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Riyad Fakhri & Youness Lazrak Hassouni

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PROTECTING WATER RESOURCES IN NORTH AFRICAN COUNTRIES AS AN ENTRY POINT TO ACHIEVE THE SIXTH SUSTAINABLE DEVELOPMENT GOAL

Riyad Fakhri  & Youness Lazrak Hassouni** 

ABSTRACT

This article examines the legal framework on water in the Maghreb countries and analyzes if the existing legal framework guarantees the achievement of the sixth Sustainable Development Goal by 2030. One of the most important challenges faced by North African countries is the scarcity of water resources. Water scarcity and difficulty of providing the population with potable water, causes a thirst crisis and disruption of biodiversity, and thus preventing the achievement of sustainable economic and social growth, especially since the communities of this region are known for their intensive agricultural activity. The MENA region is among the most exposed to the negative effects of climate change, as the decrease in rainfall and its temporal and spatial variation leads to frequent floods and multiple droughts. All these pose the problem of dealing with the legal system considering the weak official cooperation between these countries to deal with this reality and find the necessary mechanisms to protect water resources from depletion, face climate change and reduce its effects. This article focuses on the Maghreb countries: Morocco, Algeria, Tunisia and Mauritania. The choice of these countries is motivated by the fact that they share the same climatic characteristics and above all they suffer in the same way from the repercussions of global warming. Water resources in these countries are under increasing pressure amid population and industrial growth, irrigated agriculture, urbanization, tourism, climate change, overexploitation of aquifers and deteriorating water quality. In terms of methodology, the article employs a literature review of studies in this field as well as an analysis of legal texts related to water and the environment in the countries surveyed. This study shows that the Maghreb countries have made considerable efforts at the legal level to guarantee access to water for their citizens, however there are many peculiarities and insufficiencies for which the study presents some recommendations susceptible to help with the attainment of the 6 SDG objective within 2030.

Keywords: Morocco, Algeria, Tunisia, Mauritania, water resources, water law, public policies, coordination, cooperation.

1. INTRODUCTION

For Maghreb countries, water enjoys legal and institutional organization as some of its features and manifestations date back to a remote period. This reflects the great interest that these countries and their societies have been paying to this vital element, an interest that appears from a very active legislative movement regarding the legal framework for the protection of the environment in its sustainable dimension. More than this, some of them have created many institutions to which this mission was allocated, to facilitate the operation of activating legal texts and monitoring the extent to which all actors respect the contents of these texts.

Perhaps the most important challenge faced by North African countries is the scarcity of water resources,¹ which will undoubtedly lead to the difficulty of providing the population with potable water, causing a thirst crisis and disruption of biodiversity, and thus preventing the achievement of sustainable economic and social growth, especially since the communities of this region are known for their intensive agricultural activity. This region is among the most exposed to the negative effects of climate change, as the decrease in rainfall and its temporal and spatial variation leads to frequent floods and multiple droughts².

Morocco's is rated 4.2 out of 5 on the Water Security Risk Index, putting it at a "serious risk" in terms of water availability.³ The availability of water resources has fallen below 1000 m³ annually.⁴ And we find practically the

* Director of the Research Laboratory of Business Law at Hassan I University in Morocco.

** Professor of Business Law at Hassan I University in Morocco.

¹ Rasha Abou Dargham, 'Water doesn't come from a tap' <<https://www.unicef.org/mena/water-doesnt-come-tap#:~:text=The%20Middle%20East%20and%20North%20Africa%20is%20the,scarcity%20in%20the%20region%20is%20likely%20to%20worsen>> accessed 12 June 2024.

² The World Bank Group, 'Climate Risk Country Profile: Morocco, 2021'.

³ Houzir M, Mokass M and Schalatek L, 2016. Climate Governance and the Role of Climate Finance in Morocco.

⁴ Kaltoum Belhassan, 'Water Scarcity Management in the Maghreb Region' 27 March 2022, <[10.5772/intechopen.103788](https://doi.org/10.5772/intechopen.103788)> accessed 12 June 2024.

same data at the level of the other countries of North Africa.⁵ These countries are trying to deal with this problem by adopting dedicated policies, rationalizing the use of water resources, and trying to have new resources by the development of non-conventional water resources, especially seawater desalination and wastewater reuse.

However, the issue is not only a matter of water scarcity, but the existing water resources suffer from the phenomenon of severe pollution, either through the dumping of waste by the population or industrial facilities, which had led to the impact of water reservoirs and mattresses available from them. As a result, the region has become among the most exposed areas to water scarcity in the world, which may lead to major difficulties that would prevent achieving the sixth goal of the sustainable development goals in accordance with the requirements set by the United Nations in the horizon of 2030.

It is certain that those North African countries are aware of the importance of the right to water and have worked to constitutionalize it. Article 48 of the Tunisian Constitution of 2022 stipulates that: “The country must provide safe drinking water for all on an equal footing, and it must preserve water resources for future generations.”⁶ Also, article 31 of the Moroccan constitution of 2011 holds that: “The country, public institutions and territorial collectivities work to mobilize all available means to facilitate the reasons for the equal benefit of male and female citizens from the right: - Getting water and living in a healthy environment....”⁷ The same matter was addressed in article 63 of the constitution of Algeria (2020), which states the following: “The country ensures that the citizen is able to: - obtain drinking water and works to preserve it for future generations...”⁸ The constitution of the Republic of Mauritania was satisfied with an indirect reference to this right, as the second paragraph of article 19 announces: “citizens enjoy the same rights and the same duties towards the nation. Together, they contribute to building the nation and have the right, according to the same

⁵ Maddocks A, Young RS, Reig P. Ranking the World’s Most Water-Stressed Countries in 2040, World Resources Institute, August 26, 2015. 2015. Available from: <http://www.wri.org/blog/2015/08/ranking-world%E2%80%99s-most-water-stressed-countries-2040>

⁶ Presidential Decree No. 2022-691 of August 17, 2022, promulgating the Constitution of the Republic of Tunisia, Official Journal No. 91 of August 18, 2022.

⁷ Dahir No. 1-11-91 of 29 July 2011 promulgating the text of the Constitution (Official Bulletin No. 5964 bis of 30 July 2011)

⁸ Algerian Constitution (Official Journal No. 82 of December 30, 2020)

circumstances, to sustainable development and a balanced environment that respects health.”⁹

The United Nations General Assembly, on 28 July 2010, through Resolution No 64/292 explicitly recognized the human right to water and sanitation and acknowledged that clean drinking water and sanitation are essential to the realization of all human rights.¹⁰ Ensuring the right to water is among the basic and complementary conditions for other rights such as the right to life and the right to live in the environment and healthy surroundings.

In this context, it is necessary to analyze how North African States are trying to guarantee the fundamental right of access to water in accordance with their domestic law and their obligations vis-à-vis the Sustainable Development Goals. This study focuses on the Maghreb countries: Morocco, Algeria, Tunisia and Mauritania, the choice of these countries is motivated by the fact that they share the same climatic characteristics and above all they suffer in the same way from the repercussions of global warming. And the water resources in these countries are under increasing pressure amid population and industrial growth, irrigated agriculture, urbanization, tourism, climate change, overexploitation of aquifers and deteriorating water quality.¹¹

In addition, the geographical location of the Maghreb countries means that they share similar SDG challenges, and thus what affects one country in this region generally affects the others. It can be seen from the previous introduction on water scarcity and the transboundary nature of water resources in the Maghreb. This shows that the countries in this region are heavily dependent on similar water sources, and due to the limited availability of water, this generates competition and tension in trying to secure sufficient water supplies.

Despite the growing awareness of this problem and the multiplicity of legal texts and institutions directly or indirectly concerned with the protection of water resources, it appears that dealing with water has not yet risen to the

⁹ Mauritanian Constitution of 12 July 1991 as amended. Promulgated by Ordinance No. 91.022 of 20 July 1991 (Official Journal of Laws of 30 July 1991, p. 446).

¹⁰ United Nations, Human Right to Water and Sanitation <https://www.un.org/waterforlifedecade/human_right_to_water.shtml#:~:text=The%20human%20right%20to%20water%20and%20sanitation&text=On%2028%20July%202010%2C%20through,realisation%20of%20all%20human%20rights> accessed 12 June 2024.

¹¹ “World Population Prospects: Key Findings and Advance Tables” (United Nations 2015)

point of being a vital matter that concerns both citizens and governments. The practical implementation of the contents of the legal texts relating to the protection of water resources must allow human demand not to commit aggression against these resources and to demand their protection against all forms of overexploitation, pollution, occupation of the public water domain or any other forms of aggression.

In this regard, it is necessary to have a clear strategy to deal with all these elements, allow the preservation and even valorization of water resources and diversify the water supply, while considering the sixth goal of the Sustainable Development Goals by 2030, which states that: access to clean water for all is an essential component of the world we aspire to.

This article examines the role played by legal texts in protecting the water resources of Maghreb countries and exploiting them in a way that ensures their sustainability, while analyzing public water policies in these countries and trying to evaluate them to determine the extent to which the sixth goal of sustainable development can be achieved by 2030.

The main question that this study seeks to answer is whether the legal texts on water currently in force in the Maghreb countries guarantee the achievement of the sixth Sustainable Development Goal by 2030? And to answer this question, the article presents firstly the legal and institutional effort in the Maghreb countries in advancing SDG 6, secondly the legal barriers to coherence in the surveyed North African countries and finally the recommendations to strengthen the legal water framework in the Maghreb countries likely to help achieve goal No 6 of the SGD.

2. LEGAL AND INSTITUTIONAL EFFORT IN MAGHREB COUNTRIES IN ADVANCING SDG 6

Maghreb countries have made considerable efforts to legally protecting their water resources, firstly by protecting the public domain of water since it is the cradle that allows the preservation of water resources; and by putting in place an important legal arsenal whose objective is to organize the exploitation and use of water and sanction possible aggressions.

2.1 Legal protection of the water in the public domain

The protection of the public water domain is one of the most crucial methods for safeguarding water resources, as it plays a crucial role in ensuring the availability of this valuable resource and, ultimately, in upholding citizens'

right to water. Legal and regulatory texts, both general and specific to the water public domain, reflect this protection. Judicial protection also plays a pivotal role in this regard, primarily by confronting the occupation or excessive exploitation of this property.

Most of the legal texts that deal with the public domain in general date back to the beginning of the twentieth century; among them is the Dahir of 1914 relating to the public domain in Morocco¹² and the law No. 90-30 of December 1, 1990, relating to the Algerian public domain as amended by Law No. 08-14 of 20 July 2008¹³. Those laws do not directly address the water domain; however, all the countries under study have a recent specific text to water including the latest legal developments, we will limit ourselves to the approach of protection guaranteed by those texts.

The most important characteristics of the water public domain are that it is unsellable, and not liable to seizure or prescription. This general principle is subject to an exception regarding the possibility of using this property within the framework of the legally specified conditions.

The water public domain consists of all continental waters, whether surface, ground, fresh, brackish, saline, mineral or used, as well as desalinated sea water liquefied in the hydrological public domain and water installations and their annexes designated for public use.¹⁴ These are divided into two categories: natural public properties that include water and lands submerged by this water¹⁵, and artificial public properties that include water installations.¹⁶

¹² Dahir 1st Juillet 1914 relating to public domain, Official Bulletin n°80, Juillet 10, 1914, 529.

¹³ Law No. 08-14 of 20 July 2008 amending and supplementing Law No. 90-30 of 1 December 1990 on the State Law, Official Journal of the Algerian Republic No. 44, of 3 August 2008, 9.

¹⁴ Article 5 of Law No. 36.15 relating to water in Morocco.

¹⁵ Article 4 of Law No. 12.05 relating to water in Algeria, dated August 04, 2005, O.B of the Algerian Republic, No. 60, and Article 7 of the Mauritanian Mauritanian Water Law.

¹⁶ Article 3 of Law No. 36.15 relating to water in Morocco and Article 16 of Law 12.05 relating to water in Algeria and Article 11 of Law No. 2005-030 relating to water in Mauritania.

Accordingly, the Moroccan legislator, through article 5 of law No 36.15 related to water¹⁷, has extensively defined the constituent parts of the water public domain, including: natural water bodies such as lakes, ponds, marshes, salt marshes and swamps of all kinds that do not have direct contact with the sea, as well as their real estate vessels and free bank for two meters wide¹⁸.

The Moroccan and Algerian legislature have precisely defined all the components of the water public domain, and the Tunisian legislator contented himself with referring to the natural public domain of water, which must be protected since it is not subject to seizure or prescription. The use and the exploitation of the public water domain can be done by obtaining a license or a concession. The Moroccan, Algerian and Tunisian law states that obtaining a license for this use or exploitation would not cause harm to the water public domain¹⁹. For the Mauritanian legislator the exploitation of water resources is subject to the announcement system, licensing, or assignment²⁰. The Mauritanian legislator did not indicate the activities that are subject to each system, nor did he give a definition of these systems, which differ according to what is customary at the national and international levels.

Since the licensing and concession systems are the most widely used and given the lack of data on the mechanisms adopted by Mauritania in this field, we will limit ourselves to studying the mechanisms of licensing and concession in Moroccan, Algerian and Tunisian laws. The license or concession can only be granted for a specific period, and it concerns a specific annual volume and level of water according to the total available resources. The Moroccan, Algerian and Tunisian legislators defined the operations that are subject to both licensing and concession. Article 28 of the Moroccan law sets out a list of these operations that are subject to the licensing system (such as drilling wells and completing boreholes for the purpose of searching and/or bringing and using groundwater resources; establishing facilities for a period not exceeding 10 years over the public water domain with the aim of using the waters of this domain such as water mills, barriers, canals and other

¹⁷ Moroccan Water Law No. 36.15 (Official Bulletin No. 6494 of 25 August 2016) 6305.

¹⁸ It is almost the same as the contents of Article 1 the Tunisian Water code (Law No. 16 of 1975 of 31 March 1975, Official Journal of the Republic of Tunisia of 1 April 1975. 715).

¹⁹ Article 23 of the Moroccan water law; Article 71 of the Algerian water law, and article 52 and 53 of the Tunisian water Code.

²⁰ Article 18 of the Mauritanian water code (Law No. 030-2005 of February 2, 2004, Official Journal of the Mauritanian Islamic Republic No. 1096, year 47, of June 15, 2004. 294).

operations), which are the same operations referred to in article 75 of the Algerian law and article 52 of the Tunisian water code.

The Moroccan legislature was more successful in the protectionist dimension regarding licenses and concession contracts that permeate the exploitation or use of water resources since it worked in the body of the law to precisely define the procedure for granting these licenses and the method of concluding these contracts. The law also included in all transparency the obligations of the exploiter of water resources and the measures that can be taken by the Water Basin Agency to limit the abuses of the operator, including withdrawing the license or concession and charging him the costs of restoring things to the way they were. Unlike the Algerian legislator, who only referred to some general tenets.

In addition, despite the fact that the water public domain is unsellable, and not liable to seizure or prescription, these principles do not prevent attacks on the water public domain, either by attempts to seize ownership of the land or by the exploitation or the use of this domain without obtaining the necessary licenses, in these kind of situation, the judiciary plays a pivotal role in the enforcement of the protective provisions about the public water domain.

For example, there is an interesting case brought before the Moroccan judiciary, which concern the preservation of the public water domain, the “Sebou River” case (one of the most important rivers in the Kingdom of Morocco). In this case, on March 17, 1989, a person submitted a request to the registration a part of a land in the Conservation Agency, part of which was a meadow, and the other part was a drain of “Wadi Sebou”. The course of the river was transformed due to the floods in the area at the level of the “Portuguese bridge”, so this stream moved to neighboring lands, leaving its old course. The land under the old course was seized by the neighboring owners and turned it into agricultural land.

Since the matter is related to public property, which was previously determined administratively by Decree No. 131-56-2 issued on 03/11/1956²¹, the government presented in opposition against the demand of registration with maps showing the transformation of the valley course over time. After lengthy legal proceedings, the Fez Court of Appeal issued a decision on this case on August 08, 2015, upholding the Moroccan government’s opposition

²¹ Moroccan Official Bulletin N°2300 (June 23, 1956. 3016).

to the demand for registration of the land. The court's decision shows that the property in question was administratively determined and the decree on defining the public domain was published in the Official Bulletin on 11/23/1956 and became final and the land in dispute is public property by the force of law²².

In general, the real estate related to water public domain is object of attempted appropriations, is in most cases a vast area and rich lands, so this kind of case clearly demonstrates the effective role of state institutions, especially the judiciary, in protecting this domain.

The protection of the water public domain and the hydric resources is not limited to the intervention judiciary and the Water Basin Agencies, but there is a group of public institutions and administrations that play an important role in preserving the water resources, which will be clarified in the next paragraph.

2.1 Legal protection of water resources in the Maghreb countries

The achievement of SDG 6 of the 2030 Agenda in the Maghreb necessarily involves the protection and preservation of existing water resources, especially against overexploitation and degradation of the quality of these resources due to pollution. The legal arsenal of the North African countries provides important measures in this regard, including criminal sanctions (1) the judiciary also enforces these provisions (2).

2.1.1 The legal approach to actions affecting water quality.

Morocco's water law is the newest in the Maghreb region, adopted in 2016, Law No. 15.36 not only deals with immediate water-related environmental damage, but also incorporates strategic water planning to deal with climate change and its impact on water resources, in addition to creating the governance mechanisms and institutions necessary to implement its content. Article 1 explicitly states that the most important principles of water resources are rational and sustainable use of water, and water planning that considers climate change with a view to adapting to it. This aspect is further reinforced in article 2, which emphasizes the incorporation of climate change adaptation into water planning and management at every level.

The sustainable use of water resources is not the only mechanism that can guarantee access to water for future generations; the protection of water

²² Decision of the Moroccan Court of Cassation No. 680 issued on 03/06/1999 in the administrative file No. 1214, 1213 and 1212/97

resources against the aggressions of economic actors and citizens is another means that can help achieve this objective. There are numerous legal texts in the countries covered by the study that make it possible to act against these aggressions. A distinction is made between texts of a general nature and those whose subject matter relates solely to water.

The general texts include, in Morocco, the framework law No. 12-99 as a national charter for the environment and sustainable development,²³ the law No. 11-03 relating to the protection and restoration of the environment,²⁴ civil procedure, criminal procedure, and criminal law. In Algeria, the law No. 10.03 on the protection of the environment in the framework of sustainable development, which article 43 of the Algerian water law refer to.²⁵

More specific to the preservation of water quality, the Law No. 36.15 in Morocco and Algerian Law No. 12.05 relating to water²⁶, and the Tunisian and the Mauritanian water code set out a set of legal mechanisms that protect water resources from harmful behaviors that can affect water quality.

This work is carried out first by the identification of the violations and the penalties that the violator may face. In Morocco, we find that article 131 of the water law N° 36.15 expressly provides that the task of drafting records, is carried out by the judicial police officers and the water police, agents appointed for this purpose by the administration, water basin agencies and other public institutions. They have the authority to inspect violations related to the water law and to write reports in that regard.

The Algerian water laws (article 163), Moroccan (article 132) and Mauritanian (article 82) allow water police agents to access wells, boreholes and any other facility or equipment for the use and exploitation of the water public domain;

²³ Dahir No. 1.14.09 issued on 6 March 2014 implementing the Framework Law No. 99.12 as a National Charter for Environment and Sustainable Development – Official Bulletin No. 6240 on 20 March 2014, p. 3194.

²⁴ Dahir No. 1.03.59 of 12 May 2003 implementing Law No. 11.03 on the Protection and Restoration of the Environment – Official Bulletin No. 5118 of 19 June 2003, p. 1900.

²⁵ Law No. 10.03 on the protection of the environment in the framework of sustainable development. 19 July 2003 (Algerian Official Journal No. 43 of 2003, p.6).

²⁶ Law No. 12.05 relating to water of 4 August 2005 (Algerian Official Journal N°60 of 4 September 2005, p3) as amended by Law No. 03-08 of 23 January 2008 (Algerian Official Journal N°3 of 27 January 2008, p.7).

this is done in accordance with the conditions specified in the law relating to the criminal procedure. The Moroccan water law is more specific in its provisions concerning how to conduct the research carried out by the water police compared to its Algerian, Tunisian and Mauritanian counterparts.

Various legal texts also contain provisions that protect water within the framework of a general approach to environmental law, as it is an essential and important part of the ecosystem. We mention the protection provided by law No. 11.03 relating to the protection and rehabilitation of the Moroccan environment, law No. 10.03 containing the protection of the environment within the framework of Algerian sustainable development, and Mauritania's framework law for the environment No. 2000-045.²⁷ The article 111 of the Algerian law refers to a group of bodies authorized to search for and inspect environmental violations (environmental inspectors; technical staff of the administration in charge of the environment; port officers...etc.). In Algeria, also we must use the provision of the criminal procedure because the environmental law does not provide special procedures or processes for the environmental crimes.

Of all the legislation studied, Moroccan, Algerian and Tunisian law all have been approved a set of penalties and sanctions in case of the environmental crimes and the violation of the water law's provisions. For example, according to the article 218-3 of Moroccan criminal code, the introduction or placing of a substance that endangers human or animal health or the environmental field, in the air, on land or in water, including territorial waters, is a terrorist act. The penalty for this act may reach the death penalty if it results in the death of one or more persons. In all cases this act is punishable by law, at least with imprisonment from 10 to 20 years. It is the same case under the provision of article 87 bis of the Algerian Penal Code.

Only the Mauritanian law has provided the sanction of this crime in the article 92 of the Environmental Law and not in the penal code unlike its Moroccan and Algerian counterparts, and even so the punishment for pollution crimes can be very severe. Thus, the article 93 of the same law added that the penalty can be up to the death penalty if the crime caused the killing of human lives.

To the best of our knowledge, the Tunisian legal system does not have a law on the protection of the environment, but it has a set of special texts that

²⁷ Law No. 45-2000 of 26 July 2000 (Mauritanian Official Journal No. 985 of 30 October 2000, p. 577).

concern the field of environmental protection and pollution control, including in particular law No. 95-73 of July 24, 1995 relating to the public maritime domain;²⁸ law No. 95-70 of 17 July 1995 on the conservation of water and soil;²⁹ law No. 96-41 of June 10, 1996 relating to waste, control of disposal and disposal and the implementation texts;³⁰ and law No. 2007-34 of June 4 2007 on air quality.³¹ Apart from these specific laws, in general, the Tunisian legal system related to the protection of the environment and water resources could do with some refreshing. The Water Code dates to the year 1975, and no significant changes were known except through law No. 116 of 2001,³² which was devoted to water destined for consumption and did not include protectionist requirements.

In Morocco and Algeria, the legal texts related to the protection of water, or the environment distinguish between administrative and penal penalties. Most of the administrative penalties relate to the suspension of work and the seizure of tools, objects and means of transportation whose use was the basis of the violation. These could also include closing, removing or demolishing facilities and buildings completed without a license and in violation of environmental laws, and destroying dangerous or harmful seized objects. It is also possible to order the closure of water points that become illegal or have been completed without a license. If such an order is not complied with, measures may be taken automatically and at the expense of the violator. The administrative authority may also remove deposits and debris and demolish all facilities that obstruct traffic, navigation, and the free flow of water at the expense of the violator.

In addition to the administrative penalties, the law provides for a set of injunctive penalties that may vary in terms of their type according to the nature of the crime committed. We distinguish between imprisonment penalties, financial fines, and the confiscation of the seized means.

The Algerian legislator indicated in article 170 of law No 12.05 related to water that the equipment used in constructing wells or within the quantitative protection zones can be confiscated. Punishment that can also be imposed is based on articles 168, 174 and 175 of the same law. Penalties in

²⁸ Official Journal of the Republic of Tunisia No. 61 of 1 August 1995.

²⁹ Official Journal of the Republic of Tunisia No. 59 of July 25, 1995.

³⁰ Official Journal of the Republic of Tunisia No. 49 of June 18, 1996.

³¹ Official Journal of the Republic of Tunisia No. 45 of June 5, 2007.

³² Law No. 116 of 26 November 2001 (Tunisian Official Journal No. 95 of 27 November 2001, p. 4696).

such cases can include imprisonment from one month to one year and a fine of 6000 to 25000 Moroccan dirhams, or one of these two penalties only; the latter may apply where someone demolishes partially or completely, by any means, wells, artesian holes, or irrigation or drainage canals designated for public use. Whoever exploits or uses water resources without obtaining the concession stipulated in article 33 of Moroccan water law can be punished with imprisonment from one to three months and a fine of 10,000 to 500,000 dirhams, or one of these two penalties only. And according to the text of article 172 of the Algerian water law, anyone who dumps dirty water of whatever nature or pours it into wells, corridors of confluence of water, springs, drinking places and valleys shall be punished by imprisonment from one to five years and a fine of fifty thousand Algerian dinars up to one million.

The Algerian legislator devoted section II of the chapter 9 of the law No. 12.05 to the penalties prescribed for violating its contents. The Moroccan legislator also singled out the second section of Chapter 11 of the law No. 36.15 for penalties related to violations of the water law provisions.

In case of recidivism, the penalty is doubled in accordance with the requirements of article 154 of the Moroccan Penal Code³³ and article 54 bis of the Algerian Penal Code.³⁴ The competent administration can conduct a financial settlement regarding environmental violations and the penalties.³⁵

3. THE ROLE OF JURISPRUDENCE IN ENFORCING THE RIGHT TO QUALITY WATER

There is no doubt that the judiciary has a pivotal role in providing protection for the environment in general and for water resources in particular. This is evident through the effective intervention of the Public Prosecution, as well

³³ Dahir No. 1-59-413 of 26 November 1962, approving the text of the Penal Code, as amended (Official Bulletin No. 2640 bis of 5 June 1963, p. 843)

³⁴ Ordinance No. 66-156 of 8 June 1966 on the Penal Code as amended and supplemented by Law No. 06-23 of 20 December 2006 (Algerian Official Journal No. 84, p.15); <http://www.iedja.org/wp-content/uploads/2017/12/Code-p%C3%A9nal-Alg%C3%A9rie-2015.pdf>.

³⁵ According to the article 3 of section VI of law No. 11.03 related to the environment protection and Rehabilitation.

as through judicial rulings and decisions, which punish the perpetrators of environmental crime and hold them responsible for their actions. We will suffice to list some of the more serious cases brought before the Moroccan judiciary in the absence of access to the judicial decisions of the other countries subject to the study.

Human activities have a direct impact on the quality of water, including at their worst economic activities associated with dangerous or toxic substances.³⁶ These kinds of activities have a negative impact on the environment and the possibility of these substances entering the ecological and aquatic system. Several cases in this regard have been submitted to judiciary, and important judicial decisions have been made that lay down some basic principles of environmental responsibility in this field.

Among these decisions, we mention the decision of the Moroccan Court of Cassation No. 1305 of March 13, 2012, issued in the civil file No. 3/1/2011/743, where the court held responsibility for the environmental pollution because of the leakage of oil materials from the company's channels. It was proven that these materials had leaked from a ship's cargo during the process of emptying its content into the warehouses, as the samples taken showed that the oil that cause pollution was the same type that was released from a ship in the company's warehouses.

It must be noted that the oil spills into the port basin in Agadir caused a natural disaster through the pollution of sea water. The public authorities appointed a committee consisting of members of the National Pollution Control Committee to prepare a report on the accident and take the necessary measures to remedy the situation. The Office of Exploitation of Ports (a public institution) recruited its equipment, users, tools, and materials to fight pollution and disinfection for a month, which cost great material and environmental losses. The financial cost of this operation amounted to five million dirhams (around 500 000 dollars). The court did not respond to all the government's demands and limited the compensation it requested against the company that caused damage to the amount of 714 244,10 dirhams as compensation.

Examining a series of decisions from the Court of Cassation makes it very clear that oil is the main cause of water pollution. This is confirmed by the

³⁶ E Peters N, Meybeck M and Chapman D, "Effects of Human Activities on Water Quality" [2005] Encyclopedia of Hydrological Sciences.

extent of the damage caused by these materials and the large number of cases before the judiciary in this regard. Among these cases, we find the leakage of oil materials and their impact on the waterbed and private wells. The case recurs when the Moroccan Company for the Refining Industry “Samir” admitted the leakage through one of its channels, which led to the pollution of the water wells and the death of animals and the soil became unfit for agriculture, which exposed the landowners to bankruptcy, in addition to the health effects and environmental pollution.³⁷ Judicial work and jurisprudence regarding damage to water and the environment clarify the role of scientific expertise in determining responsibilities, as well as the extent of the damage and compensation for it.³⁸

In the same sense the administrative court in Algeria held the municipality responsible for damages caused by pollution of water resources that had been done by a company. This was due to the license granted by this municipality to one of the classified facilities.³⁹

In general, legal protection of water resources is insufficient to ensure sustainable management of these resources, other approaches are needed to address the water stress that North African countries are facing. This is particularly true regarding cooperation between these States and the management of groundwater resources, not only their own resources but also those shared between two or more States.

3.1 The Barriers to Coherence in the Surveyed North African Countries

There are many points that can prevent the Maghreb countries from achieving SDG 6, we will try to outline the most important barriers in this section, starting with the lack of cooperation and partnership between these countries, especially with regard to shared water resources; the deficiencies in the legal framework relating to water; and the weaknesses related to the governance of these resources.

³⁷ Moroccan Court of Cassation Decision No. 1281 of September 16, 2010 Commercial File No. 1/3/509/2010.

³⁸ Moroccan Court of Cassation Decision No. 1827 of December 9, 2010 Commercial File No. 611/1/3/2010.

³⁹ Judgment referred to by: Jamila Hamida and Zarrouk Al-Arabi, “The Jurisdiction of the Administrative Judiciary in the Field of Environmental Disputes” (2018) 05 Journal of Scientific Research in Environmental Legislation, P.194.

3.1.1 The cooperation between North African countries in the field of water supply and facing water scarcity.

In the North of Africa water resources are under increasing pressure amid population and industrial growth,⁴⁰ irrigated agriculture, urbanization, tourism, climate change, overexploitation of aquifers and deteriorating water quality.⁴¹

One issue draws our attention, since it concerns all the North African countries which is the shared water resources. These countries have large shared underground water reservoirs. For example, Morocco shares many aquifers with its neighbor's, as follows:

Name	States sharing the aquifer	Area (km ²)
Tindouf	Algeria / Mauritania / Morocco	160,000-221,019
Errachidia	Algeria / Morocco	18,500
Figuig	Algeria / Morocco	1,500-1,546
Shatt Tikri- Al-Hawaita	Algeria / Morocco	3,560-4,700
Ain Bani Mutahar	Algeria / Morocco	18,315-20,000
Ankad	Algeria / Morocco	3,500-4,677
Jabal Alhambra	Algeria / Morocco	561-1,250
Tarifa	Algeria / Morocco	13,100

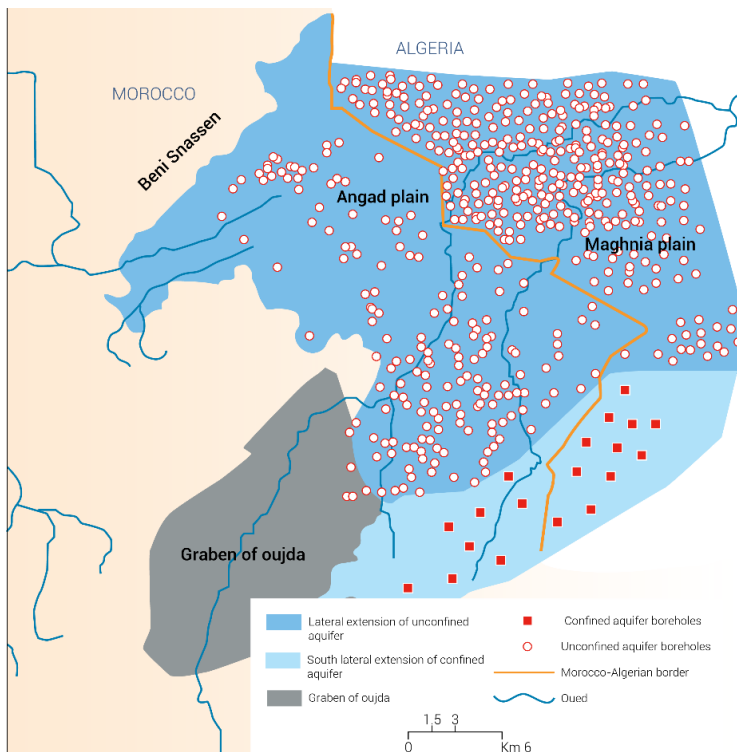
Table 1: Moroccan transboundary aquifers⁴²

Morocco also shares with Algeria the Bounaim-Tafna basin, which is located in the northeast of Morocco and northwest of Algeria and covers an area of 2,650 square kilometers (about 70% of which is in Morocco).

⁴⁰ Luis Miguel Silva-Novoa Sánchez and others, 'Governance and Sustainability Challenges in the Water Policy of Morocco 1995–2020: Insights from the Middle Draa Valley' (2022) Multidisciplinary Digital Publishing Institute <<https://doi.org/10.3390/w14182932>>.

⁴¹ Ibid.

⁴² Module 4: Management of transboundary aquifers (bund.de) https://www.bgr.bund.de/EN/Themen/Wasser/Politikberatung_GW/Downloads/Module_4.pdf?__blob=publicationFile&v%205

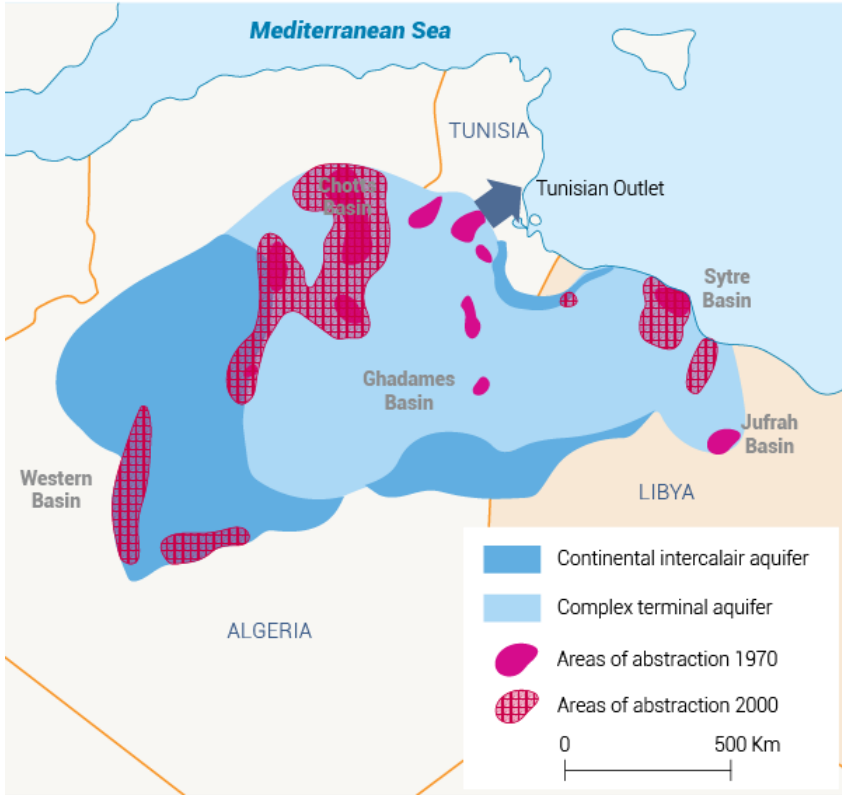


Map 1: The Bounaim-Tafna Basin⁴³

Algeria also shares five other aquifers with its neighbors: Tin-Sérririne with Niger, Air Christalline with Mali and Niger, Todni with Mali, and Mauritania. The two large and overlapping groundwater basins in the south, the Terminal Boat Basin, and the Continental Intersecting Basin, cover an area of 600,000 square kilometers and annually provide up to 40,000 billion cubic meters of water. This important source of groundwater is part of one of

⁴³ Zarhloule Y and others, 'Water as Parameter of Cooperation between Morocco and Algeria the Case of Transboundary Stressed Aquifers of Bounaim-Tafna Basin' (2010) *Acque Sotterranee*.

the largest in the world and is shared with Libya (20%) and Tunisia (10%)⁴⁴.



Map Northern Desert Basin⁴⁵

Given the importance of this aquifers and the water stress facing all north African countries, it is normal to suspect intensive cooperation between these

⁴⁴ Zella L, L'eau pénurie ou incurie (Alger : OPU 2017).

⁴⁵ Sadeg SA and Samarraï K, 'Libya Water File' (2020) FANACK Water https://www.researchgate.net/publication/341508298_Libya_Water_file_DRAFT.

countries in terms of sustainable water resources management, since they face the same constraints through, trans-boundary water agreements, and extensive contacts and links to address this common threat.

The cooperation between those countries is not as advanced as it should be, with one exception is the Northwest Sahara Aquifer System Basin, which is a consultative body that serves Algeria, Libya, and Tunisia. However, the Northwest Sahara aquifer is not being replenished naturally in a sustainable way, and it clearly has seen an immense number of wells dug and may well be exhausted within our lifetimes. As far as we know the remaining trans-boundary water basins in the Maghreb, none have cooperative agreements.⁴⁶

Implementing an integrated water resource management policy (IWRM)⁴⁷ requires coordination with neighboring states, especially in the case of shared aquifers, shared water basins. In fact, it means that if Tunisia and Algeria share an aquifer, its IWRM policy needs to be at least bi-national⁴⁸.

3.2 The deficiencies in the legal framework relating to water

There are many elements that can be improved in terms of the legal framework on water in the Maghreb countries with the aim of ensuring access to water for the citizens of this region in a sustainable way.

The first one and the main elements is to allow citizens and civil society associations to present legal actions with the aim of defending the right to water and the use of this resource in a sustainable way. Access to justice in this context will be to demand the implementation of government obligations and to demand reparation for the damage caused to the environment and water resources and to prevent the occurrence of this damage at best.

To the best of our knowledge, no cases in this purpose have been presented to the judiciary of the Maghreb countries, this is mainly due to the nature of the legal system in these countries which is deeply rooted in civil law

⁴⁶ Khayat Z, 'Overview of Transboundary Water Cooperation in the Arab Region, Enhancing Transboundary Water Cooperation in the MENA Region – Progress, Challenges and Opportunities' ((Directed by United Nations) <<https://unece.org/info/events/event/348961>> accessed March 3, 2020.

⁴⁷ UNEP, 'Options for Decoupling Economic Growth from Water Use and Water Pollution. Report of the International Resource Panel Working Group on Sustainable Water Management, Digest of Middle East Studies' (2015) <https://www.resourcepanel.org/reports/options-decoupling-economic-growth-water-use-and-water-pollution>.

⁴⁸ Kalpakian JV, 'The Lack of Environmental Cooperation in the Maghreb' (2023) 32 Digest of Middle East Studies, pp. 246-256.

traditions. Therefore, justiciability is codified according to legal texts, and there are a set of conditions that must be met by the parties. To bring a case to a court of law a plaintiff must have the standing which refers to the set of requirements that a plaintiff must meet to demonstrate that they are entitled to bring a claim before the court.⁴⁹ The lawsuit must be initiated by the right holder, his successor, or his legal representative. Standing refers also to the advantage that the plaintiff would obtain if the judge recognized the validity of his claim⁵⁰. The plaintiff must prove that they were injured and that their injury was caused by the defendant's actions. In addition, their injury must be actual and specific. We might imagine that a citizen can have the interest and the capacity to seek justice to protect their right to water. However, there must be a procedural basis for exercising this right and explaining how the proceedings are organized before the courts⁵¹.

In the same vein, protection of water resources largely depends on the role played by civil society and the active involvement of associations in the efforts of public authorities in this context. This active role depends on the facilities granted by the law of the countries under study and, above all, on the possibility of going to court to demand the effective protection of water sources and the condemnation of attacks on these resources.

Despite the importance of this role and from what we know, no association has filed a legal claim against the government or an economic actor regarding this issue. One reason for this situation, is that Moroccan law, for example, does not allow civil society associations to present legal actions to defend the general interest and the right to live in a healthy environment, which largely limits the scope for any legal actions before the judiciary.

In accordance with judicial decisions cited above, it is become clear that most of the claimants for the recognition of environmental responsibility, the removal of damage, or the protection of the water public domain are the government and public institutions. When it is not related to this, the plaintiff, in most cases, defends his personal interests and demands only compensation for the damage he suffered or his property. Unfortunately, we note the absence of associations or people calling for the preservation or protection of the environmental domain and the public domain of water, with

⁴⁹ Dahir Carrying Law No. 1-74-447 of 28 September 1974 approving the text of the Civil Procedure Code, as amended and supplemented.

⁵⁰ Bouwer K and others, *Climate Litigation and Justice in Africa* (1st edn, Bristol University Press 2024), P.105.

⁵¹ *Ibid*, PP..274-290.

the desire to protect this domain in the public interest and being aware of the importance of such protection. It is also clear that the sums awarded in the framework of compensation for environmental damage are underestimated, in comparison with the cost required to restore the situation to what it was before the occurrence of the accident causing the damage.

3.3 Gaps and weaknesses related to the governance of water resources

To ensure the enforcement of the legal protection of water, the Maghreb countries set up many institutions mandated to monitor and track the implementation of these provisions were created. These institutions are committed to ensure the governance of water resources and the adherence of economic actors and individuals to environmental protection laws in general and water law in particular.

We will focus our study on institutions in charge only of the water sector. For example, in Morocco we have horizontal bodies (Ministries, Economic, The Economic, Social and Environmental Council, judiciary, and so on) and sectorial bodies (Water Basin Agency, National Water and Forestry Agency; High Water and Climate Council, Environmental Police, Water police, and so on). Some of these bodies only play a consultative role, whereas others have decision-making authority. And we find the same organization in the other Maghreb countries⁵².

This multiplication of institutions and bodies leads to the overlap between competences,⁵³ this influences the decision-making process and threatens the effectiveness of public policies in the field of water. To ensure coordination and efficiency between all those institutions, the legal provision needs to be clarified.⁵⁴

Or at the best, one single body must lead a program or policy, this will ensure the alignment of government environmental programs. Nevertheless, it can borrow some environmental competencies from other ministries in

⁵² Nour MH and others, 'Tunisia Water Sector M&E Rapid Assessment Report' (2020).

⁵³ Legrouri A, Sendide K and Kalpakian J, 'Enhancing Integrity in Water Governance in Morocco: Opportunities and Challenges' (2019) 3(1) *Journal of Governance and Integrity* 1.

⁵⁴ On the importance of enacting clear and comprehensive climate change laws, see: Olawuyi D, 'Energy Poverty in the Middle East and North African (MENA) Region: Divergent Tales and Future Prospects', in Del Guayo I, and others, *Energy Law and Energy Justice* (Oxford University Press, 2020) 254-272.

charge of other government sectors, that intersect in one way or another with the protection of the environment, such as the ministries of the interior, higher education, scientific research, economy and finance, and others.⁵⁵ To implement public about water, these countries have established the necessary reporting bodies with the capacity to take measures to protect water and punish offenders. Among these bodies we find in Morocco the Water Basin agencies. The tasks of these Agencies are measurements, research, and carrying out the necessary studies to assess and track the development of water resources at quantitative and quality levels. The agency also prepares a blueprint for the integrated development and implementation of water resources, local water management schemes and a blueprint for the management of water failure in the event of drought⁵⁶.

However, the main challenge remains how to create synergies among all the stakeholders dealing with environmental policy.⁵⁷ 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. which goes against the tenets of the governance. A weakness that has been recognized by the Moroccan government.⁵⁸

4. RECOMMENDATION TO STRENGTHEN THE LEGAL WATER FRAMEWORK IN THE MAGHREB COUNTRIES

All the above clearly illustrates the need to review some legal provisions concerning the legal water framework in the Maghreb countries, so in this section we will try to suggest possible solutions to fill the gaps that may have

⁵⁵ Fakhri R and Hassouni YL, 'The Enforcement of the Environmental Laws in Morocco' paper presented at the 3rd ASSELLMU Conference and Workshop was held on 1–5 November 2021 at the College of Law, Hamad Bin Khalifa University, Doha, Qatar

⁵⁶ Fakhri R and Hassouni YL, 'Law and Climate Change in North African Countries: Morocco as a Case Study' Op. cit. P.284.

⁵⁷ Miqdad H, *Environmental Law (2020)* (1st edn, Imprimerie Najah ElJadida, Casablanca). For more details, see the official website of the Ministry of Energy, Mines and the Environment, Department of the Environment at: <http://www.envi.rounment.gov.ma/fr/>

⁵⁸ Morocco Climate Change Policy < https://www.umi.ac.ma/wp-content/uploads/2020/11/ODD-13-A9-politique_du_changement_climatique_au_maroc.pdf

an impact on the protection of water resources and the use of these resources in a sustainable manner.

4.1 Strengthening environmental litigation and the role of civil society

The domestic laws of the Maghreb countries must provide a clear procedure that allows citizens and civil society associations to demand the application of provisions relating to the legal protection of water resources, if necessary, through courts of law.

This can be achieved by reforming both environmental protection laws and the Code of Civil Procedure, the legal text that organizes the procedure before the courts. Thus, these texts must explicitly state that when the object of the legal action relates to the protection of water resources or the environment, the author of this action must be exempted from the requirements to prove the standing, based on the principle that the person carrying out the action wishes to defend a common interest of all the citizens of the country and to protect the rights of future generations.

Or at least, take the same position as the Algerian legislator, which authorized the associations for the defense of the environment the right to sue and contest all acts and behaviors that constitute an attack against the environment. The text was stated in the following wording: “Without prejudice to the legal provisions in force: the associations stipulated in article 35 above may file a lawsuit before the competent judicial authorities for any harm to the environment, even in cases that do not concern the persons who regularly cause it.”

Contrary to the Moroccan legislator, who indicated that only associations for the protection of the environment, which have the status of public interest, have the right to resort to the judiciary. It is unfortunate, as it was necessary at least to provide for the possibility of granting licenses in this regard and not to be limited to having this capacity due to the difficulty of obtaining it, especially for newly established associations.

It is useful to recall in this regard the pivotal role that civil society must play to defend and preserve the environment in general and water resources in particular, since it is a matter of common interest, and the environment is a common property that entitles all individuals to enjoy themselves without disposing or completely depleting it. This is to preserve the rights of future generations within the framework of the principle of sustainable development.

However, strengthening the role of civil society in environmental litigation does not guarantee the protection of water resources and their sustainable management, it is necessary to strengthen the institutions in charge of implementing the legal provisions relating to water protection.

4.2 Enforce the governance of water resources

The Maghreb suffers from water stress that continues to increase. Water scarcity is a direct threat to the country's economic, environmental, and social balances, particularly in arid and semi-arid regions and those whose incomes depend heavily on water resources. Based on this observation, the issue of water is one of the most urgent to be addressed through an approach that fully integrates its scarcity and gives primacy to its long-term preservation, for current and future generations.⁵⁹

Agriculture is the main user of water resources in the Maghreb countries, in Morocco for example, agriculture uses up to 87.8% of total water consumption.⁶⁰ This is why it is recommended to work more towards an agriculture that is both modern and responsible, from an environmental and social point of view, capable of meeting the objective of food sovereignty while integrating the requirements of resource sustainability and resilience to climate change. By promoting an agricultural use of water that considers its scarcity, by favoring sectors considered essential to food sovereignty, and by mobilizing the most advanced technologies in terms of resilience and water saving. It is also appropriate to set up incentive mechanisms for water conservation through irrigation quotas proportional to the agricultural area of the farms. It is also recommended to set up a pricing system that reflects the real value of water and encourages the rationalization of uses and the management of its scarcity.⁶¹

To ensure the enforcement of these recommendations, we need to establish a specific institution to put an end to the problems of coordinating public policies relating to water and establishing convergence between the different sectoral strategies. This institution could be responsible for dealing with the issue of water according to an integrated approach, from upstream to downstream. It will establish and approve the tariffs for the services of the

⁵⁹ “General Report on the New Development Model in Morocco, the Special Committee on the New Development Model” (April 2021) P.143.

⁶⁰ Samih I, ‘Modelling intersectoral water consumption in the Moroccan economy’ (14 September 2020) 14 Les Brefs du Plan.

⁶¹ Idem.

various infrastructures for the mobilization, production and transport of water.

Water needs cannot be met in the future without the mobilization of non-conventional resources and the preservation of groundwater resources. First, it will be necessary to rationalize the use of groundwater through methods of exploitation that consider the regeneration capacity of groundwater. In addition, it will be appropriate to make extensive use of seawater desalination to ensure a secure complement to the water supply of coastal cities, to free up additional water resources for irrigated areas and to significantly reduce water losses.⁶²

Finally, it is important to review the legal mechanisms for punishing offences or attacks on water resources, the current system is mainly based on custodial sentences for reduced periods and financial fines in most cases are derisory. This type of sanction is not a deterrent, which does not prevent the guilty from reoffending, not to mention that these sanctions are not intended to repair the damage caused to the environment and water resources.

This is why we believe it is important to review the sanction mechanism in the Maghreb countries by introducing softer forms of penalties that aim more towards the restoration of the environment, rather than just the punishment of the offender.

The Maghreb countries can use the example of Algeria because this country is the first to set up the penalty of community service as an alternative to custodial punishment. This kind of sanction must be recommended. The judiciary may replace the prison sentence with community service, for a period ranging from 40 to 600 hours, calculating two hours for each day of imprisonment for a maximum period of 18 months. The application of the penalty of community service requires several conditions set forth in Article 5 bis 1 of the Penal Code to be met:

- The accused does not have a criminal record.
- The accused was at least 16 years old at the time of the commission of the crime.
- The penalty for the crime committed does not exceed three years imprisonment.

⁶² El-Ghizela S, and others, 'Desalination in Morocco: status and prospects' (2021) Desalination Publications <doi: 10.5004/dwt.2021.27506>.

- That sentence imposed does not exceed one year in prison.
- The penalty for working for the public benefit against a minor shall not be less than 20 hours and not more than 300 hours.

In Morocco, there is a project law No. 22-43 amending the penal code that is currently under discussion in parliament, which seeks to introduce community service as an alternative to custodial punishments.

Indeed, the penalty of imprisonment for a short period is not a solution to environmental crime, and therefore the introduction of non-custodial sentences in the field of environmental and water protection would repair the damage they cause and deter all those who facilitate abuse of the environment.

In the same register, it seems very important to activate the role of the water police to effectively combat the abuses of the use and exploitation of water resources. In Morocco, for example, this experiment has proved to be a failure, as wells are built all over the place without authorization or monitoring. These police have not played a role in deterring practices that deplete water resources in the country. This is mainly due to the lack of clarity of the roles of this police force in the field, and the limited powers conferred on it by the legal text, in addition to the multiplicity of actors also involved in the appointment of water police officers, not to mention the limited human and logistical resources available to these police. The Maghreb countries must grant the Water Police and the Environmental Police the necessary material and logistical capabilities to activate their role in the field of inspection, control, and prevention.

4.3 Enforce the cooperation between North African countries.

The political issues between some North African countries can be an obstacle to cooperation on the implementation of integrated water resources management policies. However, given the importance of the crisis that these countries are facing, it is believed that no political issue is as important as enabling citizens to have access to water in a sustainable way.

Considering these political relations, it is still possible to find coordination mechanisms at least regarding shared groundwater.⁶³ It will be perfect, if we can activate the Arab Maghreb Union (AMU),⁶⁴ this institution offers all the

⁶³ Ibid.

⁶⁴ The Arab Maghreb Union (AMU) is a regional union established on 17 February 1989 in Marrakech, Morocco. It consists of five countries: Morocco, Algeria,

necessary mechanisms for the implementation of a common policy on the management of water resources and the sharing of information and lessons on this subject.

Bearing in mind that the members of this Union had already begun a major work of rapprochement in this direction with the signing of the Maghreb Charter on the Environment and Sustainable Development on 11 November 1992 in Nouakchott, Mauritania⁶⁵. Unfortunately, the current state of political relations between the countries composing this Union does not permit this. Then it makes more sense to look for other approaches.

Thus, the first attempts at rapprochement can be organized under the auspices of the Arab Water Council. The purpose of this council is to promote deeper understanding and better management of the water resources in the Arab states in a multi-disciplinary, non-political, professional, and scientific approach to disseminate knowledge and enhance sharing of experiences to achieve integrated water resources management for sustainable development and good water governance for the benefit of the Arab people⁶⁶.

The Council provides an enabling environment for Maghreb countries to exchange information and explore opportunities to establish and strengthen cooperation. The first scenario, the Maghreb countries would participate in Arab Water Council forums and coordinate policy, exchange information, and examine the potential for enhanced trans-boundary cooperation under that umbrella.

The final objective will be to set up a body between the Maghreb countries dedicated to water-related issues, why not within the framework of the Arab Maghreb Union, this legally independent entity can allow the implementation of real cooperation between these countries.

The aims of such a dialogue would be the construction of an adjunct organization to the Union du Maghreb Arabe which would focus on water

Tunisia, Libya, and Mauritania. The AMU is a Maghreb economic and integration organization that seeks the customs union of member countries and the free movement of people, services, and products to complete the Maghreb economic union.

⁶⁵ To see the stipulations of the Maghreb Charter on the Environment and Sustainable Development <http://www.moqatel.com/openshare/Wthack/Molhak/MalahekMag/AMalahekMagrab38_2-1.htm_cvt.htm> accessed June 12, 2024.

⁶⁶ For more details about The Arab Water Council, see <<https://arabwatercouncil.org/index.php?lang=en>> accessed June 12, 2024.

issues; given its own legal identity and considerable autonomy, such an organization would shield water issues from the vagaries of politics and allow cooperation to proceed unhindered across state boundaries.

Such an organization could focus on regional cooperation concerning the reuse of urban wastewater, universalizing drip irrigation, emergency water inter-basin transfer, flood water storage, desalination, urban water fixture codes and the exchange of expertise concerning controlling illegal wells.

Indeed, this will at least make it possible to benefit from the progress made by some countries without having to invest large sums in research and development, the sharing of information, experience and expertise will be very opportune, and these States face the same risks and constraints, and they have the same socio-economic context. The already existing Arab Water Council would serve a starting point for this more official approach. The second mechanism of approach between Maghreb countries will be less formal, in this context the leaders of the countries concerned can meet informally during an event such as the COP (side event), scientific meetings or seminars, to discuss scientifically the constraints shared by these countries about water.

The second alternative would be an informal one. Under this approach, water professionals would begin discussing informal means of cooperation. While this would still need the permission of the governments in question, it can be unofficial, meaning that the meetings would not need formal sanction or organization. This approach can be more flexible, as it does not normally require formal authorization or even a pre-established legal framework.

The first path leading through the Arab Water Council would be faster and more comprehensive. The second path would be slower, but more disaggregated and thus decentralized. Confronting the Trade-offs Assuming that it is possible only to pursue a single approach, there are pluses and minuses for each approach. The use of the Arab Water Council as an umbrella would lead to strong and desirable outcomes, but it is also far less politically feasible, either for activists or for policy entrepreneurs within government. In general, the first approach can be best pursued by those with official standing and administrative responsibilities, the second approach is for everyone else including academics.

5. CONCLUSION

The Maghreb countries share the same climatic characteristics and above all they suffer in the same way from the repercussions of global warming, yet there is, as far as we know, no policy of cooperation and sharing of experience between them, which is very regrettable given the reciprocal interests that these states can benefit from, political obstacles should in no way be an excuse to prevent the implementation of a real policy cooperation in the management of water resources, since it is a matter of survival.

Recent years have witnessed a great dynamism at the level of North African countries about legal systems for environmental protection, and special importance has been given to water laws in these countries. Maintaining water security is among the strategic priorities, especially in the face of drought waves that the region suffers from and the great depletion of the surface and ground water resources.

However, it seems that there is a gap between the interest of public authorities in the management of water stress and the lack of water resources and the public awareness of citizens of the obligation to preserve these scarce resources. In fact, at least in Morocco, citizens use water in the same way as if there was no risk of scarcity, whereas this is a certain reality given the methodological data and the situation of underground water.

This situation calls into question the education on the use of water resources. The environmental associations must work together with the public authorities to raise awareness of the citizens about the necessity of the preservation of water resources. These include the establishment of water user associations, the introduction of education and training initiatives and awareness campaigns targeting the public and the agricultural sector. There is an urgent need to promote public awareness to minimize drought damage, reduce losses, increase the efficiency of water use in irrigation systems and improve wastewater management.

It also seems very important to activate the role of the water police to effectively combat the abuses of the use and exploitation of water resources. In Morocco, for example, this experiment has proved to be a failure, as wells are built all over the place without authorization or monitoring. These police have not played a role in deterring practices that deplete water resources in the country. This is mainly due to the lack of clarity of the roles of this police force in the field, and the limited powers conferred on it by the legal text, in addition to the multiplicity of actors also involved in the appointment of

water police officers, not to mention the limited human and logistical resources available to these police. The Maghreb countries must grant the Water Police and the Environmental Police the necessary material and logistical capabilities to activate their role in the field of inspection, control, and prevention.

To activate the raising of the sense of environmental responsibility among the general citizens and human rights awareness of the negative effects and repercussions of behavior harmful to the environment on the individual, society, and sustainable development as a whole, we the State must include educational materials on environmental culture in the teaching curricula since the early years of the study, which makes the culture of preserving the environment and sustainable development an essential pillar of the system of knowledge and learned behavior.

In the whole of this research, we can say that despite the growing awareness of this problem and the multiplicity of legal texts and institutions involved directly or indirectly in working to protect water resources. It is noticeable that dealing with water has not yet risen to the point of being an individual and collective affair. The practical interpretation of the contents of the legal texts related to the protection of water resources should allow people to demand non-aggression against these resources and demand their protection. This is demonstrated by the practical reality and the absence of a culture of litigation regarding the protection of water resources against all forms of excessive exploitation, pollution, occupation of the water public domain or other forms of abuse of water resources.

At the end, in view of the environmental situation that the world has become suffering from, and regarding water resources in the North African region, there is no longer a place to allow the aggression on the environment to meet the materialistic personal whims and the accumulation of wealth. Therefore, there is a need to create collective awareness of the importance of preserving water resources and the environment and protecting resources for future generations, which calls for action to awaken conscience and morals, which requires civic and environmental education. Such collective awareness will accelerate the abilities of Maghreb countries to achieve Sustainable Development Goal, ensure access to water for all, and accelerate the sustainable management of water resources.