

NDC PRIVATE SECTOR ENGAGEMENT PROJECT

Engaging private sector in NDC implementation – Assessment of private sector investment potential for the water sector in coastal areas

November 2020

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UNDP's work on climate change spans more than 140 countries and USD \$3.7 billion in investments in climate change adaptation and mitigation measures since 2008. With the goal to foster ambitious progress towards resilient, zero-carbon development, UNDP has also supported the implementation of the Paris Agreement on Climate Change by working with countries on achieving their climate commitments or Nationally Determined Contributions (NDCs).

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The NDC Support Programme provides technical support for countries to pursue a “whole-of-society”, integrated approach that strengthens national systems, facilitates climate action and increases access to finance for transformative sustainable development. The programme helps countries address these financial barriers by deploying a structured approach for scaling up sectoral investments and putting in place a transparent, enabling investment environment. Beyond direct country support, UNDP facilitates exchanges and learning opportunities on NDC implementation at the global and regional level by capitalizing on our close collaboration with the UNFCCC and other strategic partners. The Programme, which works in contribution to the NDC Partnership, is generously supported by the German Federal Minister for the Environment, Nature Conservation, and Nuclear Safety (BMU), the German Federal Ministry of Economic Cooperation and Development (BMZ), the European Union and the Government of Spain.

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ACRONYMS

APAL	<i>Agence de Protection et d'Aménagement du Littoral</i> (National Agency for Coastal Development)	IPP	Independent power producer
BAU	Business as usual	m³	Cubic metre
BCT	<i>Banque Centrale de Tunisie</i> (Central Bank of Tunisia)	MENA	Middle East & North Africa
BH	BH Bank	NDC	Nationally Determined Contributions
BVMT	<i>Bourse des Valeurs Mobilières de Tunis</i> (Tunis Stock Exchange)	OECD	Organisation for Economic Co-operation and Development
BNA	<i>Banque Nationale Agricole</i>	ONAS	<i>Office National de l'Assainissement</i> (National Office of Sanitation)
BOT	Build-operate-transfer	PE	Private equity
BOOT	Build-own-operate-transfer	PCG	Partial credit guarantees
CDC-T	<i>Caisse des Dépôts et Consignations</i> (Deposits and Consignments Fund)	PND	<i>Plan National de Développement</i> (National Development Plan)
CMF	<i>Conseil du Marché Financier</i> (Financial Market Council)	PPA	Power purchase agreement
CRDA	<i>Commissariat Régional de Développement Agricole</i> (Regional Rural Development Commission)	PPI	<i>Périmètres publics irrigués</i> (Public irrigated perimeters)
DFI	Development finance institution	PPP	Public-private partnership
DPM	<i>Domaine public maritime</i> (Maritime public domain)	RDZ	Regional development zones
EIU	Economist Intelligence Unit	RFI	Rapid financing initiative
EPC	Engineering, procurement, construction	SME	Small and medium enterprises
FTE	<i>Fonds de Transition Énergétique</i> (Energy Transition Fund)	SONEDE	<i>Société Nationale d'Exploitation et de Distribution des Eaux</i> (National Water Supply Authority)
GCT	<i>Groupe Chimique Tunisien</i> (Tunisian Chemical Group)	STB	<i>Société Tunisienne de Banque</i>
GDA	<i>Groupements de développement agricole</i> (Agricultural development groups)	RO	Reverse osmosis
GDP	Gross domestic product	TND	Tunisian dinar
IGPPP	<i>Instance Générale de Partenariat Public Privé</i> (Public-Private Partnership Authority)	UNFCCC	United Nations Framework Convention on Climate Change
IMF	International Monetary Fund	UNCITRAL	United Nations Commission on International Trade Law
IPO	Initial public offering	US\$	United States dollar
		VAT	Value-added tax
		WHT	Withholding tax

1. INTRODUCTION

Transforming Nationally Determined Contributions (NDCs) into tangible actions that lead to long-term zero-carbon and climate-resilient development requires financing. Access to finance is fundamental to realize the objectives set by the NDCs. However, countries continue to face challenges in securing the financial resources needed to achieve their NDC targets.

To support the transition to low-emission and climate-resilient development, private sector resources must be mobilized to fill the gap caused by a lack of public investment. The adoption of the Paris Agreement provided a strong policy signal for private sector investment in climate finance. The development of NDCs has also provided numerous investment opportunities for the private sector. In 2015, private sector investments in renewable energy reached US\$299 billion, before dropping to \$242 billion in 2016 due to a combination of falling technology costs and lower capacity additions in some countries.¹ Project developers are by far the largest provider of climate finance, investing \$125 billion in 2016.

Investments are needed on a broader scale to achieve the objectives set in the NDCs and the Paris Agreement. For example, it is estimated that a total of \$23 trillion is required from public and private investments, the majority of which will have to come from the private sector, given the magnitude of finance needed.² Ensuring the transition to low-carbon agriculture, forestry, water and waste sectors, among others, will require additional capital. Global estimates of the cost of adapting to climate change may rise to between \$280 billion and \$500 billion per year by 2050; costs may be higher under higher emissions scenarios.³

To bridge this gap, it is important to identify the private stakeholders engaged in markets and industries and which financial instruments and services are available to technology providers and users and providers of capital.

Significant potential exists in developing countries and emerging economies for private sector players to participate in climate finance and climate actions. These players include multinational corporations and financial institutions; small and medium enterprises (SME) may also be mobilized in these countries. However, private sector players face barriers, such as financial and regulatory barriers and technical limitations, to investing and engaging in climate actions.

This report estimates the investment potential within the private sector for delivering NDC sectoral targets for the water sector in coastal areas in Tunisia. Eighty percent of Tunisia's population live in the country's coastal areas and 80 percent of its economic activities, including tourism and agriculture, take place there. Section 2 of the report assesses Tunisia's vulnerability to climate change in the water sector and in coastal areas and identifies climate targets related to the water sector. It also presents the importance of the water sector for Tunisia's resilience across the main sectors of the economy. Section 3 focuses on the enabling environment, providing an overview of the main policies relevant to private sector investment and water supply, including in agriculture and tourism, while also assessing macroeconomic risks and the business environment.

Section 4 assesses investments in the water sector in Tunisia and provides an overview of the main challenges for private sector investment in the sector and Section 5 analyses the sector's private sector investment potential using targets identified based on Tunisia's policy documents. Section 6 presents the reporting framework to align business opportunities with Tunisia's NDC targets in the water sector and with the Sustainable Development Goals (SDGs).

1 Climate Policy Initiative. 2017. *Global Landscape of Climate Finance 2017*.

2 NDC Partnership. *Unlocking private finance to help governments achieve their climate goals*.
<http://ndcpartnership.org/unlocking-private-finance-helps-governments-achieve-their-climate-goals>

3 Sustainable Development Goals. 2016. *UNEP report: Cost of adapting to climate change could hit \$500B per year by 2050*.
<https://www.un.org/sustainabledevelopment/blog/2016/05/unep-report-cost-of-adapting-to-climate-change-could-hit-500b-per-year-by-2050/>

2. CLIMATE RISK PROFILE AND TARGETS

Tunisia is particularly exposed to climate change and its economy, population and ecosystems are highly vulnerable. The country has experienced changes in its climate in recent years, including rising temperatures, falling precipitation and rising sea levels.

This section presents Tunisia's overall climate risk profile, exposure to climate change and, specifically, the water sector's vulnerability to the impacts of climate change. Tunisia's coastline extends for nearly 2,290 kilometres. Coastal areas generate 80 percent of the country's economic activity, are home to two-thirds of its population, provide 80 percent of its total tourist accommodations and host a significant share of its irrigated agriculture.⁴ This underscores the importance of these areas for the economy and its vulnerability in terms of water resources.

This report focuses on resilience in coastal areas; this section details the water sector objectives included in the NDC and other coastal area-related climate policies.

2.1 OVERVIEW OF TUNISIA'S CLIMATE RISK PROFILE

Over the last 30 years, temperatures have risen by an average of 0.4 degrees Celsius per decade. Over the 20th century, the mean average temperature has risen by 1.4 degrees Celsius.⁵ In aggregate, no significant change in annual precipitation was observed between 1901 and 2013. However, over the past 30 years, average annual precipitation has decreased by about 3 percent.⁶ Sea level rise across the Mediterranean Basin averaged roughly 3.1 millimetres per year between 1992 and 2011, while it rose approximately one millimetre per year, on average, in the western Mediterranean between 1945 and 2000.⁷

Tunisia is expected to experience more frequent and more intense extreme climate change-related events, including rising temperatures, falling precipitation, floods and droughts, in coming years. These will have a significant impact on the country's agriculture, economic development and water resources. Table 1 presents Tunisia's exposure to climate change.

Table 1: Tunisia's exposure to climate change

TEMPERATURE	<ul style="list-style-type: none"> Annual maximum temperature is likely to increase by 1.5 degrees Celsius to 2.5 degrees Celsius by 2030 and by 1.9 degrees Celsius to 3.8 degrees Celsius by 2050. Annual minimum temperature is likely to rise by 0.9 degrees Celsius to 1.5 degrees Celsius by 2030 and by 1.2 degrees Celsius to 2.3 degrees Celsius by 2050 The number of hot days is projected to increase by about 1.3 days/year between 2020 and 2039 and the duration of heatwaves is likely to increase by four to nine days by 2030 and by six to 18 days by 2050 The duration of cold spells is likely to decrease by one to three days by 2030 and by two to four days by 2050
PRECIPITATION	<ul style="list-style-type: none"> All models project a likely decrease in overall precipitation by 2050; most project a minimum decrease of around 4 percent and maximum decrease ranging from 7 percent to 22 percent
DROUGHT	<ul style="list-style-type: none"> The duration of dry spells is likely to increase by one to 21 days by 2030 and by one to 30 days by 2050 Decreased precipitation will likely be accompanied by increased frequency and intensity of droughts and flooding
RISING SEA LEVELS	<ul style="list-style-type: none"> By 2090, the sea level near Tunis is likely to rise between two and five metres under a low-emission scenario, and between four and eight metres under a high-emission one

Source: USAID. 2018. Climate Risk Profile – Tunisia

⁴ Institut National de la Statistique (INS). 2018. *Capacity by region*. <http://www.ins.tn/fr/themes/tourisme#sub-401horizontalTab1> (accessed in April 2020)

⁵ USAID. 2018. Climate Risk Profile – Tunisia.

⁶ Ibid.

⁷ Ibid.

Tunisia's climate risk profile shows that the country's water resources are likely to decline due to rising temperatures, droughts, rising sea levels and decreased precipitation. Achieving water resource resilience is essential to the country's water security. Water is also essential to Tunisia's key economic sectors, such as agriculture and tourism. Agriculture remains the backbone of the country's economy, employing about 16 percent of the labour force and accounting for 10.2 percent of gross domestic product (GDP).⁸ Water is especially important for irrigated agriculture. Tourism represents up to 6.5 percent of GDP and employs six percent of the labour force.⁹ It is also a water-intensive sector.

Coastal areas in Tunisia are severely impacted by the continuous action of physical hazards, including currents, swells and tides. More recently, sea level rise resulting from climate change has amplified these impacts. The country's coastline is expected to retreat gradually in coming years. By 2050, coastal areas are likely to experience the following as a direct or indirect result of rising sea levels:

- Loss by submersion of approximately 16,000 hectares of agricultural land in low-lying coastal areas;
- Loss by submersion of approximately 700,000 hectares of built-up areas;
- Loss by salinization of approximately 50 percent of the resources currently available in coastal aquifers;
- Indirect loss of, possibly, approximately 38,000 hectares of irrigable land by 2050, i.e., 10 percent of current irrigated land;
- Decline in the activities of seafront hotels, which have a total capacity of approximately 30,000 beds, owing to retreating beaches; and,
- Degradation of port and shore infrastructure and decline in activities that rely on this infrastructure.¹⁰

This damage will generate a loss of productive capital estimated at \$2 billion. While all sectors of Tunisia's economy are expected to have significant exposure to climate change impacts, annual production losses are estimated at approximately 0.5 percent of current GDP, mainly in tourism (55 percent) and agriculture (45 percent), with job losses in those sectors estimated at 36,000.¹¹

Tunisia's vulnerability to climate change relates mainly to its water sector, especially in the country's coastal areas. Moreover, Tunisia's key sectors, including agriculture and tourism, are closely linked to the water sector and are thus also expected to be highly impacted by climate change.

2.2 TUNISIA'S WATER SECTOR AND ITS VULNERABILITY

With some 385 m³ per capita of renewable blue water resources (defined as surface and groundwater resources) available per year, Tunisia is already experiencing water scarcity. Tunisia receives about 36 billion m³ of rainwater annually, of which 16.3 billion m³ (45 percent) can be mobilized. Of that, the annual potential of blue water that can be used to meet socio-economic needs totals 4.8 billion m³ (13 percent).¹² The Medjerda River, which has its source in Algeria, is Tunisia's largest permanent watercourse. A total of 11.5 billion m³ (32 percent) infiltrates into the soil, providing water reserves for rainfed agriculture, forests and rangelands, while the remaining 19.7 billion m³ (55 percent) evaporates, is stored in the wetlands or flows towards the sea.¹³

Groundwater constitutes 44.5 percent of Tunisia's total water potential. However, changes in precipitation patterns, coupled with rising temperatures, are expected to reduce soil moisture and the stocks of surface and underground water. Furthermore, increased evapotranspiration and decreased soil humidity are expected to increase water needs, especially for human and agricultural uses. Decreased underground water stocks, combined with the intensive exploitation of underground resources, will have a significant impact, particularly in the country's northern and central regions, where groundwater is the primary supply for agriculture and drinking water.¹⁴

8 Projet d'appui à l'initiative ENPARD Méditerranée. 2019. *Rapport de Synthèse sur l'agriculture en Tunisie*.

9 USAID. 2018. *Climate Risk Profile – Tunisia*.

10 Ministry of Environment and Sustainable Development. 2015. *Intended Nationally Determined Contributions – Tunisia*.

11 Ibid.

12 Ministry of Local Affairs and Environment. 2019. *Tunisia's Third National Communication as part of the United Nations Framework Convention on Climate Change*. <https://unfccc.int/sites/default/files/resource/Synth%C3%A8se%20Ang%20Finalis%C3%A9.pdf>

13 Ibid.

14 Ibid.

Forty percent of Tunisia's groundwater potential and about 6 percent of total water resources that can be mobilized are located in coastal areas. Sea level rise and coastal flooding are resulting in the progressive salinization of coastal water tables, particularly because salinization and overexploitation have already damaged many of these aquifers. It is estimated that sea level rise could contribute to the loss of about 30 percent of total groundwater potential and 75 percent of phreatic resources.¹⁵

Climate change is expected to exacerbate water scarcity over the coming years, with the decrease in conventional water resources estimated at about 28 percent by 2030. The decline in surface waters would approach 5 percent by the same year. Furthermore, with the expected rise in sea level, losses resulting from the salinization of coastal aquifers due to this rise would account for about 50 percent of these aquifers' current resources by 2030, amounting to almost 150 million m³.

In addition to environmental impacts, the decrease in water resources also has an impact on Tunisian society. Existing conflicts related to water use have intensified over the last few years, especially during drought periods. Women, who are very often responsible for ensuring household water supply and hygiene, and the poorest people, including those living in forests and rural areas, are expected to be the most heavily affected by water resource scarcity. Current social crises within the country's regions are also expected to intensify.¹⁶

Increased frequency of droughts, increased water salinity and submersion of underground potable water resources due to sea level rise are expected to generate significant losses in water availability. If not mitigated, water scarcity will have a significant impact on the economy. Water is essential for all economic activities in Tunisia, with an emphasis on the agriculture and tourism sectors. Table 2 provides detailed projections for water demand.

Table 2: Water demand in Tunisia

SECTOR	ESTIMATED TOTAL NEEDS (millions of m ³ /2020)	ESTIMATED NEEDS IN COASTAL AREAS (millions of m ³ /2020)
AGRICULTURE	2,082	1,124.28
TOURISM	36	28.8

Source: Ministry of Environment. 2005. *Gestion durable des ressources en eau*. (Estimated needs in coastal areas were developed based on the number of farms, beds and industry percentage in coastal areas.)

Historically, the National Water Supply Authority (Société Nationale d'Exploitation et de Distribution des Eaux (SONEDE)), a public utility, has been responsible for operating and distributing water in Tunisia in urban areas. The Directorate General for Rural Engineering and Water Exploitation (DGGREE) is in charge of water supply in rural areas. Recently, the sector has been opened to public-private partnerships (PPPs). Tunisia appears to be increasingly open to private sector participation in water resource-related services. For example, the private sector manages 44 percent of irrigation systems in Tunisia.¹⁷

2.2.1 WATER SCARCITY IN AGRICULTURE

The agriculture sector is particularly important to Tunisia. In 2016, 4,006,000 hectares were under cultivation, 468,000 of which were irrigated. Agriculture is also among the sectors most affected by the impacts of climate change on the water sector. Rising temperatures, coupled with reduced rainfall and availability of water resources, threaten the yields of the country's irrigated and rain-fed crops. Water scarcity thus also threatens the economic sustainability of the agriculture sector.

Agriculture and forestry are important sectors in the coastal area governorates. In 2005, these governorates included 272,650 farms and 2,429,000 hectares of production area. This represents approximately half of GDP from agriculture. Governorates in coastal areas currently include 32,500 hectares of vulnerable areas that could flood or be made unusable because of saltwater intrusion in aquifers.¹⁸ This underscores the dependency of agricultural production on water availability, especially in these areas.

¹⁵ Ibid.

¹⁶ Ibid.

¹⁷ Ministry of Agriculture, Water Resources and Fisheries. 2017. *Rapport National du secteur de l'eau*.

¹⁸ APAL, Addressing Climate Change Vulnerabilities and risks in Vulnerable Areas of Tunisia. 2019. *Etudes sur les ressources en eau côtières et les impacts sur l'élévation du niveau de la mer, Tunisie, Plan d'Action Phase III*.

Projections suggest that drought would reduce irrigated areas for cereal crop production by 20 percent by 2020, primarily affecting Tunisia's central and southern regions. Rain-fed areas are also expected to be impacted. Estimates show that they could decrease by about 30 percent by 2030.¹⁹ This will also impact the most vulnerable populations, especially women, who hold more than 70 percent of jobs in agriculture and forestry. Thus, assuming the expected reduction in areas suitable for agriculture and constant yields, agricultural GDP would decline by 5 to 10 percent in 2030.

Climate change, and its impacts on Tunisia's water resources, is also expected to have a significant impact on the ecosystem. Salinization and eutrophication threaten wetlands and oasis ecosystems, given their high dependence on water resources. In the Tunisian oasis zone, average temperatures are expected to increase 1.9 degrees Celsius by 2030 and 2.7 degrees Celsius by 2050, with rainfall decreasing by 9 percent in 2030 and 17 percent in 2050 and evapotranspiration increasing by 8 percent by 2030 and 14 percent by 2050.²⁰

2.2.2 WATER SCARCITY IN TOURISM

Tunisia is one of the major tourist destinations in the southern Mediterranean, with coastal resorts in Tunis, Hammamet, Sousse, Monastir, Sfax and Djerba. The tourism sector is particularly important for Tunisia, generating revenues of TND 2,373 billion (\$854.3 billion) in 2016 and directly employing some 95,500 people (on average, 2011-2015).²¹ Approximately 80 percent of accommodation capacities are located in coastal governorates.²² Coastal land area dedicated to tourism totals 5,281 hectares, 560 hectares of which are considered highly vulnerable. Tourism is based primarily on the area's image as a beach and seaside resort, so it is particularly sensitive to the summer climate, rising sea levels and coastal erosion.

Only 570 of the total 2,290 kilometres of coastline are suitable for swimming, including 190 kilometres of degraded beaches that may disappear. In addition, Tunisia has already lost more than 90 kilometres of beaches from erosion or the construction of artificial defence structures. Annual losses to the tourism sector resulting from beach retreat due to rising sea level are estimated at around 5 percent of the sector's added value.²³ Tourism is therefore highly vulnerable to climate change impacts, particularly in coastal areas.

Water scarcity is also expected to have an impact on hotel operating costs related to water resource management. Areas that are over frequented (including coasts and islands), leisure facilities (including swimming pools and golf courses), and infrastructure (including hotels) are likely to experience water supply shortages that will have a direct impact on seaside tourism. While the tourism sector consumes less than 1 percent of Tunisia's water potential, demand is concentrated in the summer, a period of low water availability, and in areas that lack natural drinking water resources, such as coastlines, islands and oases. Desalination, an adaptation solution, is often too expensive for most of the small and financially fragile hotels and tourist facilities.²⁴

2.3 TUNISIA'S NATIONALLY DETERMINED CONTRIBUTIONS AND WATER SECTOR TARGETS

2.3.1 TUNISIA'S NATIONALLY DETERMINED CONTRIBUTIONS

Tunisia submitted its NDC, including both mitigation and adaptation components, to the United Nations Framework Convention on Climate Change (UNFCCC) in August 2015. Tunisia's national target would reduce the country's carbon intensity by 41 percent in 2030, relative to base year 2010. While mitigation measures require mobilizing substantial funds, the international community is expected to fully finance adaptation measures as part of the global fight against climate change. The socio-economic and environmental impacts of climate change are expected to particularly affect Tunisia's water resources, agriculture, natural and artificial ecosystems, coastal areas, health, and tourism. Table 3 presents measures related to the water sector that the country plans to take to adapt to climate change.

¹⁹ Ministry of Local Affairs and Environment. 2019.

²⁰ Ibid.

²¹ Ibid.

²² Based on Institut National de la Statistique (INS). 2018. *Capacity by region*.

²³ <http://www.ins.tn/fr/themes/tourisme#sub-401horizontalTab1> (accessed in April 2020)

²⁴ Ministry of Environment and Sustainable Development. 2015.

²⁵ Ministry of Local Affairs and Environment. 2019.

Table 3: Adaptation measures related to the water sector in Tunisia's NDC

WATER RESOURCES	<ul style="list-style-type: none">• Adaptation measures proposed for water resources involve projects to transfer and reuse treated wastewater and to improve and secure the water supplies of large urban centres, especially Greater Tunis, Cap-bon, Sahel and Sfax.
AGRICULTURE	<ul style="list-style-type: none">• Adapt irrigated crops in the central regions to climate change• Adapt mixed farming-livestock production to climate change in vulnerable regions• Update the agricultural map to take into account the impacts of climate change• Introduce a climate monitoring and early warning system and an insurance mechanism against climatic hazards due to climate change• Conserve and exploit genetic heritage to adapt cereal crops to climate change, developing innovative systems for arable crops
TOURISM	<ul style="list-style-type: none">• Restore the Tunisian touristic coastline and protect tourist areas against the advance of the sea• Identify tourism potential based on climate characteristics and improve the distribution of eco-tourism attractions across regions• Develop a range of services that provide an alternative to and supplement seaside tourism, particularly in terms of health, culture, sport and environment. Launch and promote the concept of ecological hotels• Optimize the tourism sector's water resource management and install mini-seawater desalination plants using renewable energies

Source: Ministry of Environment and Sustainable Development. 2015. Intended Nationally Determined Contributions – Tunisia.

Implementing adaptation measures is crucial for the private sector, particularly in the agriculture and tourism sectors. The key technologies that must be considered are thus seawater desalination and the reuse of treated wastewater.

The water sector is extremely important to Tunisia, which is among the countries facing the greatest water scarcity in the world. Climate change will further impact water availability in the country, with changing rain patterns and rising sea levels that may contribute to the contamination of aquifers. Access to water is essential to the Tunisian economy. Some of the country's important economic sectors, such as agriculture and tourism, rely heavily on water availability. In coastal areas, these sectors are both important sources of employment and extremely vulnerable to the impacts of climate change. Tunisia's NDC emphasizes the importance of securing additional non-conventional water resources, such as reused treated wastewater and desalinated water.

3. ENABLING ENVIRONMENT

The existence of an enabling policy environment, including related legislation, laws, programmes and plans, is crucial to achieve the sustainable development targets in any country. Tunisia's overall development policy is governed by the country's National Development Plan (Plan National de Développement 2016-2020, PND), under which sectoral policies are developed. This section presents the current enabling policy environment in Tunisia, including climate policies, water policies and regulations, use of water resources in agriculture and tourism, and private sector participation, followed by an overview of its current business environment, including the ease of doing business in the country and its macroeconomic environment.

3.1 OVERALL POLICY ENVIRONMENT

The Government of Tunisia recognizes the importance of integrating climate actions in its policies and the importance of the private sector's implementing them, as the country's PND 2016-2020 demonstrates.

3.1.1 NATIONAL DEVELOPMENT PLAN (2016-2020)

POLICY OBJECTIVE	POLICY RELEVANCE TO THE PRIVATE SECTOR	POLICY IMPLICATIONS FOR THE PRIVATE SECTOR
To implement a development model whose goals include achieving efficiency, equity and sustainability	Tunisia's development vision relies on strong and sustainable economic growth led by both public and private investments	Private sector participates in implementing a green economy, which is the basis for achieving sustainable development

The PND 2016-2020 is Tunisia's short-term development blueprint. It aims to carry out a new development model; its goals include achieving efficiency, equity and sustainability. The Plan details a series of challenges, objectives and reforms to meet this national target, including climate change-related challenges. The plan emphasizes the need to achieve sustainable development driven by the implementation of a green economy. It also sets several objectives related to the water sector:

- Increase the rate of water resource mobilization from 93 percent in 2015 to 95 percent in 2020;
- Increase the availability of drinking water supplies in rural areas from 94 percent in 2015 to 96 percent in 2020;
- Increase the share of irrigated areas equipped with water-saving techniques from 90 percent in 2015 to 95 percent in 2020;
- Achieve a 50 percent wastewater reuse rate in 2020 compared to 25 percent in 2015; and,
- Increase the rate of connection to the public sewerage network in the communes covered by the National Office of Sanitation (ONAS) to 92.1 percent in 2020, compared to 91 percent in 2015.

To achieve these objectives, the document includes reforms that target Tunisia's business climate by enacting a new investment code and accelerating implementation of the legal framework governing PPPs. The PND also proposes to manage major projects based on the needs of the regions and cities where the projects are implemented.

3.2 POLICY ENVIRONMENT RELATED TO CLIMATE CHANGE

Tunisia's climate change policies include the National Strategy on Climate Change, NDC (submitted in 2015) and communications to the UNFCCC (the Second Biennial Update Report, submitted in 2016, and the Third National Communication, submitted in 2019).

3.2.1 NATIONAL STRATEGY ON CLIMATE CHANGE (2012)

POLICY OBJECTIVE	POLICY RELEVANCE TO THE PRIVATE SECTOR	POLICY IMPLICATIONS FOR THE PRIVATE SECTOR
To provide Tunisia with a vision and strategic objectives for 2030 and 2050 to face the challenges of climate change	Tunisia's national strategy is the main instrument enabling decision-makers and Tunisian society to steer the country's climate policies more effectively and to seize international financing opportunities	<ul style="list-style-type: none">• Potential revision of water tariffs in the agriculture sector• Limited role for the private sector in the implementation of the strategy

Released in 2012, Tunisia's National Strategy on Climate Change (*Stratégie Nationale sur le Changement Climatique*) aims to clearly identify the challenges of climate change and address them by developing strategic objectives for 2030 and 2050. The three strategic objectives include, first, achieving the country's short-term social and economic development, including safeguards in view of ecological development in the medium term (for example, resource management). The second is to reduce carbon intensity by 60 percent by 2030 compared to 2009, together with a proactive policy to stabilize emissions by 2050. The third is to implement a proactive and preventive adaptation policy supported by international aid, including financing and technology transfer mechanisms set up under global climate governance. In terms of water resources, the strategy seeks to maintain the same level of per capita water conservation annually between today and 2050. It also emphasizes the importance of reviewing water tariffs, especially in the agriculture sector.

3.2.2 NATIONAL STRATEGY FOR ENVIRONMENTAL PROTECTION

POLICY OBJECTIVE	POLICY RELEVANCE TO THE PRIVATE SECTOR	POLICY IMPLICATIONS FOR THE PRIVATE SECTOR
To promote environmental action and bring all concerned stakeholders together	Tunisia's national strategy aims to foster initiatives in favour of the transition to a green economy, blue economy, and circular economy	Potential opportunities in the development of non-conventional water resources

Released in 2020, Tunisia's National Environmental Protection Strategy (*Stratégie Nationale de Protection de l'environnement post 2020*) aims to promote environmental action throughout the country and to bring all concerned stakeholders together. It has seven components:

- Strengthen legal and institutional environmental protection mechanisms;
- Strengthen environmental controls and environmental protection (including water, soil and subsoil);
- Implement sectoral environmental protection policies and programmes;
- Develop a management system for industrial and special wastes and hazardous chemicals;
- Develop and implement an effective and relevant environmental governance system; and,
- Integrate economic and financial dimensions as factors of success for the environmental protection strategy.

In the water sector, the policy seeks to encourage the use of non-conventional water resources, including treated wastewater.

3.3 POLICY ENVIRONMENT RELATED TO WATER RESOURCES

Tunisia's policy and regulatory framework for water resource use is outdated. The country has developed strategies to better manage available water resources, but lacks a clear sectoral strategy for water supply and water and sanitation services. The Constitution of 2014 stipulates that the right to water shall be guaranteed in

Tunisia. The conservation and rational use of water is a duty of state and of society. Tunisia is also committed to achieving the SDGs, including in the water sector. The Water Strategy 2050 and the Master Plan for Wastewater Reuse are being developed, but have not been finalized. The latest comprehensive strategy, the Water Sector Strategy 2030, was developed in 1998. It provides an overview of long-term management of water resources and an inventory of the existing resources. This forecast is updated in the latest National Water Sector Report.

Tunisia developed two 10-year water mobilization strategies (*Stratégie nationale de mobilization des eaux*), which cover 1990-2000 and 2001-2011.

3.3.1 NATIONAL WATER SECTOR REPORT (2017)

POLICY OBJECTIVE	POLICY RELEVANCE TO THE PRIVATE SECTOR	POLICY IMPLICATIONS FOR THE PRIVATE SECTOR
Provides an overview of the available water resources and linkages with climate change	Provides the private sector a better understanding of the availability of water resources in the country	Emphasizes the need for technology transfer in the water sector and PPPs in the agriculture sector

The National Water Sector Report (2017) (*Rapport national du secteur de l'eau*) provides an overview of the status of Tunisia's water sector. It reviews the available water resources, institutional framework and existing initiatives as of 2017. The report is a tool for stakeholder dialogue in the sector.

The report also highlights the linkages between the impacts of climate change and the water sector and emphasizes the need for technology transfer. In the agriculture sector, the report emphasizes the need for PPPs.

3.3.2 WATER CODE (DRAFT)

POLICY OBJECTIVE	POLICY RELEVANCE TO THE PRIVATE SECTOR	POLICY IMPLICATIONS FOR THE PRIVATE SECTOR
Provides the overall framework for water use	Defines the scope within which the private sector can develop water and use water resources	Creates the possibility of concessions and greater private sector investment in the water sector

Law 75-16 established the Water Code (*Code des eaux*) in 1975, which was amended further in 1987 and 1988.²⁵ The revision began in 2009, and a draft revised water code was shared with Tunisia's Assembly of the Representatives of the People in 2019.²⁶ This version is not yet publicly available. The Water Code provides the legislative framework for water resource management in Tunisia. A 2010 draft code clearly states that all water sources are public resources. The code prohibits water resource development projects that are not authorized by the Ministry of Agriculture or other projects implemented close to water resources.

The Code also details the country's overall water use framework. Water usage rights are attached to land and property and the extent of those rights depends on the land area owned. Water usage rights may be separated from the land and property they are associated with and sold to another user only in rare cases. The water rights owner must document the reasons for the transfer of rights and the National Water Council must approve the transfer. The Council is not required to regulate use of rainwater as long as it is collected on the user's property.

The Code recognizes the importance of alternative water sources, such as wastewater reuse, the use of brackish water when possible, desalination and water harvesting. The Ministry of Agriculture may authorize private sector development and use of alternative resources. Industries that use water are encouraged to recycle it to the extent that this is technically and financially possible.

However, the wastewater reuse for agriculture is limited. It is prohibited for irrigating vegetables but may be carried out for other crops with authorization from the Ministry of Agriculture. The conditions for reusing

²⁵ Respectively, Laws 87-35 and 88-94

²⁶ <https://www.webmanagercenter.com/2019/05/31/435513/le-ministere-de-lagriculture-et-lugtt-signent-une-convention-sur-le-code-de-leau/>

treated wastewater for agricultural purposes are set by Decree No. 89-1047 of July 1989 modified by Decree No. 93-2447 of 1993.

The 2010 draft of the revised Water Code also makes concessions and greater private sector investment possible. This is a key point of discussion between the government and stakeholders. In the latest version, the Code provides a list of activities in which the private sector can be involved through concessions. These include desalination, management of sanitation infrastructure and exploitation of boreholes.

3.3.3 CODE OF LOCAL AUTHORITIES (2018)

POLICY OBJECTIVE	POLICY RELEVANCE TO THE PRIVATE SECTOR	POLICY IMPLICATIONS FOR THE PRIVATE SECTOR
Provides the overall framework for local authorities in Tunisia, including in relation to the water sector	<ul style="list-style-type: none"> Land used for water distribution and wastewater treatment networks is defined as public property. Local authorities are authorized to develop PPPs 	Creates the potential for partnership in service delivery and infrastructure delivery at the local level

Law 2018-29 established the Code of Local Authorities (*Code des collectivités locales*). It aims to provide the regulatory framework for organizing local authorities and define their roles and responsibilities. In the water sector, local authorities own the lands used for the water distribution network and wastewater treatment networks. Local authorities are required to budget expenses related to the maintenance of wastewater treatment networks. The code also authorizes local authorities to develop PPPs.

Other water sector-related laws and regulations include the water and soil conservation law (Law 95-70, 1995), water quality standards (Law 82-66) and Law 93-41, which addresses municipal water supply and sanitation.

3.4 POLICY ENVIRONMENT RELATED TO THE USE OF WATER RESOURCES IN AGRICULTURE

The agriculture sector consumes the most water by far in Tunisia, accounting for more than 75 percent of water demand in 2020.²⁷ It is therefore important to understand the enabling environment for water use in the agriculture sector, particularly in relation to private sector participation.

Tunisia has no overall agricultural and rural development strategy, although several documents address environmental policies and strategies for the sector. The country's five-year development plan (2026-2020) aims at improving the agriculture sector's contribution to Tunisia's development by guaranteeing the sustainability of natural resources and strengthening food security, among other objectives.

In agriculture, water is mainly used in irrigation systems. Some of the sector's key strategies and policies are detailed below.

3.4.1 NATIONAL STRATEGY FOR SUSTAINABLE DRINKING WATER AND IRRIGATION SYSTEMS (2011)

POLICY OBJECTIVE	POLICY RELEVANCE TO THE PRIVATE SECTOR	POLICY IMPLICATIONS FOR THE PRIVATE SECTOR
Provides the overall framework for the maintenance of drinking and irrigation systems	Potential for private sector participation in maintaining irrigation systems	Emphasizes the importance of supporting private sector participation for the sustainability of irrigation systems

The National Strategy for Sustainable Drinking Water and Irrigation Systems (*Stratégie nationale de pérennisation des systèmes hydrauliques*) seeks to support user associations in managing irrigation systems sustainably. It also aims to assist private stakeholders enter the market to provide irrigation system maintenance to user associations.

²⁷ Ministry of Environment. 2005. *Gestion durable des ressources en eau*.

3.4.2 NATIONAL STRATEGY FOR AGRICULTURE SECTOR AND ECOSYSTEM ADAPTATION TO THE IMPACTS OF CLIMATE CHANGE (2007)

POLICY OBJECTIVE	POLICY RELEVANCE TO THE PRIVATE SECTOR	POLICY IMPLICATIONS FOR THE PRIVATE SECTOR
Provides an overview of the challenges the agriculture sector faces given the impacts of climate change and actions to improve its resilience	Provides direction for private sector participation in supporting resilience within the agriculture sector	<ul style="list-style-type: none">• Potential trading of water usage rights (blue credits)• Recognizes the potential for wastewater reuse and desalination

The National Strategy for Agriculture Sector and Ecosystem Adaptation to the Impacts of Climate Change (*Stratégie nationale d'adaptation de l'agriculture tunisienne et des écosystèmes aux changements climatiques*), developed in 2007, provides several approaches to improve the resilience of the agriculture sector, such as trading blue credits, which involves the exchange/trade of water usage rights. Under this scheme, water users who do not use all of their water rights could resell them rights to other users. A pilot programme was planned as part of the strategy, which also encourages wastewater reuse and desalination.

3.5 POLICY ENVIRONMENT RELATED TO THE USE OF WATER RESOURCES IN TOURISM

Several laws and regulations govern the tourism sector, establishing processes for registering and classifying hotels and setting minimum requirements to register as such. Decree 2005-3055 provides information regarding those minimum requirements in terms of floor area, number of restaurants, number of rooms and equipment. However, there is no specific requirement regarding how hotels obtain water or reuse wastewater.

The National Climate Change Adaptation Strategy for the Tourism Sector is the main policy related to the tourism sector and climate change. Details are provided below.

3.5.1 NATIONAL CLIMATE CHANGE ADAPTATION STRATEGY FOR THE TOURISM SECTOR (2010)

POLICY OBJECTIVE	POLICY RELEVANCE TO THE PRIVATE SECTOR	POLICY IMPLICATIONS FOR THE PRIVATE SECTOR
Provides an overview of the challenges the tourism sector faces given the impacts of climate change and actions to improve the sector's resilience and encourage its further growth	Provides directions for private sector participation in supporting resilience within the tourism sector	Recognizes the potential for wastewater reuse and desalination

The National Climate Change Adaptation Strategy for the Tourism Sector in Tunisia (*Stratégie nationale d'adaptation au changement climatique du secteur touristique en Tunisie*), developed in 2010, details the impacts of climate change on the tourism sector and the sector's impact on climate change. The strategy sets out sector mitigation and adaptation actions in the context of climate change. Its key actions include reviewing and improving building management, improving urban planning to take into account the degradation of tourism resources, reviewing the tourism options the country offers to mitigate the sector's vulnerability, and improving transportation by expanding the use of energy efficient vehicles.

The strategy's proposals including reducing the sector's dependence on water resources by improving access to alternative water sources, such as through wastewater reuse, rainwater harvesting and desalination. The strategy proposes considering a requirement to use alternative water sources for water-intensive facilities, such as golf courses.

3.6 POLICY ENVIRONMENT FOR THE PRIVATE SECTOR

The policy environment for the private sector refers primarily to the public-private partnership law.

3.6.1 PUBLIC-PRIVATE PARTNERSHIP LAW (2015)

POLICY OBJECTIVE	POLICY RELEVANCE TO THE PRIVATE SECTOR	POLICY IMPLICATIONS FOR THE PRIVATE SECTOR
Provides the overall framework for the use and scope of PPPs	Provides guidance for the private sector in considering whether to use the PPP framework for project development	<ul style="list-style-type: none"> No specific sectors in the PPP law (water sector is not excluded) Public competitions are preferred over unsolicited proposals and closed competitions

The Public-Private Partnership Law (*Loi 49-2015 Relative aux contrats de partenariats publics privés*) provides the legal framework for PPPs and allows the government to better leverage private sector financing in several sectors. It supplements the legal framework regulating concessions in Tunisia (Law 2008-23), which had a limited impact on PPP development in the country.²⁸

The PPP law defines the scope of a PPP contract in Tunisia and covers project design, financing, operation and maintenance. Public service delegation agreements are excluded from the law. While the law does not exclude direct negotiation and limited competition for determining whether to enter into a PPP with a particular party, the government favours open competition. The law does not exclude any sectors.

3.7 INSTITUTIONS RESPONSIBLE FOR ENSURING WATER SUPPLY AND IMPACTED BY WATER SCARCITY AND THEIR INSTITUTIONAL FRAMEWORKS

Several key institutions in Tunisia's water sector are responsible for ensuring water supply and are impacted by water supply and scarcity. The table below summarizes the government institutions present in the sector that shape the water sector's overall direction.

Table 4: Government institutions in the water sector and their institutional frameworks

INSTITUTION	DESCRIPTION
Ministère de l'Environnement et du Développement Durable	The Ministry of Environment and Sustainable Development is responsible for protecting the environment, safeguarding nature, building the foundation for sustainable development in Tunisia's general and sectoral policies, improving the living environment, establishing rules regarding ecological governance in all sectors of activity, and combating pollution.
Office National de l'Assainissement (ONAS)	The National Office of Sanitation is responsible to manage the sanitation sector and protect the environment from water pollution. It also builds and operates the sanitation network.
Ministère de l'Équipement, l'Habitat et l'Aménagement du Territoire	The Ministry of Public Works, Housing and Country Planning is responsible for land use planning and maritime infrastructure directly related to coastal area management.
Ministère de l'Agriculture, des Ressources Hydrauliques et de la Pêche	The Ministry of Agriculture, Hydraulic Resources and Fisheries is responsible for formulating and implementing Tunisia's agricultural, water resources and fisheries policies and for establishing a favourable environment for the development of these sectors.
Bureau de Planification et des Équilibres Hydrauliques (BPEH)	The Office of Planning and Hydraulic Balances is responsible for identifying conventional and non-conventional water resources, identifying the water needs of the various socio-economic sectors, and proposing plans and programmes for the allocation of water resources to the various users by taking supply and demand into account.
Direction Générale des Ressources en Eau (DGRE)	The Directorate General of Water Resources is responsible for establishing and managing networks to measure and monitor the country's water resources, assessing the balance between the availability, demand and use of water resources, developing the basis for water resources mobilization plans, and implementing water resources mobilization plans.

28 OECD, 2015. *Les partenariats public-privé en Tunisie: analyse des cadres juridiques et institutionnel (Volume II)*.

INSTITUTION	DESCRIPTION
Direction Générale du Génie Rural et de l'Exploitation des Eaux (DG/GREE)	The Directorate General of Rural Engineering and Water Management is responsible for managing irrigation water and drinking water supply in rural areas.
Direction Générale des Barrages et Grands Travaux Hydrauliques (DG/BGTH)	The Directorate General of Dams and Large Hydraulic Works is responsible for conducting studies related to dams and large hydraulic works, as well as managing them.
Direction Générale de l'Aménagement et de la Conservation des Terres Agricoles (DG/ACTA)	The Directorate General of Agricultural Land Development and Conservation is responsible for conserving and developing agricultural lands.
Bureau de l'Inventaire et des Recherches Hydrauliques (BIRH)	The Inventory and Hydraulic Research Office is responsible for managing the hydraulic public domain.
Société de l'Exploitation du Canal et des adductions des eaux du Nord (SECADENORD)	The Northern Water Canal and Water Supply Management Company is responsible for part of the water supply in the northern and central regions.
Société Nationale d'Exploitation et de Distribution des Eaux (SONEDE)	The National Company for the Exploitation and Distribution of Water is responsible for the production and supply of drinking water throughout Tunisia. It is also in charge of water collection, transport, treatment and distribution facilities.
Agence de Promotion de l'Investissement Extérieur (FIPA-Tunisia)	The Foreign Investment Promotion Agency is in charge of providing the necessary support to foreign investors and promoting foreign investment in Tunisia.
Agence de Promotion des Investissements Agricoles (APIA)	The Agricultural Investment Promotion Agency promotes private investment in the agriculture and fisheries sectors and associated services, as well as in first-stage processing activities integrated into agricultural and fisheries projects.

3.8 OVERALL BUSINESS ENVIRONMENT

3.8.1 MACRO-ECONOMIC ENVIRONMENT

After two years of steady growth, Tunisia's real GDP increase slowed to 1.5 percent in 2019. While growth in the agriculture and fishing sectors declined from 9.8 percent in 2018 to 1.7 percent in 2019, growth was spurred by tourism and financial services and, on the demand side, private consumption. According to the Center for Economic and Social Research, the poverty rate rose by 30 percent between 2014 and 2018, due primarily to the increased cost of living, with the Nord-Ouest region particularly affected.²⁹ While the Government of Tunisia has pursued structural reforms since 2011 to reduce inequality and has stabilized the social climate to foster investment and growth, if these initiatives are to be effective, they must be accelerated and coupled with specific measures aimed at more inclusive growth. Public spending should be prioritized and better targeted to stimulate the country's economy. The global COVID-19 pandemic is expected to devastate Tunisia's stability, security and economic situation.³⁰

On the political front, Tunisia elected a new president, Kais Saied, in October 2019. He is an independent with no political experience and will need to address the economic impact of the pandemic. Although the democratic government, which was elected after the 2010-2011 civil revolution that overthrew the country's authoritarian regime, is expected to remain in place, the COVID-19 outbreak may represent a major threat to its stability.³¹ In addition, the current coalition government is fragmented as it includes several political parties, creating significant divisions within the legislature. The substantial risks to political stability stem from internecine feuds among parties.

Moreover, the country's secular foundations and relationships with Western countries make Tunisia a major target for terrorism, posing a threat to its security.

On the fiscal front, the government has committed to broadly market-friendly measures, including reducing the public sector wage bill from 14 percent of GDP to 12.5 percent, cutting subsidies, reforming the pension system and restructuring loss-making state-owned enterprises. However, these measures are unlikely to be implemented in 2020 because of the country's new agreement with the International Monetary Fund (IMF), coupled with the COVID-19 pandemic. Tunisia obtained \$745 million under the IMF's Rapid Financing Instrument (RFI) to address

²⁹ African Development Bank. 2020. *African Economic Outlook 2020*.

³⁰ Economist Intelligence Unit. 2020. *Country Report, Tunisia*.

³¹ Economist Intelligence Unit. 2020. *Country Report, Tunisia*.

financial pressures related to COVID-19. The COVID-19 outbreak is expected to weaken Tunisia's public finances, increasing the fiscal deficit sharply from an estimated 3 percent of GDP in 2019 to 8.4 percent in 2020.³² The coming economic recession will impact tax revenues, while public spending will rise with the TND 2.5 billion (\$864 million) package announced by the Prime Minister in March 2020, which includes channelling funds to low-income groups, increasing healthcare spending and providing emergency loans to firms.

However, Tunisia's spending is expected to fall starting in 2021 with implementation of the wage bill and decreased fuel subsidies. Revenues are also expected to increase from 2021 with the recovery of economic growth and external trade. The fiscal deficit is projected to fall to 4.2 percent of GDP/year on average over 2022-2024. Tunisia's public debt was estimated at approximately 71.1 percent of GDP at year-end 2019 and is expected to rise to about 80 percent of GDP at year-end 2021 and then fall to 76.9 percent of GDP at year-end 2024.³³

The Central Bank of Tunisia (BCT) manages Tunisia's monetary policy. It cut the main policy rate from 7.75 percent to 6.75 percent in mid-March to encourage domestic demand in response to the anticipated economic slowdown due to the COVID-19 outbreak. More policy rate cuts are expected in the coming months.

Tunisia's economy is likely to take a significant hit because of COVID-19, with real GDP projected to contract by 5.4 percent in 2020. Export volumes are expected to fall by 15.2 percent and tourism is expected to collapse. Government consumption is the only demand-side component that will increase to address the crisis. However, real GDP is expected to resume its growth in 2021, rising 2.6 percent and, in 2022-2024, reaching an annual average of 3.6 percent.³⁴ On the supply side, the agriculture sector, hit by dry weather in early 2020, is expected to contract, as is the manufacturing sector, which was affected by border closures as a result of COVID-19. Containment measures are also having a severe impact on the tourism and transport sectors, which are expected to take the longest to recover from the crisis.

The COVID-19 pandemic has increased Tunisia's pre-existing macroeconomic challenges. However, the country's economy is expected to slowly recover starting in 2021.

3.8.2 INVESTMENT RISK

Based on the Economist Intelligence Unit's (EIU) June 2020 risk assessment, Tunisia's overall country risk is rated CCC.³⁵ This suggests that the COVID-19 pandemic will have a severe impact on the country's economy. Tunisia is therefore unlikely to be attractive to investors in the short-term. Table 5 presents the country's risk profile.

Table 5: Tunisia's risk profile

	SOVEREIGN RISK	CURRENCY RISK	BANKING SECTOR RISK	POLITICAL RISK	ECONOMIC STRUCTURE RISK	COUNTRY RISK
RATING	CCC	CCC	CCC	CCC	CCC	CCC

3.8.2.1 SOVEREIGN RISK

Although Tunisia's prospects had begun to improve, particularly following the 2019 elections, the pandemic has dealt a severe blow to its economy. An export collapse, combined with weak institutional effectiveness, will widen the current account deficit affecting the government's creditworthiness, as well as its ability to deal with the crisis. Moreover, Tunisia's fiscal deficit and public debt stock are higher than the median for CCC-rated countries. However, recent gains in foreign exchange reserves, coupled with the collapse of domestic demand and global energy prices, have eased trade balance pressures. In addition, the support the Tunisia received under the IMF's RFI is expected to decrease pressure on reserves.³⁶ While the country's debt position remains precarious and governance challenges still exist, the EIU expects Tunisia to ultimately meet its payment obligations in full.

³² Ibid.

³³ Ibid.

³⁴ Ibid.

³⁵ Economist Intelligence Unit. 2020. *Country Risk Service, Tunisia*.

³⁶ Ibid.

3.8.2.2 CURRENCY RISK

The EIU assesses the Tunisian dinar's risk as relatively high. Sharp capital outflows due to the pandemic have increased currency volatility. The EIU estimates that the current account deficit averaged 10.8 percent of GDP/year over the last 48 months, which is higher than the 4.1 percent median for CCC-rated countries.³⁷ The pandemic is expected to weaken asset prices and create further pressure on the currency. Tunisia's high repayment obligations, coupled with increasing external financing requirements and weak institutional capacity, may prevent the country from fulfilling its payment obligations. The Tunisian dinar will be under additional pressure following the government's commitment to the IMF to allow the currency to depreciate without undue interference from the BCT.

3.8.2.3 BANKING SECTOR RISK

Although the reforms adopted by the Tunisian government after the 2010-2011 revolution improved the health of the country's banks and strengthened their resilience in the face of the pandemic's economic shock, their significant exposure to loss-making state companies make them vulnerable to poor performance and the accumulation of bad debts. The BCT cut the benchmark interest rate from 7.75 percent to 6.75 percent in March 2020 to counter the pandemic's impacts.³⁸ However, the EIU predicts that bank incomes will be heavily impacted by the economy, contracting in 2020, and falling asset prices.

3.8.2.4 POLITICAL RISK

While peaceful elections were held in October 2019, the pandemic exposes Tunisia to new challenges to political stability. Economic conditions have not improved, corruption persists and threats to the country's security from jihadi terrorists have fuelled the population's dissatisfaction with the political elites. Fear of public protests will prevent the government from managing public finances effectively post-pandemic, which may lead the authorities to prioritize domestic issues over external repayment obligations.

3.8.2.5 ECONOMIC STRUCTURE RISK

Tunisia's economy still depends heavily on economic conditions in Europe, particularly in terms of trade, tourism, remittances and investment. The pandemic is affecting all of them severely. The country's strong reliance on energy imports also remains a concern. Weak financial sector regulation and supervision exposes creditors to significant risks. Together with stagnant income levels in recent years, this reduces the country's attractiveness for potential private investment.

3.9 EASE OF DOING BUSINESS

The business environment is one of the most important factors when considering local and foreign investments. Investors tend to consider not only existing market opportunities, but also the country's ease of doing business. Regulations, including on business, and property rights protections have an impact on economic growth and must therefore be taken into account.

The World Bank Group's Doing Business Project assesses business regulations and their enforcement in 190 countries and 11 cities across the world. It covers 12 areas of regulation that affect small- and medium-size domestic firms in each country, including starting a business, dealing with construction permits, getting electricity, registering property, getting credit, protecting minority investors, paying taxes, trading across borders, enforcing contracts, resolving insolvency and employing workers.

In the 2020 report, Tunisia ranked 78th out of 190 countries.³⁹ Both its ranking and score improved compared to 2019. However, while the score has improved over the last five years, the country ranked higher in 2017 and 2016.

³⁷ Ibid.

³⁸ Economist Intelligence Unit. 2020. *Country Report, Tunisia*.

³⁹ World Bank Group. 2019. *Doing Business 2020*.

Tunisia's scores and ranks over the last five years are detailed in Table 6.

Table 6: Tunisia's ease of doing business score and rank (2016-2020)

YEAR	SCORE	RANK
2020	68.7	78
2019	66.11	80
2018	63.58	88
2017	64.89	77
2016	63.91	75

Source: World Bank Group, Doing Business reports of the last five years

This section provides an overview of important criteria for doing business in Tunisia, based on the Doing Business 2020 Report.

3.9.1 STARTING A BUSINESS

This indicator measures the number of procedures, time, cost and paid-in minimum capital requirement for a small- to medium-sized limited liability company to start up and formally operate in each economy's largest business city.

Tunisia ranks 19th, making it the highest-ranking country in the Middle East & North Africa region, with a relatively wide lead (the next MENA country, Morocco, ranks 43rd). This ranking is due to the very limited number of procedures, time, cost and paid-in minimum capital required to start a business. The ease of starting a business is relevant in developing countries, as a market for local SMEs is expected to develop in the water sector.

3.9.2 DEALING WITH CONSTRUCTION PERMITS

This indicator tracks the procedures, time and cost to build a warehouse, including obtaining necessary licenses and permits, submitting all required notifications, requesting and receiving all necessary inspections, and obtaining utility connections. It also measures the building quality control index, evaluating the quality of building regulations, the strength of quality control and safety mechanisms, liability and insurance regimes, and professional certification requirements.

Tunisia ranks 32nd, scoring higher than the regional average, but it remains below Morocco (ranked 16th). While the number of procedures (14 for Tunisia compared to 15.7 for MENA countries) and the cost of procedures (3.4 percent of warehouse value for Tunisia compared to 4.4 percent for MENA countries) are low compared to other MENA countries, the time required to complete the procedures remains high. Tunisia's ranking reveals potential barriers to implementing adaptation measures in the water sector. Because a construction permit is required to install desalination and wastewater treatment plants, a business may be discouraged if it takes a long time to obtain one. However, Tunisia scores better on the building quality control index than OECD high-income countries. This is a good start, as building quality control is important when considering the tourism sector in coastal areas.

3.9.3 GETTING ELECTRICITY

This indicator measures the procedures, time and cost required for a business to obtain a permanent electricity connection for a newly constructed warehouse. In addition, the reliability of supply and transparency of tariffs index also measures the reliability of supply, transparency of tariffs and the price of electricity.

Tunisia ranks 63rd, which is higher than the regional average but below Morocco (ranked 34th). While the number of procedures required to get electricity is relatively low (slightly lower than the average for OECD high-income countries), the cost remains high (719.1 percent of income per capita in Tunisia compared to 419.6

percent of income per capita on average for MENA countries). It scores quite high on the reliability of supply and transparency of tariff index (6 compared to 4.4 on average for MENA countries). This is a key indicator, as access to electricity is an important factor when considering the economic and business environment.

3.9.4 REGISTERING PROPERTY

This indicator examines the steps, time and cost involved in registering property, assuming the standard case of an entrepreneur who wants to purchase land and a building that is already registered and free of title dispute. It measures the quality of the land administration system based on five factors: infrastructure reliability; information transparency; geographic coverage; land dispute resolution; and, equal access to property rights.

Tunisia ranks 94th, barely higher than the regional average but below Morocco (ranked 81st), with good scores in terms of procedures, time and cost. Wastewater treatment plants and desalination plants and tourism-related facilities require large areas of land, so the ease of registering property is a highly relevant indicator for the development of Tunisia's water sector.

3.9.5 GETTING CREDIT

This indicator explores the strength of credit reporting systems and the effectiveness of collateral and bankruptcy laws in facilitating lending.

Tunisia ranks 104th, with the depth of credit information index and credit registry coverage higher than the average for OECD high-income countries. However, it also scores lowest for credit bureau coverage (zero percent of adults). Assessing the ease of getting credit is crucial because businesses that want to become involved in the water sector must make a significant investment in water-related technologies.

3.9.6 PROTECTING MINORITY INVESTORS

This indicator measures the strength of minority shareholder protections against directors' misuse of corporate assets for personal gain, as well as shareholder rights, governance safeguards and corporate transparency requirements that reduce the risk of abuse.

Tunisia ranks 61st. While it scores higher than the regional average, it scores lower than Morocco and Egypt. It performs better than the OECD high-income countries' average on the extent of director liability index.

3.9.7 PAYING TAXES

This indicator measures the taxes and mandatory contributions that a medium-sized company must pay or withhold in a given year, as well as the administrative burden of paying taxes and contributions and complying with post-filing procedures (VAT refund and tax audit).

Tunisia ranks 108th and scores lower than the regional average. While the number of payments and amount of time are lower than the regional average, the total tax and contribution rate remains significant, at 60.7 percent of profit. This is a significant burden when conducting business and trying to incentivize investment.

3.9.8 TRADING ACROSS BORDERS

This indicator measures the time and cost associated with the logistics of exporting and importing goods. It measures the time and cost (excluding tariffs) associated with three sets of procedures – documentary compliance, border compliance and domestic transport – within the overall process of exporting or importing a shipment of goods.

Tunisia scored higher than the regional average and ranked 90th. While the country's time to export for border compliance is slightly lower than the OECD high-income countries' average, the cost to import for

border compliance is among the region's highest, at \$596. Tunisia must improve all aspects of this indicator, as these factors can constitute significant barriers when water-related equipment and technologies must be imported from abroad.

3.9.9 ENFORCING CONTRACTS

This indicator measures the time and cost to resolve a commercial dispute through a local court of first instance and the quality of judicial processes index, evaluating whether each economy has adopted a series of good practices that promote quality and efficiency in the court system.

Tunisia ranked 88th, lower than Morocco (60th) but higher than the regional average. While it performs better than the OECD high-income countries' average for time, the quality of judicial processes index is slightly lower than the regional average.

3.9.10 RESOLVING INSOLVENCY

This indicator measures the time, cost and outcome of insolvency proceedings involving domestic legal entities. The variables are used to calculate the recovery rate, which is recorded as cents on the dollar recovered by secured creditors through reorganization, liquidation or debt enforcement proceedings (foreclosure or receivership).

Tunisia ranked 69th with higher scores than the regional average, but average scores globally. Its recovery rate is higher than the MENA average (51.3 percent), but is relatively low compared to the OECD high-income countries' average (70.2 percent). Resolving insolvency is a key relevant indicator, as it can have significant bearing when considering whether to start a business.

In 2019, Tunisia implemented three major business reforms. The first seeks to simplify the process of starting a business by increasing the number of services available through the one-stop shop and by reducing fees. The second speeds property registration by streamlining the internal property transfer process and increases transparency in land administration by publishing land registry data on property transactions for the previous calendar year. The third reform simplifies tax payment by implementing a risk-based tax audit system.

3.10 ENABLING ENVIRONMENT FOR CROSS-BORDER AND FOREIGN INVESTMENTS

The enabling environment for cross-border and foreign investments constitutes another important factor in investment decisions for foreign investors. Foreign investors may perceive risks to be higher in some countries if regulations pertaining to foreign investment are seen as unfavourable. For example, some investors may view restrictions on the payment of dividends to foreign investors, repatriation of funds and tax issues as constraints.

This section provides an overview of important laws and regulations pertaining to investment and foreign investment, as well as an analysis of gaps and challenges for foreign investment.

3.10.1 REGULATIONS RELATED TO DIRECT FOREIGN INVESTMENT IN TUNISIA

The main direct foreign investment policies include the Investment Law of 2016, the Law on Improving the Investment Climate (2019) and the Startup Act of 2018. Annual finance laws also establish important investment-related regulations.

OBJECTIVES OF THE REGULATIONS	IMPLICATIONS FOR FOREIGN INVESTMENT
<ul style="list-style-type: none">• Provide the overall framework for foreign investment in Tunisia• Provide the regulatory framework for multinational companies investing and operating in Tunisia	<ul style="list-style-type: none">• Permits transfer of funds abroad• Restricts the hiring of foreign management• Transfer pricing regulated• Subsidies and preferential tax regimes available for foreign investors

INVESTMENT LAW (2016)

In 2016, Tunisia approved a new Investment Law (*Loi n° 2016-71 du 30 Septembre 2016, portant loi de l'investissement*). It aims to promote investments in Tunisia by liberalizing the legal framework to invest and investors' protections. It provides investors with greater flexibility and offers more incentives.

The law reaffirms the principle of freedom to invest in Tunisia, providing non-discrimination guarantees to foreign investors. It states that they shall not be treated less favourably than Tunisian investors under comparable circumstances and prohibits expropriation of an investor and its assets, unless such action is in the public interest and subject to fair and equitable compensation and the existing legal framework. Foreign investors benefit from other important guarantees, including:

- Free transfer of funds abroad;
- Up to 30 percent of management staff may be recruited from abroad during the first three years of incorporation and up to 10 percent from the fourth year onwards;
- Administrative decisions shall be explained in writing; and,
- Access to land and equipment, excluding agricultural land and equipment.

Tunisia also provides a number of incentives to investors, such as:

- Incentives for projects of national interest with a minimum cost of TND 50 million (\$18 million) and that create 500 jobs within a three-year period from the start of operations:
 - Profits deducted from the tax basis within a 10-year period;
 - Investment grants covering up to one-third of the investment cost, including infrastructure expenses; and,
 - State participation in infrastructure expenditure.
- Broader tax exemptions:
 - 10 percent corporate tax for export companies, total exemption on profits for companies in regional development zones (RDZ) for up to 10 years; and,
 - 10 percent tax rate after the exemption period. Inputs of re-exported products are totally exempt from customs duties and VAT.
- Investment grants:
 - Up to 30 percent for companies in RDZ, with a ceiling of TND 3 million (approximately \$1.1 million); and,
 - Grants in priority sectors such as renewable energy manufacturing, collection, valorization, recycling and treatment of solid and liquid waste, which include 15 percent on the investment cost, with a ceiling of TND 1 million (\$0.3 million) and participation in capital, among others.
- Research and development (R&D) grants: grants for material and intangible investments up to 50 percent of the investment cost with a ceiling of TND 500,000 (\$180,000), R&D grants up to 50 percent of the investment with a ceiling of TND 300,000 (\$110,000).

Implementation Decree 417-2018 provides a list of 100 activities subject to government authorization in sectors such as natural resources and construction materials; transportation by land, sea, and air; banking, finance and insurance; hazardous and polluting industries; health and education; telecommunications; and, services. It also includes a list of authorizations required for specific projects. The decree states that authorizations must be acted upon within 60 days. If the administration does not respond by that deadline, the authorization is deemed to be issued to the business owner.

Tunisia adopted an onshore-offshore model in the 1970s. Fully exporting firms are defined as offshore companies, while non-exporting or partially exporting firms are defined as onshore. In offshore companies, foreign capital accounts for more than 66 percent of equity and more than 70 percent of production is exported, except in the agriculture sector, where foreign equity capital may not exceed 66 percent. Under the onshore regime, foreign capital equity is capped at 49 percent for non-industrial projects. Industrial projects may have 100 percent foreign shareholding.

LAW ON IMPROVING THE INVESTMENT CLIMATE (2019)

In 2019, Tunisia adopted Law 2019-47 (*Loi n° 2019-47 relative à l'amélioration du climat de l'investissement*), a cross-cutting law that impacts legislation across all sectors. The law seeks to improve business conditions in the country and align its business regulations with international best practices. It makes broad modifications to the investment climate, including in the tourism, agriculture and energy sectors. For example, it authorizes corporate power purchase agreements (PPAs) and establishes clear deadlines to authorize the use of agricultural lands for other purposes.

More broadly, the law eliminated the requirement that subsidiaries of foreign companies in Tunisia must obtain a merchant card. Prior to this change, a merchant card was required in order to distribute products manufactured by a parent company/group. The law also allows the private sector to operate a project under the PPP framework. On the financing side, the law also facilitates the use, by venture capital and private equity funds, of capital for investment.

STARTUP ACT (2018)

The Startup Act falls under the Digital Tunisia 2020 strategy and aims at promoting investments. It details qualifying criteria and benefits for startups. To increase foreign investment in the information and communication technologies sector, the government has adopted programmes such as Digital Tunisia 2020 and Smart Tunisia.

To qualify as a startup in Tunisia, a company must be less than eight years old, with annual revenues below TND 15 million (\$5.4 million) and fewer than 100 employees. At least two-thirds of shareholders must be founders, venture capital investors and/or angel investors. Incentives include corporate tax exemptions for up to eight years and tax exemptions on capital profits obtained from investments in startups.

FINANCE LAW (2019)

The Finance Law (*Loi de finances*) is an annual piece of legislation that authorizes government budget planning and expenditure. In 2019, the law introduced several new requirements, such as transfer pricing documentation, and changes in the tax regime. It refined the definition of “control,” stating that one company is understood to control another if the former owns 50 percent of capital or holds 50 percent of voting rights in the other, has effective control of decision-making, or is controlled by the same person/company.

Companies that are bound by foreign control relationships must report transfer pricing when annual turnover exceeds TND 20 million (\$7.2 million). Additionally, Tunisian companies and subsidiaries with annual turnover of more than TND 20 million must also communicate their transfer pricing policies to the General Directorate of Taxes.

COMMERCIAL COMPANIES CODE (2016)

The Commercial Companies Code (*Code des Sociétés Commerciales, 2016*) regulates business registration, company governance and company reporting requirements. It specifies that the branches of foreign companies must register in Tunisia under a procedure similar to that for limited liability companies. The foreign company and its Tunisian branches are considered to be part of the same legal entity. The foreign company may be held accountable for the liabilities of its branches.

BILATERAL INVESTMENT TREATIES

As of October 2020, Tunisia had signed and ratified bilateral investment treaties with 55 countries, including Turkey, Switzerland, Algeria, Congo, Libya, China, Sudan, Hungary, Portugal, South Africa, Finland, Iran, Syria, Ethiopia, Bulgaria, France and Indonesia.⁴⁰ These treaties establish the terms and conditions for private investment by nationals and companies of one state in another state and provide guarantees for investors, such as protection from expropriation.

3.10.2 CAPITAL MARKET LAWS AND REGULATIONS

Capital markets are important for foreign investment, as they facilitate the buying and selling of securities. The Tunis Stock Exchange (BVMT) includes a main market, established in 1969 for large companies, and an alternative market, established in 2007 for startups and small and medium-sized enterprises. BVMT also has a bond market and a specialized market for special purpose vehicles.

The market regulator, the Financial Market Council (CMF), was established by Law 94-117 reorganizing financial markets. The CMF reports to the Ministry of Finance.

OBJECTIVES OF THE REGULATIONS	IMPLICATIONS FOR FOREIGN INVESTMENT
<ul style="list-style-type: none">• Provide the overall framework for foreign investment in Tunisia's capital markets	<ul style="list-style-type: none">• Listing regulations and framework, approval process detailed by the BMVT• Non-residents may invest in money market instruments• Initial guidance for green bonds

LAW ON THE REORGANIZATION OF FINANCIAL MARKETS (1994) AND GENERAL RULES OF THE TUNIS STOCK EXCHANGE

The Law on the Reorganization of Financial Markets (*Loi 94-117 portant réorganisation du marché financier*) regulates listing procedures, reporting requirements for issuers and transactions in the Tunis Stock Exchange. The law is supplemented by the general rules of the Tunis Stock Exchange (*Règlement général de la Bourse des Valeurs Mobilières de Tunis*).

The law and rules specify the conditions for listing on the main and alternative markets. The main market is open to companies that can satisfy a minimum capital requirement of TND 3 million (\$1.08 million) and have at least 200 public shareholders, among other requirements. Companies that seek to be listed on the alternative market must have at least 100 public shareholders or five institutional shareholders on the day of the initial public offering (IPO). There are no capital requirements on the alternative market.

Tunisia has established four procedures for issuing an IPO:

- Direct registration: Company shares of the company are registered directly on the stock market for trading;
- Fixed price offer: All or a part of the company's capital is available to the public at a fixed price on the day of the IPO;
- Open price offer: A fixed number of securities is made available to the public, at a range of prices; and,
- Minimum price offer: The company's shareholders may make a number of shares available at a minimum price on the day of the IPO, which are then auctioned.

40 <https://investmentpolicy.unctad.org/international-investment-agreements/countries/213/tunisia>

Non-resident companies offering securities to Tunisian residents must comply with Law No. 94-117 on public shareholding and CMF reporting requirements. These companies are admitted to the non-resident compartment of the BVMT under the dual listing framework if they are listed on other markets.

Transactions between non-resident persons and non-resident companies registered under the Tunisian law on transferable securities and financial products are not subject to the provisions of this law. However, these companies must declare the transactions to the BVMT within 15 days.

GUIDELINES FOR ISSUING GREEN, SOCIAL AND SUSTAINABILITY BONDS (DRAFT – 2019)

In 2019, the CMF published draft guidelines for issuing green, social and sustainability bonds (*Guide d'émission d'obligations vertes, socialement responsables et durables*) that seek to encourage the issuance of green bonds in the country. The guidelines are aligned with the International Capital Market Association's recommendations in this area, including establishing reporting standards to ensure market integrity. The guidelines include the water supply sector as eligible for issuance.

The CMF has not yet published the final document.

3.10.3 BANKING SUPERVISION LAWS AND REGULATIONS AND OTHER REGULATIONS RELATED TO THE FINANCIAL SECTOR

The banking and financial sector is regulated by a number of laws and regulations, including the Law on Banks and Financial Institutions, the Code of Financial Services Provided to Non-residents and exchange notes and circulars on foreign investment.

OBJECTIVES OF THE REGULATIONS	IMPLICATIONS FOR FOREIGN INVESTMENT
<ul style="list-style-type: none"> • Provide the overall framework for banking services and non-banking financial services in Tunisia 	<ul style="list-style-type: none"> • Minimum bank capital requirements set at TND 50 million (\$18 million). Foreign entities are subject to similar requirements for incorporation • Some restriction on financing sourced from abroad

LAW ON BANKS AND FINANCIAL INSTITUTIONS (2016)

The law on Banks and Financial Institutions (*Loi n° 2016-48 du 11 juillet 2016, relative aux banques et aux établissements financiers*) is the key law governing the banking sector. It establishes guidelines for banking operations and supervision by the BCT. The law defines banking operations as covering the following:

- Deposits from the public;
- Credit;
- Leasing;
- Factoring;
- Islamic banking; and,
- Providing payment methods and payment-related services.

Financing provided by companies other than banks and financial institutions, such as payments for goods and services or internal financing, are not considered banking operations and are not covered by this law.

The law establishes the following minimum capital requirements to establish a financial institution in Tunisia:

- Resident and non-resident banks: TND 50 million (\$18 million) or equivalent in convertible currencies for non-resident banks;
- Resident and non-resident financial institutions: TND 25 million (\$9 million) or equivalent in convertible currencies for non-resident banks with the exception of:
 - Investment banks and institutions specialized in factoring services: TND 10 million (\$3.6 million)
 - Payment institutions: TND 5 million (\$1.8 million).

Non-resident banks or financial institutions may open representative offices in Tunisia. The BCT issues approvals for representative offices. Non-resident banks may accept deposits from Tunisian residents in TND, provide financing to Tunisian enterprises in TND and other currencies, among other services.

CODE OF FINANCIAL SERVICES PROVIDED TO NON-RESIDENTS

The Code of Financial Services Provided to Non-Residents (*Loi n° 2009-64 du 12 août 2009, portant promulgation du Code de prestation des services financiers aux non résidents*) aims to regulate the provision of financial services to non-resident entities. It establishes a framework for financial transactions between non-residents and the banking and financial services sector in Tunisia and highlights requirements for transactions between Tunisian residents and non-resident financial service providers.

Capital requirements for non-resident banks and financial institutions are aligned with the Law on Banks and Financial Institutions. Additionally, the code sets capital requirements at TND 7.5 million (\$2.7 million) for non-resident investment companies and TND 250,000 (\$90,000) for a portfolio management company. Non-resident financial institutions may invest using securities, bonds and shares from collective investment schemes.

Under the Code, non-resident financial institutions are exempt from taxes on the income generated by foreign currency deposits, the tax on industrial, commercial or professional businesses, and other taxes and benefit from a waiver of the withholding tax on interest paid on loans in foreign currency if these transactions are made with non-residents.

LAW REGULATING MICROFINANCE INSTITUTIONS

The Law Regulating Microfinance Institutions (*Décret-loi n° 2011-117 du 5 novembre 2011, portant organisation de l'activité des institutions de microfinance*) provides the enabling framework for microfinance activities in Tunisia. Companies providing microfinance should have minimum capital of TND 3 million (\$1.1 million).

The law also sets financing ceilings for microfinance transactions:

- TND 5,000 (\$1,800) provided by associations
- TND 20,000 (\$7,200) provided by microfinance institutions
- TND 1,000 and TND 3,000 (\$360 and \$1,080) for microfinance credits to improve living conditions, provided, respectively, by associations and microfinance institutions.

EXCHANGE NOTES AND CIRCULARS ON FOREIGN INVESTMENT

The Ministry of Finance and BCT also provide guidance on foreign investment ceilings in Tunisia. The Ministry's exchange note No. 4 of January 2004 emphasizes that resident companies may transfer an amount greater than TND 50,000 (\$18,000) from foreign currency revenues to finance foreign investment, between TND 50,000 and TND 500,000 (\$18,000 and \$180,000) to finance representation offices, and between TND 100,000 and TND 1,000,000 (\$36,000 to \$360,000) to finance subsidiaries and affiliates and for capital acquisition. The ceiling on these activities is TND 3 million (\$1.1 million) annually.

BCT circular No. 93-14 stipulates that banks and enterprises may borrow in foreign currencies up to TND 10 million (\$3.6 million) and TND 3 million (\$1.1 million) per year, respectively, for their activities. Lending institutions may borrow unlimited amounts from non-residents, provided that the loan duration is more than 12 months.

3.10.4 INSOLVENCY AND BANKRUPTCY-RELATED REGULATIONS AND PROCEEDINGS

OBJECTIVES OF THE REGULATIONS	IMPLICATIONS FOR FOREIGN INVESTMENT
<ul style="list-style-type: none"> • Provide the overall framework for insolvency procedures 	<ul style="list-style-type: none"> • Insolvency procedures have been simplified but remain complex and court-driven • Companies facing voluntary or official liquidation should first pay the company's debts and liabilities to the state

The Law on Collective Insolvency Proceedings (*Loi n°2016 – 36 du 29 avril 2016 relative aux procédures collectives*) provides the overall legislative framework for insolvency and bankruptcy of limited liability companies operating in Tunisia. It amends the Commercial Code, the Code of Obligations and Contracts and other laws on judicial reorganization, liquidation and bankruptcy.

The courts usually supervise insolvencies. The judge commissioner, appointed by the court, is the key decision-making authority in insolvency proceedings and is required to oversee the proceedings. An insolvency office holder is appointed and responsible for managing the debtor's assets. The proceeds of the liquidated assets are distributed to the company's creditors based on the order of precedence under the law. Employees take precedence over other stakeholders, such as tax authorities, public bodies, banks and creditors. Creditors residing outside Tunisia have 60 days from the day the insolvency procedure is announced in the official gazette to inform the court of the company's debt.

The law provides limited options for amicable settlement procedures, as all debtors are involved in the early stage of the procedure, including non-solvent debtors. Reorganization plans are allowed, but are ratified by the court in the judicial reorganization rather than voted on by creditors. The court may also impose a reorganization plan despite any objections from certain classes of creditors (cramdown mechanism).

Some creditors, such as the State, benefit from unlimited preferential treatment. Creditors' priority is not clearly defined.⁴¹

3.10.5 FOREIGN EXCHANGE

OBJECTIVES OF THE REGULATIONS	IMPLICATIONS FOR FOREIGN INVESTMENT
<ul style="list-style-type: none"> • Provide the overall framework for foreign exchange 	<ul style="list-style-type: none"> • Dividend and payments to foreign entities guaranteed (including remittances in foreign currency and repatriation of funds)

BCT governs foreign exchange in Tunisia. The two key laws that address foreign exchange and foreign trade are the Foreign Exchange and International Trade Law (*Loi n° 76 - 18 du 21 janvier 1976, et portant refonte et codification de la législation des changes et du commerce extérieur régissant les relations entre la Tunisie et les pays étrangers*) and the Foreign Trade Law (*Loi n° 94-41 du 7 mars 1994, relative au commerce extérieur*).

The Tunisian dinar is tradeable only in Tunisia. It is illegal to take dinar out of the country. The dinar is fully convertible for current account transactions, such as trade transactions, corporate production, insurance, capital income, and banking and financial expenditures. BCT authorization is required for some foreign exchange operations.

Foreign investors may freely transfer funds such as dividends, company stock sale proceeds, interest capital and export dividends without authorization. Foreign investors may also freely transfer net proceeds from the

41 European Bank for Reconstruction and Development, 2018. *Tunisia Diagnostic 2018*.

sale or liquidation of invested capital. All other operations are subject to BCT authorization. The Investment Law, 2016 highlights the rights of foreign investors to transfer funds abroad. Other decrees provide additional protections, such as Ministerial Decree 417 of May 2018, which directs BCT to issue its decision on remittance requests within 90 days and authorizes investors to submit the matter to the country's Higher Investment Authority if no response is received. The Authority will issue final approval or denial within one month.

3.10.6 TAX FRAMEWORK

Tunisia's tax regimes are governed primarily by annual finance laws and laws specific to the income tax (*Loi n°89-114 du 30 décembre 1989 portant promulgation du Code de l'impôt sur le revenu des personnes physiques et de l'impôt sur les sociétés*), value-added tax (*Loi n°88-61 du 2 juin 1988 portant promulgation du code de la taxe sur la valeur ajoutée*) and consumption tax (*Loi n° 88-62 du 2 juin 1988, portant refonte de la réglementation relative aux droits de consommation*), among others.

Table 7: Taxes applicable in Tunisia

KEY TAXES	DESCRIPTION
GENERAL CORPORATE TAX	The general corporate income tax rate in Tunisia is 25%. However, rates vary by industry, location, type of business and the nature of the income. Non-residents are taxed only on income earned in Tunisia
TAX ON DIVIDENDS AND INTERESTS	<ul style="list-style-type: none"> • A 7% withholding tax (WHT) is levied on the dividend if the payor company is within the West African Economic and Monetary Union • 19% WHT is charged on dividends • 10% WHT is charged on interest if paid to banks or 20% otherwise • 15% WHT is charged for royalties
STAMP DUTY	In general, stamp duties are charged at TND 0.5 (\$0.18) for invoices; exemptions are provided for invoices related to export operations
VALUE-ADDED TAX (VAT)	A standard 19% VAT is levied on goods and services

3.10.7 DISPUTES AND ARBITRATION

OBJECTIVES OF THE REGULATIONS	IMPLICATIONS FOR FOREIGN INVESTMENT
<ul style="list-style-type: none"> • Provide the overall framework for arbitration and litigation 	<ul style="list-style-type: none"> • Arbitration follows international standards, both between private sector parties and between the government and private sector parties

The investment law and the law on improving the investment climate encourage disputing parties to mediate on their own terms. If mediation fails, the Conciliation Rules of the United Nations Commission on International Trade Law (UNCITRAL) may apply. The rules introduce the option of international arbitration to settle disputes.

The Tunisian Arbitration Code authorizes the enforcement of foreign judgements and arbitral awards in Tunisia. Certain code provisions are based on the UNCITRAL model law.

Tunisia is a member of the International Centre for the Settlement of Investment Disputes, a signatory to the 1958 New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards, and has had a dispute settlement agreement with the European Community and its member States since 2013.

3.10.8 SUMMARY OF FINDINGS FOR FOREIGN INVESTMENT REGULATORY ENVIRONMENT

Overall, the regulatory environment for foreign investment in Tunisia is supportive. While some limitations exist on sectors in which foreign businesses may freely incorporate, there is no discrimination against foreign-owned businesses. Recent laws promoting investment emphasize investors' rights and provide incentives to encourage foreign investment.

Although investment in the banking sector is subject to specific requirements, such as obtaining a license for banking and financial activity in the country and prior consent from the BCT, foreign-owned banks are not prohibited from lending and investing in the country. There are no specific constraints on paying dividends to foreign investors, including in foreign currency, as per foreign exchange regulations and Tunisia's general investment framework.

Although the collective insolvency proceedings law simplified matters, issues remain regarding recovering debt when a company winds up. The State is a priority creditor and the process is highly court-driven. A framework for disputes and arbitration exists in Tunisia. In some cases, Tunisia provides reciprocity and allows foreign judgements to be enforced in the country, thereby enabling easier recovery of assets and liabilities. The country also adheres to international arbitration frameworks, paving the way for settlements recognized by international investors.

The overall enabling environment for private investment in the water sector in Tunisia remains nascent. Historically, the public sector and public utilities have driven investment and project origination in Tunisia. The Water Code emphasizes that water is a public good, thus limiting the potential for private investment. However, Tunisia began to recognize the importance and potential of private investment and private participation in the economy, including in relation to infrastructure and service delivery, by developing its PPP framework in 2015. Water supply-related projects are already in the PPP project pipeline. Tunisia's economic outlook remains fragile and the country has been significantly impacted by the COVID-19 pandemic. Economically, Tunisia is expected to be severely affected by the pandemic, with real GDP projected to contract by 5.4 percent in 2020. The pandemic will have a particular impact on important economic sectors, such as tourism. The regulatory framework also supports investment in the water sector to some extent, providing favourable conditions for foreign direct investment and cross-border investment.

4. PRIORITIZED SECTOR CONTEXT

Multiple barriers and challenges constrain the water sector in Tunisia, preventing investment from scaling up. This subsection presents the current status of private sector engagement and investment and the investment barriers and critical gaps in terms of alternative water resources in agriculture and tourism. It also presents the structure of each subsector and analyses the ecosystem and value chain, the status of private sector engagement and investment, and investment barriers and critical gaps the water sector faces.

The ecosystem analysis provides an overview of the relationship between inputs and products for specific subsectors. It helps explain the business environment for private stakeholders in each subsector. The value chain analysis builds on the ecosystem analysis, providing an illustrative representation of the value chain actors identified, their functions and an analysis of their relationships.

Combined, these analyses provide a better understanding of how and where stakeholders and organizations are positioned within the ecosystem and value chain and identify opportunities and engagement points for decision-makers in the public and private sectors.

Tunisia already faces water scarcity. The mobilization rate of conventional water resources stands at 92 percent.⁴² The public sector regulates the water supply and there is little direct private sector investment in water supply projects, especially for conventional water resources. Tunisia has been considering whether to mobilize non-conventional water resources by building brackish water and seawater desalination plants and reusing wastewater. This section analyses the ecosystem for the mobilization of alternative water resources in agriculture and tourism.

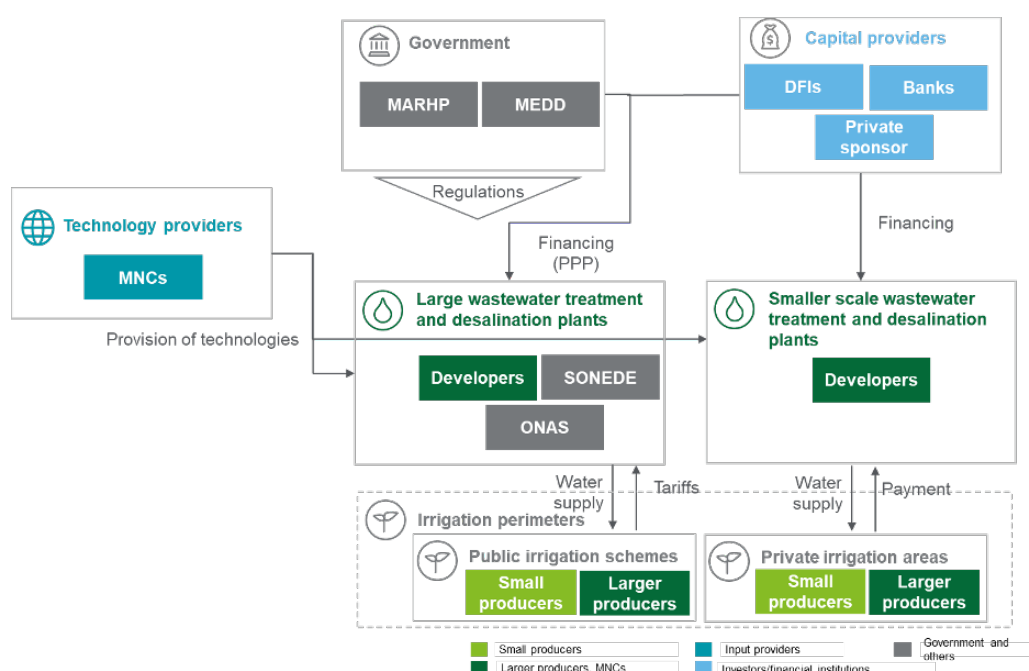
4.1 ALTERNATIVE WATER RESOURCES FOR AGRICULTURE

This subsection analyses the ecosystem and value chain for water supply from non-conventional water resources in agriculture.

4.1.1 ECOSYSTEM ANALYSIS

Figure 1 describes the water supply ecosystem for non-conventional water resources.

Figure 1: Water supply ecosystem in Tunisia for non-conventional water resources



The alternative water resource ecosystem for agriculture can be divided among input providers, plant developers, and operators and producers. The public sector leads this ecosystem; SONEDE and ONAS are usually involved in the major desalination and wastewater treatment plants developed in the country. These are usually carried out based on PPP and BOT agreements. Large plants usually supply public irrigated perimeters (PPIs).

Private developers of smaller scale wastewater treatment and desalination plants can supply private irrigated areas.

4.1.2 ANALYSING THE VALUE CHAIN, MAPPING PRIVATE SECTOR ACTORS AND IDENTIFYING BARRIERS TO ALTERNATIVE WATER RESOURCE UPPLIES FOR AGRICULTURE

Tunisia's cultivated area per capita is among the highest in Africa, with 477 hectares per 1,000 inhabitants in 2013. Rain-fed agriculture is constrained by the arid climate, irregular rainfall and the degradation of soil quality due to erosion. Tunisia's irrigated land ratio is one of the highest on the African continent, with more than 9 percent of lands irrigated, compared to 5.2 percent on average in Africa.⁴³ The agriculture sector remains economically and politically important for Tunisia, given its central role in achieving national objectives for food security, income generation, employment, regional balance and natural resource management. In 2017, the agriculture sector contributed 10 percent of the country's GDP and recorded average growth of 2.8 percent per year over the period 2011-2017.⁴⁴ In 2019, the agriculture sector employed approximately 13 percent of the total working population.⁴⁵ While this remains high, it has fallen sharply compared to the early 2000s, when employment in the sector represented 20 percent of the total working population. This is mainly due to the increasing depopulation of rural areas.

Tunisia's production system is characterized by its specialized production of cereals, fruits and tree-based crops. Table 8 presents the main crops produced in 2018.

Table 8: Tunisia's main agricultural crops (2018)

TYPE OF CROP	AREAS IRRIGATED (ha)	% OF TOTAL IRRIGATED AREAS
Wheat	1,500,000	846,939
Tomatoes	1,357,621	24,195
Olives	825,467	1,528,028
Barley	700,000	699,262
Watermelons	548,649	14,299

Source: FAOSTAT

Between 2014 and 2016, cereal production represented nearly 8.6 percent of the value of the country's agricultural production.⁴⁶ However, cereal production has declined over the last few years, particularly because it is highly vulnerable to the impacts of climate change. Olive production is also one of the main agricultural activities, with olive groves covering the largest agricultural area in the country. Nearly one million people derive part of their income from this crop. Between 2014 and 2016, olive production represented 9.2 percent of the value of total agricultural production. Between 2012 and 2016, average olive oil production totalled 193,800 tons per year, making Tunisia the second-largest producer in the world, after the European Union.⁴⁷

Small and medium-sized family farms are the main players in the agriculture sector. According to the last census, more than 54 percent of producers had access to less than 5 hectares. More than 97 percent of producers had access to less than 50 hectares.⁴⁸

43 FAO. 2015. http://www.fao.org/nr/water/aquastat/countries_regions/tun/printfra1.stm

44 Projet d'appui à l'initiative ENPARD Méditerranée. 2019. *Rapport de synthèse sur l'agriculture en Tunisie*.

45 World Bank Group, 2019. *Employment in agriculture (% of total employment) (modeled ILO estimate) - Tunisia*.

46 Projet d'appui à l'initiative ENPARD Méditerranée. 2019. *Rapport de synthèse sur l'agriculture en Tunisie*.

47 Ibid.

48 Ministère de l'Agriculture et des Ressources Hydrauliques, 2006. *Enquête sur les Structures des Exploitations Agricoles 2004-2005*.

The agriculture sector alone consumes 80 percent of water resources in Tunisia, so it is crucial to introduce technologies that increase the efficiency of the sector's water use. Olive and vegetable production rely heavily on irrigation, as do other fruits and, to some extent, wheat. Table 9 presents the country's main irrigated crops.

Table 9: Main irrigated crops in Tunisia

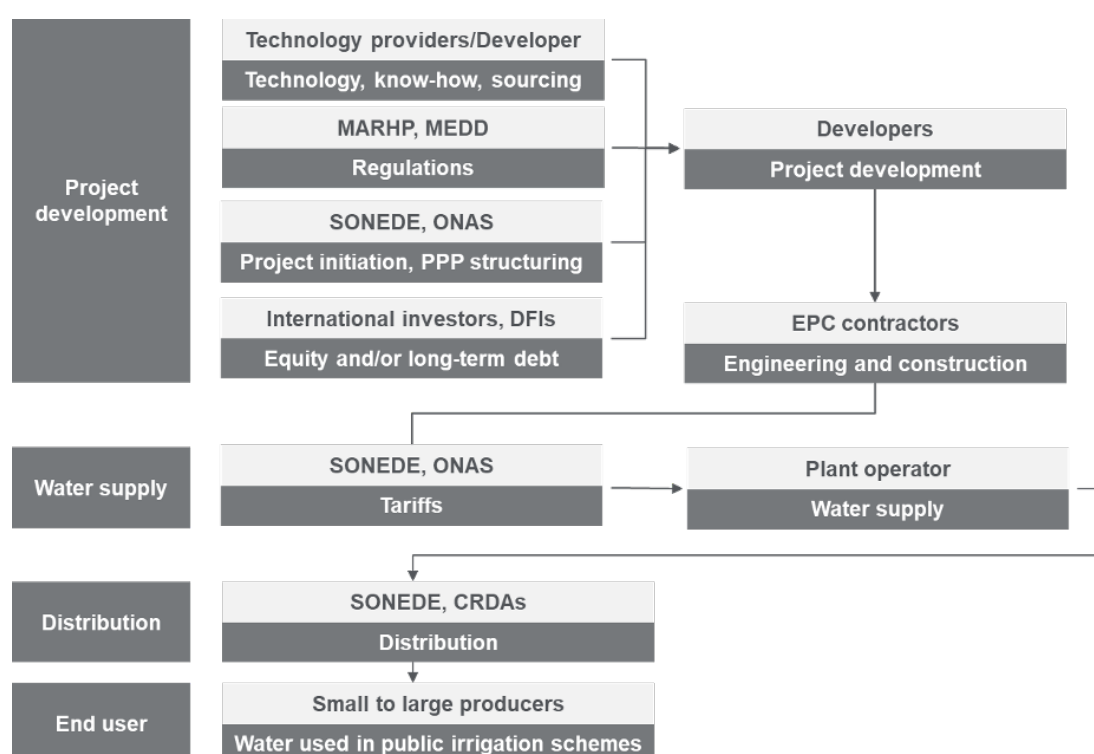
TYPE OF CROP	AREAS IRRIGATED (ha)	% OF TOTAL IRRIGATED AREAS
Cereals	50,070	12.1
Vegetables	136,420	33.1
Fruits	163,330	39.6
Industrial production (beans)	7,830	1.9
Fodder	54,600	13.2

Source: Ministry of Environment. 2005. Gestion durable des ressources en eau.

Tunisia has long supported the supply of additional irrigation resources through PPIs, which represent approximately 55 percent of all irrigated areas in Tunisia,⁴⁹ while remaining areas are privately held. As of 2015, 46 percent of the total irrigated perimeters used localized irrigation (drip), while 30 percent used sprinkler irrigation and 24 percent used gravity irrigation.⁵⁰ Initially, solar PV pumping systems were used for drinking water supply in Tunisia; in recent years they have been used increasingly for irrigation purposes, with increasing private sector participation. This is linked to higher risks of aquifer overexploitation.

The use of non-conventional water resources for agriculture is growing. Desalination plants have already been developed throughout the country and treated wastewater is also a significant non-conventional water resource for the country and the agriculture sector. Figures 2 and 3 present the value chain analysis of alternative water resource supplies for agriculture for large-scale and smaller scale plants in Tunisia.

Figure 2: Non-conventional water resource supply value chain for agriculture in Tunisia/Large-scale plants



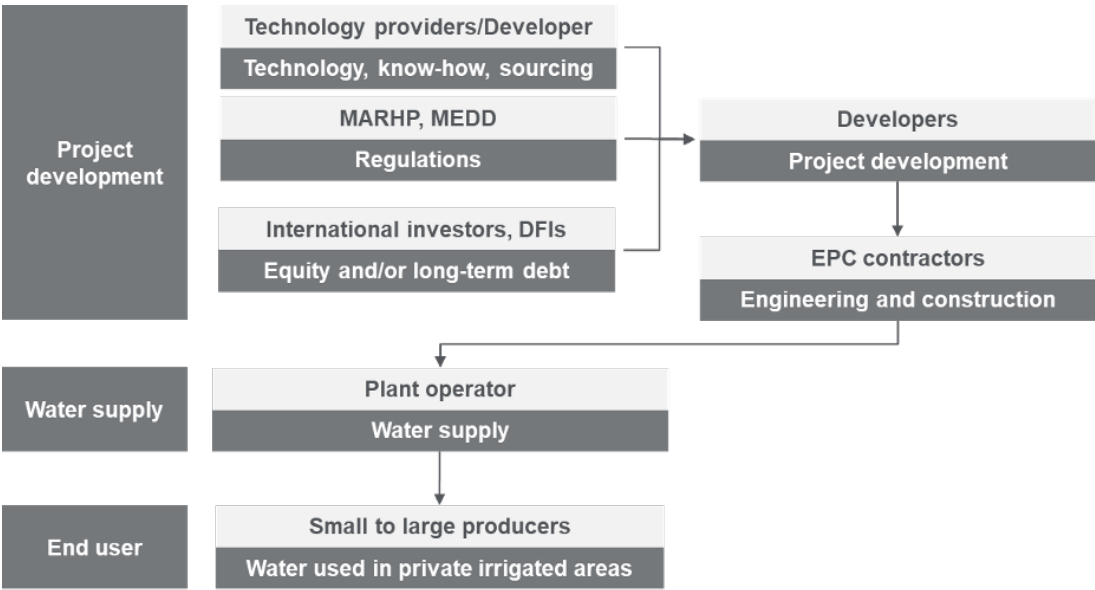
49 Ministère de l'Agriculture, des Ressources Hydrauliques et de la Pêche, 2017. *Rapport National du Secteur de l'Eau*, 2017.

50 Ministry of Local Affairs and Environment. 2019.

The large-scale, non-conventional water resource supply value chain for agriculture in Tunisia is centred on SONEDE and ONAS, the water and sanitation utilities. Projects at this scale are usually initiated by the government and involve one of those entities. When the government expects the private sector to participate, it establishes a PPP. SONEDE and SONAS are also involved in setting water tariffs and SONEDE is the main distribution entity.

The private sector is involved through developers, who can support the development of PPP projects and their financing. Private developers work closely with all other stakeholders, such as the government, technology providers, financing entities and EPC contractors. End users are typically those supplied by SONEDE. Given the importance of confirming the demand for this kind of project to ensure that the facility’s revenues are stable, the government usually targets large irrigated areas.

Figure 3: Non-conventional water resource value chain agriculture in Tunisia/Smaller-scale plants



The smaller-scale, non-conventional water resource supply value chain for agriculture in Tunisia focuses more on private developers than on large-scale water supply plant value chains. Private developers initiate projects based on water demand for irrigation in areas that ONAS and SONEDE do not supply, which are usually rural areas.

In this value chain, developers and plant operators agree on a water supply fee with producers. Smaller-scale plants usually supply producers in private irrigated areas.

The public sector could also consider developing small-scale desalination capacities for rural areas. Agricultural development groups (GDAs) supplement SONEDE in operating rural water systems. GDAs supply approximately half of rural areas and could also supervise the installation and operation of small-scale desalination in relevant areas.

DEVELOPERS AND EPC CONTRACTORS

Desalination plants and wastewater treatment plants are complex and require a high level of expertise. Large companies such as Grupo Cobra,⁵¹ Aqualia,⁵² Veolia⁵³ and Abengoa⁵⁴ are among the sector’s major players. Grupo Cobra was involved in the expansion of the Bizerte wastewater treatment plant⁵⁵ and Abengoa is involved as an EPC in building the Sousse desalination plant.⁵⁶ These companies are involved both as EPC contractors and developers.

51 <https://www.grupocobra.com/en>
 52 <https://www.aqualia.com/es/>
 53 <https://www.veolia.com/en>
 54 <http://www.abengoa.com/web/en/index3.html>
 55 <https://www.grupocobra.com/en/proyecto/expansion-of-the-bizerte-wastewater-treatment-plant/>
 56 <http://www.abengoa.com/web/en/negocio/agua/desalacion/>

Investments in desalination plants

The public sector has already invested in several seawater desalination plants with the support of sponsors. Private sector participation in large-scale brackish water and seawater desalination plants are detailed in Table 10.

Table 10: Desalination plants in Tunisia

DESALINATION PLANT	INSTALLED CAPACITY (m ³ /day)	TOTAL INVESTMENT (US\$ million)	SPONSOR	CONTRACTOR	STATUS
Gabes	34,000	N/A	N/A	N/A	Completed in 1995
Djerba	15,000	N/A	N/A	N/A	Completed in 2000
Ben Guerdane	20,000	N/A	N/A	N/A	Completed in 2013
Djerba	50,000 (capacity can expand to 75,000)	74	KfW AFD	JV FCC Aqualia and Inima	Completed in 2018
Zarat (Gabes)	50,000 (capacity can expand to 100,000)	82	KfW	Va Tech Wabag	Completion planned for 2021
Sfax	100,000 (capacity can expand to 200,000)	371	JICA	N/A	Completion planned for 2023
Sousse	50,000 (capacity can expand to 100,000)	N/A	N/A	Abengoa and Engineering Procurement & Project Management	N/A
Ksour Essef	100,000 (capacity can expand to 200,000)	145.7	N/A	N/A	Completion planned for 2025
GCT – Gabes	50,000	92.2	N/A	N/A	Preparatory phase

Source: SONEDE website <https://www.sonede.com.tn/index.php?id=56&L=0>, Instance Générale PPP homepage <http://www.igppp.tn/Station%20de%20dessalement%20de%20l%27eau%20de%20mer%20C3%A0%20Gab%20C3%A8s>, Aouini E.; Direction du Dessalement et de l'Environnement SONEDE, 2018. Water Desalination Seminar.

SONEDE has engaged private companies to design and build through EPC contract tenders. The private sector has thus been involved primarily in designing and building desalination plants, not in operating them. The Tunisian Chemical Group's (GCT) desalination plant in Gabes is planned under a PPP scheme, demonstrating the potential of PPPs for desalination plants in the country.

SONEDE has also developed more than 36,000 m³/day of treatment capacity at small desalination treatment plants across Tunisia, with individual plant capacities ranging between 800 and 6,000 m³/day. It plans to add an additional 31,000 m³/day.⁵⁷

While these investments come from public sources or with the support of international development partners, their scale illustrates the potential for private sector investment in Tunisia. Additionally, some of the plants planned by SONEDE will be developed under PPP schemes, such as in Gabes and Ksour.

Investments in wastewater treatment plants

Treated wastewater is another significant non-conventional water resource and can be reused for irrigation. Tunisia has approved three PPP projects in the North of Greater Tunis.

Table 11: Planned wastewater treatment plants in Tunisia

LOCATION	PLANNED CAPACITY (m ³ /day)	TOTAL INVESTMENT	STATUS
El Hessiane	60,000	93.3	Planned
El Allef	90,000	N/A	Planned
El Attar	170,000	N/A	Planned

Source: http://www.igppp.tn/sites/default/files/Fiches_descriptives/03-Fiche%20Station%20d%27%C3%A9puration%20%C3%A0%20Tunis%20Nord.pdf

Opportunities exist to reuse treated wastewater from the planned wastewater plant in the Cebela-Borj Touil irrigation perimeter, which is the largest irrigated perimeter where treated wastewater is already used in Tunisia. This perimeter, created in 1989, covers a total gross area of 3,200 ha.⁵⁸ As of August 2020, the PPP arrangement for these plants had not been defined.

ONAS produces treated wastewater that is then collected by regional rural development commissions (CRDAs), regional representatives of the Ministry of Agriculture, for irrigation use. CRDAs are responsible for transferring the treated effluent, storing it and pumping it to the end user.

4.1.3 GAPS, CHALLENGES AND RECOMMENDATIONS FOR TECHNOLOGY PROVIDERS AND DEVELOPERS IN ALTERNATIVE WATER RESOURCE SUPPLY FOR AGRICULTURE

PUBLIC SECTOR LEADERSHIP IN THE WATER SUPPLY SECTOR

The public sector has historically led the development of Tunisia's water sector, leaving little space for private sector involvement, as water is considered a crucial public resource. Thus, the government still leads project sourcing and preparation, contract negotiation, service delivery, and water sector operations. SONEDE and ONAS are the main utilities and provide those services.

Tunisia recently strengthened its PPP legal and institutional framework so that it can be used more often for infrastructure development, although the PPP track record and current pipeline remain modest. This reflects Tunisia's preferred model of public sector-led infrastructure development and service provision.

Private sector involvement and investment can be encouraged if the public sector focuses on sourcing and preparing projects and negotiating contracts with the private sector. By further developing its evaluation process to ensure value for money, the public sector could ensure greater private sector participation via the PPP scheme or service delivery model.

FINANCIALLY FRAGILE UTILITIES

SONEDE and ONAS are the public utilities in charge of Tunisia's water supply and sanitation. Created in 1968, SONEDE provides drinking water to the entire urban population and more than half of the rural population. It distributes more than 650 million m³ of water per year and has an annual turnover of about \$170 million.⁵⁹ However, SONEDE has faced financial difficulties in the last decade. In 2016, it received no operating subsidies, but the State covered some of its investments. Its debt totalled TND 441 million (\$158.8 million).⁶⁰ ONAS also faces higher deficits and operating costs; the latter tripled between 1998 and 2012.⁶¹

⁵⁸ Instance Générale PPP, 2018. *Pipeline of PPP projects in Tunisia, North of Greater Tunis wastewater treatment plant.*

⁵⁹ World Bank, 2018. *Tunisia Water Sector Reform Project, Program Information Document.*

⁶⁰ Ibid

⁶¹ OECD, 2014. *Water Governance in Tunisia: Overcoming the Challenges to Private Sector Participation.* <https://www.oecd.org/environment/water-governance-in-tunisia-9789264174337-en.htm>

In general, SONEDE and ONAS depend on concessional loans from international financial institutions and bilateral donors to finance their capital investments. Of the 27 sanitation projects planned between 2013 and 2016, 23 were expected to be financed by donors.⁶²

Investment, or participation in investment, through payments to private providers from SONEDE and ONAS is crucial to involving the private sector in the water sector successfully. The utilities must therefore be more financially stable.

SETTING TARIFFS REMAINS CHALLENGING

Tariffs are crucial to determine project viability and support public utilities' financial viability. After freezing tariffs in the early 2000s, the government has increased them several times since 2013.⁶³ Tunisia aims at reviewing its tariff policy annually to restore SONEDE's financial balance by 2024. However, SONEDE is still unable to cover all its production costs and is unlikely to be able to make the capital investment needed in new infrastructure and desalination plants. ONAS is in a similar position. Its tariffs were frozen between 2003 and 2010 but have increased several times since 2010 for households, hotels and industries. However, ONAS has not managed to restore financial equilibrium since 2014.

Tunisia applies a single progressive tariff to water and sanitation based on the volume of water consumed. Thus, although investment costs differ depending on the project, SONEDE supplies all water at the same tariff. The intention is to serve low-income populations and support capital investment in water infrastructure throughout the country. It also means that investors do not take the cost of water into account when choosing where to locate a business activity.

Water supply projects are among the most capital-intensive infrastructure investments. The assets cannot be repurposed or removed. Investors thus depend entirely on future revenues to obtain their desired financial return. However, revenues are often delayed after the initial investment and both investors and regulators usually face resistance to tariff hikes. The financial rate of return on water supply investments is thus relatively low.

If tariffs cannot reflect costs, water utilities and operators should, at the very least, be able to recover operating costs from tariffs. For example, capital costs can be subsidized while requiring the operator to address financial viability in its operations based on existing tariffs. This requires flexibility in terms of cost-recovery approaches.

RECOMMENDATION AND POINT OF ENTRY 1

Adopting differentiated cost recovery approaches

In Tunisia, household contributions to water and sanitation represented 61 percent of sector financing in 2014,⁶⁴ showing its reliance on the public budget, official development assistance and DFI support. The government could consider a sustainable cost recovery approach for water supply projects, including non-conventional projects. Sustainable cost recovery could allow for wide variations in payment capacity. Projects that supply urban households and those that supply rural producers may have a different cost recovery capacity, particularly for initial investment costs. Many rural water supply and sanitation systems are unlikely to recover more than a portion of investment costs, in addition to paying operating and maintenance costs.

Subsidies can be used in various ways. They can be channelled directly to end users to subsidize specific families' water bills or used to lower some users' rates, based on cross-subsidies. Subsidies could also directly target capital costs by providing concessional finance in the form of grants, subsidized loans or guarantees for initial costs.

As water operators need predictable and stable revenues, Tunisia should adopt a model under which tariffs and fiscal transfers primarily target cost recovery for operating costs. This is linked to the project's structure when the private sector is involved and addressed in other recommendations as well

62 Ibid.

63 Ibid.

64 GLAAS 2013/2014 country survey; 2014 *TrackFin* pilot assessment.

Best practice example: Direct subsidies in Chile

The privatization of Chile's public water companies led to increased tariffs. To ensure that the entire population had access to water, the government designed a subsidy system for drinking water consumption. Law No. 18,778 established a direct subsidy for drinking water and sanitation services. The subsidy was the same for beneficiaries from the same geographic region and of similar socioeconomic status and covered consumption of up to 20 m³ per month. Private companies also supported implementation of the subsidy as it provided additional revenues and established cost-reflective tariffs.

Main implementer	Government, by developing the required enabling environment, including frameworks for subsidies or cost recovery.
Private sector involvement	The private sector would be involved primarily at the implementation stage for PPP agreements.
Financial benefits	The private sector would ultimately receive financial support in the form chosen by the government (subsidies for capital costs, consumption).
Adaptation outcomes	Increased access to alternative water sources, thereby improving water security.

The procurement method also plays an important role in project financing and risk allocation. Given the difficulty of raising tariffs and the significance of subsidies for such projects, it is important to consider this method.

RECOMMENDATION AND POINT OF ENTRY 2

Selecting an appropriate procurement method for large-scale plants

Large infrastructure projects are subject to risks that may affect their performance, cause cost overruns and, thus, impact a project's financial viability. It is therefore important to carefully consider risk exposure when designing large-scale desalination and wastewater treatment projects. With PPP agreements, some or all the risk can be transferred to a private partner. However, this is determined by the procurement instrument adopted to develop the infrastructure.

Most projects in Tunisia are implemented under the turnkey approach. Contractors are responsible for both designing and building the facility. Other procurement methods allow the private sector to also assume responsibility for plant operations and financing. Depending on the technology used and its complexity, it is advisable to choose an approach under which the contractor is also responsible for operation and maintenance (O&M). This is the case for large-scale reverse osmosis (RO), as membranes may not perform well under local conditions.

Tunisia could leverage build-own-operate-transfer (BOOT) approaches to scale up desalination. Under this approach, risk and responsibilities are well defined between the plant operator and the off-taker, which would typically be SONEDE. A water purchase agreement would define the conditions under which water is purchased over the long term, including tariffs. This should at least cover O&M costs and, ideally, capital costs.

SONEDE's financial situation and the tariffs may pose obstacles to BOOT projects. This could be overcome by providing grants and subsidies to strengthen the financial viability of the plant and the arrangement.

Main implementer	Government, by developing the required enabling environment in terms of procurement methods.
Private sector involvement	The private sector would be involved primarily at the PPP implementation stage. Depending on the procurement method, it may be involved in financing and operations.
Financial benefits	The private sector would ultimately receive payments in the form of tariffs and other forms to be determined based on the contract and enabling framework.
Adaptation outcomes	Increased access to alternative sources of water, thereby improving water security.

LACK OF AWARENESS OF WASTEWATER REUSE

Producers and the population often have negative perceptions of the reuse of treated wastewater, seeing it as potentially harmful to health. Producers thus prefer using conventional water sources. This could be based on a lack of information on the quality of treated wastewater and on its authorized uses for agriculture.

LIMITATIONS ON WASTEWATER REUSE

The Water Code and water quality standards regulate wastewater reuse. The Water Code stipulates that wastewater may not be reused for crops that might be consumed raw. It is thus important to set up production areas that will use only wastewater. Producers must agree not to produce certain crops and confirm the project's viability based on the tariffs applied to reused wastewater.

COST OF CONNECTING RURAL AREAS TO NON-CONVENTIONAL WATER PRODUCTION CENTRES

The cost of connecting non-conventional water production centres to agricultural production areas remains significant, but may not always be reflected in tariffs. Overcoming such issues may require a dual approach. When agricultural areas are located near urban centres, it may be possible to connect them to large-scale desalination and wastewater treatment plants. At the same time, it is essential to identify producer groups growing crops that can be irrigated with treated wastewater.

An alternative approach using small-scale facilities may be required in rural areas. ONAS has limited activities there, while GDAs and municipalities supplement SONEDE in operating rural water systems, supplying approximately half of rural areas. Involving the private sector in developing small-scale desalination and wastewater treatment facilities in rural areas may thus be an option for Tunisia. Determining areas in which wastewater can be reused for agricultural purposes will be important to advance private sector involvement in these facilities, as treated wastewater supply for irrigation may constitute an important additional cashflow for the projects.

RECOMMENDATION AND POINT OF ENTRY 3

Introducing small-scale desalination for agriculture

The cost of connecting water supply to agricultural production areas is significant, but may not always be reflected in tariffs. Small-scale desalination plants for agriculture in coastal areas may be used. Using small-scale capacities would make it possible to tailor the amount of water produced to match the needs of the number of users. This would reduce the distance between facilities and users, thus reducing connection investment costs.

In rural areas, small private operators could support GDAs and municipalities in developing desalination plants. This could be done through PPP contracts or direct subcontracts, which would be drafted by organizations with the required knowledge.

Best practice example: Rural water supply in Morocco⁶⁵

Since 1996, Morocco's National Electricity and Drinking Water Office (ONEE) has supported creating micro-enterprises as water supply subcontractors serving local areas. Eight hundred small enterprises have thus been created, mostly in the water sector, that provide day-to-day services to rural users, resulting in payroll savings for ONEE and optimizing water management.

The creation and operation of such enterprises should be supervised to ensure that they meet the needs of rural users and can operate efficiently, particularly in the case of desalination, given the projects' complexity.

65 OECD, 2014.

Main implementer	Small enterprises for implementation; government to develop the enabling environment.
Private sector involvement	Small enterprises would be involved in water supply and operations. Desalination facility providers would be responsible to install the facilities.
Financial benefits	The private sector would ultimately receive payments in the form of tariffs and other forms to be determined based on the contract and enabling framework.
Adaptation outcomes	Increased access to alternative sources of water, thereby improving water security.

DESALINATION IS ENERGY-INTENSIVE

Desalination technologies are energy intensive. In the Middle East, desalination provided 3 percent of the region's water supply but accounted for 5 percent of total energy consumption in 2016.⁶⁶ If expanded and powered by fossil fuels, desalination could thus be a potential driver of climate change. In addition, Tunisia subsidizes electricity prices and a significant gap exists between supply costs and the sale price for Tunisia's electricity and gas company, the Société Tunisienne de l'Electricité et du Gaz. Achieving desalination objectives should not widen this gap further by increasing the use of fossil fuel and increasing Tunisia's deficit.

RECOMMENDATION AND POINT OF ENTRY 4

Combining desalination and renewable energy

Renewable energy-powered desalination is currently more costly than conventional energy desalination. Utility-scale desalination plants usually operate continuously and intermittent renewable energy sources may not be adapted for direct energy supply. Fluctuating renewable energy could be combined with hybrid power generation solutions and batteries when applicable.

Best practice example: Leveraging renewable energy for desalination in Saudi Arabia and Australia

Recent developments, including in Saudi Arabia and Australia, show that renewable energy can be used for utility-scale desalination. In Saudi Arabia, a 2MW solar plant powers a desalination plant with capacity of 30,000 m³/day. The plant remains connected to the grid for backup power.⁶⁷

Other countries, such as Australia, use wind power, which could also be leveraged in Tunisia. The Perth and Sydney seawater desalination plants both use wind power and produce more energy than they use.

Main implementer	Government, by originating desalination and renewable energy projects.
Private sector involvement	The private sector would be involved primarily at the implementation stage for PPP agreements. Depending on the procurement method, it may be involved in the financing and operation.
Financial benefits	The private sector would ultimately receive payments in the form of tariffs and other forms, which would be determined based on the contract and enabling framework.
Adaptation outcomes	Increased access to alternative sources of water, thereby improving water and energy security through the use of renewable energy.

⁶⁶ IEA, 2019. *Desalinated water affects the energy equation in the Middle East*.

⁶⁷ <https://www.waterworld.com/international/desalination/article/16201273/desalination-renewables-a-long-engagement-without-the-wedding>

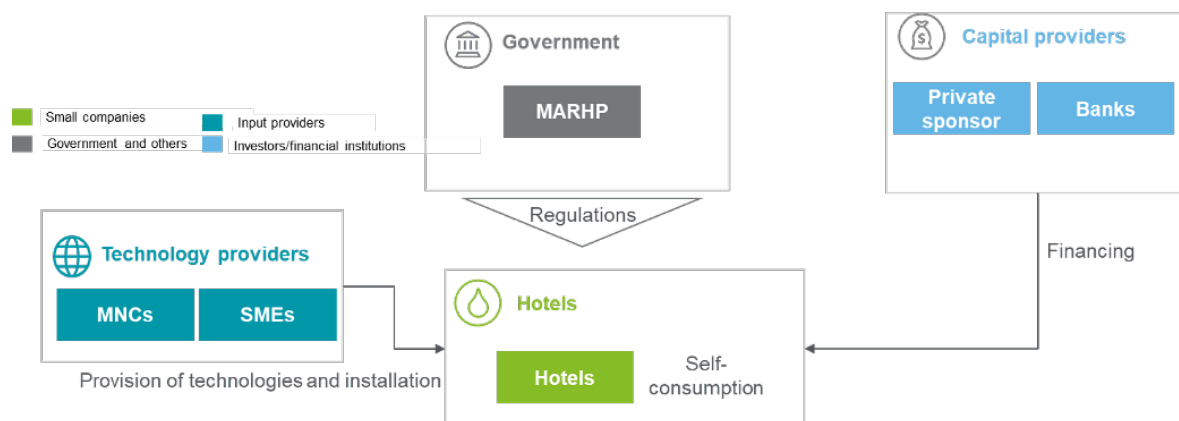
4.2 ALTERNATIVE WATER RESOURCES FOR TOURISM

This subsection analyses the ecosystem and value chain for water supply from non-conventional water resources in Tunisia's tourism sector.

4.2.1 ECOSYSTEM ANALYSIS

Figure 4 describes the water supply ecosystem for non-conventional water resources in tourism.

Figure 4: Water supply ecosystem in Tunisia for non-conventional water resources in tourism



This ecosystem can be divided between input providers and hotels. Hotels lead the ecosystem, as they initiate projects and implement them for captive use. Treated wastewater is reused in the tourism sector for gardens and golf courses on a very limited basis. The ecosystem therefore focuses on desalination.

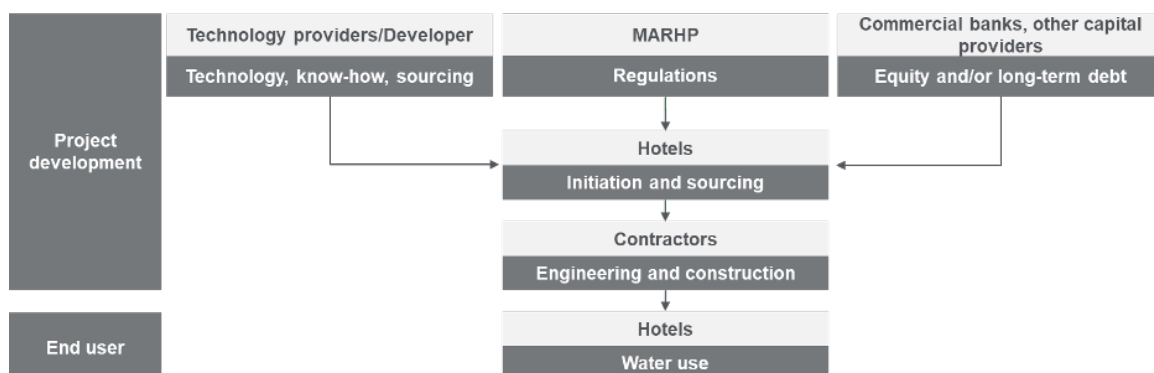
4.2.2 ANALYSING THE VALUE CHAIN, MAPPING PRIVATE SECTOR ACTORS AND IDENTIFYING BARRIERS TO ALTERNATIVE WATER RESOURCE SUPPLY FOR AGRICULTURE

In 2018, accommodation capacity in Tunisia's coastal tourist areas totalled 691 hotels and 189,288 beds.⁶⁸

The coastline is a major resource for Tunisia's tourism sector. However, increased water scarcity and shoreline retreat are significant threats to the sector and its development. The tourism sector uses less than 1 percent of Tunisia's water potential,⁶⁹ but demand is concentrated in the summer months and coincides with low water availability. Demand is also concentrated in areas that lack natural drinking water resources.

Figure 5 presents the value chain analysis of alternative water resource supply for tourism in Tunisia.

Figure 5: Non-conventional water resource supply value chain for tourism in Tunisia



⁶⁸ The coastal tourist areas are defined as Tunis, Nabeul, Yasmine Hammamet, Monastir, Mahdia, Jerba, part of Sousse, Bizerte, and Tabarka. Institut National de la Statistique (INS). <http://www.ins.tn/fr/themes/tourisme#sub-40z>

⁶⁹ Ministry of Environment. 2005.

The tourism sector could better adapt to the impacts of climate change by developing desalination plants. As of 2005, 15 percent of total demand for water for tourism was planned to be sourced from desalination plants.⁷⁰ It will be important for the tourism sector to diversify its sources of water in the near future to adapt to the impacts of climate change and support the tourism-related economy.

Some hotels have already installed desalination units in their facilities, such as those in Table 12.

Table 12: List of hotels with desalination units

HOTEL	GOVERNORATES	CAPACITY
Hotel Tour Khalef	Sousse	500 m ³ /day
Hotel Zita	Medenine	500 m ³ /day
Hotel Khiops	Nabeul	300 m ³ /day

Source: Laboratoire de Dessalement & Traitement des Eaux Naturelles, 2018. Dessalement des eaux en Tunisie.

Companies such as Polycom,⁷¹ HydroPro Tunisie,⁷² AES⁷³ and SOFILTRA⁷⁴ provide comprehensive solutions for the installation of desalination units in hotels. RO is the primary method used for desalination in Tunisia. In this process, water from a pressurized saline solution is separated from dissolved salts by flowing through a water-permeable membrane.

4.2.3 GAPS, CHALLENGES AND RECOMMENDATIONS FOR TECHNOLOGY PROVIDERS AND DEVELOPERS IN THE ALTERNATIVE WATER RESOURCE SUPPLY FOR TOURISM

COST OF INSTALLING DESALINATION TECHNOLOGIES IN HOTELS

Desalination technologies have already been adopted in a few locations in Tunisia and can be adapted to small-scale water production. However, they remain expensive. For hotels, the main consideration will be whether the technology can be competitive relative to SONEDE tariffs. If the technology is more expensive over its lifetime, hotels may prefer not to invest. In addition, the financial sector has limited experience with these technologies and related business models.

ENERGY USE FOR DESALINATION

Desalination technologies often require at least three to four times more energy than conventional water treatment. This is addressed through higher tariffs or alternative energy production at utility scale. However, given the additional energy cost, it may not be financially viable at a smaller scale. Typically, 0.36 kWh/m³ is required to treat surface water and produce water of drinking quality, while seawater desalination can require 3.6 to 4.6 kWh/m³.⁷⁵ Water intake, pre- and post-treatment, and brine discharge also require energy.

Renewable energy can be leveraged for small-scale desalination. Solar PV panels could be used to power RO installations. Small-scale PV-based desalination systems have already been tested. Given the intermittent nature of the technology, hybrid systems could be adapted more effectively to meet hotels' needs.

Renewable energy-based desalination is also more expensive in terms of initial investment. Medium-size hotels are unlikely to be able to introduce it without innovative financing instruments.

⁷⁰ Ministry of Environment, 2005.

⁷¹ <http://www.polycom-tunisie.com/>

⁷² <http://www.hydroprotunisie.com.tn/Fr/>

⁷³ <http://www.aes-tunisie.com/fr/>

⁷⁴ <https://sofiltra.com.tn/>

⁷⁵ Oxfam, 2018. A roadmap for small-scale desalination.

<https://policy-practice.oxfam.org.uk/publications/a-road-map-for-small-scale-desalination-an-overview-of-existing-and-emerging-te-620448>

THE TECHNOLOGY'S LONG-TERM RELIABILITY

The performance of desalination technologies may decline over the long term. For example, RO uses membranes for desalination. Their sensitivity and performance depend, to some extent, on feedwater quality and salinity. The visibility of O&M-related costs (replacing membranes and filters) is thus fairly low. This represents a higher risk for investors, as total lifecycle cost is not clear at project initiation.

RECOMMENDATION AND POINT OF ENTRY 5

Encouraging the introduction of renewable energy-based desalination for hotels

Small-scale desalination capacities could be installed in Tunisia based on renewable energy production. Tunisia's regulatory environment for energy production authorizes self-consumption of electricity produced by an independent entity. Hotels may thus produce their own energy for desalination. Off-site production capacities can also be developed and channelled through the national grid for captive use. Projects must be approved by the Independent Electricity Production Commission for Renewable Energies and obtain a construction permit. Tunisia offers subsidies through the Fund for Energy Transition. The Fund can provide up to 20 percent of the initial investment cost (with a ceiling of TND 200,000 (\$72,000)) and up to 70 percent of the investment required for feasibility studies (with a ceiling of TND 30,000 (\$11,000)).

Tunisia also recently authorized corporate PPAs through Law 2019-47. Small-scale facilities could leverage this model by using renewable energy produced by an independent power producer and channelled to their desalination installations. Similar arrangements for desalination facilities could also be developed for small-scale facilities. A developer could provide the material and equipment and operate the facilities and the water produced could be sold to a specific hotel through a purchase agreement.

Such an arrangement could allow hotels and small businesses to address the high initial investment cost, which might otherwise be prohibitive. Hotels would have to pay only for the water supplied. This could also help small facilities address the need for long-term maintenance.

Best practice example: Facilitating the development of PPAs between IPPs or developers and C&I customers.

Corporate PPAs have been signed for significant volumes of water in several African countries. For example, In Namibia, Ohorongo Cement signed a 15-year PPA with German developer SunEQ for a 5 MW PV array. Allowing and facilitating such arrangements could support market development.

Main implementer	Private sector, through partnerships among IPPs, developers and hotels to develop and finance small-scale desalination projects.
Private sector involvement	The private sector would be the main implementer, with minimal government involvement.
Financial benefits	Increased opportunities for renewable energy producers and developers in the water sector and decreased initial costs for hotels.
Adaptation outcomes	Increased access to alternative sources of water, improving water and energy security thanks to the use of renewable energy.

Although Tunisia has been active in securing additional non-conventional water resources, a limited number of private sector stakeholders have invested in Tunisia's water sector. Tunisia has started to develop PPPs and concession projects in the sector for desalination plants and wastewater treatment plants. However, the nature of private sector stakeholder involvement remains unclear. Overall, public sector leadership over the sector's development and the financial fragility of its utilities constrain the sector. On the end user side, lack of awareness of the real cost of water and of wastewater reuse may also constitute additional challenges.

4.3 FINANCIAL INSTITUTIONS PROVIDING GREEN FINANCING RELEVANT TO THE WATER SECTOR

Access to financing is critical for water supply. Large-scale water supply infrastructure requires significant investment and long-term financing. Smaller-scale infrastructure investments also require long-term financing. Given the importance of water supply to Tunisia, it is essential to identify potential financing institutions. Given the amount and type of financing required, large-scale infrastructure is provided mainly by development finance institutions (DFIs) and private sponsors. Small-scale infrastructure project owners may be smaller businesses that seek financing from commercial banks. As of October 2020, 32 banks provide services in Tunisia; of those, 21 provide both commercial and investment services. Banks account for approximately 90 percent of financing in Tunisia.⁷⁶

Table 13 lists the institutions that provide finance to Tunisia's water sector and the financial products and services they offer.

Table 13: Financial institutions financing the water sector

FINANCIAL INSTITUTIONS		SUBSECTOR SERVED	PRODUCTS AND SERVICES	DETAILS
Type	Example			
COMMERCIAL BANKS	N/A	Transversal	Debt	No service line specific to water, but long-term loans interest rates average 12.28%
DFIS	KfW	Desalination	Debt	Djerba and Gabes plants
		Wastewater	Debt	Wastewater treatment in industrial zones
	JICA	Desalination	Debt	Sfax plant
		Wastewater	Debt	Five plants in Tunisia
	GEF, EIB, EBRD	Wastewater	Grant, debt	Medprogramme
	AFD, EIB	Water	Grant, debt	Bejaoua plant

4.3.1 PUBLIC CREDIT INSTITUTIONS

Tunisia's state-owned banks, Société Tunisienne de Banque (STB), BH Bank (BH), and Banque Nationale Agricole (BNA), account for 38 percent of the country's banking assets. While BH focuses on real estate, STB provides credit to the tourism and agriculture sectors and BNA focuses on agriculture. As of September 2020, STB provides long-term credit to investment projects at a 12.26 percent interest rate.⁷⁷ BNA provides similar interest rates, with 11.76 percent for medium to long-term credit as of September 2020.⁷⁸

The Caisse des Dépôts et Consignations (CDC-T) is a public organization. It is a long-term investor and provides financing to several sectors, including water supply and tourism. CDC-T can invest directly in companies and projects or indirectly through investments in funds. For example, it provided financing to EPPM SA, an EPC contractor in wastewater treatment and desalination, through a convertible bond. CDC-T has also invested in hotels, including Hattuša Vacation Thermal Club, Byzacène and Société Hôtelière Port Prince. CDC-T also seeks to support infrastructure development and PPPs in Tunisia. Under a PPP, CDC-T can support public financing of the project or strengthen private offers.

CDC-T's equity investment branch, CDC Gestion, has also developed two investment funds, the Regional Development Fund and the CDC Growth Fund 1 (*Fonds CDC Croissance 1*). The Regional Development Fund targets agricultural development projects companies investing in technology and innovation in priority regions.

⁷⁶ Nooz, 2020. Tunisia: Banking, Finance & Insurance 2020. <http://nooz.com/downloads/tunisia-banking-finance-insurance-2020/>
⁷⁷ <http://www.stb.com.tn/uploads/TARIF%20septembre%202020.pdf>
⁷⁸ <http://www.bna.tn/fr/nos-tarifs.608.html>

4.3.2 COMMERCIAL BANKS

Tight liquidity and rising costs constrain commercial banking in Tunisia.⁷⁹ Customer deposits are the main source of funding. However, demand for loans is higher than customer deposits, resulting in a loan/deposit ratio of 131 percent in 2018. In December of that year, the BCT instituted a 120 percent loan/deposit ratio ceiling to increase liquidity. Commercial banks remain fragile and are impacted by a high level of non-performing loans (14 percent in 2018) compared to other countries in the region. Weak capitalization and the poor quality of assets financed constitute additional challenges for the country's banks in covering the risk of default.

The government regulates lending rates. While this holds interest rates to a reasonable level, it also incentivizes bankers to restrict the provision of credit as they cannot price their loans appropriately. As of July 2020, interest rates for long-term loans averaged 12.28 percent.⁸⁰ However, banks impose significant collateral requirements (liens on real estate) to limit their risk exposure and often require that collateral equals or exceeds the value of the loan principal.

4.3.3 DEVELOPMENT FINANCE INSTITUTIONS

DFIs are an important partner in developing large infrastructure projects, including in non-conventional water supply. Infrastructure projects require significant investment and DFIs can provide long-term financing, both to sovereign debtors and the private sector. They can thus support private sector involvement in large-scale, non-conventional water supply PPP projects.

In Tunisia, KfW and JICA have provided debt financing for desalination and wastewater treatment plants. KfW has contributed to financing plants in Djerba and Gabes, while JICA financed Sfax's desalination plant. The Medprogramme, funded by GEF, EIB and EBRD, will provide financing to modernize 10 purification plants in Bouargoub, El Kef, Teboursouk, Jammel, Sbeitla, Medenine, Tozeur, Kebili, El Hamma and Tataouine.⁸¹

4.3.4 PRIVATE SPONSORS AND INVESTORS

Private sponsors could play a significant role in financing water supply infrastructure in Tunisia. When the sponsor is a company, it usually has some relevant expertise and experience in implementing and operating the project. Sponsors can provide long-term equity financing. However, in 2017, water investment commitments worldwide were largely made by public entities (80 percent of amounts committed). This is mainly due to low cost recovery levels, which dampen investors' appetite.⁸²

There has been no private investment in water supply in Tunisia to date. However, Acciona, ACWA Power, Mitsui & Co and Masdar, among others, target the water sector and the MENA region.

4.3.5 OTHER INSTITUTIONAL INVESTORS

Infrastructure investments are an attractive asset class for insurance companies and pension funds. Such investments align with insurers' long-term objectives and usually provide stable revenues over a very long period. Specifically, domestic insurance companies and pension funds could invest in water supply projects. Investing locally allows insurance companies to hedge currency risks. For ESG-aligned insurance companies, this can also provide additional benefits to the market by improving the evaluation of their portfolio.

Twenty-three onshore insurance companies operate in Tunisia, including four mutual companies. Thirteen are conventional general or non-life insurers, while five are dedicated life insurers. However, insurance companies contribute only marginally to Tunisia's financial system.

⁷⁹ Nooz, 2020.

⁸⁰ Banque Centrale de Tunisie, 2020. *Financial Statistics, July 2020 – No. 211*. https://www.bct.gov.tn/bct/siteprod/documents/BSF_ang.pdf

⁸¹ <https://www.afrik21.africa/en/tunisia-10-wastewater-treatment-plants-to-be-upgraded-soon/>

⁸² The World Bank, 2018. *Who sponsors infrastructure projects? Disentangling public and private contributions 2017*.

4.3.6 LEASING

Tunisia's leasing market focuses primarily on the agriculture sector and consumer finance. Leasing companies also provide financing products for construction equipment. Tunisie Leasing and Factoring⁸³ is a market leader that provides leasing products to the industrial sector and the service industry. It may provide leasing facilities for equipment and assets. Most leasing companies are associated with large banks.

Although some leasing companies have started to provide products related to climate change mitigation, such as CIL Leasing, which provides products and services related to renewable energy and energy efficiency,⁸⁴ none explicitly target water supply and alternative water production, including RO.

4.3.7 RECOMMENDATIONS FOR THE FINANCIAL SECTOR

The sources of financing and financing structures for large-scale infrastructure may have a significant impact on project costs. Investors' return/risk profile expectations differ. The cost of financing can represent more than 25 percent of total capital cost. For example, the cost of building Melbourne's RO seawater desalination plant totalled \$3.5 billion, but the capital cost reached \$4.8 billion, with \$1.3 billion for project funding.⁸⁵ It is therefore crucial to identify relevant financing structures, especially in emerging markets where investors' risk perceptions may be higher than in more mature markets.

RECOMMENDATION AND POINT OF ENTRY 6

Designing financing packages that optimize financing costs

Debt service and dividends may represent 20-30 percent of the total cost of desalinated water.⁸⁶ Thus, desalination infrastructure projects must be able to obtain more favourable debt and equity financing terms. Deferring debt and equity payments until after a grace period could keep tariffs low in the first few years of operation. This would help project sponsors and the government raise tariffs gradually and achieve financial viability by the end of the project. By using guarantees and other subsidies, blended finance can also help lower investors' financial expectations by lowering the project's risk profile.

Desalination projects in the MENA region are either totally debt financed for turnkey projects or, for BOOT projects, financed using a combination of debt and equity. The local currency tranche represents 40-50 percent of the total debt, highlighting the importance of local financing.

Best practice example: Government support for desalination in Israel

Israel has installed 585 million m³ per year of desalination capacity over the last 15 years and is a leader in desalination infrastructure. The country has managed to achieve full cost recovery through tariffs while keeping them affordable. This has been achieved by scaling up the plants, using advanced and more efficient technologies, and implementing PPP schemes designed to minimize private sector risk in order to secure large amounts of private financing on the best possible terms.

Israel chose BOT and BOOT approaches, through which a private entity can build a plant that uses the most adapted technology and minimizes total costs. While the private sector bears all cost overruns caused by delays and changes, as well as O&M risks, the government provides guarantees and subsidies, such as interest rate risk guarantees, take-or-pay guarantees and subsidized cost of land. Affordable short-term debt has been leveraged to finance the construction phase and refinanced with long-term debt over the operational period, thus keeping capital costs low.

Main implementer	Private sector, by developing financing packages based on the enabling environment proposed by the government and its partners.
Private sector involvement	The private sector would be the main implementer.
Financial benefits	Debt and equity payments (cost of capital) reduced over the project's lifecycle.
Adaptation outcomes	Increased access to alternative sources of water, thereby improving water security.

83 <http://www.tlf.com.tn/index.php>

84 <https://cileasing.tn/nosservices/>

85 World Bank Group, 2019. *The Role of Desalination in an Increasingly Water-Scarce World*.

86 Ibid.

Because the financial sector perceives desalination and wastewater treatment as high risk, water supply infrastructure financing is limited. The sector is usually unable to meet the tenor requirements of such projects. The lack of long-term financing, such as long-term debt and equity, is an important limiting factor. In addition, water sector revenues are usually in local currency, while financing for large-scale infrastructure is raised abroad and is serviced and repayable in foreign currencies. This exposes investors to foreign exchange risk and highlights the importance of leveraging local financing. In addition to designing financing packages with optimized financing costs, sourcing investment from local sources is crucial to support the sector's development.

RECOMMENDATION AND POINT OF ENTRY 7

Using blended finance to encourage investment from local sources

Leveraging investment in local currency for infrastructure investment, especially for water supply projects, is essential to ensure project sustainability. However, insufficient savings and a high loan/deposit ratio mean that Tunisia's domestic banks cannot finance credit. This suggests that they may not be able to participate in financing projects with relatively low financial returns. It is also unlikely that local commercial banks would provide financing over the very long term.

Guarantees could enable commercial banks and financial institutions to lengthen the tenor of the credit they extend to infrastructure projects. Partial credit guarantees (PCGs) could help attract borrowers to the markets and extend debt maturity. PCGs are a credit enhancement mechanism for debt instruments, such as bonds and loans, under which a guarantor commits to pay the principal and/or interest up to a pre-determined amount. The PCG contract specifies the maximum portion of total principal and/or interest covered. This may change over the course of debt maturity, which can effectively help reduce risk perceptions of long-term financing.

Best practice example: GuarantCo

GuarantCo was established to mobilize local currency investment for infrastructure projects and support the development of financial markets in lower-income countries. GuarantCo is funded by the governments of the United Kingdom, Switzerland, Australia, Sweden and the Netherlands. It provides local currency guarantees to banks and bond investors to develop capital markets. GuarantCo provides PCGs, tenor extension guarantees, liquidity extension guarantees and portfolio guarantees, among other mechanisms. The guarantee amount for a single transaction ranges between \$5 million-\$50 million equivalent in local currency. The maximum tenor is 20 years.

GuarantCo provided a PCG of \$50 million to Kacific Broadband Satellites, which allowed an institutional investor to provide a \$60 million long-tenor project finance loan to a satellite deal in a niche region, contributing to Kacific's total investment of \$222.8 million. In Bangladesh, GuarantCo extended a 90 percent PCG and a tenor extension for a utility-scale solar project. The liquidity extension guarantee allows the developer to benefit from a 15-year loan tenor, while also allowing the investor to exit the transaction after eight years if the project experiences liquidity constraints.

Main implementer	Public sector and DFIs, by developing guarantees and blended financing schemes.
Private sector involvement	The private sector would be the guarantee's beneficiary and would be able to use it to structure the financing package.
Financial benefits	Debt and equity payments (cost of capital) reduced over the project's lifecycle.
Adaptation outcomes	Increased access to alternative sources of water, thereby improving water security.

The public sector has led the development of the water supply sector, including in wastewater treatment and desalination. The private sector has been involved in large-scale infrastructure primarily as an EPC contractor on major projects. Recent developments in the country's PPP framework and the pipeline of PPP desalination and wastewater treatment projects are encouraging. Further private sector involvement in large-scale infrastructure will require opening PPP frameworks to models authorizing the private sector to finance and operate plants. The importance of subsidies and guarantees for these projects should be emphasized. Currently, given their cost, renewable energy-powered, utility-scale desalination plants are unlikely to be developed at scale in Tunisia. However, combining renewable energy with desalination could allow Tunisia to avoid additional fossil fuel emissions.

If hotels and the tourism sector are to adopt small-scale desalination widely, greater private sector involvement and more innovation will be required. A number of hotels have already installed RO capacities and suppliers are already active on the market. However, the market could scale up further by providing financing instruments to the private sector. Recent developments in corporate PPAs could support the development of renewable energy-powered reverse-osmosis installations, with potential similar financing structures for the installation itself, through leasing or corporate water purchase agreements.

Finally, to further support the private sector, it will be important to support the development of concessional financing schemes by developing blended finance with commercial banks and local investors. This calls for better-designed financing packages to reduce the cost of large-scale infrastructure.

5. PRIVATE SECTOR INVESTMENT POTENTIAL

Tunisia's water sector and water resources are highly vulnerable to climate change. To adapt to the impacts of climate change and secure water resources for productive sectors such as agriculture and tourism, Tunisia has included adaptation measures in its NDC, with a focus on securing non-conventional water resources and encouraging better use of water resources.

To understand which actions offer potential for private sector investment requires identifying those that may offer financial benefits to investors. However, Tunisia's water sector is public sector-led, particularly by public utilities. Although Tunisia has opened the water sector to private sector participation to some extent, the government – not the private sector – initiates projects. In this context, the financial structure of PPP agreements will be the main factor that determines private sector interest in large-scale projects. The private sector could directly implement smaller projects if potential revenues exceed the current cost of water.

The main water sector technologies that offer private sector investment potential in the context of agriculture and tourism in coastal areas include investments in desalination plants and wastewater treatment plants.

5.1 DATA SOURCES

This subsection presents data sources for the targets adopted under this report and for investment costs.

5.1.1 TARGETS

Tunisia seeks to secure water resources sufficient to ensure its development. While Tunisia's NDC and other sectoral policies do not set explicit targets in terms of volumes to be achieved by 2030, for the purpose of this report we assume that the country will seek, at least, to avoid water overuse to ensure that its renewable water resources are replenished and not depleted.

Aggregated water use statistics for Tunisia are not available. SONEDE provides annual water use figures, but they do not include the agriculture sector, which is the country's water user. Earlier research has forecast water demand and supply, as detailed in table 14.

Table 14: Water supply and demand forecast for Tunisia

DEMAND/ SUPPLY	SECTOR	2010 DEMAND / million m ³	2030 FORECASTED DEMAND/ million m ³
DEMAND	Agriculture	2,141	2,035
	Drinking water	381	491
	Tourism	31	41
	Industry	136	203
	Total	2,689	2,770
SUPPLY	Conventional resources	3,090	2,732
	Non-conventional resources	210	389
	Total	3,300	3,121

Source: Tunisian Institute for Strategic Studies, 2014. System Hydraulique de la Tunisie à l'horizon 2030

Other more pessimistic sources have estimated that as of 2017, Tunisia was already using more than 103 percent of its freshwater renewable water resources and provided different figures for the agriculture sector, with 3,773 million m³ estimated in 2017.⁸⁷ Currently available and planned non-conventional resources should also be updated.

87 Aquastat, Freshwater withdrawal as % of total renewable water resources (%) in Tunisia, 2017. <http://www.fao.org/aquastat/en/>

Given the difference between the figures for the agriculture sector, this report uses a combination to estimate a range of targets to be achieved in Tunisia. Table 15 details the baseline data used and the estimated targets.

Table 15: Water supply and demand baseline in Tunisia (nationwide)

SECTOR		
BASELINE – PROJECTED 2030 WATER USE / million m ³	LOW RANGE	HIGH RANGE
Agriculture	2,035	3,773
Drinking water	491	491
Tourism	41	41
Industry	203	203
Total	2,770	4,508
AVAILABLE RESOURCES / million m ³		
Conventional resources	2,732	N/A
Non-conventional resources	248.69*	N/A
Planned non-conventional resources (desalination)	228.13	N/A
Planned non-conventional resources (wastewater)	116.8	N/A
Total	2,980.69	3,326.62
TARGETS	LOW RANGE	HIGH RANGE
Total additional needs in non-conventional resources	0	1,182.38

*Includes additional desalination projects developed after 2010, in addition to the 210 Mm³ already in the baseline.

Table 16 details the estimated targets to be achieved to serve coastal areas in the target sectors.

Table 16: Estimated targets for non-conventional resources for coastal areas (2030)

SECTORS	EXPECTED PERCENT WATER CONSUMPTION BY COASTAL AREAS	ADDITIONAL NEEDS IN NON-CONVENTIONAL RESOURCES FOR COASTAL AREAS / million m ³
Agriculture	54	534.38
Drinking water	82	105.65
Tourism	80	8.6
Total	N/A	648.64

Desalination plants will be needed to meet drinking water needs, while agriculture needs can be addressed through a combination of reused treated wastewater and desalination plants. Tourism could be supplied at accommodation (small-scale) level through RO technologies. For the purpose of this report, the following targets are assumed:

Table 17: Estimated targets for non-conventional resources for coastal areas (2030)

SECTORS	SOURCE OF NON-CONVENTIONAL RESOURCES	PERCENT MET BY A SPECIFIC SOURCE	EQUIVALENT IN MILLION m ³
AGRICULTURE	Large-scale desalination plants	60	320.63
	Large-scale wastewater treatment plants	30	160.32
	Small-scale desalination plants	10	53.44
DRINKING WATER	Large-scale desalination plants	100	105.65
TOURISM	Small-scale desalination (RO)	100	8.60
TOTAL	Large-scale desalination plants	N/A	426.28
	Large-scale wastewater treatment plants	N/A	160.32
	Small-scale desalination plants	N/A	53.44
	Small-scale desalination (RO)	N/A	8.60

To the extent possible and where available, renewable energy-powered solutions were chosen for the costing. Table 18 provides the sources of cost information.

Table 18: Investment cost information sources

SECTORS	SOURCE OF NON-CONVENTIONAL RESOURCES	TECHNOLOGY AND CAPACITY/INFORMATION SOURCE
AGRICULTURE	Large-scale desalination plants	Ksour Essef plant, 36,500,000 m ³ /year or 100,000 m ³ /day (excluding the cost of connection to the distribution network) IGPPP, PPP pipeline
	Large-scale wastewater treatment plants	El Hessiane plant, 21,900,000 m ³ /year or approx. 60,000 m ³ /day (excluding the cost of connection to the distribution network) IGPPP, PPP pipeline
	Small-scale desalination plants	Photovoltaic-powered plant, 657,000 m ³ /year or approx. 1,800 m ³ /day Laboratoire de Dessalement & Traitement des Eaux Naturelles, 2018. Dessalement des eaux en Tunisie.
DRINKING WATER	Large-scale desalination plants	Ksour Essef plant, 36,500,000 m ³ /year or 100,000 m ³ /day (excluding the cost of connection to the distribution network) IGPPP, PPP pipeline
TOURISM	Small-scale desalination (RO)	Photovoltaic-powered reverse osmosis (PVRO) desalination, 12,000 m ³ /year or approx. 34 m ³ /day S. Hajji, A. Bentamy, N. Mbodji, A. Hajji, 2016. Design and cost optimization of small-scale PV-powered RO desalination

This report uses the costs provided by the project concept note for projects planned as part of the IGPPP pipeline.

5.2 INVESTMENT POTENTIAL

Private sector investment potential for this sector is presented below, based on Tunisia's water sector adaptation targets, baseline and investment costs, and current project pipeline.

5.2.1 LARGE-SCALE DESALINATION PLANTS

Large-scale desalination plants will cover the demand for additional needs for drinking water and irrigation for agriculture in Tunisia. The investment potential for large-scale desalination plants is detailed in Table 19.

Table 19: Investment potential in large-scale desalination plants

DESALINATION PLANT	PLANNED CAPACITY (m ³ /day)	PLANNED CAPACITY (million m ³ /year)	TOTAL INVESTMENT (million \$)
Zarat (Gabes)	50,000	18.25	82
	Potential extension to 50,000	18.25	72
Sfax	100,000	36.50	371
	Potential extension to 100,000	36.50	144
Sousse	50,000	18.25	72
	Potential extension to 50,000	18.25	72
Ksour-Esef	100,000	36.50	144
	Potential extension to 100,000	36.50	144
Sub-total		219.0	1,101
Additional capacity required		207.28	817.76
Total		426.28	1,918.76

The current project pipeline would supply a potential 219 million m³/year. A remaining 207.28 million m³/year would still be required to meet desalination needs as calculated in section 5.1. This would represent an additional \$817.76 million of investment in large-scale desalination plants, in addition to the \$1,101 million planned. The total investment potential for large-scale desalination plants is thus \$1,918.76 million.

Investment potential is likely to vary based on the PPP agreements between the government and service providers. The costing does not include the cost of developing the distribution network, as distances may vary from one location to another.

5.2.2 LARGE-SCALE WASTEWATER TREATMENT PLANTS

Large-scale wastewater plants will supply additional irrigation needed for specific agricultural crops. Table 20 details the investment potential for large-scale wastewater plants.

Table 20: Investment potential in planned large-scale wastewater treatment

WASTEWATER PLANT	PLANNED CAPACITY (m ³ /day)	PLANNED CAPACITY (million m ³ /year)	TOTAL INVESTMENT (million \$)
El Hessiane	60,000	21.90	73.08
El Allef	90,000	32.85	109.62
El Attar	170,000	62.05	207.06
Total		116.80	389.76
Additional capacity required		43.52	145.23
Total		160.32	534.99

The current project pipeline would supply a potential 116.8 million m³/year. An additional 43.52 million m³/year would still be required to meet the needs calculated in section 5.1. This would represent an additional \$145.23 million of investment in large-scale wastewater treatment plants, in addition to the \$389.76 million planned. The total investment potential for large-scale wastewater treatment plants is thus \$534.99 million. Similar to desalination plants, investment potential is likely to vary based on the PPP agreements between the government and service providers. The costing does not include the cost of developing the distribution network, as distances may vary from one location to another.

5.2.3 SMALL-SCALE DESALINATION PLANTS

Small-scale desalination plants would supply irrigation. These plants are expected to be developed through small PPP agreements or subcontracting agreements with service providers, as small producers are unlikely to provide a revenue stream that is stable enough to cover the investment and operational risks for private investors. The costs of plants using renewable energy and those using conventional sources of fuel differ significantly.

As Tunisia is also expected to ramp up its renewable energy capacities and the plants may be grid-connected, both options have been considered. The investment potential for small-scale desalination plants is estimated at between \$131.77 million and \$585.64 million (the latter figure corresponds to renewable energy-powered desalination plants).

5.2.4 SMALL-SCALE DESALINATION (RO)

The tourism sector would primarily use small-scale desalination through RO. Based on the forecast demand in the sector, hotels are likely to require an additional 34 m³/day of water on average and per accommodation facility, or approximately 12,000 m³/year. Therefore, the capacity of a small-scale RO desalination system should match this demand. The cost of such a system that can meet this demand with renewable energy capacity is estimated at \$446,000.

Hotels would be the main implementers of this approach. For the purpose of this report, implementation potential is estimated at 100 percent of hotels in coastal areas in Tunisia. Most large hotel complexes have significant ability to meet the initial investment cost of installing a desalination facility with this production capacity. Smaller hotels may require alternative financing paths, such as leasing, corporate PPAs or similar arrangements to build such facilities. The investment potential for small-scale desalination in hotels is thus estimated at \$307.71 million.

The private sector investment potential in the water sector is estimated at between \$2,893.23 million and \$3,347.10 million. Most of that will be leveraged to develop large-scale desalination plants, specifically for the agriculture sector.

6. REPORTING FRAMEWORK TO ALIGN BUSINESS OPPORTUNITIES WITH NDC IMPACT TARGETS IN TUNISIA'S WATER SECTOR

Encouraging the private sector to invest in NDC actions is important if Tunisia is to achieve its climate goals. It also constitutes a significant business opportunity for the private sector. The private sector can further capitalize on these opportunities by better aligning with the objectives detailed in the NDC and the SDGs.

This section details the rationale for private sector alignment with NDC targets and the SDGs and provides a reporting framework for the private sector.

6.1 RATIONALE FOR PRIVATE SECTOR ALIGNMENT WITH NDC IMPACT TARGETS

Governments and international organizations engage the private sector to leverage stakeholder investments in the NDC. The NDC can offer the private sector additional business opportunities, but it is often unaware of those opportunities. It is therefore important to highlight and translate them in clear reporting frameworks, which the private sector can then leverage to enhance its understanding of the added value that climate investments bring.

A clear understanding of this alignment, or the extent to which it can align with NDC actions, offers potential advantages. First, it enables the private sector to identify actionable actions, which can be translated into business opportunities.

From a longer-term perspective, adopting reporting frameworks is also the first step towards reporting and disclosing impacts on climate objectives and SDGs. For the private sector, this can improve valuation and credit scores. Impact investors and climate finance sources may also be more comfortable providing financing to private stakeholders with established reporting frameworks and understanding the impact their business has on the country's climate challenge.

6.2 REPORTING FRAMEWORKS

The NDC and SDGs have been chosen as the main reporting frameworks for this report. Business opportunities in the water sector identified here are linked to NDC objectives and SDG targets in the following tables. To provide the businesses more in-depth information, clear metrics representing measurable key performance indicators are also included.

The reporting frameworks are intended to be leveraged and tailored by individual businesses, depending on the specific characteristics of each. For example, small-scale desalination providers in the tourism sector may also be providing financial services, such as project financing, and may use impact metrics related to access to finance.

6.2.1 LARGE-SCALE DESALINATION

Large-scale desalination-related businesses, such as developers, have a direct impact on the amount of water available for drinking water and irrigation. They also offer important co-benefits, such as in health, and contribute to the larger and longer-term goal of water resilience in Tunisia. Some developers may also contribute to development financing structures and project finance, thereby directly improving access to finance for infrastructure.

BUSINESS OPPORTUNITY	CLIMATE FRAMEWORK	SDG FRAMEWORK		METRICS
	NDC target	SDGs	Outcomes (SDG target or equivalent)	
PARTICIPATION IN LARGE-SCALE INFRASTRUCTURE PROJECTS FOR DESALINATION (PPPS)	Improve and secure water supplies	6 – Clean water and sanitation	6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all	Level of water stress: freshwater withdrawal as a proportion of available freshwater resources
			6.4 Substantially reduce the number of people suffering from water scarcity	# of households connected
			Improved access to desalination technologies	# and value (US\$) of investments
		13 – Climate action	13.1 Strengthen resilience and adaptive capacity to climate-related hazards	Total capacity installed (m ³)
		9 – Industry, innovation and infrastructure	9.1 Develop quality, reliable, sustainable and resilient infrastructure to support economic development and human well-being, with a focus on affordable and equitable access for all	# and value of deals (US\$) # and value of loans (US\$) provided by local financing organizations
			9.3 Increase the access of desalination plant developers to financial services, including affordable credit, and their integration into value chains and markets	
		2 – No hunger	2.1 End hunger and ensure access by all people to safe, nutritious and sufficient food all year round	# of producers connected
			2.3 Double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment.	Total capacity provided (m ³) for irrigation
		7 – Sustainable energy	7.1 Ensure universal access to affordable, reliable and modern energy services	RE ratio in the energy mix (%)
			7.2 Increase substantially the share of renewable energy in the global energy mix	# and value (US\$) of investments for desalination plants
			Improved access to clean energy for utility-scale plants	Total capacity installed (by energy source) (MW) for desalination plants
				Reduced need for diesel generators (litres of diesel used) and other fossil fuels
		3 – Good health	3.9 Substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.	Improved water quality (ratio of water provided from desalination)

KEY

Direct impact

Co-benefits

6.2.2 LARGE-SCALE WASTEWATER TREATMENT

Large-scale wastewater treatment-related businesses, such as developers, have a direct impact on the amount of water available for irrigation. They also contribute to the larger and longer-term goal of water resilience in Tunisia. Some developers may also contribute to development financing structures and project finance, thereby directly improving access to finance for infrastructure.

BUSINESS OPPORTUNITY	CLIMATE FRAMEWORK	SDG FRAMEWORK		METRICS
	NDC target	SDGs	Outcomes (SDG target or equivalent)	
PARTICIPATION IN LARGE-SCALE INFRASTRUCTURE PROJECTS FOR WASTEWATER TREATMENT (PPPS)	Improve and secure water supplies Transfer and reuse treated wastewater	6 – Clean water and sanitation	.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all 6.4 Substantially reduce the number of people suffering from water scarcity Improved access to wastewater treatment and reuse technologies	Level of water stress: freshwater withdrawal as a proportion of available freshwater resources # and value (US\$) of investments Total capacity installed (m ³)
		13 – Climate action	13.1 Strengthen resilience and adaptive capacity to climate-related hazards	
		9 – Industry, innovation and infrastructure	9.1 Develop quality, reliable, sustainable and resilient infrastructure to support economic development and human well-being, with a focus on affordable and equitable access for all 9.3 Increase the access of desalination plant developers to financial services, including affordable credit, and their integration into value chains and markets	# and value of deals (US\$) # and value of loans (US\$) provided by local financing organizations
		2 – No hunger	2.1 End hunger and ensure access by all people to safe, nutritious and sufficient food all year round 2.3 Double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment.	# of producers connected Total capacity provided (m ³) for irrigation
		3 – Good health	3.9 Substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.	Improved water quality for agriculture (ratio of water provided from wastewater reuse)

KEY

Direct impact

Co-benefits

6.2.3 SMALL-SCALE DESALINATION

Small-scale desalination-related businesses, such as developers, hotels and small operators, have a direct impact on the provision of water at small scale and in rural areas. They contribute to the resilience of their sector by reducing water scarcity. Some developers may also provide financing to their customers, thereby directly improving their access to finance.

BUSINESS OPPORTUNITY	CLIMATE FRAMEWORK	SDG FRAMEWORK		METRICS
	NDC target	SDGs	Outcomes (SDG target or equivalent)	
DEVELOPMENT OF SMALL-SCALE INSTALLATIONS IN HOTELS AND THE TOURISM SECTOR (RO) DEVELOPMENT OF SMALL-SCALE DESALINATION PLANTS FOR AGRICULTURE	Improve and secure water supplies Optimize the tourist sector's management of water resources and install mini-seawater desalination plants using renewable energies	6 – Clean water and sanitation	6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all 6.4 Substantially reduce the number of people suffering from water scarcity Improved access to desalination technologies	Level of water stress: freshwater withdrawal as a proportion of available freshwater resources # of hotels serviced by small scale desalination # and value (US\$) of investments Total capacity installed (m ³)
		13 – Climate action	13.1 Strengthen resilience and adaptive capacity to climate-related hazards	
		8 – Decent work and economic growth	8.9 By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products 8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services	# and value of deals (US\$) # and value of loans (US\$) provided by local financing organizations
		2 – No hunger	2.1 End hunger and ensure access by all people to safe, nutritious and sufficient food all year round 2.3 Double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment.	# of producers connected Total capacity provided (m ³) for irrigation
		7 – Sustainable energy	7.1 Ensure universal access to affordable, reliable and modern energy services 7.2 Increase substantially the share of renewable energy in the global energy mix Improved access to clean energy, for small-scale plants	RE ratio in the energy mix (%) # and value (US\$) of investments for hotels and small-scale desalination installations Total capacity installed (by energy source) (MW) for hotels and small-scale desalination installations # and value (US\$) of corporate PPAs signed for hotels Reduced need for diesel generators (litres of diesel used) and other fossil fuels
		3 – Good health	3.9 Substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.	Improved water quality (ratio of water provided from desalination)

KEY

Direct impact

Co-benefits

To better leverage the reporting framework, it is recommended that private sector stakeholders use additional tools. For example, to calculate GHG emission reductions and better mainstream the NDC and SDGs into their operations, private companies may consider leveraging the following tools.

Calculating GHG emissions: Greenhouse Gas Protocol⁸⁸

While this is not directly relevant for water supply, energy use for water supply is a significant source of GHG emissions. Calculating GHG emissions can be challenging for businesses. It requires following specific and complex methodologies, which may not be easy to approach without appropriate guidance.

The Greenhouse Gas Protocol provides standards, guidance, tools and training for business and government to measure and manage climate-warming emissions. It provides online tools to measure and manage GHG emissions, as well as related trainings. The platform builds on a long-term partnership with international stakeholders, including the World Resources Institute and the World Business Council for Sustainable Development.

Tools include the Project Protocol, which provides an accounting tool for quantifying the greenhouse gas benefits of climate change mitigation projects. It provides specific principles, concepts, and methods for quantifying and reporting GHG reductions—i.e., decreases in GHG emissions or increases in removals and/or storage—from climate change mitigation projects.

The Protocol also provides extensive guidance on developing business-level emission inventories, measuring emissions from purchased/acquired electricity and estimating avoided emissions.

Aligning with and mainstreaming the SDGs/Sustainability: Impacti Solutions⁸⁹

Aligning with the SDGs and integrating sustainability goals into operations can be an important step for enterprises. The SDGs and sustainability provide new business opportunities that the private sector can explore. However, businesses may find it complex to understand where they fit in the scope of the SDGs.

Impacti Solutions provides tools that can help the private sector understand the SDGs and areas where businesses can have the greatest impact. The Rapid SDG Opportunity Finder Tool provides personalized recommendations on priority SDGs and impact areas suited to specific businesses. After businesses choose their priority SDGs, the tool introduces them to thematic areas within each SDG. Businesses receive a personalized SDG business profile with chosen priorities at the end of the assessment. This helps them identify strategies to better integrate SDGs in their operations.

Impacti Solutions also provides an online platform to view and update an SDG business profile and connect with like-minded businesses, and an Impact Data Management Tool, which makes it possible to streamline data management, track and manage impact, and create reports.

⁸⁸ <https://ghgprotocol.org/companies-and-organizations>

⁸⁹ <https://impacti.solutions/>

7. CONCLUSION

Tunisia is particularly exposed to climate change and its economy, population and ecosystems are highly vulnerable. The country has been experiencing climate change in recent years, including rising temperatures, decreasing precipitation and rising sea levels. The water sector is extremely important to Tunisia, whose water resources are among the scarcest in the world. Climate change will further impact the availability of those resources, with changing rain patterns and rising sea levels that may contribute to the contamination of aquifers.

Access to water is essential to the Tunisian economy. Some of the country's important economic sectors, such as agriculture and tourism, rely heavily on its availability. In coastal areas, these sectors provide significant employment but are also extremely vulnerable to the impacts of climate change. Tunisia's NDC emphasizes the importance of securing additional non-conventional water resources, such as reused treated wastewater and desalinated water.

The country's policy environment emphasizes the importance of water. It is considered as a public good, thus limiting the potential for private investment to supply it. However, recent developments in Tunisia's PPP framework suggest that the country is open to greater private sector participation in securing non-conventional water resources. This is reflected in Tunisia's PPP project pipeline, which includes several desalination and wastewater treatment plants.

Tunisia's economic outlook remains fragile and the COVID-19 pandemic has had a significant impact. The country's economy is forecasted to contract significantly - by 5.4 percent of real GDP - in 2020. The pandemic is having a particular impact on important economic sectors, such as tourism. In this context, it is important to consider investment priorities and how to best leverage private sector investment.

Private sector investment in the sector remains limited. Most investments are public sector-initiated and the extent of private involvement in PPP projects proposed by the government remains unclear. Constraints on further investment also relate to the public sector's historic lead role and to the financial fragility of public utilities. Additionally, tariffs do not reflect the real cost of water, so incentives are insufficient to attract private sector investment in non-conventional water resources. Energy use remains a significant concern for desalination. Tunisia could consider using renewable energy for desalination.

Tunisia could leverage significant private sector investment in securing non-conventional water resources. By adopting BOOT approaches and their financial structure, the structure of PPP agreements will be important in fostering private sector interest in large-scale projects. Large-scale desalination plants could supply an additional 426.28 million m³/year, which existing project pipeline and additional projects could provide. The investment potential for large-scale desalination plants totals \$1,918.76 million. Large wastewater treatment plants would supply an additional 160.32 million m³/year, representing total investment potential of \$534.99 million.

The private sector could implement smaller projects in the agriculture sector and in rural areas directly or, more likely, in cooperation with GDAs. In rural areas, small private operators could operate and maintain small-scale desalination facilities. This would allow Tunisia to reduce the cost of connecting to large-scale plants in rural areas. This could be done through PPP contracts or direct subcontracting. In the tourism sector, hotels will be the main implementer of RO installations. Corporate PPAs for energy supply and developing water supply contracts, under which developers cover the initial cost and charge the hotels for energy and water costs, may enable further uptake in the sector.

The investment potential for small-scale desalination plants is estimated at between \$131.77 million and \$585.64 million (the latter figure corresponds to renewable energy-powered desalination plants). The investment potential for small-scale desalination in hotels is estimated at \$307.71 million.

The private sector investment potential in the water sector is estimated at between \$2,893.23 million and \$3,347.10 million. Most of that amount will be leveraged to develop large-scale desalination plants, specifically for the agriculture sector.

Public sector and international financing could be leveraged in blended finance approaches, such as guarantees and subsidies, to further encourage private sector participation. These will be essential in mobilizing long-term financing and local currency financing. Both are crucial to the success of any water supply infrastructure project.

UNDP NDC SUPPORT PROGRAMME

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