. When permissions are granted, they are subject to various environmental protection terms and conditions.

- *The Environment Impact Assessment Act* no. *106/2000.* This Act has been instrumental in supporting the planning Act, especially during the decision making process of development applications. For instance, the Act provides that for all projects that would result in the drainage of areas three hectares or more, countermeasures such as wetland restoration should be conducted. Furthermore, this research discovered that every municipality in Iceland has established nature committees tasked with monitoring all activities on and around wetlands.

2. Promoting institutional collaboration

According to both the manager of the Vatnajökull National Park and the Andakill ranger, Iceland has adopted collaboration as a fundamental approach to achieving wise use objectives. Several government agencies, like The Environment Agency, The Soil Conservation Service of Iceland, non-governmental organizations, farmers, and park boards collaborate on various aspects of wetland management. Similarly, as recommended by the COP5 in Japan in 1993, Iceland has established a national Ramsar wetland committee as well as a wetland restoration advisory group tasked with developing wetland operation plans. A comprehensive national wetland inventory was also created, and all wetland issues were integrated into the national biodiversity strategy and CBD action plans (Ramsar Convention n.d.*c*).

3. Promoting a strong knowledge base on wetlands

A special wetland research centre was established at Hvanneyri in 2008 to support teaching and research on wetland biology, restoration, and general wetland management. Additionally, the Icelandic Soil Conservation Service, the University of Iceland, the Agricultural University of Iceland, and the Icelandic Environment Agency have taken the lead in raising awareness about the importance of wetland protection. The Soil Conservation Service, has put a lot of effort into the restoration of already degraded land in collaboration with local communities living around wetlands. Furthermore, The Icelandic Institute of Natural History has been classifying different natural habitats as a means of generating the knowledge base needed for wetland protection and sustainability actions.

4. Financial support

The Nature Conservation Act requires the Environment Agency of Iceland (EAI) to prepare management plans for all protected areas in the country. These plans require a lot of funding to prepare, in particular salaries for technical experts and funds to implement the plan itself.

As noted by the Andakill ranger, the government of Iceland is committed to these responsibilities and allocates funds annually to that effect.

5. Adoption of technology in wetland monitoring

According to Article 3.2 of the Ramsar Convention (1971, p. 247):

> Each Contracting Party shall arrange to be informed at the earliest possible time if the ecological character of any wetland in its territory and included in the List has changed, is changing or is likely to change as the result of technological developments, pollution, or other human interference. Information on such changes shall be passed without delay to the organization or government responsible for the continuing bureau duties specified in Article 8.

To achieve these requirements, Iceland has adopted the use of GIS (Geographical Information Systems), particularly in the field of wetland monitoring and research. It is used to map wetland drainage ditches in different parts of the country as well as to guide the selection of priority wetlands for restoration activities.

4.2 How does the Environment Agency of Iceland engage with stakeholders during the preparation of management plans for protected areas such as wetlands?

The EAI oversees around 130 protected areas (Government of Iceland n.d.*c*). However, there are different laws that apply to different PAs based on the purpose of the protection, the nature of the site, and the stakeholders' interests.

In Iceland, protected areas are managed using management plans prepared for each protection site. The emphasis on management planning has been made in several Ramsar Convention meetings, such as Resolution 5.7 and Recommendation 6.13 which adopted guidelines for the preparation of management plans for Ramsar sites. A management plan helps to oversee all areas of the Ramsar site's functioning, administration, and legal usage by guaranteeing that the site is managed in such a way that the basic ecological and hydrological functions that deliver its benefits and services are preserved or improved (Gaget et al. 2020).

Since 2017, the EAI has re-strategized its management plan preparation, by investing a lot of resources on consultation with different stakeholders. According to the EAI, management plan preparations can take between six months and two years. This period depends mainly on the availability of resources, the objectives of protection and the size of the site. Furthermore, the management plans are overly complex, providing information such as where pathways are to be built, the size of information signs, and extensive information on what types of activities and land uses are authorized within a protected area. Linked to the management plan is the action plan where all actions needed for the area are listed and revised annually. It is the responsibility of the central government to fund the action plans for each protected area. However, an application for financing must be submitted to the government funding organization each year.

Several steps have been customized by the EAI to achieve the objectives of stakeholder consultation during management plan preparation. These include:

Step 1. Identification of stakeholders. The first step involves the staff of the EAI generating lists of potential stakeholders for a given protected area. The identified stakeholders are then called for a consultative meeting. During this meeting, these stakeholders are asked to list other potential stakeholders they think were left out of the initial stakeholder list.

Step 2. Grouping. All the comprehensive lists of stakeholders are further grouped according to how the stakeholders are most likely to be affected by management plan proposals and their level of influence within the protection area. The EAI eventually determines how best to communicate with and consult these different stakeholder categories. For example, while some groups may just be informed, there are others that may need to be involved or fully collaborated with in the entire process of preparing the management plan.

Step 3. Decide the communication methods. Various categories of stakeholders are then communicated with differently depending on the grouping. Those who are believed to be affected most by the plan implementation are called to special meetings to hear their views, while others are invited to a general open meeting.

Step 4. Presentation of the draft plan. Before the management plans are signed by the Minister of Environment, the draft plan is prepared and presented to the stakeholders. This is done mainly to get feedback on new issues that may have emerged or those that may have been left out. As noted by the Andakil ranger, this feedback strategy is helping the EAI win public trust on the operations of the agency. The EAI believes that the more the stakeholders are involved, the easier it is to prepare a workable management plan. In all these steps of making the management plan, experts are advised to avoid expressing personal feelings and opinions.

4.3 Some barriers to the implementation of the Ramsar Convention in Iceland

Despite all these positive developments, the Convention's implementation faces significant obstacles due to increasing development pressure at or near Ramsar sites. In its national reports to COP12 and COP13, Iceland also made note of the fact that the government's funding for the implementation of wetland management plans is constrained because of the sizeable number of nature conservation sites that need to be protected (Ramsar n.d.*c*).

The Andakill ranger said that the available funding is fiercely competitive and frequently delayed. Lack of personnel and ongoing infrastructure construction, such as hydropower plants in rivers, present big obstacles to putting the Ramsar Convention provisions into full practice. Further, a review of reports sent to COP12 (2015) and COP13 (2018) also indicated that:

i. There has not been any assessment done by Iceland on the effectiveness of its Ramsar site management.
ii. There are no-cross sectoral management committees for Ramsar sites.
iii. Socio-economic and cultural values have only been partially included in the management planning for Ramsar sites and other wetlands.
iv. According to the COP13 report, Iceland has not undertaken any scientific research on wetlands with the sole objective of guiding the proposals in management plans, for example research on potential threats to specific wetlands.

4.4 Wetland management in Uganda

In Uganda, at least half of the population uses wetlands to either directly support their needs through use of wetland products or to get revenue generated indirectly through the sale of wetland products (Turyahabwe et al. 2017). Despite the benefits of wetlands to Ugandan livelihoods, over the past years there have been increasing rates of wetland decline reported across the country (Turyahabwe et al. 2017). For example, wetland coverage decreased from 37,575 km^2 (15.6% of the nation's geographical area) in 1994 to around 26,308 km^2 (10.9 %) in 2009. This translates to a 30% reduction in national wetlands (Wetland Management Department 2009).

The 1995 Uganda Constitution, the National Environment Management Policy (NEMP 1995), and the National Environment Act no.5 (NEA 2019) are the principle legal frameworks that directly address wetland management in Uganda. Additionally, wetland management has also been incorporated into other environment-related laws and strategies, for instance, the Local Government Act (as amended) 1997, the Land Act (as amended) 1998, and the National Environmental (Wetlands, Riverbanks, and Lake Shores) Management Regulations of 2000.

Because there are several laws and strategies in place to manage wetlands in Uganda, different studies have been conducted to explore the reasons behind the increasing loss of wetlands in the country.

According to Were et al. (2013), many of the laws, rules, and regulations managing the wetlands appear to be insufficient in addressing present requirements and difficulties brought by rapid population expansion and increased agricultural production. Poverty (Kabumbuli and Kiwazi 2009), a limited wetland knowledge base (UBOS [Uganda bureau of statistics] 2017), and stakeholders' lack of understanding of sustainable use of wetlands (Turyahabwe et al. 2017) have also been linked to loss of wetlands. Similarly, Ryan et al. (2010) noted that most Ugandan citizens in rural areas still believe that they are the owners of all wetlands within their localities and that the Government has no control over them, even though the Local Government Act of 1997 proclaims that wetlands are public resources that shall be 'held in trust' (protected) by both central and local government for the benefit of the communities.

In addition to existing policies, laws, and strategies, wetland management has also been institutionalized at different levels of government in an effort to address wetland decline. This includes the following:

a) The Ministry of Water and Environment is charged with the responsibility of policymaking and supervising the general management of wetlands in Uganda.
b) The National Environment Management Authority (NEMA) is a semi-autonomous government agency responsible for the supervision and monitoring of all environment-related activities, including issuing permits for wetland access and utilizations.
c) The Wetlands Management Department (WMD), under the Ministry of water and environment is charged with technical assistance, and technical backstopping of environment management staff within the country.
d) District local governments, including municipalities, are tasked with managing wetlands within the locality of each district and municipality. They are responsible for the preparation of management plans for all of the wetlands within their jurisdiction.

5. DISCUSSION

The challenges of wetland management have become a global problem. Because of that, the Ramsar Convention's principal advice has recently focused on the promotion of wise use of wetlands by RC parties. This study, therefore, focused on understanding how Iceland as a party to the RC is managing its wetlands. The goal was to generate key lessons for Uganda from Iceland's approach to sustainable wetland management.

Iceland has designated six wetlands as Ramsar Sites (Fig. 2), covering a total area of 128,666 hectares. The dominant activities on these sites are fishing, sheep grazing, and bird habitats. Considering that Iceland is a relatively small country (103,000 km^2), with 80 percent of its total land surface mountainous and inhabitable (Ministry for the Environment and Natural Resources n.d.), designating more than one percent of the country's total land surface demonstrates an overall willingness by the government of Iceland, in not only protecting Iceland's nature and supporting its citizens in benefiting from wetland ecosystem services, but equally contributing to halting global biodiversity loss.

One of the advantages of Ramsar sites as noted in the literature is that it increases international publicity for countries. For the civil servants who are in charge of these sites' protection, the 'Ramsar status' can help in lobbying for state monies because of heightened attention to these sites. It is worth noting that, while increasing the number of Ramsar sites is important, this may come with associated risks, such as depletion and degradation due to the increased functional value of the sites. For example, overgrazing and large scale and continuous fishing may place the integrity of some of these lakes and wetlands at risk.

in their review of trends in the ecological characteristics of Ramsar wetlands, Davidson et al. (2020) noted that increased wetland loss rates were reported frequently, especially in countries with many Ramsar sites. Although they did not specify the reasons behind this, Gaget et al. (2020) reported that an increase in the number of protected areas does not imply a halt in biodiversity loss; this is because of associated factors, such as lack of management plans in some sites and limited financing to facilitate the implementation of different site protection action plans.

On promotion of wise use of wetlands, this study found that as part of Iceland's full adoption of the RC, wetland conservation measures have been incorporated into different environment related laws. Traditionally, the implementation of international frameworks has always depended primarily on states (Bodansky et al. 2017). This means that for states to succeed, the best approach is to customize some of the provisions in international treaties and incorporate them into local laws and strategies. In the findings of this study, wetland restoration measures for projects that would drain wetlands have been clearly specified in Iceland's Environment Impact Assessment Act no 106/2000. This is an indication that Iceland's wetland management goes beyond the Ramsar Convention regime, and without such laws, many actions concerning the environment would be for immediate benefit rather than for the long term good of the environment.

This study was limited, however, by the lack of an English version of the Nature Conservation Act, 2013, which hampered the review of its various clauses.

Documentation of wetland information is one of the Ramsar contracting parties' requirements. This study found that Iceland has made some wetland information publicly available in

Icelandic. This is an indication that the government is committed to building a strong knowledge base amongst wetland users within the country. The availability of wetland information in local languages helps wetland users to easily understand for instance the status of 'their' wetlands, hence bridging the knowledge gap between the wetland users and technical people / 'experts' who carry out research on these wetlands. This has a direct impact on the success of the implementation of these measures. This viewpoint is shared by Wondie (2018), who stated that the best approach to wetland management should focus on technical people sharing information with local communities. He believes that data on the current state of wetlands, their current value, and expected future conditions, among other things, are critical to successful wetland management.

Because it was not possible to interview some of these stakeholders about how they access and use these reports, the study was unable to conclude whether all these efforts are working or not, and it is a knowledge gap that needs to be addressed.

Another finding from this research is Iceland's use of technologies such as geographical information systems (GIS) to quickly assess wetland conditions such as size and degradation intensity. The use of GIS to perform these tasks is associated with precision and accuracy capabilities and outputs which can aid in the development of strategies for effective wetland management. Premalatha et al. (2010) conducted an overview of the application of GIS in wetland management and agreed that GIS allows for faster assessment of wetland conditions at a lower cost and that its visual outputs, such as maps, are easy to interpret and can facilitate quick decision-making.

Regarding how the Environment Agency of Iceland engages with different stakeholders during the preparation of its management plans for wetlands sand other protected areas, the study findings indicate that the EAI puts a lot of effort into the consultation process as a strategy for stakeholder involvement. This is the impetus for developing workable management plans for Iceland's protected areas. Horwitz et al. (2012) pointed out that wetland users and wetlands are inseparable. Any management strategies should put the user's interests, wishes, and actions first because they play a bigger role in conservation and protection of these wetlands. As an adopted strategy, stakeholder participation and involvement in Iceland begins at the project's inception and continues through to its completion. This kind of involvement is important because it is one way of ensuring the sustainability and acceptability of the conservation measures put in place. It is, however, important to also note that ensuring full participation is something which is still questionable. This is because different organizations may have different interests and objectives in carrying out stakeholder involvement. It is therefore necessary that the objectives of stakeholder participation and involvement should be set out clearly before the stakeholders themselves are selected.

When EAI staff who are in charge of preparing management plans are not aware of all potential stakeholders, the preliminary lists are used to expand the lists to include relevant stakeholders. This is undertaken through active engagements between known stakeholders and EAI staff. This finding implies that proper stakeholder analysis is critical as the first step in stakeholder involvement and cannot be done solely by experts in their offices. Many researchers have also addressed the significance of stakeholder analysis. Reed (2008), on the other hand, pointed out that in cases where expert knowledge is sufficient to identify all stakeholders, there may be no need for the active participation of others at this stage.

Iceland's management plan preparation process includes publishing the draft for public comment for six weeks before the final plan is signed by the Minister. This, in my opinion, is a good practice and a simple way of building public trust by informing them of what has been proposed so far, so that they can give feedback and introduce new knowledge that can further improve the management plan and its objectives. As wetland managers, this approach can be used as an avenue to clarify to stakeholders and the public why certain proposals were accepted or rejected during consultations. Similarly, feedback can also aid in the identification of future risks that may affect the implementation of wetland management plan proposals.

Much as reporting back before implementing proposals can be seen as a positive gesture, it can also come at a cost in terms of potentially causing conflict among different stakeholders. For instance, the most powerful stakeholders may use the opportunity to try to impose their own interest at the expense of less powerful stakeholders. Motu'apuaka et al. (2015) agreed that balancing multiple inputs is difficult because, as an expert, you must ensure that all stakeholders find that their perspectives are valued.

This study suggests that understanding the effectiveness and limitations of management plans could be crucial in generating new knowledge aimed at improving wetland- and natural resource management, particularly in developing countries where management plans are viewed as a legal requirement while their quality and preparation process are of less importance.

6. CONCLUSION AND RECOMMENDATIONS

This review of how Iceland has adopted the Ramsar Convention revealed that the implementation of international frameworks necessitates the customization of some of these obligations and other provisions into national legal frameworks. This is due to variations in local conditions, cultures, and governance systems.

Similarly, when it comes to best practice for stakeholder engagement in wetland management, legalizing and institutionalizing stakeholder engagement across different levels of government may promote effective participation. This can be done by establishing clear steps that should be followed while undertaking consultations and other engagement activities.

Once every aspect of management is nationally legalized, in addition to well-informed stakeholders and the public who trust the system, it is possible to achieve wise use of wetlands. I, therefore, propose some recommendations to both Iceland and Uganda that could be used to improve and strengthen existing wetland management interventions:

For Iceland:

a) A review of the effectiveness of Ramsar Convention implementation in Iceland could be conducted. This may aid in identifying any gaps that are not currently known.

b) The Ramsar Convention requires the development of a National Wetland Policy.

For Uganda:

a) A national conversation at all levels is required to recognize the value of wetlands and the consequences of not implementing conservation measures.

b) There is a need to increase the number of Wetlands of International Importance.

c) In addition to recognizing the importance of wetlands for local livelihoods, there is a need to develop initiatives that promote wetlands as tourist destinations. This could help in reducing the effects of the direct extraction of wetland resources.

d) It is high time to stop viewing local communities as 'wetland destroyers' because, when properly engaged, they can be positive contributors to environmental change.

e) There is a continuing need for capacity-building, knowledge generation, and exchange through wetlands research.

f) There is a need to create and legalize a consultation framework that addresses the key spectrum of informing, consulting, and involving wetland stakeholders, by civil servants and other wetland managers right from the initiation to implementation of conservation measures.

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