

Toward Securing the Preservation of Wetlands and Environmental Water Share

Hamun Wetlands Case Study

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12.1 INTRODUCTION

This chapter examines the need for a nexus and ecosystem approach to the management of wetlands in the context of water share agreements. It examines the nature, scope, and content of the ecosystem approach, barriers to their effective implementation, and innovative legal approaches to promote such strategies.

Wetlands are home to several flora and fauna that make up biodiversity in a country or region.¹ International law therefore emphasizes the need for the preservation of wetlands in order to preserve and conserve biodiversity.² According to the Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention),³ a wetland is “simply an area that holds water either temporarily or permanently. Wetlands include wadis, oases, swamps, marshes, fens, bogs, and mires.”⁴

The MENA region is home to 223 wetland ecosystems, in which more than 100 “Wetlands of International Importance” are in Arab region.⁵ Iran also is home to twenty-five Wetlands of International Importance,⁶ of which the Hamun wetlands are among this list. In this region, in addition to serving a breadth of other functions such as sediment regulation, pollutant filtration, and nutrient cycling, wetlands are natural buffers against droughts, as they store, purify, and replenish water, providing year-round access for domestic and agricultural use.⁷

¹ Damilola Olawuyi, *Environmental Law in Arab States* (Oxford University Press 2022) 256–260.

² *Ibid.*

³ Convention on Wetlands of International Importance especially as Waterfowl Habitat (adopted February 2, 1971, entered into force December 21, 1975) 996 UNTS 245 (Ramsar Convention).

⁴ Olawuyi (n 1) 256–260.

⁵ *Ibid.*, 256–257.

⁶ See: Hamun-e-Puzak, South End, and Hamun-e-Saberi and Hamun-e-Helmand, The Secretariat of the Convention on Wetlands (Ramsar, Iran 1971), “The List of Wetlands of International Importance” (May 9, 2023) 27 www.ramsar.org/sites/default/files/documents/library/sitelist.pdf accessed February 9, 2024.

⁷ Hannah Marcus, “Ecosystem-Based Adaptation: An Unseized Opportunity to Combat Water Insecurity in the Middle East” Medium (Planetary Health Alliance, October 14, 2021)

According to the Ramsar Convention, wetlands constitute a resource of great economic, cultural, scientific, and recreational value and the contracting states are committed to the “wise use of wetlands in their territory.” Despite the importance of wetlands to biodiversity, they are disappearing three times faster than forests due to climate change, plastic pollution, construction and infrastructure development, the impacts of changing rainfall patterns, and drought, among other environmental factors.⁸

Having in mind the environmental changes and the growing number of environmental norms, the question is how the contracting parties of the existing water management agreements could coherently comply with these agreements and implement their obligations relating to biodiversity and nature conservation under international environmental law in general and conventional and customary law governing international water courses in particular. While Article 5 of the Ramsar Convention has generally obliged contracting parties to consult with each other on implementing obligations arising from the convention in international wetlands, it does not include any rule on the duty of riparian wetland states to allocate the required water share for securing the preservation of wetlands.

The Ramsar Convention is not the only instrument in this regard. The majority of water management agreements adopted prior to emerging international environmental norms regarding the protection of watercourse environment did not take into account the environmental considerations. The Afghan–Iranian Helmand River Water Treaty of 1973 is another salient example in this regard. While the Helmand River is the main source of Hamun internationally registered wetlands, the treaty does not refer to environmental water requirements of them. This raises questions on how to ensure the integrated management of wetlands and water resources in an ecosystems and nexus manner that addresses cross-cutting risks to biodiversity.

The “ecosystem approach,” which has been initiated by the 1992 Biodiversity Convention and consolidated by the 1997 Convention on the Law of Non-navigational Uses of International Watercourses, obliges states to protect and preserve the marine environment of international watercourses by “taking into account generally accepted international rules and standards.” This chapter examines how the implementation of an ecosystems approach to wetland management can advance biodiversity and nature conservation.

This chapter is divided into five sections. After this introduction, Section 12.2 examines international legal obligation of wetland states. The interplay between international legal regimes of wetlands preservation and watercourses utilization is also discussed. It also deals with the emergence of the ecosystem approach as a

<https://phalliance.medium.com/ecosystem-based-adaptation-an-unseized-opportunity-to-combat-water-insecurity-in-the-middle-east-7375e0018687> accessed February 9, 2024.

⁸ United Nations Environment Programme (UNEP), “Wetlands and Biodiversity’ Is the Theme for World Wetlands Day 2020” (January 30, 2020) www.unep.org/news-and-stories/story/wetlands-and-biodiversity-theme-world-wetlands-day-2020 accessed February 9, 2024.

response to the need to protect international watercourses. Section 12.3 examines legal barriers to the effective implementation of the ecosystem approach, drawing specific lessons from the Hamun wetlands and Hirmand River. Section 12.4 provides recommendations on how to advance nexus and ecosystems approaches in the management of wetlands and watercourses. Section 12.5 is the concluding section.

12.2 WETLANDS AND BIODIVERSITY: INTERNATIONAL LEGAL FRAMEWORK

Wetlands are vital for humans, for other ecosystems, and for our climate, providing essential ecosystem services such as water regulation, including flood control and water purification.⁹ Wetland biodiversity matters for our health, our food supply, tourism, and jobs.¹⁰ Therefore, the obligation for countries to protect and conserve the ecosystem of international watercourses and wetlands is a central part of international law. In fact, wetlands protection is the contact point of several legal regimes, including wetland protection, biodiversity preservation, and international water law. The principle of sustainable lakes management, which recognizes the complementarity of water and biodiversity management, is the core aim of these regimes. In this regard, in 2022, the UN Environment Assembly “[r]equests all Member States and members of specialized agencies, and invites relevant international organizations, where applicable, to ... protect, conserve, restore and ensure the sustainable use of lakes, including aspects such as water quality, erosion, sedimentation and aquatic biodiversity, through integrated management at all levels, as set out in targets 6.5 and 6.6 of the Sustainable Development Goals.”¹¹ It calls on countries to “support the advancement of sustainable lake management at all levels, in coordination with relevant conventions, as appropriate, including the Convention on Wetlands of International Importance.”¹²

This resolution builds on previous international legal instruments, such as the Ramsar Convention, which aim to halt the worldwide loss of all wetlands and to conserve them, through sustainable use and management. The Ramsar Convention was signed in Ramsar, Iran on February 2, 1971.¹³ According to the Ramsar Convention, wetlands are of great economic, cultural, scientific, and recreational value and the contracting states¹⁴ are committed to the “wise use of

⁹ Olawuyi (n 1).

¹⁰ Ibid.

¹¹ United Nations Environment Programme (UNEP), “Resolution Adopted by the United Nations Environment Assembly on March 2, 2022 5/4. Sustainable Lake Management” (March 7, 2022) UNEP/EA.5/Res.4. 1(a) <https://wedocs.unep.org/bitstream/handle/20.500.11822/39749/K2200671%20-%20UNEP-EA.5-Res.4%20-%20ADVANCE-.pdf?sequence=1&isAllowed=y> accessed February 9, 2024.

¹² Ibid., para 2(a).

¹³ Ramsar Convention (n 3).

¹⁴ Ibid., Preamble, para 3.

wetlands in their territory.”¹⁵ In the case of international wetlands, “the Contracting Parties shall *consult* with each other about implementing obligations arising from this Convention especially in the case of a wetland extending over the territories of more than one Contracting Party or where a water system is shared by Contracting Parties.” Despite this general and customary obligation of consultation,¹⁶ among the riparian states there is no reference to the environmental water requirements for these wetlands. It seems that the standard of “wise use of wetlands,” has been considered as an adequate guide in this regard.

The Scientific and Technical Review Panel of the Ramsar Convention has published a series of handbooks for the “wise use of wetlands.” According to the first one, “wise use of wetlands is the maintenance of their ecological character, achieved through the implementation of ecosystem approaches, within the context of sustainable development.”¹⁷ Further, Handbook 10 of this convention provides extensive guidance and recommendations for managing and allocating water resources.¹⁸ In this line, according to the United Nations Economic Commission for Europe’s handbook on water allocation in a transboundary context, “understanding water availability for different needs, uses and functions, in different seasons and climate and in development scenarios, is a key requirement for sustainable and equitable water allocation,”¹⁹ and “[i]n modern water allocation arrangements, environmental needs are assessed and an environmental reserve is recommended to be set aside before allocating water to other uses.”²⁰ This handbook also emphasizes the concept of sufficient minimum flow for prevention over abstraction during low-flow periods.²¹

Any allocation of water resources in international wetlands cannot be done without reference to the related rules and principles of international water law.²² The 1992 Helsinki Convention on the Protection and Use of Transboundary Watercourses

¹⁵ Ibid., Article 3(1): “The Contracting Parties shall formulate and implement their planning so as to promote the conservation of the wetlands included in the List, and as far as possible the wise use of wetlands in their territory.”

¹⁶ Construction of a Road in Costa Rica along the San Juan River (*Nicaragua v Costa Rica*) [2015] ICJ Rep 104.

¹⁷ Ramsar Convention Secretariat, “Wise Use of Wetlands: A Conceptual Framework for the Wise Use of Wetlands” Ramsar handbooks for the wise use of wetlands, Vol. 1 (2007) 22 www.gwp.org/globalassets/global/toolbox/references/wise-use-of-wetlands-ramsar-2007.pdf accessed August 15, 2023.

¹⁸ Ramsar Convention Secretariat, “Water Allocation and Management: Guidelines for the Allocation and Management of Water for Maintaining the Ecological Functions of Wetlands” Ramsar handbooks for the wise use of wetlands, Handbook 10 (4th ed., 2010) www.ramsar.org/sites/default/files/documents/pdf/lib/hbk4-10.pdf accessed August 15, 2023.

¹⁹ UNECE, *Handbook on Water Allocation in a Transboundary Context* (United Nations 2021) ECE/MP.WAT/64, 18 https://unece.org/sites/default/files/2022-12/ECE_MP.WAT_64_Handbook%20on%20water%20allocation%20in%20a%20the%20transboundary%20context.pdf accessed February 9, 2024.

²⁰ Ibid., 41.

²¹ Ibid., 42.

²² Ibid., 24.

and International Lakes (Helsinki Convention),²³ and the 1997 Convention on the Law of the Non-navigational Uses of International Watercourses (Watercourses Convention),²⁴ are the most relevant instruments in this regard. Furthermore, the Helsinki Convention promotes sustainable use of transboundary waters. While it was originally adopted as a regional treaty in 1992,²⁵ it became open to ratification by any country in 2016.²⁶ The Helsinki Convention entered into force on February 6, 2013 and has forty-seven member states.²⁷ State parties to the Helsinki Convention, inter alia, “shall, take all appropriate measures ... (c) To ensure that transboundary waters are used in a reasonable and equitable way, taking into particular account their transboundary character, in the case of activities which cause or are likely to cause transboundary impact.”²⁸ In addition, they are committed to the exchange of information,²⁹ bilateral and multilateral cooperation,³⁰ and consultation on the issues covered by the provisions of this convention.³¹

In comparison with the Helsinki Convention, the Watercourses Convention is a global legal framework that establishes basic standards and rules for cooperation between watercourse states on the use, management, and protection of international watercourses. It provides that “the most fundamental obligations contained in the Convention do indeed reflect customary norms.”³² According to Article 5(1) of this convention: “Watercourse States shall in their respective territories utilize an international watercourse in an equitable and reasonable manner.” According to paragraph 2 of Article 5, to be equitable and reasonable, the use must also be consistent with adequate protection of the watercourse from pollution and other forms of degradation.³³ Moreover, the “utilization of an international watercourse in an equitable and reasonable manner within the meaning of Article 5 requires

²³ Helsinki Convention on the Protection and Use of Transboundary Watercourses and International Lakes (adopted March 17, 1992, entered into force October 6, 1996) (Helsinki Convention, also Water Convention) https://treaties.un.org/Pages/ViewDetails.aspx?src=IND&mtdsg_no=XXVII-5&chapter=27&clang=_en accessed August 15, 2023.

²⁴ United Nations Convention on the Law of the Non-navigational Uses of International Watercourses (May 21, 1997) 36 ILM 700 (Watercourses Convention).

²⁵ *Ibid.* See Articles 23, 25.

²⁶ See Amendments to Articles 25 and 26 of the Convention on the Protection and Use of Transboundary Watercourses and International Lakes, Madrid (adopted November 28, 2003, entered into force February 6, 2013) ECE/MP.WAT/14; C.N.639.2012 https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-5-b&chapter=27&clang=_en accessed August 15, 2023.

²⁷ Helsinki Convention (n 23).

²⁸ *Ibid.*, Article 2 (2) (c).

²⁹ *Ibid.*, Article 6.

³⁰ *Ibid.*, Article 9.

³¹ *Ibid.*, Article 10.

³² Stephen McCaffrey, “The UN Convention on the Law of the Non-navigational Uses of International Watercourses: Prospects and Pitfalls” in M. A. Salman and Laurence Boisson de Chazournes (eds), *International Watercourses: Enhancing Cooperation and Managing Conflict*, Technical Paper No 414 (World Bank 1998) 26.

³³ *Ibid.*, 19.

taking into account all relevant factors and circumstances, including (a) Geographic, hydrographic, hydrological, climatic, ecological and other factors of a natural character.”³⁴

In addition to Article 5, watercourse states are obliged to “protect and preserve the ecosystems of international watercourses,”³⁵ and shall take all necessary measures to “protect and preserve the marine environment, including estuaries, taking into account generally accepted international rules and standards.”³⁶ By using the term of “ecosystems of international watercourses,” the Watercourses Convention fostered the initiation of “ecosystem approach,” which seeks to integrate and mainstream other environmental considerations in the allocation and management of international wetlands.

12.2.1 *The Emergence of an Ecosystem Approach: A Response to the Need for the Protection of International Watercourses*

As earlier mentioned, the duty to “protect and preserve the ecosystems of international watercourses” is an independent obligation of riparian states. In other words, watercourse states are obliged not only “to utilize an international watercourse in an equitable and reasonable manner but to exercise due diligence to protect and preserve watercourse ecosystems.”³⁷

The ecosystems approach has principally emerged under the auspices of the 1992 Convention on Biological Diversity (CBD).³⁸ Article 2 of the CBD provides that “[e]cosystem means a dynamic complex of plant, animal, and micro-organism communities and their nonliving environment interacting as a functional unit.” Therefore, an “ecosystem approach” requires consideration of the whole system rather than individual components.³⁹ It aims to advance the integrated management of land, water, and other aspects of the ecosystem in a manner that advances wetland preservation as well as biodiversity.⁴⁰

In accordance with Article 1 of the CBD, the conservation of ecosystems is one of its three main objectives and Article 8(f) obliges state parties to “rehabilitate and restore degraded ecosystems.” Some of the provisions of the CBD may be regarded

³⁴ Watercourse Convention (n 24), Article 6(1).

³⁵ *Ibid.*, Article 20.

³⁶ *Ibid.*, Article 23.

³⁷ McCaffrey (n 32) 19.

³⁸ Owen McIntyre, “The Protection of Freshwater Ecosystems Revisited: Towards a Common Understanding of the ‘Ecosystems Approach’ to the Protection of Transboundary Water Resources” (2014) 23 *RECIEL* 1, 90.

³⁹ Owen McIntyre, “The Emergence of an ‘Ecosystem Approach’ to the Protection of International Watercourses under International Law” (2004) 13 *RECIEL* 1, 1.

⁴⁰ See Convention on Biological Diversity, “Ecosystem Approach” www.cbd.int/ecosystem#:~:text=The%20ecosystem%20approach%20is%20a,use%20in%20an%20equitable%20way accessed October 19, 2023.

relevant in the protection of international watercourses too. These include the duty to cooperate “through international organizations for conservation and sustainable use of biological diversity,”⁴¹ the identification of “processes and categories of activities which have or are likely to have significant adverse impacts on the conservation and sustainable use of biological diversity, and monitor their effects through sampling and other techniques,”⁴² impact assessment and minimizing adverse impacts,⁴³ and an exchange of information.⁴⁴ As elaborated under the CBD regime, it “prioritizes conservation with a view to ensuring ecosystem functioning and resilience. It conditions sustainable use to the taking into account of the limits of ecosystem functioning and promotes connectivity.”⁴⁵

To advance the ecosystem approach, the fifth meeting of state parties adopted a set of principles to guide the practical implementation of the ecosystem approach,⁴⁶ and the United Nations Economic Commission for Europe (UNECE) adopted the 1993 Guidelines on the Ecosystem Approach in Water Management.⁴⁷ Article 20 of the Watercourses Convention should be read along these lines as well. Also, the general obligation to “protect and preserve the ecosystems of international watercourses” should be read with respect to the principle of equitable and reasonable utilization set out in Article 5 of the Watercourses Convention. According to the International Law Commission commentary on Article 20, “[t]he obligation to ‘protect’ the ecosystems of international watercourses is a specific application of the requirement contained in Article 5 that watercourse States are to use and develop an international watercourse in a manner that is consistent with adequate protection thereof.”⁴⁸

A similar obligation has been adopted under Article 23, which provides that “Watercourse States shall ... take all measures with respect to an international watercourse that are necessary to protect and preserve the marine environment, including estuaries, taking into account generally accepted international rules and standards.” While the article emphasizes on the “marine environment,” the obligation set forth in Article 23 is not, however, to protect the marine environment,

⁴¹ Convention on Biological Diversity, Article 5.

⁴² *Ibid.*, Article 7(c).

⁴³ *Ibid.*, Article 14 (a).

⁴⁴ *Ibid.*, Article 17.

⁴⁵ E. Morgera, “The Ecosystem Approach and the Precautionary Principle” in M. Faure (ed), *Elgar Encyclopedia of Environmental Law* (Edward Elgar 2017) 70–80.

⁴⁶ See Convention on Biological Diversity Decision V/6, Ecosystem Approach, UN Doc UNEP/CBD/COP/5/23 (June 22, 2000).

⁴⁷ UN Doc ECE/ENVWA/31 (1993) https://unece.org/DAM/env/water/publications/documents/Library/Old_documents_found_library/ECE_ENVWA_31_eng.pdf accessed August 16, 2023.

⁴⁸ International Law Commission, “Commentaries on the Draft Articles on the Law of the Non-navigational Uses of International Watercourses and Commentaries Thereto and Resolution on Transboundary Confined Groundwater” (1994) II Yearbook of the International Law Commission, part 2, 119.

per se, but to take measures “with respect to an international watercourse” that are necessary to protect the environment.⁴⁹

In the years after the adoption of the Watercourses Convention, many international conventions and instruments,⁵⁰ creating regimes for the utilization of watercourses, have moved beyond the traditional doctrines of the utilization of international watercourses. As McIntyre has argued, the ecosystem-oriented approach has become a normative one that should be taken into account in any regime of utilization and protection of international watercourses.⁵¹ He notes that “[i]t is possible to discern, from the recent practice of States and international organizations in relation to shared water resources, a shift in emphasis from a purely territorial and resource utilization focus, to a more ecosystem-oriented approach.”⁵² In his recent article he concluded: “As the so-called ‘ecosystems approach’ receives ever wider and more emphatic support among the international community, any remaining doubts regarding its normative status in international water resources law must inevitably recede.”⁵³

While the required measures for implementation of the “ecosystems approach” are not much developed,⁵⁴ this approach should be regarded as a response to the need for the protection of international watercourses. The reality is that when the continued existence of an international watercourse ecosystem is under threat, there would not be a clear view for the sustainable utilization of such a watercourse, thus the environmental protection of the ecosystem itself is an inevitable obligation.

The Colorado River, and the resulting deterioration of the ecosystem of the Colorado Delta,⁵⁵ is a dramatic example in this regard.⁵⁶ Due to the overallocation of the waters of the Colorado, freshwater flows into the delta have been reduced by nearly 75 percent during the course of the twentieth century, resulting in a concomitant reduction of delta wetlands to about 5 percent of their original extent.⁵⁷ The delta’s current ecological condition is characterized by dried mudflats, vegetation loss, and species endangerment. Stakeholders now advocate the addition of a minute to the 1944 Treaty between the USA and Mexico governing allocation of the waters of the river,⁵⁸ which would expressly dedicate water to delta conservation.⁵⁹

⁴⁹ Ibid., 124.

⁵⁰ McIntyre (n 39) 1.

⁵¹ Ibid., 2.

⁵² Ibid.

⁵³ McIntyre (n 38) 95.

⁵⁴ Ibid.

⁵⁵ Reprinted in McIntyre (n 39) 4.

⁵⁶ The Hamoun international wetlands and international Hirmand watercourse are also discussed in Section 12.3.

⁵⁷ D. F. Luecke et al., “A Delta Once More: Restoring Riparian and Wetland Habitat in the Colorado Delta” (1999) *Environmental Defense Fund* 4, www.edf.org/sites/default/files/425_delta.pdf accessed September 13, 2024.

⁵⁸ Treaty Respecting the Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande (February 3, 1944), printed in 3 UNTS 314, 56.

⁵⁹ See, generally, R. E. Verner, “Short Term Solutions, Interim Surplus Guidelines, and the Future of the Colorado River Delta” (2003) 14 *CJIELP* 2, 241.

12.2.2 *The Legal Status of Ecosystem Obligations*

There are divergent views regarding the legal status of ecosystem obligations. While commentators such as Fuentes,⁶⁰ and Brunée and Toope,⁶¹ are reluctant to recognize these obligations as customary, it would appear that the International Law Commission has taken a different approach by declaring that “[t]here is ample precedent for the obligation contained in Article 20 in the practice of States and the work of international organizations,” before proceeding to list a wide range of relevant authorities.⁶² McCaffrey and McIntyre have reached the same conclusion.⁶³ McCaffrey, after referring to three principles expressed in the convention (i.e. equitable and reasonable utilization, not to cause significant harm, and to notify potentially affected riparian states of the planned measures on an international watercourse), concluded that “other provisions of the Convention, such as some of those relating to the environment, are closely related to, or even flow from these principles. To the extent that these provisions are based on the fundamental principles, they too might be said to reflect custom.”⁶⁴

The ecosystem approach creates an obligation of conduct,⁶⁵ which encompasses an obligation of due diligence.⁶⁶ As the International Law Commission commentary cited: “As with the obligation to ‘protect’ ecosystems under Article 20, the obligation to prevent pollution ‘that may cause significant harm’ includes the duty to exercise due diligence to prevent the threat of such harm.”⁶⁷ Thus it cannot be read as an absolute or an obligation of result.⁶⁸ The most significant procedural due diligence requirements include early interstate notification and consultation, and where necessary negotiation, in respect of potentially harmful planned projects or uses of international watercourses. Each can only meaningfully be performed in conjunction with an environmental impact assessment (EIA) which includes the transboundary effects of the project in question.⁶⁹

⁶⁰ X. Fuentes, “Sustainable Development and the Equitable Utilization of International Watercourse” (1998) 69 *BYIL* 171.

⁶¹ Jutta Brunnée and Stephen J. Toope, “Environmental Security and Freshwater Resources: A Case for International Ecosystem Law” (1994) 41 *YIEL* 5, 70–71.

⁶² International Law Commission (n 48) 283.

⁶³ McIntyre (n 38) 95.

⁶⁴ McCaffrey (n 32) 27.

⁶⁵ An ‘obligation of conduct’ is an obligation to make an honest endeavour, notwithstanding the outcome.

⁶⁶ *Ibid.*, 21. See also International Law Commission (n 48) 122.

⁶⁷ *Ibid.*, International Law Commission (n 48) 122.

⁶⁸ “Obligations of result” refer to the requirement where a party is bound to achieve a specific result. For the distinction between obligation of conduct and obligation of result in international law see: Rüdiger Wolfrum, “Obligation of Result Versus Obligation of Conduct: Some Thoughts About the Implementation of International Obligations” in Mahnouch H. Arsanjani, Jacob Cogan, Robert Sloane, and Siegfried Wiessner (eds) *Looking to the Future: Essays on International Law in Honor of W. Michael Reisman* (Brill/Nijhoff 2010) 363–383.

⁶⁹ Owen McIntyre, “Environmental Protection and the Ecosystem Approach” (2018) *Research Handbook on International Water Law*, 136.

Notwithstanding the clear status of ecosystem obligation in current international environmental law, “the precise implications of an obligation to protect the ecosystems of international watercourses are not altogether clear.”⁷⁰ The retroactive effect of the ecosystem approach can result in implementation challenges. By recognizing the normative and customary status of the ecosystem approach, watercourse states are under a duty to protect the ecosystems of international watercourses.⁷¹ This includes the obligation to take into account all environmental considerations, including the survival of the ecosystems of international watercourses, in any ongoing and future agreements on the management or allocation of water resources. In this regard, the Economic Commission for Europe’s handbook on water allocation in a transboundary context declares that, “in modern water allocation arrangements environmental needs are assessed and an environmental reserve is recommended to be set aside before allocating water to other uses.”⁷² However, the retroactive application of a new normative approach to previous customary water shares and contractual management of international watercourses is problematic.

Article 23 of the Watercourses Convention obliges watercourse states to take all measures that are necessary to protect and preserve the marine environment of international watercourse, “taking into account generally accepted international rules and standards.” If the phrase “generally accepted international rules and standards” is seen as a dynamic criterion, the major parts of the problem will be solved. The International Law Commission commentary provides that “[t]he phrase refers both to rules of general international law and to those derived from international agreements, as well as to standards adopted by states and international organizations pursuant to those agreements.”⁷³ As a result, one cannot consider the “rules of general international law” as a static one.

In the Gabcikovo-Nagymaros Project case (*Hungary v Slovakia*),⁷⁴ the International Court of Justice (ICJ) had an opportunity to deal with this problem when “Hungary argued that subsequently imposed requirements of international law in relation to the protection of the environment precluded performance of the Treaty,”⁷⁵ and “Slovakia argued, in reply, that none of the intervening developments in environmental law gave rise to norms of jus cogens that would override the Treaty.”⁷⁶ The ICJ held that

[n]either of the Parties contended that new peremptory norms of environmental law had emerged since the conclusion of the 1977 Treaty, ... the Court wishes to point out that *newly developed norms of environmental law are relevant for the*

⁷⁰ McCaffrey, *The Law of International Watercourses* (2nd ed., Oxford University Press 2007) 458.

⁷¹ McIntyre (n 38) 95.

⁷² UNECE (n 19) 41.

⁷³ International Law Commission (n 48) 125.

⁷⁴ Gabcikovo-Nagymaros Project case (*Hungary v Slovakia*) [1997] ICJ Rep.

⁷⁵ *Ibid.*, para 97.

⁷⁶ *Ibid.*

implementation of the Treaty and that the parties could, by agreement, incorporate them through the application of Articles 15, 19 and 20 of the Treaty. These articles ... require the parties, ... to take new environmental norms into consideration when agreeing upon the means to be specified in the Joint Contractual Plan.⁷⁷

The awareness of the vulnerability of the environment and the recognition that environmental risks have to be assessed on a continuous basis have become much stronger in the years since the Treaty's conclusion. These new concerns have enhanced the relevance of Articles 15, 19, and 20.⁷⁸

A careful reading of Article 19 of the 1977 treaty shows that, like Article 23 of the 1997 Watercourses Convention, this article is exposed to divergent interpretations. On the other hand, the ICJ, by recalling its opinion that "the environment is not an abstraction but represents the living space, the quality of life and the very health of human beings, including generations unborn,"⁷⁹ and the necessity of assessment of "environmental risks on a continuous basis," has considered the phrase "environmental norm" to be a dynamic standard.⁸⁰ The court has concluded that "new norms have to be taken into consideration, and such new standards given proper weight, not only when States contemplate new activities but also when continuing with activities begun in the past. This need to reconcile economic development with protection of the environment is aptly expressed in the concept of sustainable development."⁸¹

In parallel with the ICJ, the Permanent Court of Arbitration has unequivocally found that:

It is established that principles of international environmental law must be taken into account even when (unlike the present case) interpreting treaties concluded before the development of that body of law. The Iron Rhine Tribunal applied concepts of customary international environmental law to treaties dating back to the mid-nineteenth century, when principles of environmental protection were rarely if ever considered in international agreements and did not form any part of customary international law. Similarly, the International Court of Justice in *Gabcikovo-Nagymaros* ruled that, whenever necessary for the application of a treaty, "new norms have to be taken into consideration, and [...] new standards given proper weight." It is therefore incumbent upon this Court to interpret and apply this 1960 Treaty in light of the customary international principles for the protection of the environment in force today.⁸²

⁷⁷ *Ibid.*, para 112, emphasis added.

⁷⁸ *id.*

⁷⁹ Advisory Opinion on the Legality of the Threat or Use of Nuclear Weapons [1996] ICJ Rep para 29.

⁸⁰ [1997] ICJ Rep (n 74) para 112.

⁸¹ *Ibid.*, para 141.

⁸² Arbitration regarding the Indus Waters Kishenganga (*Pakistan v India*) (2013) XXXI, RIAA 452.

Therefore, it can be concluded that while the ecosystem approach is a new customarily emerged normative standard in the regime of the utilization of international watercourses, it should be taken into account in the interpretation and application of both the previous and recent water management agreements. The importance of this finding is shown in Section 12.3, where the critical situation of the Hamun international wetlands makes it necessary to revise the Hirmand River agreement for allocating environmental water share. In Section 12.3 the legal and institutional challenges of the ecosystem approach are discussed.

12.3 LEGAL AND INSTITUTIONAL CHALLENGES OF THE ECOSYSTEM APPROACH: LESSONS FROM THE HAMUN INTERNATIONAL WETLAND CASE STUDY

The challenges of the ecosystem approaches may be discussed from different points of views. Drawing lessons from the Hamun international wetland, this section focuses on the legal and institutional challenges to the implementation of the ecosystems approach in practice.

12.3.1 *The Hamun International Wetlands*

As the third largest lake in Iran,⁸³ the Hamun wetlands consist of three separate lakes that join to form one large wetland when completely under water.⁸⁴ Hamun-Hirmand is in the south/southwestern part, Hamun-e-Sabereen is the northwestern part, and Hamun-e-Pouzakare is located in the northeastern part of the Sistan Plain.⁸⁵ The Sistan Basin lies on the Iran–Afghanistan border. Melted snow from the Hindu Kush Mountains of Afghanistan nourishes this dry basin. The Helmand River carries the snowmelt across the Margo Desert and into the Sistan Basin, where the water pools into Lake Hamun.⁸⁶

⁸³ Middle East Images, “Climate Crisis in Hamun Lake” <https://meimages.com/projects/hamun-lake/> accessed February 10, 2024.

⁸⁴ European Commission, “Hamoun Is Our Breath – Restoring Wetlands to Save Livelihoods’ European Commission International Partnerships” https://international-partnerships.ec.europa.eu/news-and-events/stories/hamoun-our-breath-restoring-wetlands-save-livelihoods_en accessed August 6, 2023.

⁸⁵ Iran submitted Hamoun Lake as a Natural Heritage site. See UNESCO World Heritage Convention, “Hamoun Lake” (Date of Submission: February 5, 2008) Ref No: 5276 <https://whc.unesco.org/en/tentativelists/5276/> accessed August 1, 2023.

⁸⁶ US Department of the Interior, DOI Inspector General, United States Geological Survey (USGS), “Science for Changing World, Lake Hamoun, Iran and Afghanistan” Earth Resources Observation and Science (EROS) Center – Earthshots <https://eros.usgs.gov/media-gallery/earthshot/lake-hamoun-iran-and-afghanistan> accessed August 11, 2023.

Hamun has been registered as the first Iranian wetland in the List of Wetlands of International Importance of the Ramsar Convention.⁸⁷ Due to the natural importance of Hamun Lake, Iran has proceeded to register it in the list of United Nations Educational, Scientific and Cultural Organization World Heritage sites (Natural Site) as well.⁸⁸ Hamun is a spring season lake. In seasons of high precipitation, the area of lake is about 5,700 km². Approximately 3,800 km² of its area lies within Iranian territory and the rest is located in Afghanistan. The lake has great habitats and an abundant variety of flora and fauna. A considerable number of peregrine birds migrate here from distant places. It has been a place of residence since 4000 BC, nomads have been lived here for long time, and the place enjoys a great variety of scenic beauty.⁸⁹

Hamun is located in an extremely arid area which is known for its dust storms and droughts. Therefore, notwithstanding the annual short rainfall in the region, over 90 percent of the total flow to the lake is provided by transboundary Hirmand/Helmand River.⁹⁰ Further, climate change and the unsustainable management of natural resources, including damming by Iran and Afghanistan, have exacerbated the situation in the region such that, over the past twenty years, Hamun has completely dried up. Only in rare years, with an increase in rainfall, have small sections of the lake reappeared.⁹¹ The Helmand River, at approximately 1,300 km in length, is the longest river in Afghanistan. Originating from the Koh-e Bābā heights of the Hindu Kush Mountain range (about 40 km west of Kabul), draining the entire southwestern portion of Afghanistan (approximately 100,000 square miles), the river moves southwest toward the Iranian border, passing through the provinces of Wardak, Oruz-gān, Helmand, and Nimruz. South of Zaranj, the river flows northward, forming the Afghanistan–Iran border for 55 km before emptying into the Hamun lakes.⁹²

The Helmand median annual water output is 2.200 million cubic meters and, although its course runs mainly through Afghanistan, its most irrigable banks lie in Iran. “The Sistan provinces in both countries depend on the Helmand almost as much as Egypt does on the Nile.”⁹³

⁸⁷ Ramsar Convention Secretariat (n 6) 25–26. According to Article 2(4) of the Convention: “Each Contracting Party shall designate at least one wetland to be included in the List when signing this Convention or when depositing its instrument of ratification or accession, as provided in Article 9.”

⁸⁸ UNESCO World Heritage Convention (n 85).

⁸⁹ Ibid.

⁹⁰ Mahdi Akbari et al., “Desiccation of the Transboundary Hamun Lakes between Iran and Afghanistan in Response to Hydro-climatic Droughts and Anthropogenic Activities” (2022) 48 *JGLR* 878.

⁹¹ Middle East Images (n 83).

⁹² Encyclopedia Iranica, “Helmand River i. Geography” www.iranicaonline.org/articles/helmand-river-i accessed August 14, 2023.

⁹³ Ibid.

12.3.2 *The Legal Challenge of the Application of an Ecosystem Approach*

12.3.2.1 The Retroactive Application of the Ecosystem Approach: The Necessity of Integration

As discussed in Section 12.2, the retroactive application of the ecosystem approach to the previous international obligations is a normative challenge. Efforts to apply the ecosystems approach to the legal regime of Hirmand River have revealed the implementation challenges in a practical context. The Hirmand case study shows that the retroactive application of the ecosystem approach cannot effectively protect ecosystems, especially endangered wetlands.

Setting aside of the long history of Iran–Afghanistan dispute over the Hirmand River,⁹⁴ the conclusion of the Afghan–Iranian Helmand–River Water Treaty in March 13, 1973 is a turning point in this regard. Article II of the treaty allocates about 0.82 km³ water flow from Hirmand River as the water right of Iran. The article provides that Afghanistan shall deliver Iran an average of 22 m³/s plus 4 m³/s (for “goodwill and brotherly relations”),⁹⁵ providing a basis for monthly allocation of the Hirmand River flow to Iran. Monthly flow deliveries are based on “normal water year” (Article II), which is defined as a year with total flows upstream of Kajaki Dam being more than 5.661 km³ between October 1 and the following September 30 (Article I). Therefore, this treaty is flexible in dry years; for example, water deliveries are adjusted proportionally to deviations from predefined normal years (Article IV). Also, Afghanistan must supply water of a quality that can be treated, if necessary, for irrigation and domestic uses (Article VI).⁹⁶

While the Iranian Department of Environment has estimated that, for the ecological restoration of the lakes, 7.67 km³ environmental flow is needed annually,⁹⁷ the 1973 treaty does not anticipate any environmental water share for the Hamun wetlands. Due to the date of the conclusion of the treaty (almost fifty years ago), it does not appear to be coordinated with the ecosystem. In fact, the wording of the Article II is limitative: “The total amount of water from the Helmand River to be delivered by Afghanistan to Iran in a normal water year, is limited to an average flow of twenty-two cubic meters per second.” Consequently, Iran utilizes all treaty-allocated water for potable and agricultural uses.⁹⁸ Iran reserves its water share

⁹⁴ See A. Amini, S. Z. Ghoreishi, and H. Mianabadi, “Understanding 1973 the Helmand Treaty by Invoking Rules of Interpretation According to Vienna Convention 1969” (2021) 11 *JWIM* 2, 249 (in Persian). For the English abstract of the Article, see https://jwim.ut.ac.ir/article_82737.html?lang=en accessed February 10, 2024.

⁹⁵ For example, 22 cubic meters per second/4 cubic meters per second.

⁹⁶ See also Akbari et al. (n 90) 877.

⁹⁷ Iran Department of Environment (DOE) “Determining the Environmental Flow Needs of Hamoun Wetlands” (2014) reprinted in Akbari et al. (n 90) 877.

⁹⁸ Akbari et al. (n 90) 877.

in four reservoirs named the Chah Nimeh Reservoirs (CNRs): CNR₁ (Cap: 0.220 km³), CNR₂ (Cap: 0.090 km³), CNR₃ (Cap: 0.320 km³), and the last and largest reservoir, the CNR₄ (Cap: 0.810 km³).⁹⁹ First, three reservoirs were constructed in 1983, and the last one was commissioned in 2008.¹⁰⁰ The main purposes of CNRs in Iran are to meet the agricultural (0.4 km³/yr), domestic (0.11 km³/yr), and industrial (0.03 km³/yr) demands of the Sistan region based on the current status of the basin, totaling 0.54 km³/yr.¹⁰¹

The limitative wording of the treaty is not limited to Article II; the last paragraph of Article V strictly specifies that “Iran shall make no claim to the water of Helmand River in excess of the amounts specified in this Treaty, even if additional amount of water may be available in the Helmand Lower Delta and may be put to a beneficial use by Iran.” While it seems that the treaty has barred Iran from any claim to the water in excess of the amounts specified in this treaty, the text can be construed to befit an environmental approach. In fact, Iran has been banned from the water in excess of the amounts its water share for itself (for more potable, agricultural, and industrial uses), there is nothing stopping Iran from claiming the water for *internationally* protected wetlands. The Hamun wetlands is saturated with overflow of the river during spring when the CNRs are full and the rest of the overflow is conveyed to the lakes.¹⁰² In addition to climate change and the reduction of precipitation during the past decade, blocking Iran’s water share and damming the Hirmand River have exacerbated the situation, leading to the complete evaporation of the lakes.

In fact, the construction of the Kamal Khan Dam (March 2021) on the lower Helmand River in Afghanistan’s Nimroz province has severely affected Iran’s share of water from the Helmand River, not to mention the amount that flows into Sistan Baluchistan. According to the 1973 treaty, Helmand’s water has to be measured and allocated between Iran and Afghanistan at the Kamal Khan Dam. Removing water from the river system upstream, from the historical point of measurement at Kamal Khan Dam, has complicated the water problem even more.¹⁰³

The implementation of the ecosystem approach to previous legal instruments such as the Helmand River Treaty faces the normative challenge of stability and legal certainty. It has been argued that the implementation of this approach “is the apparent conflict between the adaptivity required by the approach and the

⁹⁹ Ibid., 878.

¹⁰⁰ Absaran Consulting Company, “Chah Nimeha Water Resources Planning Report: Studies of the Second Phase of Water Supply in Sistan Plain” (2015) (in Farsi), reprinted in: Akbari et al. (n 90) 878–879.

¹⁰¹ Iran DOE (n 97).

¹⁰² Akbari et al. (n 90) 886.

¹⁰³ Fatemeh Aman, “Water Dispute Escalating between Iran and Afghanistan” (2016) South Asia Center, Atlantic Council 6 www.atlanticcouncil.org/wp-content/uploads/2016/09/Water_Dispute_Escalating_between_Iran_and_Afghanistan_web_0830.pdf accessed July 4, 2023.

traditional virtues of law, such as stability and legal certainty.”¹⁰⁴ However, as argued by Langlet and Rayfuse, this perceived tension between stability and flexibility is not always inevitable. While legal certainty sometimes acts as a hindrance to adaptivity, it also serves as a framework for driving environmental adaptive change.¹⁰⁵ This is what the ICJ found in the *Gabcikovo-Nagymaros Case* in 1997. In this case, the ICJ found that

newly developed norms of environmental law are relevant for the implementation of the Treaty and that the parties could, by agreement, incorporate them through the application of Articles 15, 19 and 20 of the Treaty. These articles do not contain specific obligations of performance but require the parties, in carrying out their obligations to ensure that the quality of water in the Danube is not impaired and that nature is protected, to take new environmental norms into consideration when agreeing upon the means to be specified in the Joint Contractual Plan.

By inserting these evolving provisions in the Treaty, the parties recognized the potential necessity to adapt the Project. Consequently, the Treaty is not static and is open to adapt to emerging norms of international law. By means of Articles 15 and 19, “new environmental norms can be incorporated in the Joint Contractual Plan.”¹⁰⁶

Contrary to the 1977 agreement between the parties of the *Gabcikovo-Nagymaros Case*, the *Afghan–Iranian 1973 Helmand-River Water Treaty* is a static instrument.¹⁰⁷ It neither considers the environmental norms nor allows Iran to claim more water share than its contractual right, even if “additional amounts of water be available in the Helmand Lower delta.”¹⁰⁸ Therefore, there is no choice but to amend the treaty by taking into account the new environmental norms governing the management of international watercourses, including ecosystem protection obligations, since watercourse states have continuous obligations in this regard under customary international law.

As a matter of fact, Afghanistan, even before building the Kamal Khan Dam, did not respect its obligations under 1973 treaty. By opening the dam, as had been anticipated by Iran, the situation became even worse. Nowadays, Afghanistan is choosing not to deliver the water share of Iran under the 1973 treaty but to reserve the overflow of the river water behind the dam. A recent study shows that “[u]pstream regulations are the main cause of inflow delivery reduction to the lakes. The construction of

¹⁰⁴ Nicolas de Sadeleer, *Environmental Principles: From Political Slogans to Legal Rules* (Oxford University Press 2002) 235.

¹⁰⁵ David Langlet and Rosemary Rayfuse, “Challenges in Implementing the Ecosystem Approach: Lessons Learned” in David Langlet and Rosemary Rayfuse (eds), *The Ecosystem Approach in Ocean Planning and Governance: Perspectives from Europe and beyond* (Brill/Nijhoff 2018) 449–450.

¹⁰⁶ [1997] ICJ Rep (n 74) para 112.

¹⁰⁷ *Afghan-Iranian Helmand River Water Treaty* (Helmand March 13, 1973) <https://faolex.fao.org/docs/pdf/bii74405.pdf> accessed February 10, 2024.

¹⁰⁸ *Ibid.*, Article V.

Chah Nimeh Reservoir 4 (capacity of 0.81 km³ for domestic and agricultural use in a socio-economically disadvantaged region of Iran) and Kamal Khan Dam (capacity 0.05 km³) has aggravated the situation.”¹⁰⁹ The study ends by recommending that riparian countries revisit “the 1973 treaty ... to share the Hirmand River inflow considering the environmental right of the lakes.”¹¹⁰

Current tension between Iran and the Taliban regime happened when the former Iranian president warned the Taliban “to take the issue of [Helmand] water and Iran’s share of water seriously.” The Taliban hit back with their spokesperson Zabihullah Mujahid, stating that Iranian officials should present their request “using appropriate words.”¹¹¹ While declaring its commitment to the 1973 treaty, the reality is that the Taliban, concordant with former governments of Afghanistan, has not complied with its obligations under the treaty and has denied the Iranian water share for several years. Surprisingly, the Taliban, in response, claimed the lack of enough water is due to drought,¹¹² and at same time did not cooperate with the Iranian commissioner for measuring water flow. Whereas the Taliban claim “there is no water in the Kamal Khan dam, and if the water from the Kajaki dam is released, it will not reach there,”¹¹³ its obligation under the treaty is an independent obligation. For the purpose of allocating Iran’s water share from the Hirmand flow, the flow of water shall be measured “at the hydrometric station at Dehrawud on the Helmand River upstream from the entrance to Kajaki Reservoir,”¹¹⁴ either in a “normal water year” or “in year when due to climate factors the amount of flow is less than that of a normal water year.”¹¹⁵ The treaty has variant regulations for different climates in either normal or abnormal water years. Therefore, Afghanistan could not collect all water flow of the river at downstream of the Dehrawud hydrometric station, and at the same time claim that “[i]f we release ... [water] to Iran, then it will travel hundreds of kilometers in the dry river of Helmand and reach Iran as currently, there is no water in the Kamal Khan dam, and if the water from the Kajaki dam is released, it will not reach there.”¹¹⁶

¹⁰⁹ Akbari et al. (n 90) 889.

¹¹⁰ Ibid. See also Mahdi Akbari and Ali Torabi Haghighi, “Satellite-Based Agricultural Water Consumption Assessment in the Ungauged and Transboundary Helmand Basin between Iran and Afghanistan” (2022) 13 *Remote Sensing Letters* 12, 1244.

¹¹¹ Holly Dages, “Iran and Afghanistan Are Feuding Over the Helmand River: The Water Wars Have No End in Sight” (July 7, 2023) www.atlanticcouncil.org/blogs/iransource/iran-afghanistan-taliban-water-helmand/ accessed August 16, 2023.

¹¹² “[R]ecent years have seen a terrible drought in Afghanistan and the region. As a result, the water table has dropped, several of our provinces, including the Helmand River, are experiencing drought, and there is a lack of water.” see Statement of Islamic Emirate regarding recent remarks of Iranian President, No 428 (May 19, 2023) Islamic Emirate of Afghanistan www.alemarahenglish.af/statement-of-islamic-emirate-regarding-recent-remarks-of-iranian-president/ accessed August 16, 2023.

¹¹³ Ibid.

¹¹⁴ Article 1(b).

¹¹⁵ Article 4.

¹¹⁶ Statement of Islamic Emirate Afghanistan No 428 (May 19, 2023) (n 112).

Whatever the result of the claims of the parties, the ecosystem of the Hamun wetland is under threat. As a result, it is necessary that the ecosystem approach is officially integrated in the legal regimes for the protection of wetlands and international watercourses and that the institutions of the aforementioned regimes interact with each other regarding the effective protection of endangered ecosystems. The latter issue is discussed in the Section 12.4.

12.3.2.2 Lack of Institutional Coordination between Water and Biodiversity Institutions

The Hirmand case study reveals another challenge of the application of ecosystem approach in the management of Hamun wetlands: a lack of institutional coordination between water and biodiversity institutions.

As a matter of law, the Hirmand Treaty has some arrangements and mechanisms for the implementation of its provisions. According to Article 8: “Each party shall appoint a Commissioner and a Deputy Commissioner from among its nationals who shall represent their respective countries in the implementation of this Treaty.” The Complementary Protocol 1 of the treaty specifies the scope of authorities, duties, and responsibilities of the commissioners. However, the Afghan party does not cooperate in this regard. In such a situation, an environmental convention’s treaty bodies may play a constructive role. As mentioned earlier,¹¹⁷ the Hamun wetlands have been registered as the first Iranian wetland in the List of Wetlands of International Importance of the Ramsar Convention from one side, and both riparian states, Iran and Afghanistan, are parties of the CBD from the other side.¹¹⁸ Both conventions seek the same goal: the protection of the wetlands. Therefore, the coordination between the secretariates of these conventions could foster their efforts of protection in urgent case like the Hamun wetlands.

It should be noted that the Ramsar Convention collaborates with other conventions which focus on biodiversity issues, including the CBD through the Biodiversity Liaison Group,¹¹⁹ established in 2002,¹²⁰ and the Memorandum of Co-operation has been signed between the secretariates of the conventions in 2005.¹²¹ However, these

¹¹⁷ See Ramsar Convention Secretariat (n 6).

¹¹⁸ Ibid.

¹¹⁹ Convention on Biological Diversity, “Liaison Group of Biodiversity-related Conventions” (January 20, 2022) www.cbd.int/blg/ accessed October 10, 2023.

¹²⁰ Ramsar Convention Secretariat, “Partnerships with other Conventions” www.ramsar.org/about/partnerships/partnerships-other-conventions accessed October 11, 2023. See also “Partnerships” (4th ed., Ramsar Handbook 10) www.ramsar.org/sites/default/files/documents/pdf/lib/hbk4-05.pdf accessed October 11, 2023.

¹²¹ Memorandum of Co-operation between the Convention on Wetlands (Ramsar, Iran 1971) and the Convention on Biological Diversity (adopted May 10, 2005) (Liaison Group) www.cbd.int/doc/agreements/agmt-ramsar-2005-05-10-moc-web-en.pdf accessed October 11, 2023.

developments are not sufficient and there needs to be a joint mechanism for joint implementation of the conventions.

12.3.2.3 The Necessity of Integration of Local Communities and Private Sector

The local communities are the main beneficiaries of the ecosystem's resources; therefore, their awareness and participation are crucial for the conservation of biodiversity of any ecosystem and protection of wetlands.¹²² It is interesting to note that neither the Ramsar or Watercourses Convention paid attention to such participation, whereas the local communities are traditionally interested in the management of the wetlands and watercourses. By contrast, the CBD explicitly recognizes “the desirability of sharing equitably benefits arising from the use of traditional knowledge, innovations and practices relevant to the conservation of biological diversity and the sustainable use of its components.”¹²³ Therefore, state parties

shall, as far as possible and as appropriate: respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices.¹²⁴

Like local communities, the private sector has long been identified as an important partner of international organizations in their achievement of development goals.¹²⁵ While the CBD has obliged its member states to “[e]ncourage cooperation between its governmental authorities and its private sector in developing methods for sustainable use of biological resources,”¹²⁶ or “take legislative, administrative or policy measures, as appropriate, with the aim that the private sector facilitates access

¹²² Such awareness and participation are necessary since “official conservation policies that severely limit human use of natural resources for the sake of biodiversity conservation, such as strict protected areas, too often have harmful effects on livelihoods and the well-being of human populations living in or around these areas,” Isabel Ruiz-Mallén, Antonio De la Peña, María Elena Méndez-Lopez, and Luciana Porter-Bolland, “Local Participation in Community Conservation: Methodological Contributions” in Luciana Porter-Bolland, Isabel Ruiz-Mallén, Claudia Camacho-Benavides, and Susannah R McCandles (eds), *Community Action for Conservation Mexican Experiences* (Springer 2013) 117.

¹²³ Convention on Biological Diversity, Preamble.

¹²⁴ *Ibid.*, Article 8(j).

¹²⁵ United Nations Conference on Trade and Development (UNCTAD), “Private Sector Engagement in Biodiversity-Related Conventions: Special Focus on the Sector of Natural Ingredients for the Cosmetics and Food Industries” (May 11, 2007) <https://unctad.org/meeting/private-sector-engagement-biodiversity-related-conventions-special-focus-sector-natural> accessed October 12, 2023.

¹²⁶ Convention on Biological Diversity, Article 10(e).

to, joint development and transfer of technology,”¹²⁷ the Ramsar and Watercourses Conventions are silent in this regard. The CBD Conference of Parties (COP) has singled out the private sector as an important player in the conservation, sustainable use of biodiversity, and the equitable sharing of benefits that are derived from this resource.¹²⁸

By finding the importance of the involvement of the local communities and private sector for the preservation of wetlands it is clear that any application of the CBD-based ecosystem approach to the management of international wetlands should involve these partners. In today’s globalized world, global governance requires that local communities and the private sector, including multinational enterprises, are involved in any development and management projects.

In sum, local communities are at the heart of any wetlands development and management project and the private sector has access to the financial resources and the latest knowledge and technologies which are necessary for the effective protection of wetlands. Therefore, the application of the ecosystem approach, without the involvement of local communities and the private sector, would be insufficient.

12.4 ADVANCING THE ECOSYSTEMS APPROACH TO BIODIVERSITY MANAGEMENT: RECOMMENDATIONS

The ecosystem approach is a new way of dealing with the parts of the environment which include international wetlands and watercourses. The emergence of this approach was inevitable as a consequence of the rise of environmental awareness since the 1970s, when the majority of international agreements for the management of international wetlands and watercourses had been concluded. Therefore, paying attention to the following recommendation is necessary for the effective protection of wetlands through the application of an ecosystem approach.

12.4.1 *Need for Official Incorporation of the Ecosystem Approach*

The application of an ecosystem approach to international agreements should be analyzed on a case by case basis.¹²⁹ Notwithstanding the experience of other legal

¹²⁷ Ibid., Article 16(4).

¹²⁸ Ibid. See decision VIII/17.

¹²⁹ Duncan E.J. Currie, “Ecosystem-Based Management in Multilateral Environmental Agreements: Progress towards Adopting the Ecosystem Approach in the International Management of Living Marine Resources” (2007) WWF *International Global Species Programme*, 6–8 https://wwfeu.awsassets.panda.org/downloads/wwf_ecosystem_paper_final_wlogo.pdf accessed August 16, 2023. Also, see: “The Ecosystem Approach: Its Mandate and Implementation” (August 28, 2007) Deep Sea Conservation Coalition www.sprfmo.int/assets/Meetings/Meetings-before-2013/International-Consultations-2006-to-2009/IntCons-4-2007-Noumea-New-Caledonia/5ad27dd026/SP-04-Inf-3-DSCC-ecosystem-approach-brief.pdf accessed August 16, 2023.

disciplines, such as the CDB,¹³⁰ the precise implications of this approach, to protect the ecosystems of international watercourses, are not altogether clear enough.¹³¹ While some academic work has been done in this regard,¹³² further normative steps, even through soft law instruments, would be required in order to clarify the implication of this approach. Such steps have already been taken by the adopting the “principles of the ecosystem approach,”¹³³ under the framework of the CBD, by the CBD/COP) at its 5th meeting. Parties, and other government and international organizations, have been called upon to apply the ecosystem approach by giving consideration to these principles.¹³⁴ A similar normative endeavor is recommended under the Ramsar and Watercourses Conventions.

12.4.1.1 Need for Institutional Coordination between Water and Biodiversity Institutions

This chapter showed that three separate legal regimes regarding wetlands, biodiversity, and watercourses have the same goal, which is the preservation and conservation of ecosystems. The ecosystem approach is the contact point between three conventions: the Ramsar Convention (1971), the CBD (1992), and the Watercourses Convention (1997). It can improve the capacity of the secretariats of these conventions for the effective protection of wetlands. This could not be achieved except through close coordination between these conventions. It should be noted that cooperation between the Ramsar Convention and the CBD has already been commenced and the Biodiversity Liaison Group established in this regard.¹³⁵ This initiation is a good first step, which should develop through the adoption of a special procedure for joint action in urgent cases such as the desiccating Hamun wetlands. By such joint action, any member state of these conventions could bring international community attention to the environmental crisis in the one internationally registered wetland.

¹³⁰ See R. D. Smith and E. Maltby, “Using the Ecosystem Approach to Implement the Convention on Biological Diversity: Key Issues and Case Studies” (2003) IUCN <https://portals.iucn.org/library/sites/library/files/documents/cem-002.pdf> accessed August 16, 2023.

¹³¹ McCaffrey (n 70) 458.

¹³² Ruby Moynihan, “An Ecosystem Approach in International Law Concerning Transboundary Freshwater Ecosystems” in *Transboundary Freshwater Ecosystems in International Law: The Role and Impact of the UNECE Environmental Regime* (Cambridge University Press 2021) 152–201. See also Ruby Moynihan Magsig, “An Ecosystem Approach in International Environmental Law Relevant to Transboundary Freshwater Ecosystems” (2022) 6 *Chinese Journal of Environmental Law* 125.

¹³³ Convention on Biological Diversity, “The Ecosystem Approach and Adaptive Management” (2000) CBD Decision V/6: The Ecosystem Approach, COP 5 of the CBD www.cbd.int/doc/meetings/esa/ecosys-01/other/ecosys-01-dec-cop-05-06-en.pdf accessed August 16, 2023.

¹³⁴ *Ibid.*, 2.

¹³⁵ See Liaison Group (n 119).

12.4.1.2 Need for the Integration of Local Communities and the Private Sector in Development and Management Plans

As mentioned in Section 12.3.2.3, the role of local communities and the private sector in development and management plans are significant. The Ramsar and Watercourses Conventions have ignored the capacities of these relevant sectors of local and international societies. As discussed earlier, the integration of these sectors in the management of wetlands is essential for the effective preservation of wetlands. Therefore, as a principle it is recommended that the ecosystem approach should involve all relevant sectors of society including local communities and private sector.¹³⁶ By such an integration, from one side, all forms of relevant information, including scientific and indigenous and local knowledge, innovations, and practices will be considered; and scientific and technological development will be absorbed into the management and development plans of wetlands in the other hands. Further, the integration of the private sector into the management and development plans of the wetlands also encourages this sector to invest in and finance those plans.

12.5 CONCLUSION

The legal regime of every aspect of the environment, including international wetlands and watercourses, cannot be addressed in isolation. Accordingly, while the customary “ecosystem approach” has rapidly emerged after the conclusion of the Ramsar Convention and many water management agreements, its obligations should be taken into account in terms of the interpretation and application of those instruments. Judicial decisions and doctrines support this finding. However, the precise implications of this approach to protect the ecosystems of international watercourses are not altogether clear; thus, further normative steps, even through soft instruments, for clarifying the implication of this approach are required. To this end, the adoption of “principles” that are similar to what has been adopted under the framework of the CBD is recommended.¹³⁷ Also, the effective application of an ecosystem approach requires that local communities and the private sector should be integrated in development and management plans, and institutional coordination between water and biodiversity institutions should increase. This coordination should be overseen by the adoption of a special procedure for joint action in urgent cases such as the desiccating Hamun wetlands.

The case study in this chapter shows the need for normative and institutional development. The treaty governing the transboundary Hirmand River between Iran

¹³⁶ See Principle 12 of the principles of the ecosystem approach that states: “The ecosystem approach should involve all relevant sectors of society and scientific disciplines.” CBD Decision V/6: The Ecosystem Approach, COP 5 of the CBD (n 133).

¹³⁷ *Ibid.*

and Afghanistan is the sole water resource of the Hamun international wetlands and prevents Iran from claiming any additional water over that which is allocated. Afghanistan denies any environmental water share for the desiccating lakes, and Iran intends to use all of its water share for growing potable and agricultural uses. The result stifles the last chance of restoring one of the first internationally registered wetlands under the Ramsar Convention. It is therefore imperative for Iran and Afghanistan to amend the treaty in order to allocate an appropriate environmental water share to the Hamun wetlands.