

WATER GOVERNANCE IN A CONTEXT OF SCARCITY

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Morocco has made access to drinking water a priority for many years. Among other actions, the country has adopted a series of legislative measures and institutional reforms to improve how water management is defined and regulated, remedy inequalities of access, protect water quantity and quality, and reuse it. In large urban areas, innovative mechanisms such as subsidized connections have been put in place to help the most disadvantaged communities. However, the current climate emergency, with its particularly negative impact on water, means we need to rethink the challenges of water and its governance. In a context marked by scarcity, ensuring water sustainability is crucial, as clearly laid out in the Sustainable Development Goals (Goal 6). We must reassess the resilience of how this vital resource is managed by adopting participative, cross-sectoral and interdisciplinary approaches to develop the tools for the governance model now needed: social water management.

INTRODUCTION

Morocco has long prioritized water and government statements as well as a number of concrete actions clearly point to an awareness of the value of water resources. This recognition of water's importance goes hand in hand with a political commitment to organizing and controlling the way it is managed. His Majesty King Mohammed VI addressed the nation on the 19th anniversary of his accession to the throne in July 2018 with a speech that once again underlined the priority status of water as well as its role in stability: "My keenness to improve social conditions and tackle economic challenges is second only to my determination to preserve and develop our country's strategic resources, particularly water. Indeed, the latter plays a fundamental role in development and stability."

Since independence, Morocco has implemented water policies and legislative and institutional measures to improve the regulation of water management and distribution to Moroccans, including the most vulnerable. In the current context of water scarcity and climate change, governance systems for this essential resource have to be rethought.

MANAGING SCARCITY

Natural conditions and a location in an arid or semi-arid region mean water resources are limited and distributed irregularly in time and space. They therefore need to be protected, used and even reused within an effective governance model.

Although a low emitter of greenhouse gases, Morocco is not exempt from warning signs of probable impacts of climate change. All its water comes from the sky,¹ raising the risk of more frequent and intense droughts, flooding, a fall in the level of groundwater and average amounts of water in reservoirs, reduced annual rainfall and perhaps a change in sea level.

While it continues to come under ideological attack, the climate emergency is now an established fact. Water bears the brunt of its effects, which in turn hinder efforts to embrace sustainable development. The early 21st century is undeniably bringing us face to face with a series of complex social, economic, environmental and political changes.

Reports by the IPCC² sound the alarm about the impacts of climate change that will slow economic growth and poverty reduction in low-income countries, further erode food security and create new pockets of poverty even in high-income countries, accentuating inequalities. It is our duty to change our responses and act with greater speed. A series of preventive processes and measures to combat vulnerability while encouraging adaptation has already been implemented. Putting these into practice involves applying the principles of sustainable development to sector-specific strategies and the actions of operators providing water and sanitation services.

The new challenges of the climate emergency add to the more established challenges. For instance, Moroccan cities are now more heavily populated than rural areas for the first time in the country's history. The impact of population growth combined with ever-greater soil sealing caused by urbanization, coastal development and housing build-up in former medinas, and the development of economic activities generate greater and more varied demand, putting more and more pressure on water resources.

In demographic terms, Morocco is now home to 36 million people, up from 20 million in 1980. It took over 50 years for the population to double. Between 1900 and 1952, the population rose from 5 to 9.3 million.

These variables explain, among other factors, the decision to implement a policy designed to endow the country with the necessary infrastructure for exploiting and controlling water (such as the reservoir policy).³ The goal is to optimize

or possibly reuse water, ensure that water is distributed fairly, promote good health and ensure food security.

LEGISLATIVE MEASURES AND INSTITUTIONAL REFORMS IN MOROCCO

Just like the rest of the planet, Morocco has to tackle the thorny questions of how to:

- remedy unequal access to water and sanitation between towns and cities and their different districts, regions and environments (rural regions, substandard housing, and so on);
- ensure and organize distribution between different sectors (domestic, industrial, agricultural and tourism);
- protect the quantity and quality of water resources, which have become scarcer and more vulnerable, and reuse the water that is produced;
- work to ensure that water is a factor for cooperation, solidarity and social peace rather than a source of conflict and/or claims and possible insecurity;
- anticipate the future and ensure sustainability. The processes involved in meeting the Sustainable Development Goals, particularly Goal 6,⁴ and their success depend on the abundance or scarcity of this shared asset.

Morocco has made significant progress and produced several reports and studies that show what remains to be done. These highlight other, complex issues that interact with water and polarize a multitude of problems and challenges that need tackling.

The 1995 Law 10-95 on water⁵ represented a significant step forward by providing a unifying text setting out the basic principles of water management, including:

- public ownership of water;
- uniform water management;
- first recognition of the fight against water pollution and for water regeneration (Chapter VI);
- adoption of the user-pays and polluter-pays principles;
- water management consultation;
- decentralized management by drainage basin;
- recognition of the social, economic and environmental value of water;
- solidarity between users, sectors and regions.

Adopted in August 2016, Law 36-15⁶ confirms and supplements Law 10-95 on water by expanding its normative content and closing a number of loopholes. Its main goals consist of promoting effective water governance by simplifying procedures, reinforcing the legal framework for reusing water,

1 Morocco does not have shared water resources other than the Kiss River, which also runs through Algeria, the Guir and the Figuig aquifer.

2 See the IPCC Special Report on Global Warming of 1.5 °C, World Meteorological Organization, Bulletin no.: Vol 67 (2) - 2018.

3 Morocco has 145 large dams.

4 According to the UN: Goal 6 consists of ensuring access to drinking water and sanitation. It includes targets for protecting and restoring water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes. It also aims to improve water quality and reduce water pollution, particularly pollution caused by hazardous chemicals. Other targets involve expanding international cooperation and implementing integrated water resources management at all levels.

5 Dahir 1-95-154 of August 16, 1995 promulgated Law 10-95 on water.

6 Dahir 1-16-113 of 6 Kaada 1437 (August 10, 2016) promulgated Law 36-15 on water. See also Dahir 1-14-09 of March 6, 2014 promulgating framework law 99-12 covering the national environment and sustainable development charter.

establishing a legal framework for desalinating seawater, strengthening mechanisms for protecting water resources, and improving measures for guarding against extreme phenomena linked to climate change.

The new law extends the use of the public water domain to wetlands, rainwater and stormwater. It also covers the management of water-based risks to improve protection of people and goods as well as the coherent, collaborative planning of water so it can be managed rationally and sustainably, improved and reused.

Other key improvements include: (i) the right of every citizen to have access to water in sufficient quantity and of acceptable quality; (ii) environmental protection and the promotion of sustainable development; (iii) integrated, decentralized, territorialized and participative water management that respects good governance practices, adopts a gender-sensitive approach, and ensures territorial and socioeconomic solidarity.

The new mechanism reinforces quality standards (sanitation) and water conservation (outflows), and allows public-private partnerships. It introduces standards that apply to the construction, maintenance, use and safety of water infrastructure.

The law endorses the principle of integrated, decentralized, collaborative management by drainage basin as established by a new, two-tiered institutional mechanism: at the drainage basin level, with a basin committee, and the national level, with an inter-ministerial commission.

In terms of energy, Morocco is adopting a positive approach by setting a target of 52% renewable energy by 2030 and implementing initiatives linking water, sanitation and energy.

The gradual incorporation of water imperatives into sector-specific policies for new ministerial departments is also under way.

Morocco has become one of the nations that have made water access a constitutionally protected right. This is a major step forward in 21st-century human rights, symbolizing further advances in economic, cultural, social and environmental rights. Globalization has led to the emergence of water on the public stage, where it has become the subject of legal efforts to have it gradually recognized – implicitly then explicitly – as a fundamental human right.

As a highly active international actor, Morocco voted in favor of Resolution 64/292 at the United Nations General Assembly on July 28, 2010. The resolution explicitly recognized the human right to clean, safe drinking water as essential to the right to life and the realization of all human rights. It also voted in favor of further resolutions, entitled “Human rights to water and sanitation” adopted by the UN General Assembly and Human Rights Council, which drew a distinction between the right to water and the right to sanitation. In keeping with

these resolutions, Morocco dedicated article 31 of its 2011 Constitution to the right to water.⁷

The Moroccan approach is based on the binding nature of this right, by linking the right to water to the right to the environment and to sustainable development, paving the way for a holistic approach. Given that sustainable development is rooted in three key spheres – ecological, economic and social – this gives the individual an active role in development that can even be as a mediator between humans and nature. Furthermore, it calls for action that is territorialized, local and gender-sensitive, since it promotes equal access for women and men. The right was again endorsed in the aforementioned Law 36-15 on water.

Nevertheless, the right can only be constructed on the basis of knowledge of water availability and services.

The new institutional provisions introduced by Law 36-15 open the door to consultations between elected representatives, professional associations, user groups, manufacturers, farmers, public establishments and ministerial departments. These actors can then decide on plans, programs and water resource development projects relating to their drainage basin.

The law offers value added due to the rules for its implementation, which can make a considerable contribution to improving sanitation management provided that an effort is made to harmonize them.⁸

Municipal water distribution operators have made targeted use of the private sector in large cities: Casablanca in 1997 with Lyonnaise des Eaux; Tangier-Tétouan in 2002 and Rabat in 2004 with Veolia, alongside, for medium-sized cities, autonomous public corporations that come under the control of the Ministry of the Interior as part of the decentralization process, since the Local Authority Charter gives local authorities the power to decide how local public services should be managed.⁹

7 Article 31 of the 2011 Constitution specifies that: “The State, public establishments and local authorities work for the mobilization of all the means available to facilitate equal access for all citizens, women and men, to conditions that permit their enjoyment of the right to:
• access to water and a healthy environment;
• sustainable development.”

8 In addition to the ministries and their local representatives, including the relevant departments of autonomous public corporations, concession services and local authorities under the control of the Ministry of the Interior, the Higher Council of Water and Climate provides a coordination platform at the national level; on the operational level, this means that actions taken by several different bodies converge to meet the goal of providing access to water and sanitation.
• On the first level is the local authority or local authority association (owner of the infrastructure with the power to choose management mechanisms for water and sanitation services).
• ONEE [Office National de Electricité et de l'Eau Potable] (in urban areas and surrounding built-up areas and for the Rural Water Supply Program – PAGER).
• The Basin Agency.
• Public corporations under control of the Ministry of the Interior.
• Concession holders, national and international private operators.
• Associations (particularly associations of farm water users as part of PAGER).

9 Dahir 1-02-297 of October 3, 2002 promulgating Law 78-00 covering the Local Authority Charter (Official Bulletin of November 21, 2002).

CITIES: FIRST TO BENEFIT FROM THE GRADUAL SPREAD OF ACCESS TO WATER AND SANITATION

Drinking water is a priority in Morocco. All urban residents have access to an uninterrupted supply of drinking water in their homes.

A gradually increasing number of communities have been given access to this service. The state invests heavily in access to essential services for the poorest urban communities by using appropriate and innovative mechanisms.

Specific measures for the most disadvantaged were applied from the 1980s onward, with the launch of Operation Subsidized Connections, giving landlords or tenants the option to pay for their connections in monthly installments according to their means.

In the same spirit, in response to the exclusion of informal housing, in May 2005 King Mohamed VI launched the National Initiative for Human Development (INDH), one of the components in the strategy for upgrading every city, covering:

- domestic connections and sanitation (collection and treatment) in unstructured districts;
- *restructuring* and *rehousing* of communities living in informal housing districts.
- The INDH-Inmae project for greater Casablanca illustrates a further initiative taken by the state and the concession operator to combat urban poverty. The project aims to identify technical and financial solutions for access to domestic water, sanitation and electricity for 500,000 people.

The territorialized, banded pricing model means operators can apply an appropriate, mixed rate and use the first band as a social band.

A national sanitation plan, laying out a medium-term national strategy for wastewater collection and treatment, was adopted in 2006. The plan was designed to accelerate action in an area where the country had fallen behind: protection of water quality, reuse of water, and combating of wastewater discharges into the natural environment, which reached 600 cubic meters in 2005 and are projected to rise to 900 cubic meters in 2020.

Most African states, where almost all our migrants are from,¹⁰ have acknowledged that the right to water is a human right. However, they implement it in different ways, reflecting each country's specific options, financial resources and available water.

In this context, two additional factors underscore the importance of the water law:

- **potential insecurity:** the management of cross-border water resources is problematic in Africa. The continent is home to around 63 cross-border international drainage basins linked to states that cover 64% of the continent's surface area and account for 77% of its population and 93% of its surface freshwater. Only 19 of them are covered by a cross-border water agreement, while 15 of the agreements do not apply to all the states bordering the water resource in question;

- proven demand, particularly in June 2015 in the run-up to the Paris Climate Change Conference, when 162 INDCs¹⁰ noted that the water sector is a priority for African countries as part of efforts to adapt and monitor agriculture and health, sectors that are in direct interaction with water.

EFFECTIVE GOVERNANCE FOR SUCCESSFUL RESILIENCE

In the context of unequal distribution of water as illustrated by territorial disparities and heightened by climate change, governance is a crucial issue.

Awareness of the risks has grown, particularly during the Covid-19 pandemic. It validates the quest for a new equilibrium between economic activities, the natural environment and the human world. It could provide the basis for defining integrated policies to coordinate sector-specific public actions in the form of coherent, sustainable and possibly converging strategies and actions at the appropriate levels. Decisions can no longer be made only by pioneering scientists and development experts. At both the national and local levels, coordination, participation and harmonization as well as territorialized, decentralized, local action are now core concepts.

However, despite efforts to boost coordination, the observed impacts tend to be sector-specific, which is useful, but does not address the fact that water is a cross-cutting issue. If we wish to analyze it through the lens of climate change, we can only do so by adopting a comprehensive, cross-sector approach designed to re-embed the economy in the social order (sustainable development and social responsibility).

Initially tackled with a largely technical approach, the complex reality of this vital resource has gradually been taken into consideration. But what about implementation? We need to identify new modes of governance. The concept of water as "everyone's business" needs all development actors to get involved and take on responsibilities. We are switching from centralized action based on a unilateral act to a new type of response marked by the arrival of new actors: civil society and the private sector as well as the informal sector, which offers local culture and expertise.

Water calls on us to engage with different timescales in a difficult, challenging task that encompasses:

- looking to the past to learn lessons from it rather than indulging in nostalgia;
- tackling the complexity of reality, the here and now, with water recognized as key to sustainable development;
- taking account of sustainability in planning for the future and the world we want to leave our children and grandchildren;
- sharing experiences and conclusions.

¹⁰ 161 countries and the European Union out of 197 parties concerned by the negotiations.
- The acronym "INDC" stands for "Intended Nationally Determined Contribution" and refers to the contributions proposed by the parties ahead of the Paris 2015 Climate Change Conference, which took place from November 30 to December 11, 2015. It is a new type of instrument under the United Nations Framework Convention on Climate Change (UNFCCC), used by states to present, prior to the conference, national plans to combat climate change.

It will become increasingly important to tackle the issue of water not only in terms of equitable access, but also of risk management – arising from factors including the climate emergency – to avoid jeopardizing the achievement of the Sustainable Development Goals that Morocco has committed to, fully and resolutely.

A host of new questions remain to be answered: what form of value-added, which systems for assessing performance, the need for a results and accountability approach, regulation and promotion mechanisms at the national level, improving tools and roll-out in the field, certification and evaluation systems, etc. And then there are the issues that could block the process!

Strengthening the relationship between the research and action world and the decision-making world would offer tools for social water management, now recognized as key to technical and financial water management.

In concrete terms, this requires an interdisciplinary response to complex problems, each discipline interacting with the other, on a regulatory basis or by establishing dialogue

between science and the disciplines covered by human and social sciences.

Continuing to translate an equilibrium between economic activities, the natural environment and the human world into concrete actions is necessary to defining integrated policies which coordinate sector-specific public actions in order to operationalize coherent, contextualized, sustainable actions at the appropriate levels. What we need are the mechanisms of a circular economy.

In short, performance, ethics and the legal framework have to be encompassed.

The Coalition Marocaine pour l'Eau (COALMA), a non-profit organization, is working to meet these challenges. It is made up of representatives of the full array of stakeholders from the public and private sectors. It provides a space for sharing, discussing and suggesting experiences and ideas with the goal of conserving Morocco's water resources in the long term and developing Moroccan expertise.¹¹

¹¹ See www.coalma.ma

Water access and governance: the Veolia experience in Morocco

SUBSIDIZED CONNECTIONS TO ENSURE WIDESPREAD WATER ACCESS: REPORT ON THE AMENDIS (VEOLIA) EXPERIENCE IN TANGIER AND TËTOUAN

As a part of the Initiative for Human Development (INDH) introduced by the Kingdom of Morocco, the program to ensure widespread access to water and wastewater services consists of creating the right conditions for low-income households in under-equipped districts to access essential drinking water and sanitation services by offering them payment facilities.

Amendis, the Veolia Morocco subsidiary in charge of water and electricity distribution as well as wastewater collection and treatment in Tangier, Tétouan, Mdiq, Fnideq and Asilah, bases its commitment to ensuring access to its services on two actions:

- studying and rolling out a program to provide under-equipped districts with water and sanitation services;
- designing and managing a subsidized connections program to provide low-income households with the financial conditions needed to connect to the networks.

In Tangier, the programs were formalized with two agreements signed by Amendis with its partners in the presence of His Majesty King Mohammed VI in 2006, then again in 2013 as part of the urban renovation project for greater Tangier.

Currently 149 districts and douars, spread across eight areas covered by Tangier delegated water management, are already equipped, adding up to 58,767 plots and 293,835 residents connected.

In Tétouan, Amendis has taken action as part of an urban and economic redevelopment program with a broader environmental approach. Between 2014 and 2018, this consisted of:

- combating pollution;
- providing water and sanitation services to disadvantaged districts;
- renewing and reinforcing water and sanitation networks, particularly in the historic center;
- combating flooding.

Six areas were equipped, with close to 63,150 residents benefiting from subsidized connections.

These subsidized connection programs owe their success to the use of mobile agencies (buses fitted out as agencies) providing a vital local service, and to the provision of a secure supply of drinking water. Eliminating wastewater discharge on roads and in nature also helps to improve sanitation conditions and the lives of people in the two cities.



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REMOTE MANAGEMENT FOR WATER RESOURCE PROTECTION: THE HUBGRADE PLATFORM OPERATED BY REDAL (VEOLIA) IN RABAT-SALÉ

The Kingdom of Morocco is one of the African continent’s main actors in the fields of connectivity, telecoms, internet access and digital uses in general. Given this context, Veolia Morocco has made digital central to its strategy and solutions. In December 2019 in Rabat, its Redal subsidiary, in charge of managing water distribution and wastewater and electricity services in Rabat, Salé, Témara and Skhirate, opened its first Hubgrade hypervision center dedicated to operational performance.

The center is used for remote management of installations, equipment and infrastructure for Redal’s activities in Morocco. Wastewater pre-treatment and treatment plants are concerned, but also water source stations, reservoirs, and water, electricity and wastewater networks.

For the water component, the center has a dashboard for monitoring operations and performance for water infrastructure (treatment plants, reservoirs, pumping stations, boreholes, etc.) as well as most of the wastewater system (including lifting and pumping stations, wastewater pre-treatment and treatment plants, etc.).

Operational indicators are generated automatically so that decisions can be taken quickly.

The center also has a system for pre-locating leaks with equipment installed in the water supply network that “listens” to pipes at night.

As repair teams use geolocation, operations are assigned and undertaken with maximum speed, thus limiting the volume of water lost. Although it is difficult to prevent leaks, it is critical to prevent them from flowing for too long.

The center’s data collection capacities provide a concrete solution to the constraints caused by COVID-19. Veolia Morocco has therefore been able to adapt, protect its employees and continue with its task of delivering daily services that are even more essential during a crisis.

New digital solutions will soon make it possible to integrate several data sources. It will then be easier to detect errors inherent in infrastructure, including to help water source protection.