

The Role of National and Regional Institutions in Biodiversity and Forest Conservation

Riyad Fakhri and Youness Lazrak Hassouni

4.1 INTRODUCTION

This chapter examines the role of national and regional institutions in promoting the integrated regulation and administration of biodiversity and forest management in the Middle East and North Africa (MENA) region. Drawing lessons from Morocco, it evaluates current legal and institutional challenges to integrated management of forest and biodiversity.

We cannot discuss the environment and biodiversity without analyzing the forest domain. Any damage to the forest has serious repercussions on the wider ecosystem and biodiversity. The need to reverse the rapid loss of biodiversity and forest resources is, undoubtedly, one of the key environmental challenges in the Maghreb.¹ While there has been a rise in biodiversity legislation, a coherent implementation of forest conservation as part of biodiversity management remains largely absent or unevenly developed across the region.² For example, the ecological system in Morocco is characterized by biodiversity, and the forest is the most important reservoir for this diversity, which controls its balance.³ The forest also plays an important role in reducing global warming and climate change. Forests constitute approximately 9.5 million hectares, which is about 13 percent of the total area of the Kingdom of Morocco.⁴ The latter is characterized, thanks to its geographical location,⁵ by a great eco-biological diversity and a variety of different natural environments.⁶ Morocco ranks among the countries with the highest levels of diverse

¹ See Damilola Olawuyi, *Environmental Law in Arab States* (Oxford University Press 2022) 1–15.

² Ibid.

³ See Marijke van Kuijk, Francis E. Putz, and Roderick Jan Zagt, “Effects of Forest Certification on Biodiversity” (Tropenbos International 2009) 19 www.tropenbos.org/file.php/52/forest_certification_and_biodiversity.pdf accessed January 22, 2024.

⁴ Mohammed Ellatifi et al., “Wood Harvesting and Sustainable Forest Management in Morocco” www.fao.org/3/Y9351E/Y9351E36.htm accessed September 20, 2023.

⁵ Agence nationale des eaux et forêts (ANEF) www.eauxetforets.gov.ma/AccueilAR/SitePages/Forets-En-Chiffres.aspx accessed September 20, 2023.

⁶ At the level of land use and real estate status, the forest is owned by the government an area of about 9,619,090 hectares. Ellatifi (n 4).

terrestrial ecosystem, which are characterized by their habitat of more than 4,000 vascular plant species, nearly 550 species of vertebrate animals, and thousands of invertebrate organisms.⁷ Forests are home to two-thirds of all flora and one-third of Morocco's animal species.⁸ This makes them play a pivotal role in biodiversity. At the level of the Mediterranean basin, Moroccan biodiversity ranks second only to the Anatolian region (Turkey), with a total localization rate of 20 percent.⁹ There is no doubt that the natural resources in Morocco are of high quality, and are considered an important resource for economic and social development, but they remain fragile in the face of a range of natural risks, perhaps the most important of which are climate change and human behavior. Therefore, the need to protect forests from overexploitation has been a key objective of environmental regulation in Morocco. Environmental law in Morocco mandates that the exploitation of forests must be in accordance with specific procedures and conditions.

Morocco organized the forest domain for the first time with the 1912 *Circular of the Grand Vizier*.¹⁰ After this circular, the Dahir of January 3, 1916, entitled *The Special Regulation for the Public Property* and in which the forest property was determined, was issued,¹¹ followed by the Dahir of October 10, 1917, on conservation and forest exploitation, which is the most important legal framework in this field.¹² Several other laws and decrees have also been issued directly and indirectly related to the forest field, including the Dahir of March 4, 1925, relating to the protection and identification of "Argan forests amongst others."¹³

Furthermore, international bodies and forums, such as the Group of Eight, Interpol, the European Union, the United Nations Environment Programme, and the United Nations Regional Crime and Justice Research Institute, have identified some acts as environmental crimes in nature regardless of the nature of the harm.¹⁴ For example, according to the Convention on International Trade in Endangered Species of Wild Fauna and Flora, the illegal trade in endangered wild species; illegal, unreported, and unregulated fishing, contrary to controls imposed by various regional fisheries; and logging and the related trade in stolen timber, in contravention

⁷ Convention on Biological Diversity, "Morocco – Main Details" www.cbd.int/countries/profile/?country=ma accessed September 26, 2023; see also Agence nationale des eaux et forêts (ANEF), "Biodiversité au Maroc" www.eauxetforets.gov.ma/Biodiversite/Biodiversite%20au%20Maroc/Pages/Biodiversite%20au-Maroc.aspx accessed September 26, 2023.

⁸ Ibid.

⁹ Royaume du Maroc: Ministère de la transition énergétique et du développement durable, "Biodiversité" www.environnement.gov.ma/fr/biodiversite#:~:text=Le%20taux%20d'end%20C3%A9misme%20global,%20C3%A9chelle%20de%20la%20M%20C3%A9diterran%20C3%A9, September 26, 2023.

¹⁰ The first Official Bulletin of Morocco, February 1, 1913, 3.

¹¹ The Official Bulletin of Morocco, No 141, January 10, 1916, 28.

¹² The Official Bulletin of Morocco, No 235, October 29, 1917, 901. See Rachid Attahir, "The Legal Framework for the Penal Aspect in Forest Offenses" (2021) 4 *JEMED* 2.

¹³ The Official Bulletin of Morocco, No 647, March 17, 1925, 526.

¹⁴ See INTERPOL, "Our Response to Environmental Crime" www.interpol.int/en/Crimes/Environmental-crime/Our-response-to-environmental-crime accessed January 22, 2024.

of national laws, among others, are governed by several international and regional instruments, which aim to conserve flora and fauna from overexploitation.¹⁵

In the same vein, a recent study by the United Nations Environment Programme (UNEP) found that acts harmful to the environment constitute the fourth largest criminal domain in the world after drugs, counterfeiting, and trafficking in human beings.¹⁶ The illegal exploitation of forests and illegal logging is also widely recognized as one of the five most prevalent areas of environmental crime globally.¹⁷ These crimes are the most lucrative form of transnational criminal operations, with an estimated monetary value in 2016 between US\$91 and US\$259 billion annually.¹⁸

Although the protection of the forest in Morocco was initially motivated by the subsistence and livelihood it provides, especially for forest-dependent communities, its important role in achieving ecological balance, preserving biodiversity, and reducing global warming has become widely acknowledged from the 1970s onwards.¹⁹ This recognition is reflected in several conferences held and international conventions about forest preservation and protection, including the 1992 Earth Summit, which ended with special attention on the sustainable management of forests.

So how effective is Morocco's legal and institutional framework protecting Morocco's forest and biodiversity? Moreover, how effective are the institutions, departments, and agencies specialized in the management of forest in Morocco, with procedures that are described as complex and strict, at least nominally, in protecting this national wealth at the level required nationally and internationally? To answer these questions, this chapter examines four fundamental themes raised by the legal and judicial protection of the forests. First, it examines the need for the integrated regulation of biodiversity and forest management given the interconnectedness of these two elements. Second, it evaluates integration gaps and challenges in laws relating to forest management and biodiversity in Morocco. Third, it evaluates institutional arrangements in forest management in Morocco, especially the role of the Water and Forestry Agency in activating the integrated management of

¹⁵ See Olawuyi (n 1) 1–15.

¹⁶ United Nations Environment Programme, “The State of Knowledge of Crimes that Have Serious Impacts on the Environment” (UNEP 2018) https://wedocs.unep.org/bitstream/handle/20.500.11822/25713/knowledge_crime_envImpacts.pdf?sequence=1&isAllowed=y accessed January 22, 2024.

¹⁷ Environmental Investigation Agency Report, “Environmental Crime – A Threat to Our Future” (October 14, 2008), <https://eia-international.org/report/environmental-crime-2/> accessed January 22, 2024.

¹⁸ See Christian Nellemann, Rune Henriksen, Arnold Kreilhuber, Davyth Stewart, Maria Kotsovou, Patricia Raxter, Elizabeth Mrema, and Sam Barrat (eds), “The Rise of Environmental Crime – A Growing Threat to Natural Resources Peace, Development and Security,” A UNEP/INTERPOL Rapid Response Assessment (United Nations Environment Programme and RHIPTO Rapid Response – Norwegian Center for Global Analyses 2016) 7 https://23af4a98-6f9f-4a7d-b229-cbf91315456e.filesusr.com/ugd/655326_dai17a489dedb467a957358b6cb8bba37.pdf accessed January 22, 2024.

¹⁹ Olawuyi (n 1).

forest and biodiversity in Morocco. Fourth, it offers recommendations on how to advance the integrated management of forest and biodiversity in Morocco and across the Maghreb region.

4.2 THE NEED FOR THE INTEGRATED MANAGEMENT OF FORESTS AND BIODIVERSITY

Forests play several roles: ecological, economic, and social. Hence there is a need for an ecosystem management approach that sustains the integrity of the forest space in a sustainable way.²⁰ The preservation of forests is not a new concept. It is intimately linked to the broader nature conservation movement that emerged in the 1860s. Its main objective is to conserve rare or endangered species through the establishment of reserves that allow free evolution. This is a single-functional management approach often realized in the creation of national parks and reserves. However, most natural resources exist outside these so-called protected areas.²¹ In this regard, acting effectively for the protection of biodiversity in the forest environment requires an integrated or so-called multifunctional approach.²² In this sense, the forest can be assigned several functions, with a main objective and other secondary ones. These functions can be compatible and allow the achievement of several objectives simultaneously.

Thus, the integrated or multifunctional management of the forest domain will guarantee the achievement of many objectives that are of general interest (environmental, social, and economic).²³ It will also guarantee the preservation and protection of the forest biodiversity simultaneously. This is achievable in a participatory approach, especially with the active involvement of forest neighbors. This approach is based on four tenets. The first one is the management of space, essential for integrated forest management to identify the entire forest domain and to grant it strong legal protection. Terrestrial management is an operation that will make possible the definition of the rules of access to resources, clarify property rights, and define participatory management methods with all stakeholders, including the local population.²⁴

The second point concerns the multisectoral and multidisciplinary approach in the design of public policies during the implementation of these policies. An integrated approach to the management of forests and biodiversity makes it possible to reconcile local, national, and international constraints and to use economically viable procedures for all.

²⁰ See Chapter 5.

²¹ See Janus Bodgan Falinski and Frédéric Mortier, "Biodiversity and Sustainable Forest Management in Europe," (1996) 48 *Revue forestière française* 89 <https://hal.science/hal-03444336/document> accessed January 22, 2024.

²² See Philippe Lejeune, Hugues Claessens, Matthieu Alderweireld, and Jacques Rondeux, "Towards Integrated and Participatory Forest Management? The Example of the Municipality of Nassogne" (2007) *Forêt Wallonne* 86, 11 <https://hdl.handle.net/2268/25233> accessed January 22, 2024.

²³ *Ibid.*

²⁴ *Ibid.*

The third point is the social and cultural aspect. No integrated management is possible without all actors being responsible and attentive to the effects of their activities on the forest. It is necessary to educate and raise awareness so that each actor can integrate the objectives of sustainable forest management into his or her actions, which implies the empowerment of the local population and the transfer of certain tasks to them.²⁵

The fourth point relates to the forest economy. Any management of forest land must take account of the economic activities and ensure that the exploitation of resources does not call into question the viability of the forest and that it is not considered as agricultural land. This means that any economic activity must take on a sustainable dimension and not threaten the ecological role of the forest. An integrated management approach makes it possible to achieve the three conditions necessary for the conservation of the forest biodiversity: namely, enabling ecological systems to continue their biological evolution and to keep them in the best conditions of adaptability to changes in environmental conditions; maintaining the components of biological diversity to better know and understand them; and advancing the science and conservation of natural resources that can be useful to humans.²⁶ The implementation of these conditions necessitates the integration of sustainable forest management beyond the protected areas.²⁷

4.2.1 *International Instruments Relevant to Forests and Biodiversity*

Although the international community is aware of the importance of the integrated management of forests and biodiversity, there is currently no specific international or regional instrument on integrated forest management.²⁸ The need for an international instrument for the protection of forests is felt more strongly for developing countries, since the forest resources in these countries require protection against climate, agriculture, livestock, industry, and energy.²⁹

²⁵ B. Dupuy, H.-F. Maître, and I. Amsallem, “Tropical Forest Ecosystem Management Techniques: State of the Art” (FAO Forestry Policy and Planning Division, Rome, July 1999) www.fao.org/3/X4130F/X4130fo8.htm#TopOfPage accessed September 20, 2023.

²⁶ See Falinski and Mortier (n 21).

²⁷ See Georg Winkel, Jakob Derks, Agata Konczal, Andreas Rigling, Andreas Schuck, and Frank Krumm, “Advancing Biodiversity Conservation through Integrated Forest Management in Europe,” assessment and actions needed policy brief resulting from the INFORMAR and Forest projects under the European Network Integrate. (December 2020) 182–189 www.researchgate.net/publication/348490373_Driving_factors_for_integrated_forest_management_in_Europe_-_findings_from_an_empirical_case_study_assessment accessed January 22, 2024.

²⁸ See Barbara M. G. S Ruis, “No Forest Convention, but 10 Tree Treaties” (2001) 52 *Unasylva* 206, www.fao.org/3/y1237e/y1237e03.htm accessed January 22, 2024.

²⁹ Koadima Lissieni, “The International Protection of Forests,” Master II research thesis in public international law, Université Ouaga II (March 2019) 10 www.pif-burkina.org/wp-content/uploads/2021/03/Memoire-KOADIMA-Lisieni.pdf accessed January 22, 2024.

There is no global consensus on the need for an international instrument specific to forests. The adoption of a convention on forests was on the agenda at the United Nations Conference on Environment and Development, better known as the Earth Summit, held in Rio de Janeiro, Brazil, June 3–14, 1992.³⁰ No binding instrument has seen the light, since it is impossible to compromise on the principle of the sovereignty of states over natural resources.³¹

The absence of an international convention specific to forests does not prevent the existence of many conventions having a direct impact on biodiversity and forests, and a distinction must be made between nonlegally binding instruments and general environmental conventions.

4.2.1.1 Nonbinding Instruments

Though not legally binding, the United Nations General Assembly Declaration of Principles of August 14, 1992, for a global consensus on the management, conservation, and sustainable development of all types of forests, is a source of inspiration for all actors involved in forest protection.³² This declaration recognizes that forest protection is a cross-cutting issue touching on all environmental, economic, social, and environmental issues. National policies and programs must consider the relationship between the conservation, management, and sustainable development of forests and consider all aspects related to the production, consumption, and recycling of forest products.³³

In addition to this declaration, there is the 2030 Agenda Sustainable Development Goals (SDGs), one of whose goals concerns the sustainable development of forests and the preservation of biodiversity.³⁴ SDG 15, which most directly addresses

³⁰ United Nations, Rio Declaration on Environment and Development, UN Doc.A/CONF.151/26 (Vol. I), August 12, 1992, www.un.org/documents/ga/confi51/aconfi5126-iannex1.htm (accessed December 12, 2023).

³¹ The International Tropical Timber Agreements are the only binding global agreements specific to forests. They are signed under the auspices of the UN. The first agreement was signed on November 18, 1983, in Geneva, and was replaced by a second agreement signed on January 26, 1994. It was adopted January 27, 2006, and entered into force on December 7, 2011. This agreement sets out the rules to prevail in the trade in timber from tropical forests to promote the sustainable management of tropical timber-producing forests. United Nations Conference on Trade and Development (UNCTAD), International Tropical Timber Agreement (adopted January 27, 2006, and entered into force December 7, 2011) TD/TIMBER.3/12 https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XIX-46&chapter=19&clang=en accessed January 22, 2024.

³² United Nations Conference on Environment and Development, “Non-legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forests: Note by the Secretary-General of the Conference” (April 21, 1992) A/CONF.151/6 <https://digitallibrary.un.org/record/144461?ln=en> accessed January 22, 2024. Principles 5, 6 and 7 of the Declaration.

³³ *Ibid.*

³⁴ UN General Assembly (UNGA), “Transforming Our World: The 2030 Agenda for Sustainable Development” (October 21, 2015) A/RES/70/1 www.refworld.org/docid/57b6e3e44.html accessed January 22, 2024.

biological diversity, calls on countries to ensure “the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements.” It also encourages countries to “promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally.”³⁵

Obviously, this will not be possible without the mobilization of significant resources from all sources and at all levels to finance sustainable forest management and to encourage developing countries to give priority to sustainable forest management, including forest conservation and reforestation.

4.2.1.2 General Environmental Conventions

The forest and its biodiversity are at the crossroads of all environmental protection instruments, so there is the climate regime based on the United Nations Framework Convention on Climate Change (UNFCCC), the biological diversity based on the Convention on Biological Diversity (CBD), and the protection of wetlands because of the Ramsar Convention.³⁶

First, mention should be made of the content of the Convention concerning the Protection of the Natural and Cultural Heritage adopted on November 16, 1972 and ratified by Morocco on October 28, 1975.³⁷ The second article of this convention considers natural sites or strictly demarcated natural areas which have outstanding universal value from the point of view of science, conservation, or natural beauty to be part of World Heritage, and forests meet this definition. Thus, state parties must identify, protect, enhance, and transmit them to future generations.³⁸

The Convention on Wetlands of International Importance, especially as Waterfowl Habitat, adopted on February 2, 1971 and known as the Ramsar Convention,³⁹ was ratified by Morocco on October 10, 1980.⁴⁰ As of 2020, the country had designated thirty-eight Ramsar sites, covering a total area of 316,086 hectares.⁴¹ The first four wetlands of international importance were inscribed in 1980 and twelve new ones were inscribed in 2019.⁴²

³⁵ Ibid.

³⁶ See Chapter 2.

³⁷ Ibid.

³⁸ Ibid., Article 4 of the convention.

³⁹ See Chapters 1 and 2.

⁴⁰ UN Treaty Collection, “Convention on Wetlands of International Importance Especially as Waterfowl Habitat” <https://treaties.un.org/pages/showDetails.aspx?objid=0800000280104c20> accessed January 22, 2024.

⁴¹ Convention on Wetlands of International Importance Especially as Waterfowl Habitat, “Morocco” www.ramsar.org/country-profile/morocco accessed January 22, 2024.

⁴² UNESCO, “Ramsar convention on wetlands of international importance Especially as waterfowl habitat” (February 2, 1971, as amended by the Protocol of December 3, 1982 and the Amendments of May 28, 1987) Paris, July 13, 1994 <https://rhis.ramsar.org/fr> accessed January 22, 2024.

This convention indirectly concerns forests since some fall within their scope. This convention also concerns biodiversity, the forests being important reservoirs of fauna and flora. Thus, to be classified as a Ramsar area, it is necessary to support endangered species or species important for the conservation of biodiversity.⁴³

In addition, the CBD does not contain forest-specific provisions.⁴⁴ However, it is a space for the protection of biological diversity. Morocco signed the CBD in 1992 and ratified it on August 21, 1995.⁴⁵ Indeed, forests are indispensable because of their role as habitats. State parties should adopt procedures to require environmental impact assessment of projects likely to harm biodiversity. In the same context, the role played by the United Nations Convention to Combat Desertification, signed on June 17, 1994, is particularly significant.⁴⁶ Since the destruction of forests is usually the cause of desertification, it is necessary to protect forests and to reforest.

Finally, international instruments for environmental protection cannot be discussed without emphasizing the link between climate and forests. In this sense, the UNFCCC was adopted to stabilize greenhouse gas concentrations in the atmosphere.⁴⁷ There is no need to demonstrate the relation between climate and forests. These are a means of combating climate change, just as forest degradation is a source of greenhouse gases. The Kyoto Protocol encourages states to promote sustainable forest management and reforestation.⁴⁸ Forest conservation and restoration can be an element of these nationally determined contributions in the Paris Agreement adopted at the Conference of the Parties (COP) 21, 2015, in Paris.⁴⁹

Ultimately, despite the goodwill of the international community, expressed through the disputed instruments set out here, some of their stipulations show flexibility by using terminology such as “as far as possible.”⁵⁰ This greatly influences the implementation of these stipulations and their incorporation into domestic law.

⁴³ Ibid., Article 2.2 of the convention.

⁴⁴ See Moïse Tsayem Demaze, “International Conventions on the Environment: Status of Ratifications and Commitments by Developed and Developing Countries” (2009) 3 *Geographic Information* 73, 84 www.cairn.info/revue-l-information-geographique-2009-3-page-84.htm accessed January 22, 2024.

⁴⁵ Royaume du Maroc: Ministère de la transition énergétique et du développement durable, “La Convention sur la Diversité Biologique” <http://environnement.gov.ma/fr/115-theme/biodiversite/3384-la-convention-sur-la-diversite-biologique#:~:text=Au%20cours%20de%20ce%20sommet%2C%20le%20Royaume%20du,y%20compris%20les%20C3%A9cosyst%20C3%A8mes%20et%20les%20esp%20vivantes> accessed January 22, 2024.

⁴⁶ See Chapter 2.

⁴⁷ UNFCCC, Rio Conference on Environment and Development (adopted on May 9, 1992, entered into force on March 21, 1994). It consists of a preamble, twenty-six articles, and two annexes.

⁴⁸ Kyoto Protocol to the United Nations Framework Convention on Climate Change (December 10, 1997) 2303 UNTS 162, Article 2.

⁴⁹ Paris Agreement to the United Nations Framework Convention on Climate Change (December 12, 2015) TIAS No 16-1104 Decision 1/CP.21.

⁵⁰ The Convention on Biological Diversity (June 5, 1992) 1760 UNTS 69, Article 8.

The doctrine adds that the CBD attaches great importance to commercial imperatives and the commitment of financial resources is also the Achilles' heel of environmental protection.⁵¹

4.3 THE SEARCH FOR INTEGRATION OF FOREST CONSERVATION AND BIODIVERSITY AT NATIONAL LEVELS: LESSONS FROM MOROCCO

Overlogging, overexploitation, and the unsustainable use of forest resources remain key causes of the decline in vegetation cover and the damage caused to forests in many parts of the MENA region. In Morocco, for example, the most important threat to forest conservation and biodiversity is the illegal logging of trees, which increases the pressure on the forest area, with legal felling estimated to be between 600,000 and 800,000 cubic meters per year.⁵² Although the legal text attempts to control grazing,⁵³ the reality sometimes bears witness to the fact that there is still room for herding activity for neighboring residents. This is mainly due to social considerations, since most of the population of pastoralists are from vulnerable and poor social classes, and the public authorities face logistical difficulties due to the material and human resources necessary to monitor and punish violations. Public authorities face greater risks such as monitoring construction, logging, overshooting, construction, plowing, fires, and other hazards that pose a more serious threat to forest areas than grazing. In practice, the legal provisions governing the right to graze are sometimes not respected, whether in terms of the number or type of livestock, the times allowed for grazing in forests, or even the lack of control and custody of livestock.⁵⁴

To address these concerns, the Moroccan legislature, through Law No. 113.13 on pastoral nomadism and the development and management of forest areas and pastures, has regulated pastoral areas and forest rangelands.⁵⁵ Article X expressly refers to the possibility of exploiting and using forest resources by populations enjoying exploitation or usufruct rights for grazing and pastoral activities.⁵⁶ The second paragraph of this article adds that forest areas can be opened, on an exceptional basis, for grazing in the event of climate disasters associated with drought or flooding and in

⁵¹ Serge Maljean-Dubois, "Biodiversity, Biotechnology, Biosafety: International Law Disarticulated" (2000) 4 *Journal of Drug Issues* 950; see also: Lissiéni (n 26).

⁵² Fourth Report on the Environmental Situation in Morocco, Ministry of Energy Transition and Sustainable Development-Sustainable Development Sector (2020) 107.

⁵³ Dahir No. 1.16.53 of April 27, 2016, implementing Law No. 113.13 on pastoral nomadism and the preparation and management of areas and rangelands forest (The Official Bulletin of Morocco, No 6466 of May 19, 2016) 3859.

⁵⁴ See Azgoudi Abdrahim, "The Forest Domain in Morocco, between the Constraints of Administrative Management and the Reality of Judicial Protection," (2020) Special Issue 19 *Moroccan Journal of Legal Systems and Politics* 240.

⁵⁵ Dahir No. 1.16.53 issued on April 27, 2016 (The Official Bulletin of Morocco, No 6466 of May 19, 2016) 3859.

⁵⁶ Ibid.

the event of any other disaster threatening the national herd. In this case, forest areas can be temporarily opened for grazing as a refuge to meet the needs of the herds.⁵⁷

In this regard, the Water and Forest Department estimates that more than 80 percent of the forest area is exploited indiscriminately and all year round, a situation that negatively affects forest areas.⁵⁸ The Moroccan legal system evokes the social status of the population adjacent to the forests and balances this situation with the need to preserve forest wealth as one of the most important reservoirs of the ecosystem and biodiversity.

Despite the existence of various public policies put in place by the government to cope with the overexploitation of forest rangelands and ensure their renewal, social pressure and the lack of population involvement represent the impediments to reaching a solution to this phenomenon and result in the exploitation of forest pastures beyond their capacity.⁵⁹ In addition to the subsistence activities of the inhabitants living near the forest, there are many legal, institutional, and material obstacles that can prevent the implementation of an integrated policy for forest management and therefore ensure the protection of biodiversity in this area.

Morocco also recognizes the integrated management of forests and biodiversity through a new public policy called the Forest Strategy 2020–2030; the National Agency for Water and Forests is the authority in charge of the enforcement of this new strategy.⁶⁰ This strategy is based on four main pillars related to the creation of a new model with a participatory approach involving the population living nearby the forests, the management and development of forest spaces according to their qualifications, the development and modernization of forest professions, and the institutional and legislative reform of the sector.⁶¹ The objective is to rectify the equivalent of thirty years of forest cover degradation by 2030, create more than 27,000 additional direct jobs, and achieve the goal of making the revenues of the valorization of production chains and ecotourism reach five billion dirhams as an annual trade value.⁶²

⁵⁷ Ibid.

⁵⁸ See Abdrahim (n 54).

⁵⁹ See Mohamed Ellatifi, “The Economy of Forests and Forest Products in Morocco: Assessment and Prospects,” doctoral thesis in economic sciences (University of Montesquieu-Bordeau IV, Law, Social and Political Sciences, Economics and Management Sciences, June 5, 2012) 58.

⁶⁰ Dahir No. 71-21-1 of July 14, 2021, implementing Law Nos 20-52 on the creation of the National Agency for Water and Forests (The Official Bulletin of Morocco, No 7006, July 22, 2021) 5639. The updated legal text of the agency is considered as the beginning of a review of the forest domain governance. This text grants broad and multiple powers to this agency, as the first paragraph of Article 3 of the law stipulates that the agency is responsible for implementing the strategic orientations of the government policy in the areas of protection, conservation, valorization, and sustainable development of national forest wealth and resources, as well as in the field of combating desertification, creating and managing protected areas, especially national parks, the management of hunting resources, fishing, and aquaculture in wild waters, as well as the preservation of wild flora and fauna and endangered species.

⁶¹ Fourth report on the environmental situation for the year 2020. See “Forests of Morocco 2020–2030: Programming of 600,000 ha of Forest Plantations by 2030” www.maroc.ma/en/news/forests-morocco-2020-2030-programming-600000-ha-forest-plantations-2030 accessed January 22, 2024.

⁶² Ibid.

It is an ambitious strategy based on the best international practices, yet the existence of an international convention or treaty specific to the protection of forests can greatly facilitate the implementation of this type of management.

4.3.1 *Institutions Charged to Protect Forests*

To fulfill all environmental protection requirements in general and integrated forest and biodiversity protection in particular, many laws have been enacted and several governmental institutions have been established. These institutions and bodies are established to ensure that economic actors and individuals adhere to environmental protection laws in general. Other bodies have a specialized role in dealing with biodiversity and forests. Institutions involved in this area can be classified into two categories: horizontal bodies (ministries, the Economic, Social and Environmental Council, and the police, judiciary, etc.), and sectoral bodies (the National Water and Forestry Agency, the High Water and Climate Council, the Environmental Police, etc.). Some of these bodies can also be classified as institutions making decisions while others have a consultative role only.

There are also several consultative bodies, including the National Council of the Environment and the Regional Councils for the Environment.⁶³ All these councils have a consultative role only. They track studies and propose legislative drafts and regulatory texts related to the environmental field.⁶⁴ They also raise awareness and sensitization of the importance of preserving the environment and its components. Furthermore, the Economic, Social and Environmental Council was established with the mandate to monitor the coherent implementation of environmental policies and legislation and to develop proposals that could contribute to sustainable development at all levels,⁶⁵ in addition to the High Water and Climate Council, which educates public authorities on the national policy relating to water resource management and weather and climate monitoring.⁶⁶ Besides consultative organs, the country has established the necessary reporting bodies with the capacity to take measures to protect the environment and punish environmental offenders. Among these bodies is the National Agency for Water and Forestry, which is primarily responsible for protecting forests, ensuring their development and managing various forest-related areas.

⁶³ Decree No. 2.79.247 of May 12, 1980, on the reorganization and improvement of the institutions responsible for the protection of the environment (The Official Bulletin of Morocco, No 3527 of June 4, 1980) 719.

⁶⁴ Decree No. 2-93-1011 of 18 Chaabane 1415 (January 20, 1995) on the reorganization of organizations responsible for the protection and improvement of the environment <https://faolex.fao.org/docs/pdf/mor16650.pdf> accessed January 22, 2024.

⁶⁵ Royaume du Maroc, "Le Conseil Économique, Social et Environnemental" www.cese.ma accessed January 22, 2024.

⁶⁶ Article 78 of Dahir No. 1.16.113, issued pursuant to Law No. 36.15 on water (The Official Bulletin of Morocco, No 6494 of August 25, 2016) 6305.

However, the main challenge remains how to create strong synergies between all the stakeholders dealing with environmental policy.⁶⁷ The duplication of institutions concerned with the environmental field intertwines the issue of environmental protection between many sets of programs and policies adopted by several government agencies. There is a wide range of institutions in charge of environmental study and planning (ministries, the Economic Social and Environmental Council, the Supreme Water and Climate Council, the National Environment Council, the National Water and Forestry Agency, etc.). This can also lead to overlaps between the competences of local authorities (regions, prefectures, provinces, and communities) and those of line ministries and certain public institutions. For example, the regulatory laws of local authorities provide a series of competences related to the environment, including the development and management of regional parks, while departments and ministries retain the same competences without specifying their limits or the coordination and cooperation between these bodies.

To ensure coordination and efficiency between all those institutions, the legal provision needs to be clarified.⁶⁸ This situation led to inflation in planning and programming, and thus to sectoral planning, which goes against the philosophy of integrated forest management. In the absence of coordination between the organs and institutions entrusted with these functions, there will be a problem with the effectiveness of the government's programs, a weakness that has been recognized by the government.⁶⁹

4.3.2 *Issues Related to the Legal Framework*

Several legal provisions and instruments in Morocco may constrain or limit the integrated management of forests and biodiversity. Three major issues in this sense are discussed.

4.3.2.1 *The Protection of the Forest Domain*

The preservation of the forest domain against any encroachment is the cornerstone of any integrated management strategy. In Morocco, there is a practice which consists of separating plots of land from the forest and making them available to investors. This practice challenges any public forest protection policy.

⁶⁷ Hadi Miqdad, *Environmental Law* (Imprimerie Najah ElJadida 2012). For more details, see the official website of the Ministry of Energy, Mines and the Environment, Department of the Environment www.environnement.gov.ma/fr/ accessed January 22, 2024.

⁶⁸ On the importance of enacting clear and comprehensive climate change laws, see D. Olawuyi, "Energy Poverty in the Middle East and North African (MENA) Region: Divergent Tales and Future Prospects" in I. Del Guayo, L. Godden, D. Zillman, M. Montoya, and J. Gonzalez (eds), *Energy Law and Energy Justice* (Oxford University Press 2020) 254–272.

⁶⁹ Morocco Climate Change Policy (March 2014) www.umi.ac.ma/wp-content/uploads/2020/11/ODD-13-A9-politique_du_changement_climatique_au_maroc.pdf accessed January 22, 2024.

The forest domain has a strict protective regime. It is not transferable and not acquired by prescription, nor can it be seized. However, this protection accepts one exception, which is provided for in the first paragraph of Chapter II of the *Dahir* of October 10, 1917, on the conservation and exploitation of forests, which states: “The property of the forest store cannot be sold, and its separation from the forest system can only be done for the benefit of the public interest.”⁷⁰ There is a possibility of separating the forest from its system if there is a public interest.⁷¹ Although the separation process is complex and requires the intervention of different parties and multiple procedures, it ends with the issuance of a decree published in the official bulletin, based on the opinion of the administrative committee established by the decree of June 6, 1959.⁷² This decree subjects the separate piece of forest to the rules of the private property of the state, allowing it to be freely disposed of.

If the rule requires the separation of the forest domain from its system in the public interest, the reality sometimes testifies otherwise, as it will be down to the forest to assign its real estate to serve various projects. The parts separated from the forest may be allocated to tourism projects or the creation of industrial zones, dams, mines, quarries, etc. During the last fifty years, 7,000 hectares of forest domain have been allocated to such projects, without searching for alternatives.⁷³ Among the factors that allow these abuses is that the legislative and regulatory texts regulating the procedure for separating property from the forest system do not deal with the destiny of the property after the separation process. There is nothing to prevent the Directorate of State Property from changing this allocation from one specific project to another, as the condition of public benefit may be achieved during the initiation of the separation procedure. After the completion of the process, the allocation is changed to another project that does not necessarily achieve public benefit and can be related to commercial purposes.

This leads to the degradation of the forest and consequently its biodiversity. Without the preservation of the forest domain, all reforestation efforts will be ineffective. In addition, the forest may be the scene of more important economic or social activities. This fact poses a problem for environmental approval granted to economic activities within the forest area.

⁷⁰ *Dahir sur la conservation et l'exploitation des forêts, modifié par Dahir du 17 avril 1959 et du 21 juillet 1960.* www.fao.org/faolex/results/details/en/c/LEX-FAOC002830 accessed January 22, 2024.

⁷¹ It relates to the following projects: dams, roads, motorways, railways, airports, ports, and their technical installations; hospitals and clinics of the health sector; educational institutions of the National Education Sector. According to the circular of the High Commissioner for Water, Forests, and the Fight against Desertification No 2088 of May 3, 2011.

⁷² Decree No 2-58-1371 of June 6, 1959, defining and establishing the committee in charge of expressing its opinion in the event of separation the forest from its system (The Official Bulletin of Morocco, No 2435 of June 16, 1959) 1953.

⁷³ Kingdom of Morocco, Ministry of Energy Transition and Sustainable Development-Sustainable Development Sector, Third Report on the Environmental Situation in Morocco (2015), 110. www.environnement.gov.ma/PDFs/Rapport-reem.pdf accessed January 24, 2024.

4.3.2.2 Environmental Assessment

The second legal problem which largely influences the protection of forests in Morocco is the authorization granted to certain types of economic projects within the forest area. It is on this occasion that the role of Law No. 49.17 on Environmental Assessment is highlighted.⁷⁴ In fact, by expanding the field of environmental impact study and opening new areas for it, Law No. 49.17 was considered a qualitative leap in the policy of strengthening legal and institutional governance in the field of the environment.

The practice of studying the impact of economic projects on the environment has shown significant shortcomings and a series of abuses. These abuses are particularly related to the fact that the said studies are entrusted to technical study offices that are selected by the entrepreneur and paid out of his/her own pocket. A fact that raises doubts about the impartiality and objectivity of the study, especially in the face of the difficulty of conducting counter-experiences given their cost.

The obligation to conduct an environmental impact study before creating any economic activity in the forest is natural and necessary, since any activity of whatever nature may cause damage to the natural resources of the forest and thus affect the ecosystem. Despite the negative repercussions of these activities, they are licensed, and perhaps among the most controversial activities are quarries because of their serious effects on the ecological balance. A number of reports explicitly indicate that the exploitation of quarries within the forest property causes the destruction of existing shrubs and leads to an imbalance of the forest ecosystem.⁷⁵ Moreover, the bodies directly involved in the management of forest property are also aware of the negative impact of this type of project on the ecosystem and ecological balance of the forest, as explicitly indicated in the report on the environmental situation in Morocco, which was prepared by the Ministry of Energy Transition and Sustainable Development for the year 2020.⁷⁶ Motivated by its awareness of the negative impact of economic projects on the forest system, the Water and Forestry Department asked for an environmental impact study before the issuance of the law itself.⁷⁷

⁷⁴ Dahir No. 1.20.78 issued on August 8, 2020, implementing Law No 49.17 on Environmental Assessment (The Official Bulletin of Morocco, No 6908 of August 13, 2020) 4346, which replaced the 2003 Law No 12.03 on the study of the impact on the environment.

⁷⁵ Report of Moroccan Court of Accounts for the year 2009, 80 <https://tinyurl.com/32evxtz4> accessed January 24, 2024. See also Taha Mebtoul, "Morocco's Parliament Creates Commission to Explore Sand Quarries" (September 21, 2020) www.morocoworldnews.com/2020/09/320288/moroccos-parliament-creates-commission-to-explore-sand-quarries accessed January 22, 2024.

⁷⁶ The fourth report on the environmental situation for the year 2020, 93. 4ème Rapport sur l'État de l'Environnement du Maroc- version intégrale (mtedd.gov.ma) accessed January 24, 2024.

⁷⁷ High Commissioner's Circular No. 31901 of September 5, 2007 (unpublished document).

This did not prevent these authorities from granting a license to establish a gravel quarry in a forest nature reserve, for example.⁷⁸ This issue raises an obvious question: How is it possible to license a quarry to extract gravel inside the forest while this activity has clear effects that should require in-depth studies to be carried out? In fact, the extraction process requires the use of explosive materials, the uprooting of young trees, and the spread of dust, all of which are easy to prove. This raises doubts about the objectivity of environmental impact studies carried out by companies involved in economic activity, which were mentioned earlier, and which call for legislative intervention since the new law maintained the same procedures specified in the previous text.⁷⁹

4.3.2.3 The Fragmentation of the Legal Framework on Forest and Biodiversity

The third issue which can prevent the integrated management of forests in Morocco is that the legal framework related to environment and specifically to forests and biodiversity is fragmented and dates back to the beginning of the twentieth century. Indeed, there are at least eleven laws about forest and biodiversity, most of them issued in the first years of the twentieth century.

For example, we have the Dahir issued on January 3, 1916, establishing special regulations to determine private properties of the state (*Amlak Makhzaniya*); the Dahir dated October 10, 1917, regarding the preservation and exploitation of forests;⁸⁰ the Dahir dated March 4, 1925, relating to the protection and identification of argan tree forests;⁸¹ the Dahir issued on August 15, 1928, specifying the conditions to make lands planted by the “Hulfa” part of private property;⁸² the Dahir dated July 23, 1930, regarding the preservation and exploitation of the “Hulfa” plant;⁸³ the Dahir issued on September 20, 1976, regulating the population’s contribution to the development of the forest economy;⁸⁴ the Dahir of April 11, 1922, regarding fishing and aquaculture in wild waters, as amended by the Decrees of January 23, 1957, June 16, 1961, August 17, 2011, and August 4, 2015;⁸⁵ Law No. 54.03, issued on June 15, 2006, amending and supplementing the Dahir, issued on July 21, 2023, relating to the control of hunting;⁸⁶ Law No. 22.07, regarding protected areas issued on July 16, 2010;⁸⁷

⁷⁸ Decision No. 177 issued by the Court of Cassation on March 29, 2012 in the administrative file No 775/4/2/2011 (published in the Real Estate Files Journal issued by the Court of Cassation “Water and Forests Issues,” No 4, 2014) 139.

⁷⁹ *Abdrahim* (n 42) 244.

⁸⁰ The Official Bulletin of Morocco, No 235, October 29, 1917, 901.

⁸¹ *Ibid.*, No 647, March 27, 1925, 526.

⁸² *Ibid.*, No 830, September 18, 1928, 2610.

⁸³ *Ibid.*, No 927, August 1, 1930, 1608.

⁸⁴ *Ibid.*, No 3334, September 22, 1976, 2915.

⁸⁵ *Ibid.*, No 6388, August 20, 2015, 7123.

⁸⁶ *Ibid.*, No 5435, June 3, 2006, 1648.

⁸⁷ *Ibid.*, No 5861, August 2, 2010, 3904.

and Law No. 29.05, regarding the protection of species of wild plants and animals and the control of trade in them, issued on July 2, 2011.⁸⁸ All these laws have several implementing provisions (decrees and decisions).⁸⁹

This multiplication and fragmentation of the legal framework about forest and biodiversity make the legal provision difficult to understand and enforce, and it can also lead to the absence of coherence between all the texts of laws. This situation is not specific to forest and biodiversity but it concerns all the environmental legal frameworks.

To this fragmentation one may add the multiplication of the implementing provisions. Those enforcement texts are one of the most important obstacles to the activation of legal texts related to the environment in general, as some laws require more than twenty enforcement texts, which limits their effectiveness. For example, the activation of Law No. 03.12, on environmental impact studies, required two decrees, two decisions, and a ministerial circular, which was changed in 2020 by Law No. 49.17 on environmental assessment, which raises the need to prepare new implementing provisions as well as to amend other legal texts referring to the contents of the old law. Moreover, there is a set of legal texts that were never implemented in the field since they were waiting for the publication of the implementing provisions (Law No. 08.01 on Quarries 2002, which did not come into force, and was replaced in 2015 by Law 27.13).⁹⁰

4.3.3 *The Lack of Awareness, Scientific Research, and Human and Financial Resources*

In Morocco, there are many civil society associations and nongovernmental organization (NGOs) which are active in the field of environmental protection and are considered to be essential partners in preserving the environment's wealth. This role reflects their contribution to the development and monitoring of government programs at all levels. The National Strategy for Environment and Sustainable Development gives priority to civil society associations by strengthening their capacities.⁹¹ A series of annual activities have been organized since 2014, with the objective of pushing NGOs toward professionalism and transparency in environmental work.⁹² One successful example of civil society associations' role in environmental

⁸⁸ The Official Bulletin of Morocco, No 5962, July 21, 2011, 3474.

⁸⁹ A collection of texts is available at the following link: www.eauxetforets.gov.ma/AccueilAR/SitePages/Textes-Reglementaires.aspx accessed January 22, 2024.

⁹⁰ Dahir No. 1.15.66 was issued on June 9, 2015, implementing Act No. 27.13 on quarries. The Official Bulletin of Morocco, No 6374 of July 2, 2015, 6082.

⁹¹ Kingdom of Morocco, "National Strategy for Environment and Sustainable Development" [www.greenpolicyplatform.org/sites/default/files/downloads/policy-database/ENG-SNDD_RESUME%20EXECUTIF-V24-D%20\(1\).pdf](http://www.greenpolicyplatform.org/sites/default/files/downloads/policy-database/ENG-SNDD_RESUME%20EXECUTIF-V24-D%20(1).pdf) accessed January 22, 2024.

⁹² In this context, twelve training workshops are organized annually at the level of each of the kingdom's entities for some 360 collective frameworks on; *inter alia*, local action to combat climate change

protection is the Mohammed VI Foundation for Environmental Protection. The Mohammed VI Foundation works under a well-defined strategy aimed primarily at fostering environmental education and sustainable tourism.⁹³

In the same context, a project called Mobilizing Civil Society to Support Dialogue in order to Adapt to Climate Change in Morocco launched in 2018 under the auspices of the World Wildlife Fund office in North Africa.⁹⁴ The project involves the active participation of sixteen associations representing various regions of the kingdom and aims to support, train, and strengthen their capacities. It aims to sensitize the authorities about the importance of integrating climate change adaptation and mitigation into public policies for development, particularly in the areas of water and forests.⁹⁵

However, despite the importance of these initiatives, from what we know there is no association specializing in the protection of forests or biodiversity in Morocco, and even if this type of association existed, it would be difficult for it to have an impact given the lack of means available to environmental associations in general. Furthermore, Moroccan law does not allow civil society associations to present legal actions to defend the general interest and the right to live in a healthy environment,⁹⁶ which largely limits their actions.

The intervention of the public authorities alone will not achieve the expected objectives in terms of forest protection. Indeed, civil society, as an intermediary between the government and citizens, must be involved in all facets of public intervention in the protection of forests and biodiversity, especially through awareness-raising actions addressed to citizens living next to the forests and exploiting their resources.

The question of human, logistical, and financial resources is now acute given the multiplication of risks that the forest is facing, especially because of the effects of climate change and the recent wildfires. This testifies to the need for all the necessary tools and technical capacities to combat this increasingly devastating phenomenon, and scientific research can be used to face those challenges.

and societal action. For more information on the work to promote the role of environmental protection associations, please see the following associations: www.environnement.gov.ma/images/ONG-Partenariat/AR/Appui-au-financement-des-projets-associatifs-ar-link.pdf accessed September 19, 2022.

⁹³ For more information about the Mohammed VI Foundation for Environmental Protection: <https://fin6e.org/en/> accessed January 22, 2024.

⁹⁴ www.afd.fr/fr/carte-des-projets/societe-civile-et-changement-climatique-au-maroc-et-en-tunisie accessed January 24, 2024; and <https://jamaity.org/project/mobilisation-de-la-societe-civile-pour-la-resilience-aux-changements-climatiques/> accessed January 24, 2024.

⁹⁵ See Article 22 of the Framework Law No 99.12 for associations.

⁹⁶ For example, the Algerian legislator, which authorized the associations for the defense of the environment to sue and contest all acts and behaviors that constitute an attack against the environment (Article 36 of Law No 10.03 related to environmental protection and sustainable development in Algeria). In Morocco, only associations with the status of public interest have the right to resort to the judiciary.

This question of resources is even more important when one analyzes the ambitious projects undertaken by the Forests and Water Agency.

4.4 ADVANCING THE INTEGRATED MANAGEMENT OF FORESTS AND BIODIVERSITY: RECOMMENDATIONS

The elements covered in this chapter clearly illustrate the need to review some legal provisions concerning environmental law in general and especially those related to biodiversity and forests. In this section we suggest possible solutions to fill the gaps that may have an impact on the protection of the forest and its biodiversity.

4.4.1 *Improving Institutional Frameworks*

The success of integrated forest and biodiversity management depends on multi-sectoral government action, which requires the involvement of all relevant public actors. To advance integrated forest and biodiversity management, clear and comprehensive legal and policy frameworks are required to address concerns of regulatory overlap, lack of coordination, and inefficiency that have been identified in the implementation of climate change law and policies in North African countries.

There is a need to create mechanisms for coordination between the various institutions involved in protecting the forest. The best approach is to create an intergovernmental institution on environmental protection in general, because the forest and biodiversity protection cannot be limited to the direct protection of this area but depends on global action that concerns all aspects of the environment and climate change. It is certain that the existence of a positive synergy between the different components of the environment can have better results than any action that targets only one of these components (water, forest, air, plastics, etc.), especially when it comes to implementing public policies or programming.

This institution must involve representatives of all the various ministries and agencies that have relevant roles to ensure the integrate management of the forest. In this way there will be a sharing of experience, resources, and work toward improving their consistency and complementarity.

To succeed in this challenge, there is a need for legislative provisions that clarify the roles of the respective agencies to avoid role duplication and overlap. Improving the quality of legal texts governing these institutions would generate greater efficiency in their programs and actions.

Regarding forest biodiversity, the National Agency for Water and Forests can be the tool for the implementation of public policies concerning the forest, but without coordination and financial and human resources the work of the agency will be ineffective.

In Morocco, effective forest protection requires thinking about reviewing the legislative and regulatory provisions concerning environmental law or at least the

organization and legislative techniques used by the country. Pending the general overhaul of environmental law, there are certain provisions concerning forest protection that must be reviewed immediately.

4.4.1.1 The Forest Domain

The Dahir of October 10, 1917, on the conservation and exploitation of forests, allows the government to separate part of the forest domain to devote it to a social or economic project.⁹⁷ The impact of this practice on the forest sector is certainly negative, as explained earlier. This is why it is imperative to put an end to it.

This situation necessitates legislative intervention that expressly prevents the separation of the forest from its system. In the face of climate change and the disasters that the forest suffers, chiefly fires, which have greatly affected the forest area, there is no justification for maintaining this separation rule. This is due to its repercussions on the area of the forest property in Morocco, and thus on the indicators of ecological balance and the country's ecosystem.⁹⁸ If it is hard to achieve, at least some provisions shall be stipulated to prevent the allocation of the separated property for a purpose other than the public benefit. This should be done while specifying a mechanism to monitor this process and issuing a decree by the head of government to retract the separation process in case it is proven that the rule of public benefit has been violated.

The government should not rely on the forest as a real estate container, as its tasks go beyond its pure real estate nature, and it also represents a basic component of the ecosystem, an ecological balance reservoir, and a natural heritage shared by all members of society. It is a fragile component that should be preserved and developed rather than depleted and allocated to projects of whatever nature.

In general, the management of the forest domain must imperatively be part of a sustainable logic, therefore any economic project that does not guarantee the sustainability of the forest and its biodiversity must be abandoned. The provisions of Law No. 49.17 on environmental assessment must be unequivocally on the harmful repercussions of certain economic projects in the forestry areas and prohibit their implementation.

4.4.1.2 Improving Legal Frameworks in the Environment

The predominance of legal fragmentation illustrates the need to review the philosophy of legislation in the field of the environment through the establishment

⁹⁷ Dahir of October 10, 1917 (n 70).

⁹⁸ Khalil Rahmani, "Mechanisms of Formation and Protection of the Real Estate Balance of the Private Property of the Country," master's diploma in private law, Course of Contract and Real Estate Law, Faculty of Legal, Economic and Social Sciences, Mohammed I University Oujda, Morocco, Academic Year 2007–2008, 39.

of an “environment code” that would put an end to sporadic legislation related to different areas that do not have a global logic surrounding the environment in its general context.

Developing an environmental code would simplify a series of legal and administrative procedures related to environmental protection. The code would not be sufficient to accommodate all the texts related to the environment but it can include the most important of these texts, which have a direct impact on the protection of the environment in Morocco. The most important tasks of the environment code would be to simplify the process of preserving the environment and the process of implementing the legal text. It would allow for the streamlined teaching of environmental law and the identification of responsibilities and the creation of a special institution in charge of applying all the legal texts related to environment protection and the climate change adaptation and mitigation efforts; this institution should oversee the coordination between the different departments and all the stakeholders.

This environmental code should have two sections. The first section should concern the legislative provisions, whose first part should include common requirements (definitions, basic and general principles related to the environment, environmental impact study, public institutions, environmental protection associations, environmental protection programs, common requirements regarding violations and penalties, financial requirements, administrative procedures, and disputes).

The second part should be concerned with the physical environment (water, seawater, climate, air, forests, the land and what is below, grazing, quarries, and violations of the environment). The third part could contain natural spaces (coasts, coral reefs, nature reserves, protected natural sites, landscapes, hiking and access to nature, green belt, and blue belt). The fourth should concern the natural heritage (protection of natural assets, fishing, and hunting). The fifth and last part could focus on pollution and risk prevention (natural risk prevention, industrial risk prevention, audiovisual pollution, waste management and disposal).

The second section of this code should contain all the regulatory provisions that enable the content of the code to be applied procedurally. They would be decrees, decisions, and other texts that codify the organizational aspect of the process and that do not require a legislative framework and are mainly aimed at demonstrating the mode and methods of implementing the code provision (registration forms, model contracts, professional cards, documents for obtaining licenses, etc.).

An environmental code can be easily developed in Morocco because there are existing legal provisions on environmental protection in general, so the work will be limited to compiling and standardizing certain requirements, particularly regarding the implementing provisions. The environmental code can clearly identify the competencies and powers of all stakeholders in environmental management, as well as those responsible for coordination between all stakeholders. If the implementation of an environmental code is difficult, the alternative would be at least to develop a code for forests.

4.4.2 Strengthen Awareness and Scientific Research

Improving legal and institutional frameworks in the environment will be ineffective without simultaneously setting up practical mechanisms likely to guarantee its effective implementation. Citizens' awareness is an essential component of any public policy concerning environmental protection, and this awareness is particularly important regarding the protection of the forest or the implementation of integrated forest management, since part of the damage caused to the forest is due to the direct actions of citizens, as specified earlier.

For this purpose, involving citizens in the implementation of forest protection is not a choice but a necessity, and obviously it is on this occasion that the role of civil society can be decisive, especially for awareness-raising and education actions. This is why environmental associations working on forests must be involved in coordination with public authorities. These associations must be considered as partners and must be given all the necessary means to carry out their actions; it is unacceptable for this type of association not to be recognized as a public utility.

In addition, the availability of an environmental code would simplify the teaching of environmental law, as the diversity and fragmentation defined by the current Moroccan legal system makes it difficult to understand all components. This explains the absence of environmental law from the curriculum, and the law cannot be activated without being introduced and educated to young people. This subject must be included in secondary courses or at least within the early years of university, whatever the specialty, because environmental protection is a common concern of all.

Furthermore, the National Forest Strategy 2020–2030 does not sufficiently elaborate on the important role of research in the preservation of biodiversity and the sustainable use of forest resources.⁹⁹ Certainly, the success of integrated forest and biodiversity management depends on continuous scientific research on modalities and tricks that can adapt to climate change.¹⁰⁰ In most cases, individual scientists work in isolation, which hampers the interdisciplinary approach essential for integrated forest management. In other words, governmental efforts should focus on investing in forest- and biodiversity-oriented scientific research. This should include supporting interdisciplinary and collaborative research through the establishment of laboratories. This is of paramount importance, considering the evolving nature of forest biodiversity, which constantly changes. In this regard, it becomes compulsory to understand how these changes might affect the functioning and stability of ecosystems and develop strategies to address these changes.¹⁰¹

⁹⁹ Kingdom of Morocco (n 91).

¹⁰⁰ Winkel et al. (n 27).

¹⁰¹ D. Kraus and F. Krumm (eds), *Integrative Approaches as an Opportunity for the Conservation of Forest Biodiversity* (European Forest Institute 2013).

4.5 CONCLUSION

The status and importance of the forest in preserving the ecological balance and biodiversity for a country such as the Kingdom of Morocco, which is suffering from the consequences of climate change, especially the recent wave of fires, is incontrovertible. To strengthen the efforts made by the government and public institutions to protect the patriarchal space and to promote biodiversity, some measures must be taken; perhaps the most important is the reform of the legal framework for the forest, which is characterized by the dispersion and obsolescence of most of its provisions. This reform must work on the compilation of legal texts into a code of the forest domain. It must also specify the adaptation of these legal texts to modern requirements, especially climate change.

Public authorities should also create awareness-raising programs on the importance of preserving the forest property and its ecosystems for the benefit of inhabitants living near to the forests as well as other citizens and visitors. The government must create alternative resources to the forest property for the benefit of neighboring populations and motivate them by considering them as partners in the preservation of the forest. This can be done by creating specific training for them to integrate the public policies related to forests and entrust them with some tasks, such as monitoring the forest environment against compensation. The real problem that needs to be worked on is to consider the neighboring populations as partners in the process of protecting the forest, and to achieve this, it is necessary to fight the poverty that drives them to use the forest as a livelihood resource. Given the current situation of the forests, the government must put an end to the procedure of separating the forest domain from its system. Real estate that has not been used or discarded, either totally or partially, must be recovered and returned to the forest property.

Finally, since the National Agency for Water and Forests is the institutional mechanism responsible for the implementation of public policies related to forestry, the state must provide this agency with all the human, financial, and logistical resources needed to ensure that it fully accomplishes its tasks. The legal provisions referred to in this chapter involve multiple and varied tasks but the implementation of these provisions will be possible only if the state allocates all the necessary means to do so.