13

Biodiversity and Marine Protected Areas

An Analysis of the Fishing-Oriented MPA Legal Framework in Morocco

Samira Idllalène and Hicham Masski

13.1 INTRODUCTION

This chapter examines the importance of marine protected areas (MPAs) as tools for the management of fish and other marine species. Drawing lessons from the MPA legal framework in Morocco, it analyses the legal gaps and barriers in the management of fishing-oriented MPAs (MPA-Fs) and proposes recommendations on how to strengthen the management of MPAs to advance biodiversity and the protection of the marine and ocean ecosystem.

The Moroccan coastal zone is a major transition area between tropical ecosystems in the south and temperate ones in the north, and between the Atlantic and the Mediterranean. The particularly high productivity of the northwest Atlantic upwelling systems has, from the beginning of the industrialization of fishing vessels (mid-twentieth century), attracted distant fleets.[1] Since the 1980s and the establishment of its Exclusive Economic Zone, Morocco has developed a thriving fishing sector that has become one of the most productive in Africa and the 17th in the world.[2] On the land side, the coastal zone is populated by nearly 9.5 million inhabitants.[3] Since 2000, it has contributed close to 82 percent of national industrial production, 54 percent of tourism, and 71 percent of banking activity.[4] The trend toward littoralization reaches more than 55 percent.[5] Economically coveted, Moroccan coastal areas are home to a wide variety of contrasting ecosystems with diverse habitats that have been under intense pressure for several decades.[6] For example, all bottom species stocks assessed

[1] Kifani Souad, Masski Hicham, and Faraj Abdelmalek, "The Need of an Ecosystem Approach to Fisheries: The Moroccan Upwelling-related Resources Case" (2008) 94 *Fisheries Research* 1, 36, 42.
[2] Food and Agriculture Organization, *The State of World Fisheries and Aquaculture* 2022 (FAO 2022).
[3] Haut Commissariat au Plan (HCP), 2010 www.hcp.ma/Les-Comptes-nationaux-provisoires-de-2010_a635.html accessed February 11, 2024.
[4] Ibid.
[5] Ibid.
[6] Kifani Souad et al. (n 1).

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in the 2000s are in a state of overexploitation,[7] and this situation persists for the latest published assessments.[8] This situation enhances the vulnerability of marine populations and their hosting ecosystems to natural or anthropogenic pressures.

To address threats to biodiversity, in 2010 Morocco enacted Law 22-07 relating to protected areas.[9] The aim of the law is to classify and conserve specific areas by setting up a network of protected areas covering all natural ecosystems across the country. These ecosystems include wetlands, forests, archaeological sites, and sites with faunal or floristic landscape value. Law 22-07 is in line with the Convention on Biological Diversity (CBD) ratified by Morocco in 1995.[10] According to Article 2 of the CBD, a protected area means "a geographically defined area, which is designated or regulated and managed to achieve specific conservation objectives." MPAs contribute to biodiversity conservation and can help in both mitigation and adaptation to the impacts of climate change.[11] Law 22-07 includes MPAs in the general definition of protected areas. The typology of protected areas under the law is based on the classification made by the Master Plan for Protected Areas (PDAP),[12] established in 1996 by the Moroccan Department of Water and Forests.[13] The PDAP identifies and classifies Sites of Biological and Ecological Interest (SIBE) according to their degree of degradation and the protective measures to which they must be subject by priority. However, since 2010 no MPA has been created on the basis of Law 22-07 on protected areas.[14] In fact, the regulations which make it possible to classify the identified SIBEs into protected areas have never been adopted. Yet new MPAs for

[7] Food and Agriculture Organization, *The State of World Fisheries and Aquaculture 2008* (FAO 2008).

[8] Institut National de Recherche Halieutique (INRH), "Observatoire Halieutique" https://observatoire-halieutique.ma accessed February 11, 2024.

[9] Law No. 22-07 relating to Protected Areas, promulgated by the Dahir No 1-10-123 of July 16, 2010. Official Bulletin No. 5866 (August 19, 2010) 1581.

[10] Kingdom of Morocco, National Biodiversity Strategy and Action Plan, Vol. 3 www.cbd.int/countries/?country=ma accessed February 11, 2024. See also: United Nations Environment Programme (UNEP) and the European Union Plan of Action for the Mediterranean, "Le cadre juridique des Aires Marines Protégées au Maroc: Fiches synthétiques" in P. Emmanouilidou et al. (eds), *SPA/RAC* (Projet MedMPA Network 2019).

[11] C. M. Roberts et al., "Marine Reserves Can Mitigate and Promote Adaptation to Climate Change" (2017) 114 *Proceedings of the National Academy of Sciences* 24, 6167, 6175.

[12] Kingdom of Morocco, "Sustainable Development in Morocco: Achievements and Perspectives, from Rio to Rio +20" Plan Directeur sur les Aires Protégées (Ministry of Energy, Mines, Water and Environment, Department of Environment, June 2012) 39 https://sustainabledevelopment.un.org/content/documents/1010file.pdf accessed February 11, 2024.

[13] Samira Idllalène and Hicham Masski, "Les aires marines protégées: nouvel outil de gouvernance côtière ? Le cas du Maroc" in Marie Bonnin et al. (eds), *Aires Marines Protégées Ouest Africaines, défis scientifiques et enjeux sociétaux* (IRD 2015).

[14] However, the existing national parks with a marine part were reversed in the legal regime of Law 22-07 in February 2022. See for example, Arrêté du ministre de l'agriculture, de la pêche maritime, du développement rural et des eaux et forêts No 457-22 du 12 rejeb 1443 (14 février 2022) portant classification du Parc national d'Al Hoceima. No 7080 – 5 ramadan 1443 (7 avril 2022). On the same date, two additional national parks with coastal areas (Souss Massa and Khnifiss) were similarly reclassified under the provisions of Law 22-07.

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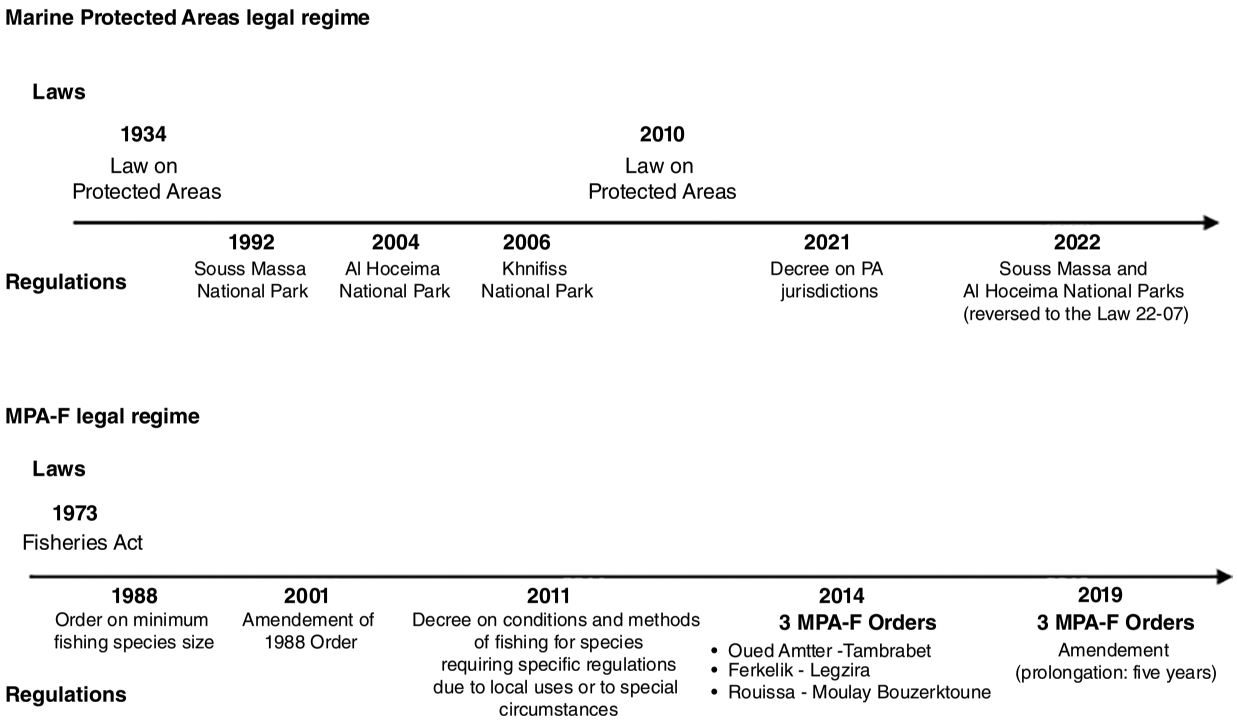


FIGURE 13.1 Concurrent evolution of separate legal regimes for MPAs and MPA-Fs
Source: Authors.

fisheries were de facto created in the framework of the Fisheries Act of 1973 (see Figure 13.1).[15] However, the legal status of these MPAs is disconnected from Law 22-07 on protected areas and can even contradict the protected areas legal regime.

Originally, MPA-Fs were developed in the form of a fisheries management plan within a circumscribed area, with open or closed areas to fishing, regulation of fishing gear, commercial size of certain species, and fishing effort, among other things (Table 13.1).

TABLE 13.1 *Main provisions of the ministerial decisions creating the MPAs for fisheries*

Legal techniques	Explanation
Zoning	The three ministerial decisions (MDs) on MPA-Fs establish three types of zoning: – A defined fishing area where the conditions and technical procedures for fishing the fish species listed in Article 1 are determined. – A no-take zone with a list of prohibited species and either annual or five-year time restrictions. For example, from September 1 to March 1 it is prohibited to fish certain species among the list of species in Article 2 of MD No. 336–314 of (February 3, 2014) ("Al Boran" MPA). The three decisions list the geographic coordinates of each area.
Regulated species	– The three MDs establish lists of species in Article 1 that are affected by the restrictions of these decisions. The names of the species are quoted in French and in Latin. Some of these species are subject, in the no-take areas, to seasonal restrictions on an annual basis or for a period of five years. – All three MDs refer to MD No. 1154–1188 on the minimum legal market size of fish species.
Fishing gear	– The three MDs provide a list of prohibited fishing gear for the species listed in Article 1. They specify that gear-related prohibitions must be listed on the fishing license. Among the fishing gear, the MDs refer to those that are prohibited by the general legislation and regulations in force. – In addition to the fishing gear for which the prohibition is general in the area covered by the MDs, these texts add other types of prohibited fishing gear for which the prohibition is annual. It lists for each type of fishing gear and the dates during which they are prohibited. – One of these MDs (the Al Boran MPA decision) added another fishing instrument to this list, namely the bottom trawl (Article 8). – The Massa MPA restrictions exclude all kinds of fishing nets and the smallest hooks (hook opening less than 6 mm), while the other two MPAs ban or reduce drastically the use of most problematic gear.

(*continued*)

[15] Dahir promulgating Law No 1-73-255 of 27 Chaoual 1393 (November 23, 1973) forming Regulations on Maritime Fisheries, Official Bulletin No 3187.

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TABLE 13.1 (*continued*)

Legal techniques	Explanation
Fishing vessels	– All three MDs adopt the same rules regarding vessel tonnage restrictions in MPA-Fs which shall not exceed 2 tonnage units. However, this limit has been revised in the amended texts of these MDs published in 2021. In fact, according to these modifying texts, the tonnage of the vessels has been increased to 3 tonnage units.
Other obligations	– The three MDs require the masters of the vessels and the fishing skippers, who have a fishing license for species mentioned in Article 1 in the fishing area defined in Article 2, to comply with the 2011 decree with regard to keeping a fishing logbook and declaring their catches.

Source: Compiled by author.

Three MPA-Fs were created as part of the Millennium Challenge Corporation (MCC)-funded project to assist small-scale fisheries.[16] Ten years after the establishment of the MPA-Fs project, the legal regime underpinning MPA-Fs remains unclear. At the outset, these so-called MPA-Fs have a different legal regime from the classic protected areas legal regime. Indeed, these MPAs are established outside the Law on Protected Areas which was in force at the time of their creation (Figure 13.1).[17]

This chapter examines how such legal barriers and gaps to MPA-F management in Morocco can be coherently addressed to advance biodiversity and for the conservation of fisheries resources and marine ecosystems. The chapter is organized into five sections. After this introduction, Section 13.2 explains the contribution of MPAs to biodiversity and fisheries conservation under international and regional laws. Section 13.3 examines the legal frameworks on MPAs in Morocco, with a focus on the main provisions of Law 22-07 on protected areas, and examines why MPA-Fs have not been integrated into the existing legal framework relating to MPAs, and especially what the consequences are or could be in terms of the place of these MPAs in environmental law, as well as their real effectiveness. Section 13.4 offers recommendations on how to better strengthen the management of MPAs to advance biodiversity and the protection of the marine ecosystems. Section 13.5 is the concluding section.

[16] This project is part of the agreement "Compact" (2008–2013) between the Moroccan government and the Millennium Challenge Corporation (MCC). Morocco and the MCC signed in August 2007 a compact agreement of US$697.5 million (in force September 15, 2008), aiming to modernize industrial sectors and target areas in which the country had competitive advantages such as fisheries (five projects in all). The Small-Scale Fisheries Project is one on them and it is designed to modernize fishing practices. See Millennium Challenge Corporation (MCC), *Closed Compact Report: Morocco Compact* (signed: August 31, 2007; entry into force: September 15, 2008; compact end date: September 15, 2013) www.mcc.gov/resources/doc/closed-compact-report-morocco/ accessed February 11, 2024.

[17] Law No 22-07 (n 9) 1582.

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13.2 THE CONTRIBUTIONS OF MPAS TO BIODIVERSITY AND FISHERIES CONSERVATION

Since the second COP to the CBD in 1995, there has been a growing emphasis on the necessity to conserve marine biodiversity. The Jakarta Mandate on Conservation and sustainable use of marine and coastal biological diversity is an illustration of this interest.[18] In 2004, at the COP to the CBD, there was consensus that "marine and coastal protected areas are vital tools and methods in the preservation and responsible utilization of marine and coastal biodiversity."[19] At COP10 in Nagoya, parties adopted a revised and updated Strategic Plan for Biodiversity, including the Aichi Biodiversity Targets, for the 2011–2020 period.[20] It encompasses five strategic goals. One of these goals aims "[t]o improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity." In fact, parties agreed to postpone the deadline for achieving the objective of conserving 10 percent of their marine and coastal regions within protected areas to 2020 (Aichi Target 11).[21] In addition to this quantitative target, five supplementary qualitative targets relating to MPAs were included. They encompass the following elements: ecological representativeness, effective management, connectivity, integration into the surrounding landscapes and seascapes, and embracing areas of particular importance for biodiversity and ecosystem services.[22] These principles were recently affirmed in the Kunming-Montreal Global Biodiversity Framework as adopted at COP15 in 2022.[23]

The significance of MPAs for biodiversity preservation is also emphasized by numerous other international legal agreements, both on a global and regional scale. As an example, in the Mediterranean region the Protocol concerning Specially Protected

[18] The Jakarta Mandate work program was adopted in 1998 at the COP meeting in Bratislava. It encompasses five components: (1) integrated marine and coastal area management (IMCAM); (2) marine and coastal living resources (MCLR); (3) marine and coastal protected areas (MCPAs); (4) mariculture; (5) alien species and genotypes. See: Convention on Biological Diversity, "Marine and Coastal Biodiversity" (January 25, 2024) www.cbd.int/marine/ accessed February 11, 2024.

[19] Convention on Biological Diversity, "Decision Adopted by the Conference of the Parties to the Convention on Biological Diversity at Its Seventh Meeting VII/5" marine and coastal biological diversity (April 13, 2004) UNEP/CBD/COP/DEC/VII/5 Review of the programme of work on marine and coastal biodiversity www.cbd.int/doc/decisions/cop-07/cop-07-dec-05-en.pdf accessed February 11, 2024.

[20] Convention on Biological Diversity, "Strategic Plan for Biodiversity 2011–2020, Including Aichi Biodiversity Targets" (January 21, 2020) www.cbd.int/sp/ accessed February 11, 2024.

[21] See: UNEP/CBD/COP/10/27. Siân E. Rees et al., "Defining the Qualitative Elements of Aichi Biodiversity Target 11, with Regard to the Marine and Coastal Environment in Order to Strengthen Global Efforts for Marine Biodiversity Conservation Outlined in the United Nations Sustainable Development Goal 14" (2018) 93 *Marine Policy* 250.

[22] Ibid.

[23] See Convention on Biological Diversity, "Decision Adopted by the Conference of the Parties to the Convention on Biological Diversity: The Kunming-Montreal Global Biodiversity Framework" (December 19, 2022) CBD/COP/DEC/15/4 www.cbd.int/doc/decisions/cop-15/cop-15-dec-04-en.pdf accessed February 11, 2024.

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Areas and Biological Diversity (SPA/BD) was adopted within the framework of the Barcelona Convention on the Protection of the Marine Environment and Coastal Zone of the Mediterranean (1995).[24] This protocol's objective is to establish a network of specially designated marine areas with the goal of conserving natural habitats that are at risk, as well as habitats crucial for the survival of endangered species.[25] The list of Specially Protected Areas of Mediterranean Importance (SPAMI) was established by the parties with a view to promoting cooperation in the management and conservation of natural areas and the protection of threatened species and their habitats. The SPA/BD Protocol provides the criteria for the choice of protected marine and coastal areas likely to be included on the SPAMI list. For an area to qualify for inclusion in the SPAMI list, it should among other conditions possess a regional value (uniqueness, naturalness, natural and cultural representativeness, diversity, and presence of habitats of crucial importance) and it should have distinctive significance for scientific exploration in the natural sciences and serve as a valuable resource for environmental education or awareness initiatives (Article 8.2 SPA/BD Protocol, Annex 1).[26] Besides, areas eligible for inclusion in the SPAMI list should have a legal status guaranteeing their effective long-term protection (SPA/BD Protocol, Annex 1, C).

Similarly, there is an injunction to create MPAs in the Abidjan Convention for Cooperation in the Protection and Development of the Marine and Coastal Environment of the West and Central Africa Region (March 23, 1981).[27] Article 11 on Specially Protected Areas states: "The Contracting Parties shall, individually or jointly […] take all appropriate measures to protect and preserve rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other marine life." The article specifies that parties have to establish protected areas and "prohibit or control any activity likely to have adverse effects on the species, ecosystems or biological processes in such areas."

At the global level, the Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention) is an international treaty aimed at the conservation of wetlands around the world.[28] The criteria for the classification of wetlands in the Ramsar List of Wetlands of International Importance are quite similar to those for MPAs under the CBD (representativeness, rarity, and uniqueness) and are important for conserving biodiversity. In fact, Ramsar sites often overlap with other MPAs of different legal status. Among these statutes we find the United Nations

[24] Specially Protected Areas Regional Activity Centre (SPA/RAC 2020) www.rac-spa.org/spami accessed February 11, 2024.
[25] Ibid.
[26] Ibid.
[27] United Nations Environment Programme, "West and Central Africa: The Abidjan Convention" www.unep.org/explore-topics/oceans-seas/what-we-do/working-regional-seas/regional-seas-programmes/west-and accessed February 11, 2024.
[28] 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).

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Educational, Scientific and Cultural Organization (UNESCO) biosphere reserves.[29] These are sites (terrestrial, marine, and coastal) that promote solutions reconciling the conservation of biodiversity with its sustainable use. Designated by states under the intergovernmental Man and the Biosphere Program, established by UNESCO in 1970, they have two main objectives.[30] The first is to develop the necessary foundations for the sustainable use and preservation of the biosphere. The second is to improve the relationships between human beings and their environment. Biosphere reserves have three main functions: conservation of biological diversity, cultural and economic development (socio-culturally and environmentally sustainable), and logistical support (for research and education).[31] While they do not have a binding legal status, biosphere reserves are developing rapidly, including at a transboundary level, as is the case with the Intercontinental Biosphere Reserve of the Mediterranean, which extends from Morocco to Spain and encompasses marine areas.[32]

MPAs are also recognized under other international treaties on nature conservation, such as the Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention, 1979) and the UNESCO Convention on the Protection of the Underwater Cultural Heritage (2001), as well as through specific international treaties on preventing marine pollution, such as the International Convention for the Prevention of Pollution from Ships (1973–1978).[33]

Despite the increased recognition of MPAs, there is scientific debate about whether to consider the measures put in place to manage fishery resources as part of MPAs.[34] Expanding MPAs to include these measures could indeed help achieve the 10 percent target more quickly. Over time, it appears that there has been a convergence between these two approaches.[35] In fact, the categories of protected areas established by the International Union for Conservation of Nature (IUCN), which are globally recognized, allow for the inclusion of protected areas within the

[29] UNESCO, "Man and the Biosphere (MAB) Programme: What Are Biosphere Reserves?" www.unesco.org/en/mab/wnbr/about accessed February 11, 2024.

[30] Ibid.

[31] Ibid.

[32] UNESCO, "Intercontinental Biosphere Reserve of the Mediterranean, Morocco/Andalucía, Spain" https://en.unesco.org/biosphere/wnbr/mediterranean accessed February 11, 2024.

[33] UNEP-MAP-RAC/SPA, "International Legal Instruments Applied to the Conservation of Marine Biodiversity in the Mediterranean Region and Actors Responsible for Their Implementation and Enforcement" (RAC/SPA Tunis and European Commission 2010) www.cbd.int/doc/meetings/mar/ebsaws-2014-03/other/ebsaws-2014-03-submission-rac-spa-9-en.pdf accessed February 11, 2024.

[34] Jean-Yves Weigel et al., "Marine Protected Areas and Fisheries: Bridging the Divide" (2014) 24 *Aquatic Conservation: Marine and Freshwater Ecosystems* S2. See also Tundi Agardy et al., "Dangerous Targets? Unresolved Issues and Ideological Clashes around Marine Protected Areas" (2003) 13 *Aquatic Conservation: Marine and Freshwater Ecosystems* 4, 353, 367. Also: Michael Kriegl et al., "Marine Protected Areas: At the Crossroads of Nature Conservation and Fisheries Management" (2021) 8 *Frontiers in Marine Science* 676264.

[35] Jake Rice et al., "The Role of MPAs in Reconciling Fisheries Management with Conservation of Biological Diversity" (2012) 69 *Ocean and Coastal Management* 217, 230.

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objective of the sustainable use of resources (Category VI).[36] This category covers natural areas which "are managed to protected their biodiversity in such a way as to provide as sustainable flow of products and services for the community."[37] This inclusion is contingent upon certain conditions. Specifically, four conditions must be fulfilled: (1) The area must align with the general definition of a protected area; (2) at least two-thirds of the area should be maintained and intended to remain in its natural state; (3) large commercial plantations are not allowed; and (4) a management authority must be established.[38] The key point is that the area must be managed so that the long-term protection and maintenance of its biodiversity is assured. Consequently, it could provide an appropriate framework for incorporating measures to protect fisheries resources, especially taking into account that the nature of fisheries management is changing to a more sustainable paradigm through the ecosystem approach to fisheries.[39]

Currently, only 2.7 percent of the ocean is under a high level of protection. This limited level of ocean conservation is primarily attributed to conflicts with fishing and other activities that involve the extraction of resources.[40] The MPA Atlas indicates that there are only a limited number of MPAs in Morocco. Yet Morocco has ratified the conventions mentioned earlier and has enacted a specific law for protected areas that is applicable to MPAs. At the same time, the country has created MPA-Fs. The lack of MPAs in Morocco can be explained by several factors, among which is the fact that MPAs do not have a clear and dedicated legal regime.

13.3 LEGAL FRAMEWORKS ON MPA-FS IN MOROCCO

MPAs are regulated by the general provisions of Law 22-07 on protected areas. The legal framework set for MPAs in international law, including regional instruments that Morocco is a party to, are applicable. In fact, as an example, the national park of Al Hoceima in the Mediterranean was classified as a SPAMI under the Protocol on Marine Protected Areas and Biodiversity in the Mediterranean. The maritime part of this national park was therefore extended adequately (19,600 ha).[41] The

[36] Craig L. Shafer, "Arguments for and against IUCN Protected Area Management Category VI with a Review of State Versus Community Governance" (2020) 53 *Journal for Nature Conservation* 125, 697.

[37] EUROPARC and IUCN, "Guidelines for Protected Area Management Categories – Interpretation an Application of the Protected Area Management Categories in Europe" (EUROPARC and WCPA, Grafenau Germany, 2000) 13.

[38] Ibid.

[39] Serge M. Garcia, *The Ecosystem Approach to Fisheries: Issues, Terminology, Principles, Institutional Foundations, Implementation and Outlook* (FAO 2003).

[40] Enric Sala et al., "Protecting the Global Ocean for Biodiversity, Food and Climate" (2021) 592 *Nature* 7854, 397, 402.

[41] Najoua Ghouat et al., "Environmental Governance Deficiency of Protected Areas in Morocco, Case of Al Hoceima National Park" (2021) 20 *Environmental Engineering and Management Journal (EEMJ)* 11.

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regulation that created this national park was also amended in order to be in agreement with Law 22-07 of 2010.[42] Besides, several regulations enacted by the Ministry of Fisheries establish no-take reserves in some specific areas.[43] Furthermore, the Fisheries Act has also provisions (Article 16) that were used for setting MPA-Fs.[44] In application to this article, three regulations create MPA-Fs in Morocco. Nevertheless, the regulations already mentioned lack a specific definition for these MPAs. As noted earlier, even the appellation "MPAs" does not exist in these legal texts. One regulation (a Ministerial Decision (MD) or Order) creates an MPA in the Mediterranean coast and two in the Atlantic coast of Morocco.[45] As shown in Figure 13.2, these legal texts are the following:

- Decision of the Minister of Agriculture and Maritime Fisheries No 337-314 of February 3, 2014, regulating the fishing of certain fish species in the maritime area located in the Atlantic between Ferkelik and Legzira, also called the "Massa" MPA.[46]
- Decision of the Minister of Agriculture and Maritime Fisheries No 335-314 of February 3, 2014, regulating the fishing of certain fish species in the maritime area located in the Atlantic between Rouse and Moulay Bouzerktoune, also called the "Mogador" MPA.[47]

[42] The National Park of Al Hoceima in the Moroccan Mediterranean Coast was created in 2004 by a decree for the application of the 1934 Law on National Parks. In 2022, the Ministerial Order by the Ministry of Agriculture, Fisheries, Rural Development, Water and Forests gave the Al Hoceima National Park the legal status of a National Park under Law No 22-07 on Protected Areas. This order somewhat regularized the legal status of the park by placing it under the new regime established in 2010. However, the Order was released on February 2022. See: BO No 7080 – 5 ramadan 1443 (April 7, 2022). Two other national parks with a maritime area (Souss Massa and Khnifiss on the Atlantic coast) were also reclassified within regulations published in the same official bulletin.

[43] For example, the regulations relating to the temporary ban on fishing for monk seals, other marine mammals, and certain other marine species. These regulations are continually renewed. Arrêté No 660-19 du 6 rejeb 1440 (13 mars 2019) prorogeant la durée de validité de l"arrêté No 2806-09 du 10 novembre 2009 relatif à l'interdiction temporaire de pêche des phoques-moines et autres mammifères marins ainsi que de certaines autres espèces marines www.fao.org/faolex/results/details/fr/c/LEX-FAOC092473/ accessed February 11, 2024.

[44] It states: "Maritime fisheries not provided for in this Dahir or those that require different regulations due to local customs or specific circumstances shall be regulated by Decree. The same applies to nets intended for the capture of small fish species, such as mullets, eels, anchovies, etc., as well as for traps, fish weirs, longlines, … and other various fishing gear" (translation).

[45] According to Moroccan law, the decisions of the ministers (except those provided by the prime minister) are called "arrêtés." In this chapter, we use the appellation Decision(s) or Orders for "arrêtés."

[46] Decision of the Minister of Agriculture and Maritime Fisheries No 337-14, 3 Rabii II 1435 (February 3, 2014) regulating the fishing of certain fish species in the maritime area located in the Atlantic between Ferkelik and Legzira, BO No 6326, 23 Rabbi I 1436 (January 15, 2015) 603. The appellation "Massa" MPA comes from the Fisheries Department. This is also the case for the names given to the other MPAs ("Mogador" and "Al Boran").

[47] Decision of the Minister of Agriculture and Maritime Fisheries No. 335-14, 3 Rabii II 1435 (February 3, 2014) regulating the fishing of certain fish species in the maritime area located in the Atlantic between Rouissa and Moulay Bouzerktoune, BO no 6326 (January 15, 2015) 599.

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- Decision of the Minister of Agriculture and Maritime Fisheries No. 336-314 of February 3, 2014, regulating the fishing of certain fish species in the maritime area located in the Mediterranean between Oued Amtter and Tambrabet, also called the "Al Boran" MPA.[48]

The three MDs were published in the same official bulletin.[49] Each of them states in their preamble that the selection of the locations and the species intended for protection were determined after discussions with the Maritime Fisheries Chambers and their federation. Additionally, they considered the recommendations provided by the National Institute for Research on Maritime Fisheries.[50]

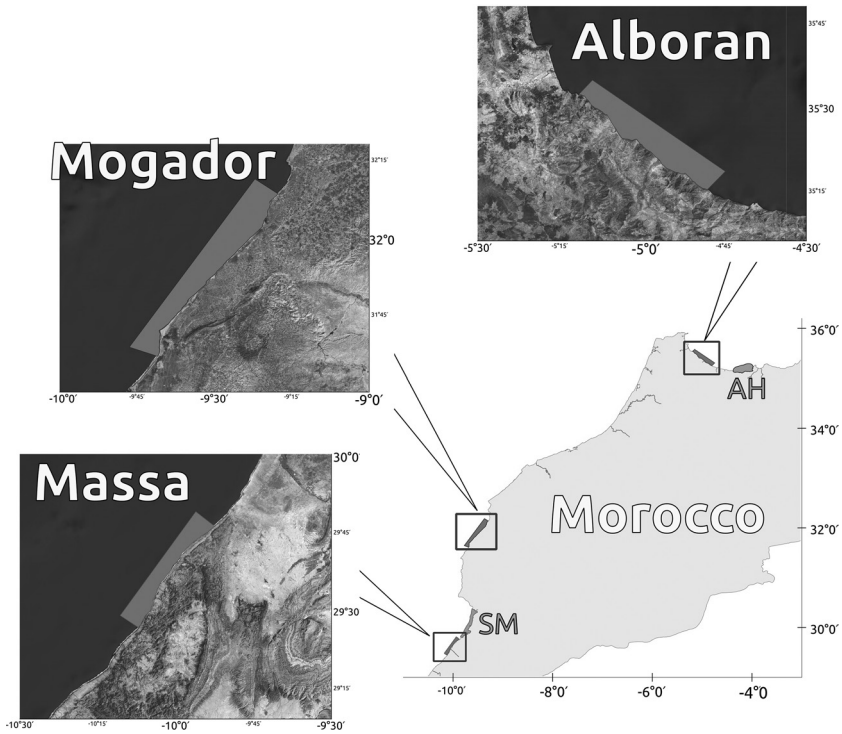


FIGURE 13.2 MPA-F locations

[48] Decision of the Minister of Agriculture and Maritime Fisheries No. 336-14, 3 Rabii II 1435 (February 3, 2014) regulating the fishing of certain fish species in the maritime area located in the Mediterranean between Oued Amtter and Tambrabet, BO no 6322, 9 Rabbi I 1436 (January 1, 2015) 126.

[49] Decision of the Minister of Agriculture and Maritime Fisheries, Official Bulletin No 6326 of January 15, 2015, 599.

[50] INRH (Institut national de recherches halieutiques) is the main scientific institution in charge of providing scientific advice to the fisheries sector. INRH is part of the Ministry of Maritime Fisheries (n 8) www.inrh.ma accessed February 11, 2024.

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The three MDs' provisions echo a decree published in 2011, relating to setting the conditions and methods of fishing for species requiring specific regulations due to local uses or special circumstances.[51] This decree itself applies the provisions of the law regulating maritime fisheries.[52] In fact, Article 16 of this law states that: "The maritime fisheries not provided for in the present Dahir or those which must be regulated differently because of local customs or particular circumstances shall be regulated by decree. The same shall apply to nets intended for the capture of small fish: morettes, eels, anchovies, etc.; to traps, pots, longlines, nets and other various fishing gears."[53]

Table 13.1 summarizes the main provisions of these decisions through their five main components: zoning, regulated species, fishing vessels, fishing gears, and other obligations.

On the one hand these Orders are based on Decree No 2-10-164 of April 11, 2011 (the "2011 Decree"). On the other hand, several provisions refer to other MDs that complete them. Indeed, the restrictions on the size of the species are the same in general Fisheries Regulations.[54] Thus, the size of species that can be caught is the same inside and outside the MPAs. These decisions have all been amended in order to extend their duration, as some of their provisions were due to expire five years after their publication in the official bulletin.[55] The amending texts were published in the same Official Bulletin of February 6, 2020.[56] In sum, these MDs do not mention the Law on Protected Areas but are based on the law on fisheries. Therefore, it is not clear if they can actually be considered as protected areas.

[51] Décret No 2-10-164 du 7 Joumada I 1432 (11 avril 2011) fixant les conditions et modalités de pêche des espèces de poissons nécessitant une réglementation particulière en raison des usages locaux ou de circonstances particulières, BO No 5940 – Joumada II 1432 (5 mai 2011).

[52] Dahir promulgating the law No. 1-73-255 of 27 Chaoual 1393 (November 23, 1973) forming Regulations on Maritime Fisheries, Official Bulletin No. 3187, as amended and supplemented.

[53] Translation added.

[54] For example: Order of the Minister of Agriculture and Maritime Fisheries No. 4195-14 of Safar 2, 1436 (November 25, 2014) regulating the fishing of certain species of hake; Order of the Minister of Agriculture and Maritime Fisheries No. 4198-14 of Safar 2, 1436 (November 25, 2014) regulating the fishing of certain species of shrimp; Order of the Minister of Agriculture and Maritime Fisheries No. 4201-14 of Safar 2, 1436 (November 25, 2014) regulating the fishing of large crustaceans.

[55] Except for the MPA on the Atlantic called "Massa" between Ferkelik and Legzira. In fact, the ministerial decision, creating this MPA the five year restriction is not mentioned.

[56] Official Bulletin No 6854 of February 6, 2020 (11 joumada II 1441) 260. These texts are the following: Decision of the Minister of Agriculture, Maritime Fisheries, Rural Development, Water and Forests No. 4065-19 of 23 Rabii II 1441 (December 20, 2019) amending the Decision of the Minister of Agriculture and Maritime Fisheries No. 335-14 of 3 Rabii II 1435 (February 3, 2014) regulating the fishing of certain fish species in the maritime zone located in the Atlantic between Rouissa and Moulay Bouzerktoune; Decision of the Minister of Agriculture, Maritime Fisheries, Rural Development, Water and Forests No. 4067-19 of 23 Rabii II 1441 (December 20, 2019) amending the Decision of the Minister of Agriculture and Maritime Fisheries No. 337-14 of 3 Rabii II 1435 (February 3, 2014) regulating the fishing of certain fish species in the maritime zone located in the Atlantic between Ferkelik and Legzira; Decision of the Minister of Agriculture, Maritime Fisheries, Rural Development, Water and Forests No. 4066-19 of 23 Rabii II 1441 (December 20, 2019) amending and supplementing the Decision the Minister of Agriculture and Maritime Fisheries No. 336-14 of 3 Rabii II 1435 (February 3, 2014) regulating the fishing of certain fish species in the maritime area located in the Mediterranean between Oued Amtter and Tamrabet.

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13.3.1 *Protected Areas Legal Regime*

Protected areas in Morocco were governed by a law dating from 1934, which served to establish the existing national parks.[57] The PDAP of 1996 aimed to establish an inventory of potential sites for the creation of protected areas. These SIBEs are classified in this plan in categories according to the priority of their subsequent classification as protected areas by law. This law was passed in 2010 (Law 22-07).[58]

First, the law provides a definition of protected areas. This definition includes both terrestrial and marine areas. The law establishes five categories of protected areas based on the IUCN categories.[59] Law 22-07 repeals the National Parks Act of 1934. As a result, the existing national parks should be placed in one of the new categories established by the new law (Article 40).[60] The same is true for SIBES, which by virtue of their classification in one of these categories will become legally binding protected areas.

In what follows, we first briefly introduce the main provisions of Law 22-07 by explaining the definition and categories of protected areas and then the process and conditions of their management.

13.3.1.1 Definition and Legal Categories of the Protected Areas

Law 22-07 reforms completely the existing legal framework applicable to protected areas. This reform focuses in particular on the following three main aspects: a broader definition of protected areas and their objectives; creation of new categories of protected areas; and stronger involvement of the population and local communities in the creation and management of protected areas. The law defines protected areas as "any geographically delimited, duly recognized, specially developed and managed land and/or marine area for the purpose of ensuring the protection, maintenance and enhancement of biological diversity, the conservation of natural and cultural heritage, its enhancement, its rehabilitation for sustainable development and the prevention of its degradation" (Article 1).[61]

The law makes distinctions among various types of protected areas, varying in their compatibility with sustaining human activities. These protected areas, which

[57] Dahir of September 11, 1934 on the creation of national parks, Official Bulletin of October 25, 1934, 1074.

[58] Law No 22-07 relating to Protected Areas, promulgated by Dahir n1-10-123 of July 16, 2010. BO No 5866 of August 19, 2010, 1582.

[59] Dudley Nigel (eds), *Guidelines for Applying Protected Area Management Categories* (IUCN 2008). See also, Day Jon, Dudley Nigel, Hockings Marc et al., *Guidelines for Applying the IUCN Protected Area Management Categories to Marine Protected Areas* (IUCN 2012).

[60] This was done recently by Orders of the Minister of Agriculture, Maritime Fisheries, Rural Development, and Water and Forests published in the Official Bulletin No 7080 of April 7, 2022.

[61] Dahir No 1-10-123 of 3 Chaabane 1431 (July 16, 2010) promulgating the Law No 22-07 relating to Protected Areas, BO No 5866 of 8 Ramadan 1431 (August 19, 2010) 1581.

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can be terrestrial or marine or both, are: the national park, the natural park, the biological reserve, the natural reserve, and the natural site.

The *national park* is a natural area, terrestrial and/or marine, whose purpose is to protect biological diversity, landscape, and cultural values and/or geological formations of special interest and to offer the public opportunities to visit, for cultural, scientific, educational, recreational, and tourist purposes, while respecting the natural environment and the traditions of the local populations.

The *natural park* is distinguished by its aim to protect and enhance the natural heritage while ensuring the maintenance of its ecological functions and the sustainable use of their natural resources.

Biological reserves can only be located on a public domain and have a very strong remit to preserve biological diversity. Their aim is the maintenance of natural species, vegetal or animal, as well as their habitat, in view of their conservation and their preservation.

Natural reserves are established for the purposes of conservation and maintaining the good condition of sedentary or migratory fauna, flora, soil, water, fossils and geological formations, and geomorphological sites of particular interest that should be preserved or rehabilitated. They are used for scientific research and environmental education purposes only.

The *natural site* is dedicated to the protection of one or more natural elements that deserve to be protected because of their rarity, their representativeness, their aesthetic qualities, or their landscape, historical, scientific, cultural, or legendary importance, whose conservation or preservation is of general interest.

The law presents a new method of nature conservation for all these protected areas.

13.3.1.2 Methods of Creation and Management of Protected Areas According to the Law on Protected Areas

According to Law 22-07, protected areas can aim, in addition to the conservation of the natural and cultural heritage, to further scientific research and can contribute to economic and social sustainable development. It also envisions the establishment of a zoning system that distinguishes between areas with different protection regimes, taking into account the development objectives, the constraints arising from the nature of the area, and the constraints justified by the needs of the people living there (Article 3).

Law 22-07 grants the initiative to create protected areas to the administration and to local communities (Article 9). The project for the creation of a protected area is preceded by a three-month public survey. The purpose of this survey is to allow the public to become aware of the project and to formulate its opinions and observations (Article 11). The project for the creation of the protected area must include a presentation of the project as well as a graphic document indicating the zoning, the buffer zone, if any, as well as the boundaries of the protected area (Article 12). It must also present the main orientations for the protection, enhancement, and

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sustainable development of the protected area's resources as well as a draft regulation setting out the rules for the use of the protected area. The protected area must have a development and management plan, the draft of which is established at the initiative of the competent administration, in consultation with the local communities and the populations concerned (Article 19). The management plan includes specific measures and restrictions to ensure the conservation of the protected area.

Law 22-07 provides that the competent administration may concede the management of the protected area to any legal person of public or private law (Article 25). Legal restrictions on ownership and use rights within the boundaries of the protected areas result upon its creation. In this regard, a compensation procedure is provided (Article 16). Other restrictions and prohibitions regarding a series of activities "likely to harm the natural environment, the conservation of fauna and flora, or to alter the character and elements of the ecosystem of the protected area" are included in the law. Hunting and fishing are among these activities as well as the introduction of animal or plant species (Article 18).

From this, it can be understood that the legal framework for MPAs can be established according to Law 22-07. Therefore, it is legitimate to question the place of MPA-Fs within this framework. As we saw in Section 13.3, the legal framework for MPA-Fs was established outside the Law on Protected Areas (Law 07-22). How then does this framework claim to govern protected areas when it has no connection to the basic law? Can MPA-Fs established outside Law 07-22 be considered as genuine MPAs? This is what we address in the following Section 13.3.2.

13.3.2 *In Search of the Legal Status of MPA-Fs: Legal Barriers and Challenges*

How can we situate the MPA-Fs within the legal and institutional framework applicable to the protection of biodiversity in Morocco? As we have seen, three MDs (or Orders given by the Ministry of Fisheries) deal with the legal regime of these MPA-Fs. However, these MDs do not specify anywhere that they relate to MPAs. In fact, these Orders are referring to "maritime areas" in the Atlantic or Mediterranean where the regulation of fishing for certain species seems relevant due to specific circumstances and particular usages (as stated in the 2011 Decree to which these MDs are referring). So, are these areas truly meeting the criteria of being MPAs? Before addressing these questions, it is important to examine why MPA-Fs were not established under Law 22-07.

13.3.2.1 Why are MPA-Fs Not Established under Law 22-07 on Protected Areas?

MPA-Fs were created in 2014. Law 22-07 on protected areas was enacted in 2010 (Figure 13.1). It would have been logical for the new MPA-Fs to be established under the current law governing protected areas. Yet the government chose to establish the

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MPA-Fs under the Fisheries Act. We can explain this choice as being due to several political factors.

First of all, we need to keep in mind that the MPA-Fs were created in the framework of the MCC Small Fisheries Project. The main purpose of this project is to strengthen fishing capacities and to regulate fishing activity.[62] Second, the Fisheries Department was the primary interlocutor in this project. This department handles management tasks and was not responsible for protected areas. Third, the negotiation process was complex and it was difficult to find a suitable category under Law 22-07 that could correspond to MPA-Fs.

13.3.2.2 MPA-Fs are Created under the Small-Scale Fisheries Project Supervised by the Ministry of Fisheries

The diagnosis report preceding the establishment of MPA-Fs highlights that the selection of the appropriate legal framework for their creation was a complex and challenging process. This required several negotiation meetings and the establishment of several scenarios for the integration of these MPAs into the Moroccan legal and institutional system.

The MPA-Fs project was carried out within the framework of the Small-Scale Fishing MCC project, (Small-Scale Fisheries Project) as part of its second component called Fish Landing Sites and Port Facilities Activity.[63] This project falls under the jurisdiction of the Department of Fisheries.[64] Yet the management of protected areas in Morocco was previously (and still is) carried out by the Department for Water and Forests (HCEFLCD),[65] which can be described as a "historical" manager in this field. Therefore, including these new MPAs in one of the categories of Law 22-07 means that HCEFLCD would have had a role in their creation and management. In addition, the lack of regulations to implement Law 22-07, which would at least designate the protected areas management entities, has made the situation challenging.[66]

13.3.2.3 The Sluggish Progression in Enacting Regulations under Law 22-07

One of the arguments advanced during the consultation phase regarding the legal status of MPA-Fs pertains to the slow process of establishing protected areas under Law

[62] See n 16.
[63] Ibid.
[64] See n 3.
[65] The High Commission for Water and Forests and the Fight against Desertification (HCEFLCD), now transformed into an agency: Agence nationale des eaux et forêts www.eauxetforets.gov.ma/SitePages/Index.aspx accessed February 11, 2024.
[66] The Decree of 2021 has now settled the situation since it clarifies the attribution of each ministry as to the management of protected areas. Thus, MPAs would be under the responsibility of the Department of Fisheries, while MPAs with a terrestrial part would come under the competence of both this department and the Department of Forests. Recently the Fisheries Ministry has been expanded to include the Department of Forests. The new name of this Ministry therefore is the Ministry of Agriculture, Maritime Fisheries, Rural Development and Water and Forests.

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22-07. It should be recalled that the MPA-Fs project was adopted only a few months before the closing of the Small-Scale Fisheries Project of the Compact between Morocco and the MCC (2008–2013). It was therefore necessary to act quickly.[67]

In fact, in order to establish an MPA under Law 22-07, it would have been necessary to undertake first a public survey of three months, establish and publish the management plan in the official bulletin, and undertake specific measures within the Department of Forests to manage and conserve the protected areas' resources. The sluggish progress in implementing regulations to Law 22-07 remains an ongoing challenge. To date, no particular regulations categorizing the designated SIBEs into one of the protected area categories have been approved. But even assuming that MPA-Fs could be created under Law 22-07, it was necessary to find the category of protected area that best suited them.

It is important to delve into the legal structure of these new MPA-Fs in order to answer to the following question: Are these areas truly meeting the criteria of being MPAs?

13.3.2.4 Should MPA-Fs Be Considered as MPAs?

Upon reviewing the MDs that establish the MPA-Fs, one can observe that they are more oriented toward fisheries management tools rather than marine conservation legal instruments. In fact, these MDs are outside the scope of the protected areas legal regime as established under Law 22-07. Moreover, these regulations are not effective.

13.3.2.5 MPA-F Regulations Are Fisheries Management Legal Tools

In fact, the legal techniques selected in the three MDs creating the new MPA-Fs are the same as the classical techniques used for fisheries management under the Fisheries Act. For example, zoning, which forms the central component of these MDs, is a practice that has been employed by the Fisheries Department in its regulations for a considerable time (Table 13.1).[68]

Two observations can be made in this regard. First, in terms of the legal technique used (zoning, fish size restrictions, etc.), these MDs add almost nothing to the texts that are not labeled "MPAs." Second, as for their content, the contribution of these

[67] Millennium Challenge Corporation, "Final Evaluation Brief: Modernizing the Small-Scale Fisheries Value Chain in Morocco. Fishers Report Improved Conditions, but the Project Did Not Increase Revenues" (November 2022) www.mcc.gov/resources/doc/evalbrief-112822-mar-fisheries accessed February 11, 2024.

[68] For example, the Decision of the Minister of Agriculture and Maritime Fisheries No 4198-14 (November 25, 2014) regulating the fishing of certain species of shrimp. Arrêté du ministre de l'agriculture et de la pêche maritime No 4198-14 du 2 safar 1436 (25 novembre 2014) règlementant la pêche de certaines espèces de crevettes, BO No 6322, rabii I 1436 (1er janvier 2015), p. 136. For more examples, see n 57.

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texts lies in the fact that they add a layer in terms of seasons and duration of the prohibition and restriction rules. Basically, they are part of these regulations. In sum, their added value to fisheries regulation is more quantitative rather than qualitative.

In fact, from a strict legal viewpoint, and taking the example of the three so-called MPA-Fs, it could be argued that all the MDs based on the 2011 decree are also establishing MPA-Fs.[69] Indeed, the difference between these MDs and the three MDs creating the MPA-Fs is the fact that the three MDs are applicable to several species whereas the other MDs target a single species or at least one category of species. Apart from this, the two categories of texts (i.e. the so-called MPA-F MDs on the one hand, and the other MD targeting unique species on the other hand) contain the same types of provisions, namely: zoning, prohibition of certain types of fishing gear, restrictions on the tonnage of vessels authorized to fish, restrictions on the size of species, and an obligation to land the catches. For example, the restrictions about nets and hooks (hook opening less than 6 mm) are primarily intended to protect the smallest fish and reduce bycatch. However, these restrictions are almost the same everywhere, even outside the MPA.[70]

If a comprehensive examination of the regulations of MPA-Fs and other fishing regulations established under the 2011 decree demonstrates that the legal regulations of MPA-Fs lack substantial progress compared to the existing fishing regulations, it would be beneficial to evaluate whether these texts provide any additional advantages compared to the legislation governing protected areas.

In contrast to Law 22-07, the regulations of MPA-Fs do not include the fundamental conditions commonly found in legislation governing protected areas.[71] Consequently, MPA-Fs can be viewed as legal anomalies.

13.3.2.6 MPA-Fs Operate Outside the Scope of Foundational Protected Area Law

MPA-F regulations make no mention of the fact that they are MPAs. The name "MPA-Fs" comes mainly from the communication around the MCC Small-Scale Fisheries Project made by the Department of Fisheries and by the MCC itself. The legal texts establishing these "MPAs" come under the legislation of marine fisheries and not of protected areas. On the other hand, by analyzing their content and, in a preliminary way, their implementation, one realizes that these "MPAs," instituted far from the legislation on protected areas, may have little or no real added value in advancing biodiversity conservation.

[69] Ibid. This is the case for example for Order of the Minister of Agriculture and Maritime Fisheries No. 4198-14 of Safar 2, 1436 (November 25, 2014) regulating the fishing of certain species of shrimp. See footnote 57 above.

[70] See Section 13.1.

[71] Lausche Barbara, "Guidelines for Protected Areas Legislation" (2011) 81 *IUCN Environmental Policy and Law Paper*.

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In fact, as mentioned earlier, Law 22-07 is the legal framework for establishing protected areas according to a specific procedure and conditions. These conditions are notably: the public consulting before the creation of the MPA, and the management plan and committee. Regarding the first aspect, it is true that the creation of the MPA-Fs was preceded by a process of consultation with the fisheries community. Indeed, during the implementation phase of the national strategy for MPA-Fs, a "selection stage" involved the utilization of a structured multicriteria approach to pinpoint pilot sites. This process included consultation with stakeholders and scientists. Prior to the establishment of the MPA-Fs, surveys were conducted in 2012 in the selected areas involving the local fisheries' administration and fishermen. Thematic focus groups were conducted in each of the three selected areas and a scientific fisheries survey was conducted in the Mediterranean.[72] The results were used for the preparation of the MPA-F management plans.[73]

As for the management plans, they were intended to be used as guides for the MPA users and managers. They identified the Fisheries Department as the authority responsible for the application of the management plan and included the creation of a national consultative committee, a scientific committee, and a local management committee.[74] The management plans give the geographic limits of the MPA-Fs and those of the no-take areas identified inside the limits of the MPA-Fs, and then detail all the management rules.[75] These plans also included sections detailing: (1) the financial sources for the administration of the MPA-Fs, (2) the capacity building of the managers, (3) the equipment dedicated to the surveillance, and (4) surveillance and enforcing regulations. These management plans, which had a validity of five years after the MPA-Fs Declaration (2015), have neither been published nor been used for the management of the MPA-Fs.

Therefore, on-the-ground MPA-Fs are still largely unknown to the fishermen. In fact, about half of the ports' staff, as well as fishermen at project sites near MPA-Fs, and several government agency employees had no knowledge of the status of MPA-Fs.[76] This point was raised in the evaluation report of the Small-Scale Fisheries Project, which provides interesting details on the implementation (or rather the lack of implementation) of the MDs creating the MPA-Fs.[77] In this sense, the report indicates that the majority of personnel and fishermen who were cognizant of the regulations (such as the bans on harvesting specific species within the "MPAs" or the

[72] Masski Hicham, "Investigation of a Subtidal Fish Community in a South-Western Mediterranean Settlement Area of Morocco" (2015) 31 *Journal of Applied Ichthyology* 1, 208, 210.

[73] One of the authors, Masski Hicham, was part of the whole project as a fisheries ecologist and was one of the two key experts during the "selection stage."

[74] Tarik Dahou et al., "Savoirs experts vs savoirs territoriaux" (2023) 14 *Développement durable et territoires* 1 http://journals.openedition.org/developpementdurable/22421 accessed February 11, 2024.

[75] Ibid.

[76] Abbie Turiansky et al., *Morocco Fisheries Evaluation Final Report* (Mathematica 2021) 61.

[77] Ibid.

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restrictions on certain fishing equipment) understood that these regulations were either not being enforced or that fishermen were not adhering to them.[78]

As for the government stakeholders, even if they were aware of the status of the MPAs, they "gave mixed reports; some stated that the regulations were in place and others believed that the MPA sites had not yet been activated."[79] The report underlines the problem of the enforcement of these MPAs, particularly in the absence of basic conditions constituting the MPAs, such as the monitoring committee. Yet governance is a key factor in protected area effectiveness as it is widely demonstrated.[80] It is also provided for in Law 22-07.[81] Nevertheless, the MPAs are not instituted in the framework of this law. The Maritime Fisheries Act does not mention a management committee for MPAs, nor does it mention MPAs anywhere. As we have seen, this law, which served as a basis for the three MDs creating MPA-Fs, only deals with the regulation of fisheries, including in terms of their rational management. Its Article 16, about particular circumstances justifying the adoption of specific fisheries management measures, is not sufficient as a legislative framework for MPAs. The lack of a management committee and of a published management plan for the MPA-Fs can explain their noneffectiveness.

13.3.2.7 The Legal Restrictions in the MPA-Fs Are Not Effective as Tools for Fisheries Conservation

MPA-Fs regulations refer to a Ministerial Order of 1988 determining the minimum allowable catch size.[82] The problem with this Ministerial Order is that it fails to safeguard juvenile individuals of most bottom fish species until they reach sexual maturity. Among the twenty-seven species or groups of species (e.g. *Pagrus sp.*) covered by the 1988 Order, twenty-three species have a minimum catch size allowance based on their length at first maturity, and ten species have a length at first maturity that is at least 1.5 times greater than the allowed catch size.

Another frequently employed regulatory measure involves temporarily prohibiting the use of specific fishing equipment or the harvesting of certain species, known as fishing time closure. The goal of these methods is to protect sensitive ecological periods in the fish life cycle, especially adult spawners and spawning habitats. The prohibition of almost all fishing nets during the coldest months (December to February) offers a real advantage to the success of the spawning

[78] Ibid.
[79] Ibid.
[80] Dearden Philip et al., "Trends in Global Protected Area Governance 1992–2002" (2005) 36 *Environmental Management*, 89, 100.
[81] See Section 13.2.
[82] Arrêté du ministre des pêches maritimes et de la marine marchande No 1154-88 du 20 safari 1409 (3 octobre 1988), fixant la taille marchande minimale des espèces pêchées dans les eaux maritimes marocaines as amended in 2001 (Bulletin officiel, No 3962, 5 octobre 1988, 326).

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process for temperate and subtropical species, which are the most abundant in Moroccan waters. Nonetheless, the use of the beach seine in the Alboran MPA-F, allowed from May to January, is extremely destructive for newborn fish for which the settlement period begins in March, and they are heavily harvested by the beach seine during spring and summer.[83]

Regarding the no-take area within the MPA-Fs, it is inadequate to achieve the commonly accepted objective for MPAs. It is crucial to remember here that protected areas Category VI were accepted by the IUCN as a protected area under specific conditions. One of these conditions is that two-thirds of the area should be maintained and intended to remain in its natural state.[84]

The intrinsic gaps in the regulations of MPA-Fs contradict the fundamental elements of protected areas. Besides, these regulations were undermined by new, contradictory regulations.

13.3.2.8 Lack of Legal Coherence in the Management of MPA-Fs

MPA-Fs' legal rules were undermined by the trawling regulations. In fact, alongside the establishment of permanent no-take zones in the Mogador and Alboran MPAs, the exclusion of all trawling activities inside the MPAs with a reinforced control was a clear benefit to habitat protection. This was especially true for the Alboran MPA, where trawling activities were known to be a real threat to shallow (up to 10 m depth) marine areas. This benefit was partially lost when an issued Order (No 4202-4214, November 25, 2014) reduced the exclusion area for trawlers to 1.5 nautical miles while the MPA extended to 3 nautical miles.[85] Along the Atlantic coast, the benefit offered by the MPAs when compared to adjacent areas was drastically reduced when the Vessel Monitoring System launched by Fisheries Department in September 2013 began to produce tangible results.[86] During the subsequent two years, the reenforcement and effectiveness of the control reduced the violations to the trawl ban inside 3 nautical miles from the coastline.

Based on the preceding analysis, it becomes evident that MPA-Fs lack the enforcement and efficacy typically associated with protected areas. Their adoption

[83] Hicham Masski, "Investigation of a Subtidal Fish Community in a South-Western Mediterranean Settlement Area of Morocco" (2015) 31 *Journal of Applied Ichthyology* 1, 208, 210.

[84] EUROPARC and IUCN, Guidelines for Protected Area Management Categories – Interpretation and Application of the Protected Area Management Categories in Europe (EUROPARC and WCPA, Grafenau Germany, 2000) 13. See Section 13.2.

[85] Order of the Minister of Agriculture and Maritime Fisheries No 4202-14 of Safar 2, 1436 (November 25, 2014) setting the minimum distances from which the use of dragging nets is authorized in the Mediterranean. Official Bulletin No 6322 (January 1, 2015) 139.

[86] Imad El Khalkhali and Houda Yejjou, "Evaluation d'usage du VMS (vessel monitoring system) dans le secteur de la pêche maritime au Maroc" (2017) 21 *International Journal of Innovation and Applied Studies* 2, 209.

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was tailored specifically to fisheries, potentially biasing their intended purpose. Their assimilation into the legal and institutional framework has not yielded any tangible impact on the ground. On the contrary, MPA-Fs not only represent a legal anomaly but also contradict other specific regulations. Consequently, it is crucial to contemplate methods for enhancing and reinforcing their initial objectives, which they have failed to accomplish.

13.4 STRENGTHENING THE MANAGEMENT OF MPA-FS TO ADVANCE MARINE BIODIVERSITY CONSERVATION AND SUSTAINABLE USE: RECOMMENDATIONS

Given the inefficacy of the MPA-Fs, one potential solution could involve their incorporation into the Protected Areas Act No 22 to grant them authentic enforceability. To achieve this, it is vital to evaluate the suitable category for their integration within the protected areas. Once the category is determined, it is crucial to adhere to the established process for creating protected areas as outlined in Law 22-07. Indeed, the adoption of the new MPA-Fs needs to be recommenced and reassessed. Additionally, the establishment of their management committee and the revision and publication of their management plan in the official bulletin are imperative steps.

13.4.1 *The Necessary Integration of MPA-Fs into the Protected Areas Act (Law 22-07)*

An analysis of the categories established by Law 22-07 reveals that the most suitable category for MPA-Fs would be the natural park category or the national park category. In fact, the other categories (biological reserve, natural reserve, natural site) are more specifically focused on the conservation of the biodiversity, while MPA-Fs as mentioned focus on the sustainable use.

MPA-Fs could correspond to the category of natural park, which is the second category of protected areas created by the law under Article 5. Indeed, as mentioned earlier, the natural park could encompass ecosystems representing a particular interest "which it is advisable to protect and develop, while ensuring the maintenance of its ecological functions and the sustainable use of their natural resources." This definition recalls the definition of the IUCN Category VI discussed earlier.[87] In fact, this category also has social and economic objectives in addition to conservation. It is the most widely used protected areas category, especially in developing countries.[88] Indeed, it includes almost 40 percent of all protected areas worldwide (terrestrial

[87] See Section 13.2.

[88] Craig L. Shafer, "Arguments for and against IUCN Protected Area Management Category VI with a Review of State versus Community Governance" (2020) 53 *Journal for Nature Conservation* 125697.

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and marine).[89] This possibility was indeed discussed during the negotiation process of MPA-Fs. We have previously analyzed that MPA-Fs do not entirely fulfill the conditions required to incorporate Category VI into the IUCN categories.[90]

MPA-Fs could also correspond to the category of national park as it is defined by Law 22-07, as mentioned earlier, as a natural area, terrestrial and/or marine, whose purpose is "to protect biological diversity […] and to offer the public opportunities to visit, for cultural, scientific, educational, recreational and tourist purposes, while respecting the natural environment and the traditions of the local populations." While this definition does not expressly mention fishing as an activity allowed in the national park, we could make an analogy with tourism, which is tolerated to a certain extent in the national park. The integration of MPA-Fs in one of these categories will necessitate the amendment of the MDs establishing them. These decisions should adopt a clear definition of attributions and responsibilities in MPA-Fs.

13.4.2 *The Need for a Clear Definition of Attributions and Responsibilities in MPA-Fs*

The amendment of the MPA-F regulations would be facilitated by the adoption of the new decree of 2021 for the application of Law 22-07.[91] Indeed, under this decree, MPAs would be managed by the Department of Maritime Fisheries, while MPAs would be partially managed by this department and by the Department of Water and Forests. This distribution of competences could facilitate the creation of future MPAs and the implementation of Law 22-07. Therefore, these existing fishing-oriented MPAs could be transitioned into the new protected area framework, ensuring their proper designation as genuine protected areas. Nevertheless, the amendment of the legal status of the MPA-Fs would require a comprehensive review of their legal provisions to better align them with the purpose of sustainable use. In this regard, it is crucial to take into account the scientific advice and the aforementioned IUCN conditions to create this kind of MPA.

Once reverted to the legal status of protected areas under Law 22-07, the MPA-Fs should encompass effective measures to ensure their management according to the objectives of the CBD. First, the new regulations should clearly identify the administrations and entities in charge of the management of each MPA-F and clarify their missions. While the decree of 2021 clarifies who is in charge of MPAs, it does not detail the missions of each department according to the different categories of MPAs. The fact that these two departments are now merged into one ministry does not

[89] Ibid., 2.

[90] See Section 13.3.

[91] Decree No. 2-18-242 (April 27, 2021) taken for the application of certain provisions of Law No 22-07 relating to Protected Areas, Official Bulletin No 7062 of February 3, 2022, 75.

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suffice to resolve the issue of attributions responsibilities, which is crucial for the efficient management of the MPAs.[92] Second, it is important that the management plan of the MPA-F is made public and has a binding effect.

13.4.3 *The Need for Robust and Binding Management Plans*

As mentioned earlier, the initial management plan elaborated for the MPA-Fs was never published in the official bulletin. This lack has resulted in rendering the MDs establishing the MPA-Fs legally nonbinding.

Moreover, from a procedural standpoint, the management plan should adhere to the stipulations outlined in the Law on Protected Areas, as discussed in Section 13.3. In this regard, it should be presented for input and feedback from fishermen and other relevant stakeholders. Furthermore, the initial management plan should be updated in order to take into account the current ecological and economic situation of the area covered by it. Indeed, the management plan should correspond to the needs of each protected area. In this regard, it should focus more on conservation. In fact, the protection of habitats and of the most important ecophases in the life cycle of species, especially spawning and juvenile aggregations, are among the essential objectives to be achieved by an MPA.[93] Allowing as many fish as possible to reach maturity by protecting juveniles is essential for the renewal of adult cohorts. The adoption of the length at first maturity as the minimum allowable catch size is essential for the reconstruction of fish communities.[94] Hence, the use of fishing gear with a high impact on small juveniles, such as the beach seine, should be prohibited. Furthermore, the presence of large and older individuals is important to increase the resilience of fish communities.[95] It is then important to protect a significant proportion of adult individuals, and not just during the mating season. Two of the MPA-Fs have no-take areas, but these are too small to be effective in the protection of large individuals (less than 2.5 percent of the MPA area). The size of the no-take areas needs to be increased to provide refuge for the largest individuals. The physical disturbance from trawling and dredging is recognized as a major threat to marine biodiversity and must be significantly reduced or eliminated.[96] Trawling

[92] Since the recent government reorganization, the Ministry of Fisheries and Agriculture has been amalgamated with the Ministry of Forests and Water and is now referred to as the Ministry of Agriculture, Fisheries, Rural Development, Water, and Forests.

[93] Kirsten Grorud-Colvert et al., "The MPA Guide: a Framework to Achieve Global Goals for the Ocean" (2021) 373 *Science* 6560.

[94] Rainer Froese, "Keep it Simple: Three Indicators to Deal with Overfishing" (2004) 5 *Fish and Fisheries* 1, 86, 91.

[95] Charles Birkeland and Paul K. Dayton, "The Importance in Fishery Management of Leaving the Big Ones" (2005) 20 *Trends in Ecology and Evolution* 7, 356, 358.

[96] Simon F. Thrush and Paul K. Dayton, "Disturbance to Marine Benthic Habitats by Trawling and Dredging: Implications for Marine Biodiversity" (2002) 33 *Annual Review of Ecology and Systematics* 1, 449, 473; Michel J. Kaiser, "Recent Advances in Understanding the Environmental Footprint of

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is explicitly banned in all three MPA-Fs but needs to be effectively enforced, especially in the Alboran MPA-F, through greater control and enforcement to prevent trawler incursions, which are still reported by local artisanal fishermen. The use of small artisanal dredges is allowed in the Alboran MPA-F, where it is stated that this gear will only be used on sandy and muddy seabeds. This fishery produces thousands of tons of shellfish every year, so its impact on the seabed may not be negligible. The impact of this gear on the seabed and benthic communities needs to be assessed in order to minimize it.

Enhancing the management of MPA-Fs is crucial to achieving their primary objective and aligning them more closely with the legal framework of protected areas, including the CBD. This can notably occur through clarifying the responsibilities of stakeholders in the MPA-Fs and adopting a robust, enforceable management plan that is widely recognized and published in the official bulletin. Consequently, the current management approaches outlined in the three MDs establishing the MPA-Fs should be reassessed, and these legal texts should be amended accordingly.

13.5 CONCLUSION

Established in the framework of the Fisheries Act of 1973, MPA-Fs were created by three Ministerial Orders in 2014 in the margin of the existing Law on Protected Areas of 2010 (Law 22-07). This dual legal treatment results in confusion regarding their legal status. Additionally, the legal mechanisms employed for their regulation are largely ineffective. While they could potentially be classified under the IUCN Category VI of MPAs, MPA-Fs do not adhere to the fundamental conditions necessary to be recognized as genuine protected areas. In fact, the no-take areas within these MPAs, for example, are not as significant as they should be according to the standard criteria for MPAs. Moreover, the legal documents establishing these MPA-Fs apply the general regulations on fisheries management that are applicable outside the boundaries of the MPAs. Furthermore, these Ministerial Orders are not consistent with other conflicting general texts that permit trawling within the MPA-Fs, for example.

It is essential to conduct an evaluation of these MPA-Fs, alongside a comprehensive revision of the legal documents that established them. This revision should encompass both substantive and formal aspects. In fact, several management rules provided in the three Ministerial Orders establishing the MPA-Fs need to be amended and/or reinforced. Furthermore, as these legal texts are adopted within the framework of the Fisheries Act (Article 16), they are inherently temporary. The most recent revision of their duration was undertaken in 2019. Consequently, another

Trawling on the Seabed" (2019) 97 *Canadian Journal of Zoology* 9, 755, 762. Jan Geert Hiddink et al., "Selection of Indicators for Assessing and Managing the Impacts of Bottom Trawling on Seabed Habitats" (2020) 57 *Journal of Applied Ecology* 7, 1199, 1209.

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review is supposed to be conducted in 2024 likely for an additional five-year period. The problem with these revisions is that they are not made upon a reassessment of the MPA-Fs. The first official assessment of these MPA-Fs was done by the MCC itself in the framework of a global assessment of the MCC project.[97] In fact, the MCC assessed whether enhancing conditions for small-scale fishers and promoting the sustainable utilization of fishing resources had led to an overall enhancement in the economic efficiency and productivity of Morocco's Small-Scale Fisheries System.[98] The evaluation study was based on fisher surveys, administrative data on fish sales, infrastructure assessments, key-informant interviews, and focus groups.[99]

An important step forward is an assessment of the biodiversity within and outside the MPA-Fs, which is essential for evaluating their sustainability. This assessment will undoubtedly facilitate their reclassification as authentic MPAs under Law 22-07. The merger of the Ministry of Fisheries with the Department of Forests and Water, along with the adoption of a decree to define the stakeholders for MPAs, notably partial MPAs, has the potential to bring about a shift in the governance of MPA-Fs.

[97] Turiansky et al. (n 76).

[98] Mathematica, "Evaluation of the Morocco Small Scale Fisheries Project 2018–2022" www.mathematica.org/projects/evaluation-of-the-morocco-small-scale-fisheries-project≥ accessed February 11, 2024.

[99] Ibid.

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