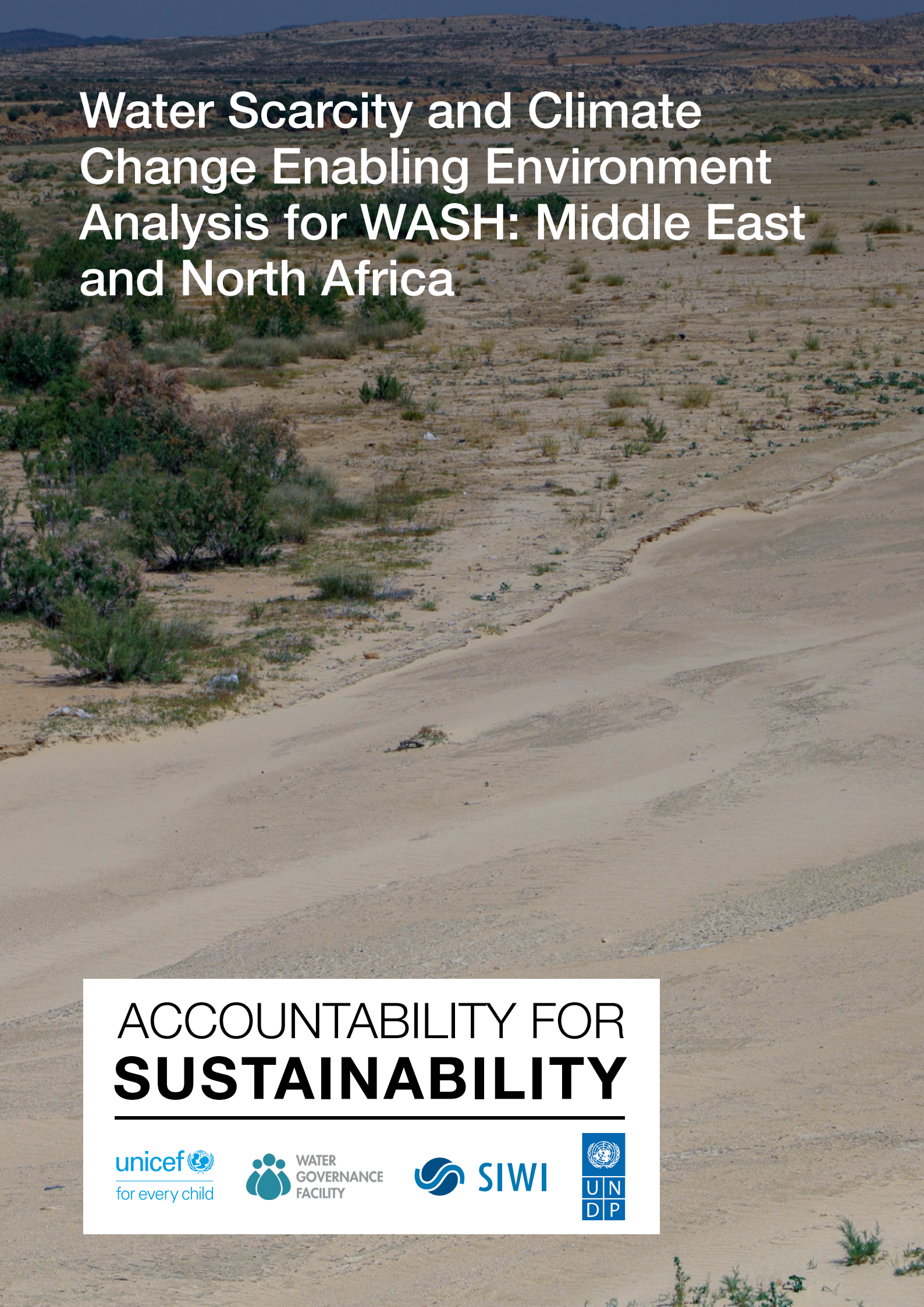

Water Scarcity and Climate Change Enabling Environment Analysis for WASH: Middle East and North Africa

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SUMMARY AND KEY FINDINGS

The Middle East and North Africa (MENA) Region is the most water stressed region in the world. According to 2018 data, 14 of the 17 most water stressed countries globally were in the region, including the top six (FAO, 2022).

However, the overall level of water stress of a country does not paint a full picture on the risk and impact to the country and its people, including children. Moreover, the level of water stress does not provide information about a country readiness to manage water stress impact. Assessing the "readiness" of a country's enabling environment to tackle water scarcity and related compounding climate change risks is the main aim of this report.

An in-depth analysis of the enabling environment within the water and climate sectors was undertaken in 14 MENA countries. The assessment was structured using the Sanitation and Water for All (SWA) enabling environment building blocks (SWA, n.d.): "Policy and Strategy", "Institutional Arrangements", "Financing", "Capacity Development", and "Planning, Monitoring and Review". Under each building block, assessment criteria were defined and subsequently measured through the use of a combination of the findings from country desk reviews and country surveys distributed to UNICEF country offices.

The assessment found that the best performing building blocks include "Policy and Strategy" and "Institutional Arrangements", with "Financing" and "Capacity Development" performing the worst. Planning, Monitoring and Review building block had mixed results with some countries performing well, and others poorly.

The specific areas where countries generally performed well include:

- Climate policies and strategies in many countries addressed water scarcity and climate risks to water resources and water-sanitation-hygiene (WASH) services.
- Regulations to address water scarcity were found to be at least partially in place in all countries.
- Multi-stakeholder planning exercises for water that factored in water scarcity and climate change were held in many countries in the last two years.

Areas where countries generally did not perform so well, include:

- Water resources and/or WASH policies often do not consider water scarcity and climate change.
- Levels of official development assistance (ODA) financing was found to be a particularly low in some countries.
- Drought Early Warning Systems (DEWS) were not in place and functional in many countries.
- Joint Sector Reviews (JSRs) are often not happening, presenting a missed opportunity to focus on water scarcity and climate change issues.

Key recommendations from the review include to:

- Ensure policies and strategies for climate and water include water scarcity and climate change risks, including NDCs and NAPs.
- Undertake robust national climate change vulnerability and adaptation assessments for water resources and WASH services to inform policies and plans.
- Strengthen JSRs for water sector planning to factor in water scarcity and climate change.
- Undertake regulatory analyses and reform planning exercises with multi-sectoral participation.
- Communicate financing shortfalls and advocate for increased national and ODA allocations, including climate finance.
- Scale-up early warning systems, especially for drought and surface and groundwater levels (including quality).

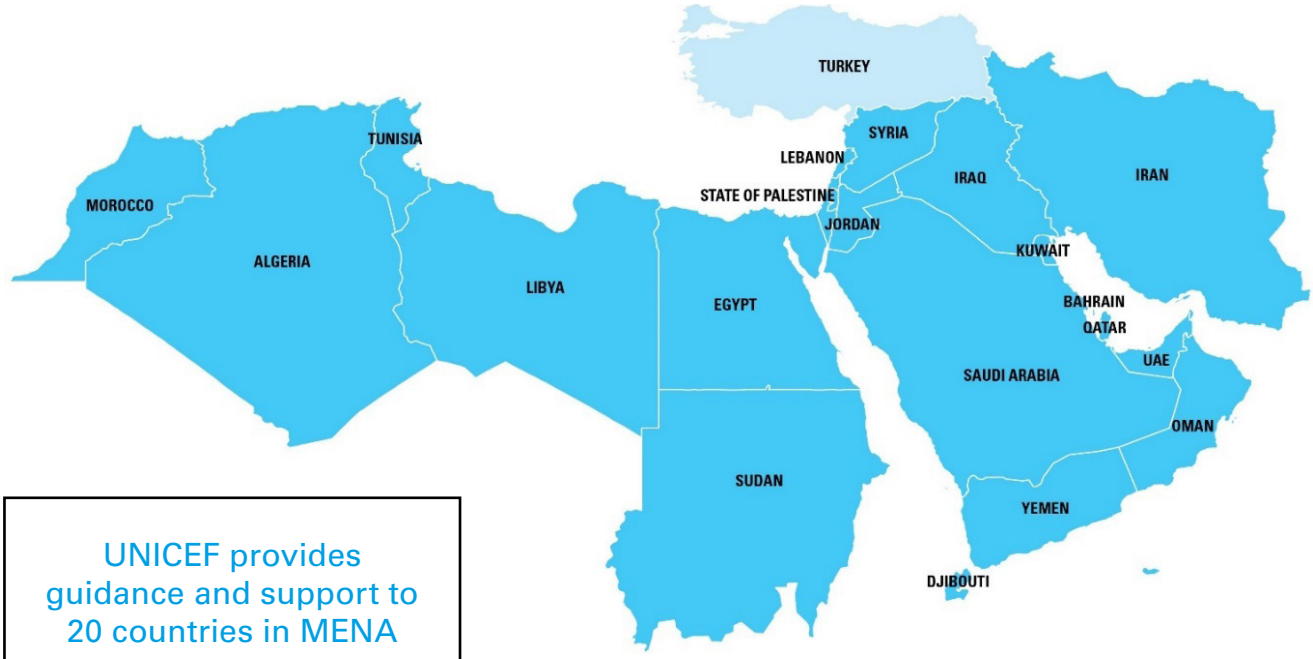
INTRODUCTION

The purpose of this assessment report is to present a brief overview of the water scarcity situation in MENA, to examine how the country level enabling environment addresses water scarcity and related climate change risks and impacts, particularly related to WASH, and to develop conclusions and recommendations based on common areas of strengths and weaknesses across countries.

Overview of the water scarcity and water resources situation in MENA

The Middle East and North Africa (MENA) Region is the most water stressed[1] region globally. According to 2018 data, 14 of the 17 most water stressed countries globally were from the region, including all of the top six – see Table 1 (FAO, 2022) and Figure 2. Moreover, according to World Resources institute (WRI) projections, water stress levels are expected to worsen for most MENA countries under a "business as usual" climate scenario[2] to 2040 (WRI, 2015).

Figure 1. Map showing UNICEF Middle East and North Africa Region[3]



UNICEF provides guidance and support to 20 countries in MENA

1 SDG 6.4.2 Level of water stress: freshwater withdrawal as a proportion of available freshwater resources
2 The "business as usual" scenario (SSP2 RCP8.5) represents a world with stable economic development and steadily rising global carbon emissions, with CO2 concentrations reaching ~1370 ppm by 2100 and global mean temperatures increasing by 2.6–4.8°C relative to 1986–2005 levels.
3 MENA Regional Office Intranet, 2019. Maps is this report do not reflect a position by UNICEF on the legal status of any country or territory or the delimitation of any frontiers (see disclaimer).

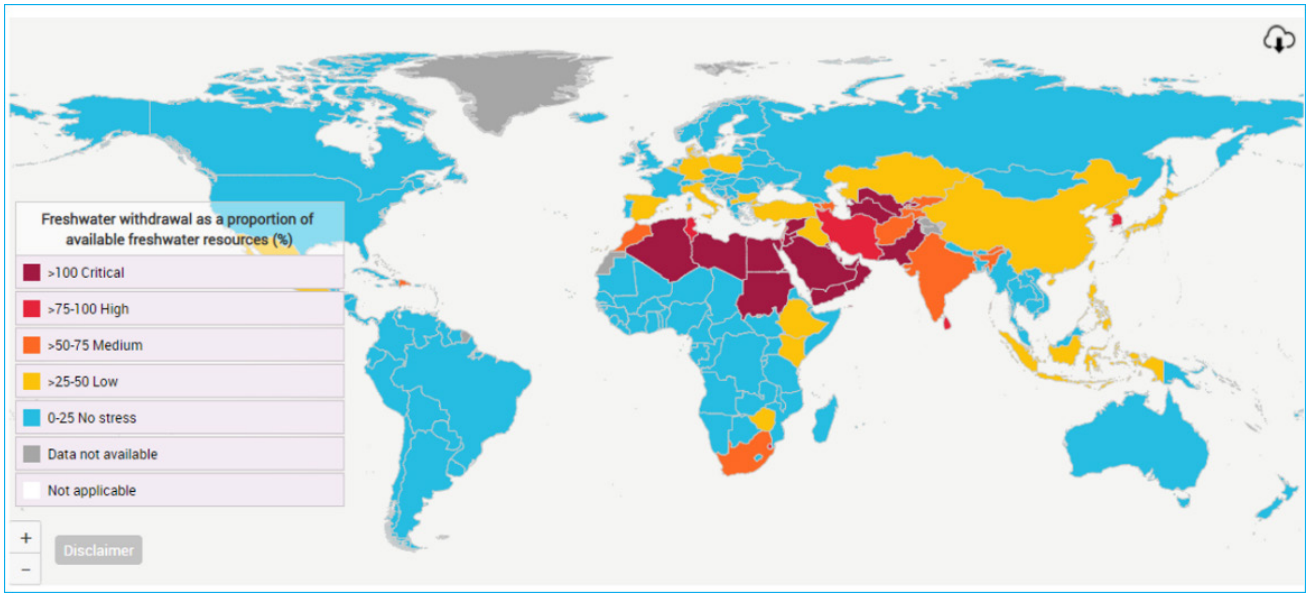
Table 1. SDG 6.4.2 Water stress classification[4] and total renewable water resources per capita global ranking for MENA countries (2018)

Country	Level of Water Stress (%)[4]	Water stress global rank	FAO classification of water stress level	Total renewable water resources per capita (m3/inhab/yr)	Least total renewable water resources global ranking	Falkenmark water stress indicator level[5]
Kuwait	3851	1	Critical	4.83	15	Absolute Scarcity
United Arab Emirates	1667	2	Critical	15.57	16	Absolute Scarcity
Saudi Arabia	993	3	Critical	71.21	19	Absolute Scarcity
Libya	817	4	Critical	104.81	24	Absolute Scarcity
Qatar	431	5	Critical	20.85	17	Absolute Scarcity
Yemen	170	6	Critical	73.69	20	Absolute Scarcity
Algeria	138	9	Critical	276.28	28	Absolute Scarcity
Bahrain	134	10	Critical	73.91	21	Absolute Scarcity
Syrian Arab Republic	124	11	Critical	991.56	48	Scarcity
Sudan	119	12	Critical	904.27	43	Scarcity
Egypt	117	14	Critical	584.21	36	Scarcity
Oman	117	15	Critical	289.89	31	Absolute Scarcity
Jordan	100	16	Critical	94.3	22	Absolute Scarcity
Tunisia	96	17	High	399.04	32	Absolute Scarcity
Iran (Islamic Republic of)	81	24	High	1675.36	68	Stress
State of Palestine	63	28	Medium	172.12	26	Absolute Scarcity
Lebanon	59	30	Medium	656.47	39	Scarcity
Morocco	51	35	Medium	804.91	41	Scarcity
Iraq	47	39	Low	2338.06	83	No Stress
Djibouti	6	113	No Stress	312.85	31	Absolute Scarcity

4 FAO AQUASTAT data informs SDG 6.4.2, which measures "Level of water stress: freshwater withdrawal as a proportion of available freshwater resources" with a scale ranging from Critical (>100), High (>75-100), Medium (>50-75), Low (>25-50), No Stress (>0-25)

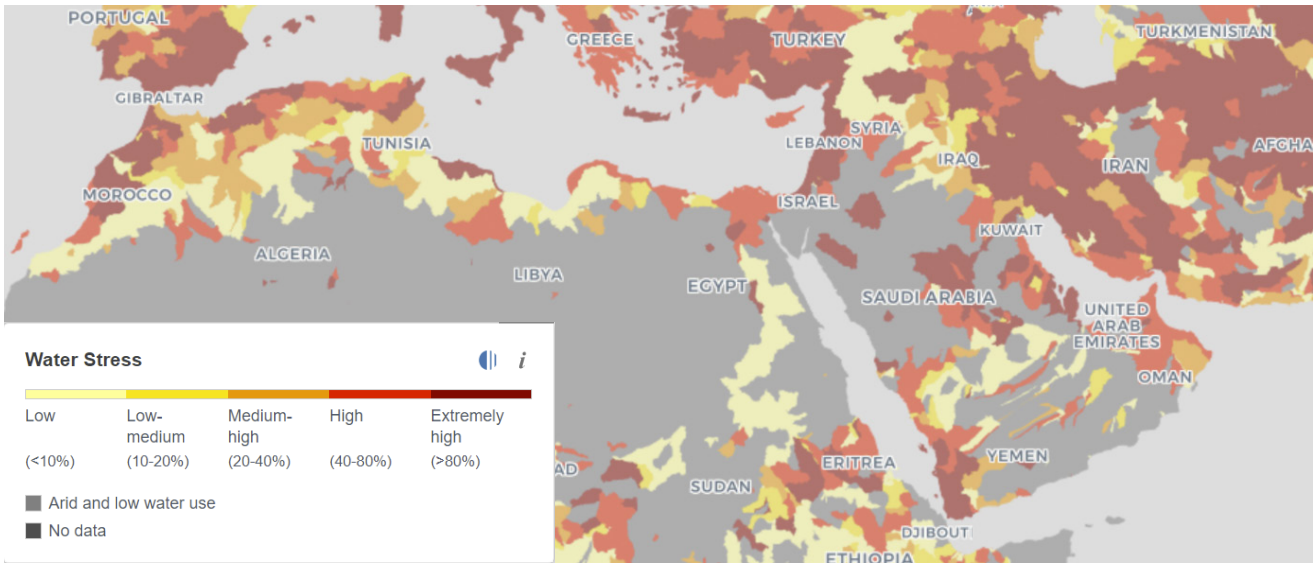
5 According to the Falkenmark water stress index: If the amount of renewable water in a country is below 1,700 m3 per person per year(4657lpcd), that country is said to be experiencing water stress; below 1,000 m3/capita/yr (2740lcd), it is said to be experiencing water scarcity, and below 500 m3/capita/yr (1370lpcd) absolute water scarcity

Figure 2. Map showing Freshwater Withdrawal as Proportion of Available Freshwater Sources



The country level rankings and projections, although useful indicators of the situation in a country, can hide differential water stress in different parts of a country. Even a country with Medium/Low/No Stress may have hotspots where water stress is high, or critical. Figure 3 highlights these geographical disparities across the MENA region.[6]

Figure 3. Map showing differential water stress in MENA region (WRI, 2019)



Water stress results from multiple interacting factors, including availability of water resources, water withdrawals, population size, and efficiency of use, to name a few. A comparison between key water resource indicators for the MENA region vs global averages for renewable water availability and withdrawals can be seen in Table 2 (FAO, 2022). Average MENA renewable water resources fall within "absolute scarcity" and are much lower than global averages. While at the same time, average water withdrawals for MENA countries are higher than the global average. However, this general story hides the different realities in each country, with huge disparities evident in both renewable water resources (Figure 4) and withdrawals (Figure 5).

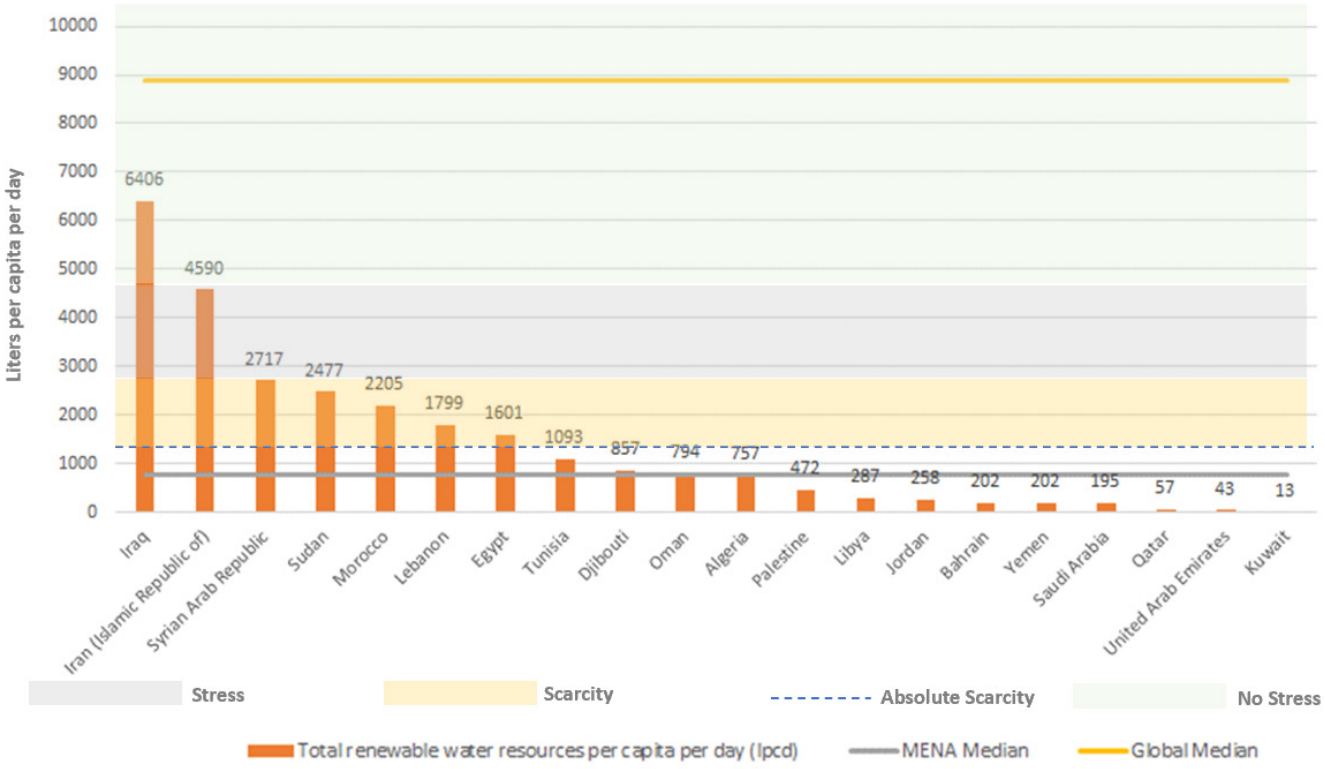
6 World Resources Institute (WRI) (2019) Aqueduct tools, WRI Aqueduct. Web: https://www.wri.org/aqueduct Accessed July 2021.

Table 2. FAO AQUASTAT Selected Indicators for Water Resources (2022)

	MENA Median	Global Median
Total renewable water resources per capita (m3/inhab/yr)	283 (m3/inhab/yr) 776 (Lpcd)	3247 (m3/inhab/yr) 8895 (Lpcd)
Total water withdrawal per capita (m3/inhab/yr)	325 (m3/inhab/yr) 889 (Lpcd)	286 (m3/inhab/yr) 784 (Lpcd)
Agricultural water withdrawal (lpcd)	691 (Lpcd)	477 (Lpcd)
Industrial water withdrawal (lpcd)	28 (Lpcd)	60 (Lpcd)
Municipal water withdrawal (lpcd)	125 (Lpcd)	160 (Lpcd)

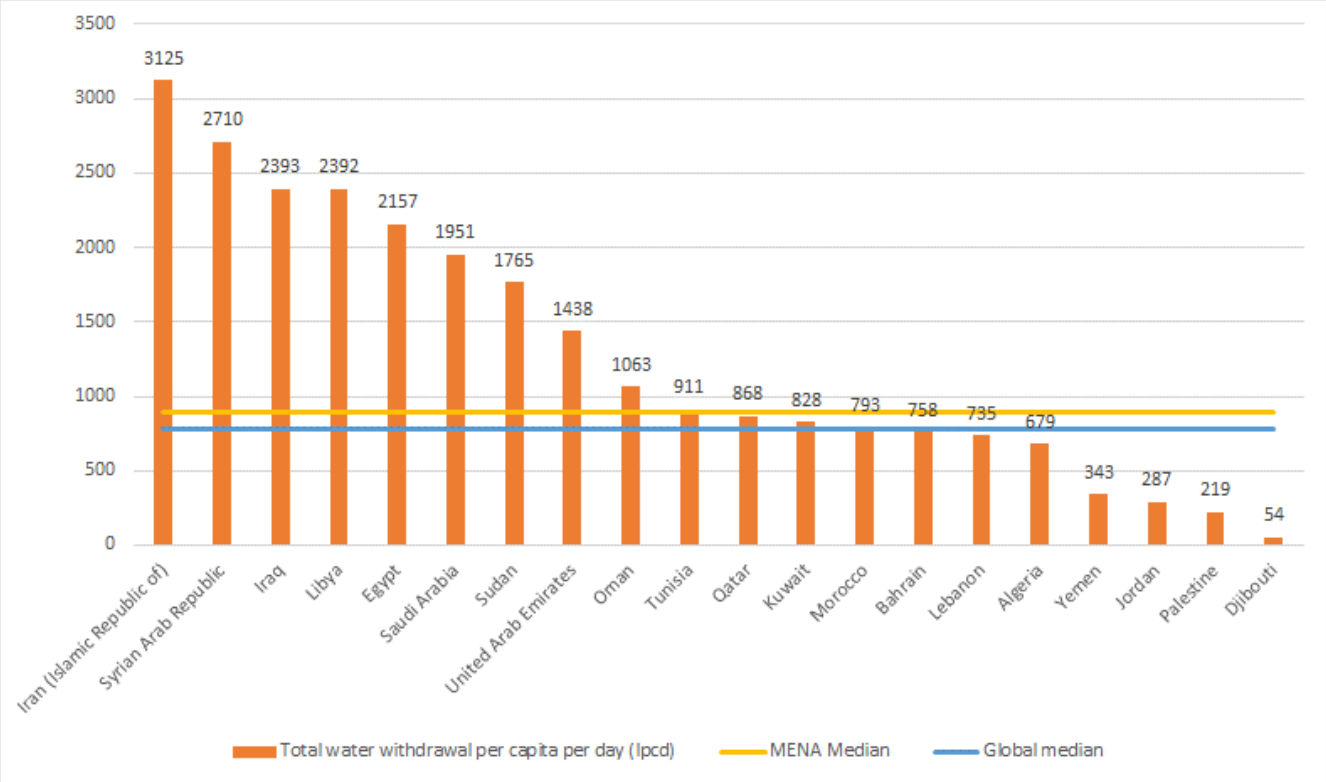
One of the most commonly used measures of water scarcity is the 'Falkenmark indicator'[7]. This indicator defines water scarcity in terms of the total water resources that are available to the population of a region; measuring scarcity as the amount of renewable freshwater that is available for each person each year. If the amount of renewable water in a country is below 1,700 m^3 per person per year, that country is said to be experiencing water stress; below 1,000 m^3 it is said to be experiencing water scarcity; and below 500 m^3, absolute water scarcity.

Figure 4. Total litres of renewable water resources per capita per day (lpcd) in 2018 (Adapted from FAO, 2022), with Falkenmark index thresholds included.



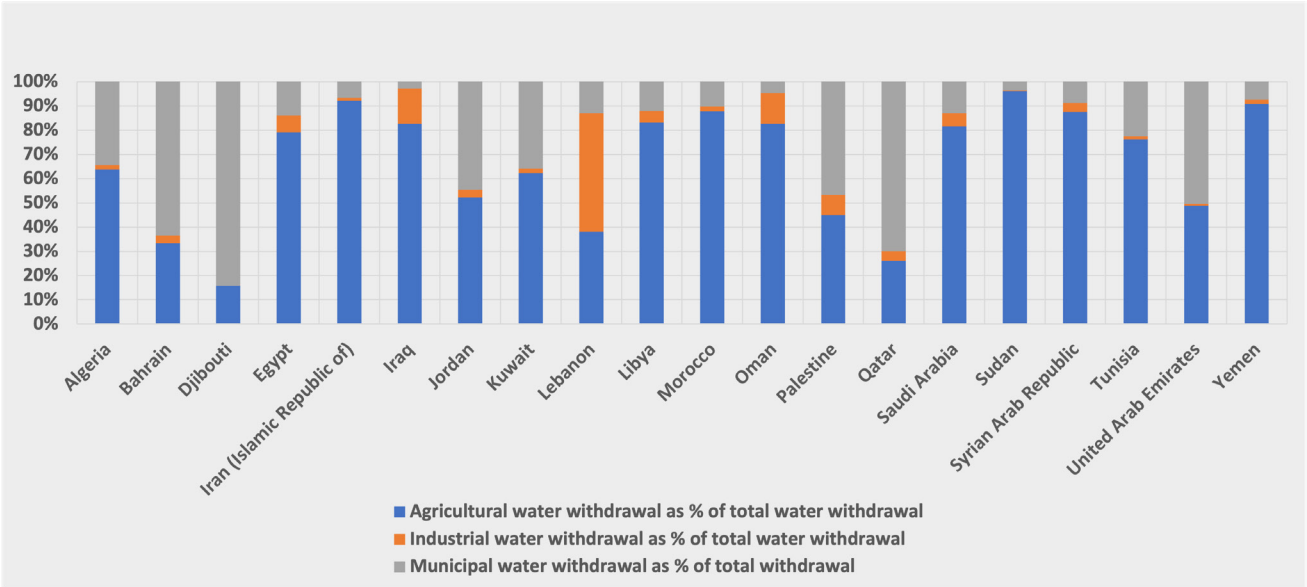
7 Damkjaer, S., & Taylor, R. (2017). The measurement of water scarcity: Defining a meaningful indicator. Ambio, 46(5), 513–531. https://doi.org/10.1007/s13280-017-0912-z

Figure 5. Total litres of water withdrawal per capita per day (lpcd) in 2018 (FAO, 2022)



The analysis of industrial, domestic, and agricultural water withdrawals percentages of the total water resources for the year 2018, shows that agriculture is the main water user in the region with average equal to (66.7%), followed by (27.4%) for municipal use, and with only marginal use for industry in a few countries.

Figure 6. Water use per sector as % of total water withdrawal[8].



8 FAO (2022). AQUASTAT Core Database. Food and Agriculture Organization of the United Nations. Web: http://www.fao.org/aquastat/en. Accessed February 2023.

Unpacking water stress further, total renewable water resources per capita has decreased on average by 24% from 2007 to 2018 (Table 3). The MENA median of 776 lpcd in 2008, is below the Global Median of 8895 lpcd, and all 20 MENA countries fall below the Global median. Interestingly, Syria is the only country where the amount of renewable water per capita increased by 17% between 2007-18, presumably due to a relatively recent decrease in its population size.

Table 3: Change in renewable water resources in lpcd between 2007-18[9]

Total renewable water resources per capita per day (lpcd)			
Country	**2007**	**2018**	**% Reduction 2007-18**
Algeria	936	757	19%
Bahrain	307	202	34%
Djibouti	1021	857	16%
Egypt	2014	1601	21%
Iran (Islamic Republic of)	5263	4590	13%
Iraq	8819	6406	27%
Jordan	410	258	37%
Kuwait	22	13	39%
Lebanon	2588	1799	31%
Libya	321	287	11%
Morocco	2550	2205	14%
Oman	1444	794	45%
Palestine	610	472	23%
Qatar	130	57	56%
Saudi Arabia	261	195	25%
Sudan (data is for 2008-18)	2860	2477	13%
Syrian Arab Republic	2316	2717	-17%
Tunisia	1227	1093	11%
United Arab Emirates	67	43	36%
Yemen	270	202	25%
MENA Median	978	776	24%

While the water stress in a country indicates the level of pressure on the water resources, it does not inform about the readiness of the country to reduce risks and address the impact on its people. Assessing the "readiness" of a country's enabling environment to tackle water scarcity and related compounding climate change risks is the main aim of this report and will be discussed in the next section.

9 FAO (2022). AQUASTAT Core Database. Food and Agriculture Organization of the United Nations. Web: http://www.fao.org/aquastat/en. Accessed February 2022.

WATER SCARCITY AND CLIMATE CHANGE ENABLING ENVIRONMENT ANALYSIS

An in-depth analysis of the enabling environment within the water and climate sectors was undertaken in 14 MENA countries[10], with respect to water scarcity and climate change from the perspective of ensuring WASH services. The assessment was structured using the Sanitation and Water for All (SWA) enabling environment building blocks (Figure 7). The building blocks are the key components of a functioning WASH sector.

Figure 7. SWA Building Blocks

The assessment measured the existence and content of policies and strategies, regulations, plans, monitoring and coordination mechanisms, and financial flows but did not assess the effectiveness of the implementation of the building blocks.

Under each building block a number of assessment criteria were identified and assessed through the use of a combination of the findings from country specific reports and surveys of UNICEF staff.

10 Algeria, Djibouti, Egypt, Iran, Iraq, Jordan, Lebanon, Libya, Morocco, SoP, Sudan, Syria, Tunisia, Yemen.

Policy and strategy

The Policy and Strategy Building Block assesses if water and climate policies and strategies sufficiently address water scarcity and climate risks.

Table 4. Method for the assessment of Policy and Strategy Building Block

Criteria	Assessment Method
Criterion 1: Are the human rights to water and sanitation (HRWS) formally recognised?	GLAAS survey response data from 2019, when available (seven countries). Country specific research for remaining nine MENA countries.
Criterion 2: Do water (including WASH) related policies and strategies address water scarcity and climate change risks?	Water and WASH policies and strategies were sourced through FAOLEX webpage[11] and through general Google searches. A list of the sourced documents was then validated with UNICEF Country Offices (COs), with missing or newer documents, including those at draft status.
Criterion 3: Do Nationally Determined Contributions (NDCs) and National Adaptation Plans (NAPs) address climate change risks to water/WASH?	Climate change policies and strategies were sourced using the NDC registry[12] and NAP registry[13] webpages. UNICEF COs supplemented with draft NDC or NAP documents, when available.

Findings and discussion

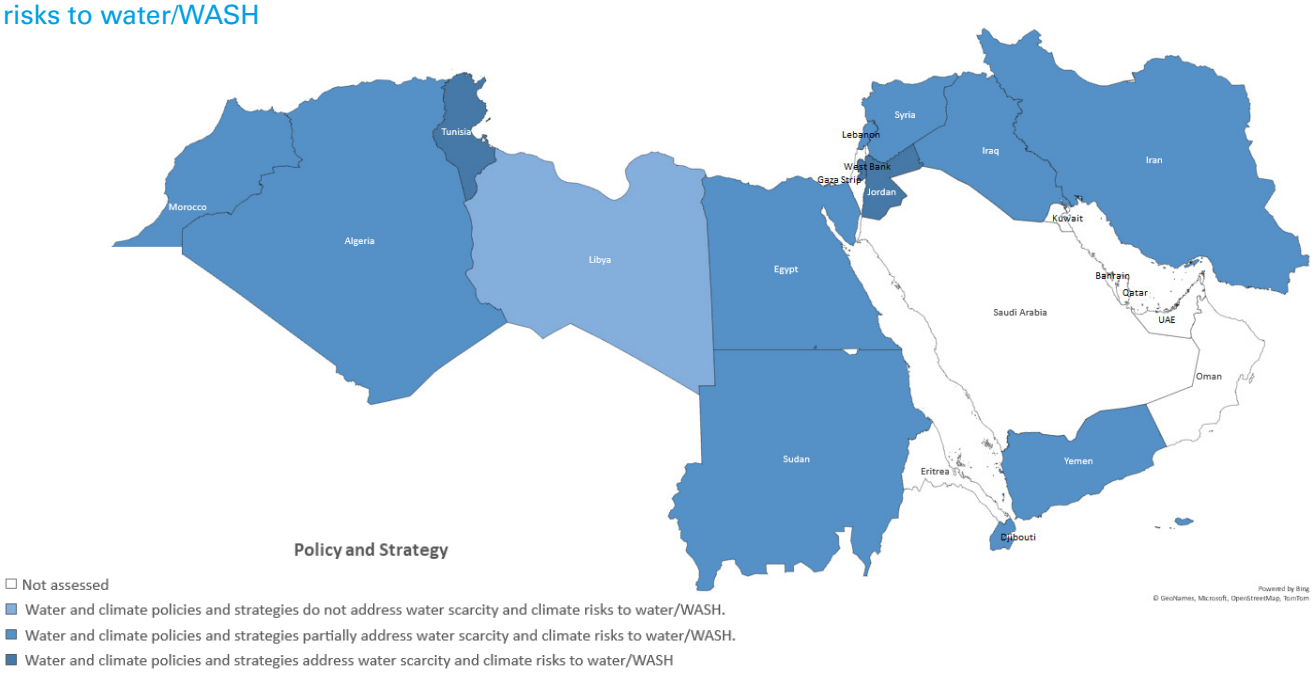
Whilst three countries (Jordan, SoP, Tunisia) have both water and climate policies and strategies that address water scarcity and climate risks to water/WASH, the majority of countries (nine) were found to have water and climate policies and strategies that only partially address water scarcity and climate risks.

The assessment found that climate policies and strategies more often addressed water scarcity and climate risks to water and WASH, than specific water and WASH policies do. This finding may be explained as some of the water resources and WASH policies and strategies are outdated and are less frequently updated than the NDCs, which go through a five-year cycle under the UNFCCC and Paris Agreement mechanisms. It is also important to note that when compared to climate change policies and strategies, water and WASH related policies and strategies appear fragmented, with multiple documents from different water sub-sectors.

There were examples of strong NDCs (Algeria, Djibouti, Jordan, SoP, and Tunisia) and NAPs (SoP, Jordan-draft) that address water scarcity and climate change risks to water/WASH, whilst examples of strong water/WASH policies that address water scarcity and climate change can be found in Iran, Jordan, and SoP. Case studies of Jordan and SoP are presented in the boxes below.

11 https://www.fao.org/faolex
12 https://www4.unfccc.int/sites/ndcstaging/Pages/Home.aspx
13 https://www4.unfccc.int/sites/NAPC/Pages/national-adaptation-plans.aspx

Figure 8. Assessment of water and climate policies and strategies to address water scarcity and climate risks to water/WASH



Although NDCs were often found to include water and WASH, including as a priority sector under adaptation sections in some documents, sometimes there was limited rationale and articulation for why water or WASH was a priority, and in what ways water or WASH will be impacted, or is at risk from climate change. In some NDCs, whilst water was prioritised, WASH does not feature strongly.

The human right to water and sanitation were found to be formally recognised in the majority of countries (nine), and partially in three countries. Although data was not available for two countries, there was no indication that there was any country in the region that does not recognise at least partially the human right to water and sanitation.

Conclusion and recommendations

These findings highlight that there are still gaps in climate change and water/WASH policy alignment in most countries.

Recommendations:

- Countries use opportunities presented by policy and strategy revision processes to strengthen the inclusion of water scarcity and climate change risks to water resources and WASH services. This could be done in a variety of ways, including:
    - As of June 2022, a number of countries are yet to submit their updated NDC which was due in 2021, including Algeria, Djibouti, Egypt, Libya, Sudan, Yemen. As of June 2022, NAPs are under development in at least three countries, including Iraq, Jordan, and Sudan[14]. This represents an opportunity to influence the process to ensure the documents address water scarcity and climate risks to water/WASH.
    - Outdated water and WASH policies and strategies that are dormant or at draft status should be updated to factor in water scarcity and climate change risks to WASH.
- In order to robustly and effectively influence and inform climate change and water policies and strategies to ensure they are fit for purpose, it is important to do so in an evidence-based way:

14 Sudan submitted a brief "Interim updated NDC" so it is envisaged that a full updated NDC is under development.

- Undertake climate change vulnerability or risk assessments, and related adaptation planning exercises, for water and WASH at different scales within a country. This provides the climate science basis and the rationale for the inclusion and prioritization of water and WASH in climate related plans, and to introduce climate in water and WASH policies and strategies.

CASE STUDY

Water and WASH in the National Adaptation Plan (NAP) in State of Palestine

WASH features prominently in SoP's climate policies and strategies. The 2016 NAP (EQA, 2016) informed both the subsequent NDC's (SoP, 2017; SoP, 2021) and the respective sector NDC implementation plans for water (EQA, 2021). Water, wastewater, and health are all included as priority sectors within the climate change strategies, which recognize the importance of water as a cross-cutting issue.

Historical trends in climate have been assessed to incorporate climate change risks as one of the potential vulnerabilities of the SoP water sector (and other sectors). Extensive adaptation measures have been identified related to WASH, with three NDC implementation plans developed for the water sector, on (1) water treatment and conservation; (2) improving water networks infrastructure; and (3) improving water sources infrastructure. These are based on five conditional actions: a) 70% of the treated wastewater in large-scale wastewater treatment plants in the West Bank and Gaza is re-used by 2030; b) 7 MCM of rainwater in the West Bank is harvested by 2032; c) NRW water is reduced by 15 % by 2032; d) 5% of rainwater in priority urban areas is drained and collected by 2032; and e) 100% of identified wells and springs are rehabilitated by 2030. The mitigation benefits of the adaptation measures (e.g., reducing NRW, improving wastewater treatment and reuse) are however not recognized adequately.

CASE STUDY

Water and climate policies and strategies address water scarcity and climate change risks to water/ WASH in Jordan

Jordan developed a National Water Strategy 2016-2025 (the Strategy), including an Action Plan, (MWI, 2016) partly as a response to the challenges of meeting the growing national water demand, and in turn the impact of continued water scarcity. The Strategy comprises 12 sub-policies and documents, including a masterplan, policies on surface and groundwater use, water reallocation, and water demand management. The Strategy is further complemented with the "Climate Change Policy for a Resilient Water Sector" and a national policy statement on drought to guide the national efforts to lessen the impacts of drought on the vulnerable water resources of the country (MWI, 2018). The Policy integrates climate adaptation and mitigation actions with the current water sector priorities and activities. The Ministry of Water has conceptualized and prepared a roadmap for the strategic scale-up of sanitation and water reuse in Jordan, and together with (MWI, 2020).

Drinking water and sanitation feature very prominently in Jordan's climate policies and strategies, including in the National Climate Change Policy (GoJ, 2013); the Third National Communication to the UNFCCC (GoJ, 2014); the NDC (GoJ, 2021-a); and the NAP (GoJ, 2021-b). In the NDC, while some mitigation measures are included, e.g., biogas generation from sewage sludge, adaptation is the main focus for water and WASH, informed by the NAP. Water resources management is the leading adaptation priority for the country, with other key measures listed below:

- Integrating climate change adaptation and resilience in policy and institutional reforms
- Improved water demand management
- Improving adaptive capacity of water utilities
- Improved efficiency in water use
- Non-conventional water resources
- Rainfall EWS and reducing flood risks
- Supporting watershed/basin level management of water resources

Institutional Arrangements

The institutional arrangements building block assesses coordination, regulation and service delivery arrangements.

Table 5. Method for the assessment of Institutional Arrangements

Criteria	Assessment Method
Criterion 1 – Coordination: 1. Are coordination mechanisms for water well developed?[15]	Assessed based on desk review findings for each country and the subsequent CO validation.
2. Do Joint Sector Reviews (JSRs) happen for water that include a focus on water resources management, water scarcity and climate change?	Assessed through UNICEF CO surveys. Responses were triangulated with 2019 GLAAS survey data, where available (seven countries).
Criterion 2 – Regulation: 3. Do regulations exist that contribute to addressing water scarcity?[16]	Water related regulatory documents were sourced through FAOLEX webpage[17] and through general Google searches. Sourced documents were validated with UNICEF COs, with missing or newer documents identified.
Criterion 3 - Service delivery arrangements: 4. What is the estimated Non-Revenue Water (NRW) level?[18]	Assessed based on the desk review findings for each country and the subsequent CO validation process.
5. Are domestic and non-domestic water tariffs structured to discourage excessive use of water?	Assessed through UNICEF COs surveys.

Findings and discussion

The assessment results show that all 14 countries have at least partially developed institutional arrangements, with three countries (Iran, Morocco, and Tunisia) having well developed institutional arrangements.

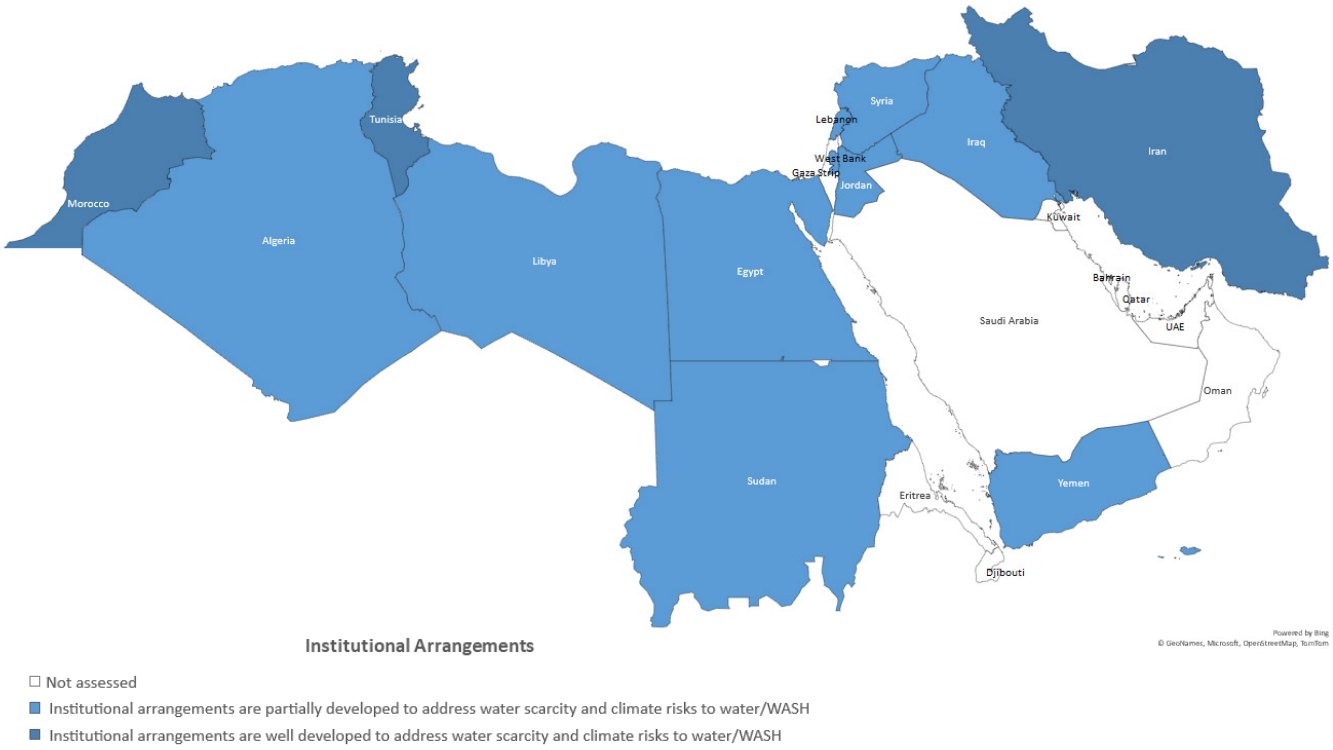
In terms of coordination mechanisms for water (Criterion 1), Morocco and SoP appeared to have the most well-developed mechanisms in place. For Criterion 2, four COs (Iraq, SoP, Syria, Tunisia) regularly or sometimes host a JSR that focusses on WRM and/or water scarcity and/or climate change.

In terms of regulations (Criterion 2), four countries (Iran, Morocco, SoP, Tunisia) were found to have regulations that contribute to addressing water scarcity, with a focus on the following areas: domestic/non-domestic tariff, abstraction, discharge, wastewater reuse, water protection/conservation. See the box below for the case of Iran which has a long history of developing its regulatory framework to address water scarcity.

15 This was assessed based on the desk review findings and CO validation process
16 Here we were looking to identify regulations covering the following areas: domestic/NON-domestic tariff, abstraction, discharge, wastewater reuse, water protection/conservation
17 https://www.fao.org/faolex
18 The rationale for using this indicator is that a relatively low/high NRW level can indicate service delivery arrangements that are supportive (in the case of low NRW) or no supportive (in the case of high NRW) of addressing water scarcity

The final area, service delivery arrangements (Criterion 3), was the least well performing area, with the majority of countries having NRW exceeding 25% (eight countries), and >40% (four countries). Although there was data missing for four countries on tariffs, five countries have domestic or non-domestic tariffs that are not set to discourage excessive water use. Where tariffs partially discouraged excessive use of water, it was more often for only domestic tariffs.

Figure 9. Level of Institutional arrangements development to address water scarcity and climate risks to water/WASH



Conclusion and recommendations

The findings highlight overall positive performance of countries, as it is the only block where no countries scored red, but the findins also highlight that a lot still can be done, especially in the area of service delivery arrangements (NRW and tariffs to promote water conservation). Joint Sector Reviews (JSRs) are often not happening, presenting a missed opportunity to focus on water scarcity and climate change issues

Recommendations:

- When countries are planning for and preparing JSRs, it should be ensured that a conscious decision and focus is placed on making time during the JSR process to specifically discuss water scarcity and climate change impacts to water and WASH.
- Countries might consider undertaking a WASHREG[19] exercise, to undertake an in-depth analysis on how fit for purpose the regulatory environment is for addressing water scarcity and climate change risks to water/WASH and develop a related regulatory reform action plan. A particular focus can be placed in the analysis on tariffs for water conservation, abstraction/discharge permitting and volumes, wastewater treatment and use, and water protection/conservation.

19 https://www.unicef.org/reports/washreg-approach

CASE STUDY

Regulations to address water scarcity in Iran

Historically, Iran has implemented several policies and regulations aimed at tackling water scarcity. These include:

- The 1966 Law on Preserving Groundwater Resources aims to regulate provisions regarding protection of groundwater resources and monitoring its usage. The Ministry of Energy (MoE), the responsible authority, has the power to prohibit drilling of wells and aqueducts in specific areas for a specific period of time. The Law also states that individuals, private or public entities are required to prevent groundwater from pollution and follow sanitary instructions.
- To cope with growing challenges related to water scarcity, Iran elaborated a Law on the Equitable Distribution of Water Resources in 1983. The Law aims to codify regulations regarding fair distribution of water within the country and between domestic, agricultural, and industrial consumers.
- Regulation on the Establishment of the Drought Crisis Management Committee was developed in 1997. The main tasks of the Committee include to explore the causes of the drought and to study ways to cope with water scarcity and drought crises.
- In 2001 regulation to manage water scarcity and reduce water consumption patterns was established. The law specifies water consumption patterns for domestic, agricultural, and industrial sectors. In emergency situations the law stipulates that the MoE shall reduce the designated patterns.
- In 2008, regulation on the interlinkageof water resources and water use was elaborated as a response to the challenges of meeting the growing national water demand and the impact of continued water scarcity. It consists of 12 articles and aims to regulate the protection of water resourcesand the management of water use in the country; the Ministry of Agriculture and the MoE are responsible for the enforcement of the regulation.

Financing

The Financing Building Block assesses how finance targets water scarcity and climate change risks to water/WASH.

Table 6. Method for the assessment of Financing

Criteria	Assessment Method
Criterion 1 – General Finance: 1. Amount of water and sanitation related ODA disbursements per capita for "water conservation, including data collection" (2010-18)[20]	Data for the assessment was accessed through the OECD Creditor Reporting System[21] for the period 2010-18 and converted to a per capita figure by using the average population over 2010-18 using population data from UNDESA[22].
2. Whether a financing plan is in place and used for water, and whether it covers water scarcity and climate change?	Data for the assessment was requested through a UNICEF CO survey. Responses were triangulated with 2019 GLAAS survey data, where available (seven countries).
Criterion 2 – Climate Finance: 3. Climate finance for water per capita per year 2010-18	Data was extracted from the OECD Creditor Reporting System (CRS)[23]. Data was analysed from 2010–2018 and filtered by water-related sectors and sub-sectors, with Rio markers for climate finance applied to identify finance related to mitigation and/or adaptation, and whether that finance is "principally" or "significantly" contributing to mitigation and/or adaptation[24]. Data was converted to a per capita figure by using the average population over 2010-18 using population data from UNDESA[25]. Analysis does not include climate finance for irrigation, as this falls outside of the "Water and Sanitation" sector in the CRS dataset.

Findings and discussion

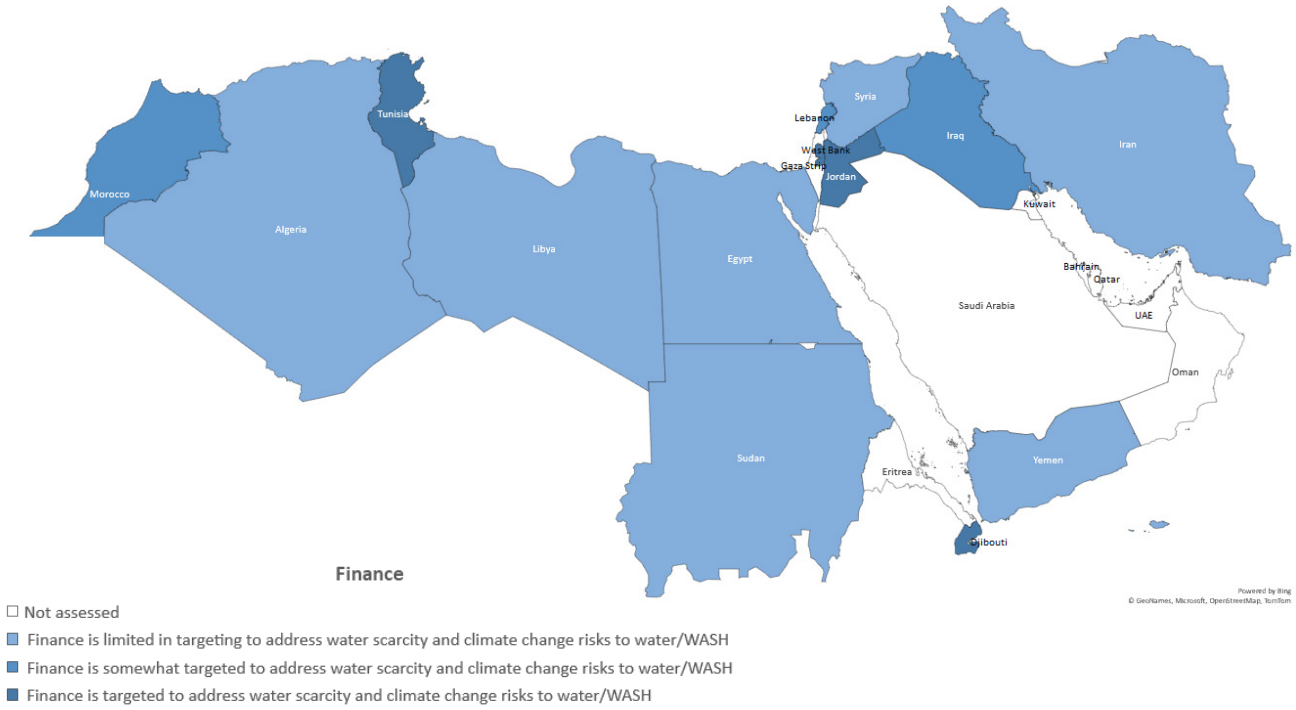
The findings show that for the majority of countries, there is limited targeting of finance to address water scarcity and climate change risks to water/WASH. The findings also highlight sometimes large disparities between countries.

ODA disbursements per capita for "water conservation, including data collection", ranged from US$3.46 in SoP to US$0.01 in Yemen, with three countries receiving >US$1.00 (SoP, Jordan, Morocco) and five countries <US$0.10.

Three COs (Iraq, Jordan, and Syria) have a financing plan for water that factors in water scarcity and climate change, whereas four countries had no financing plan at all for water.

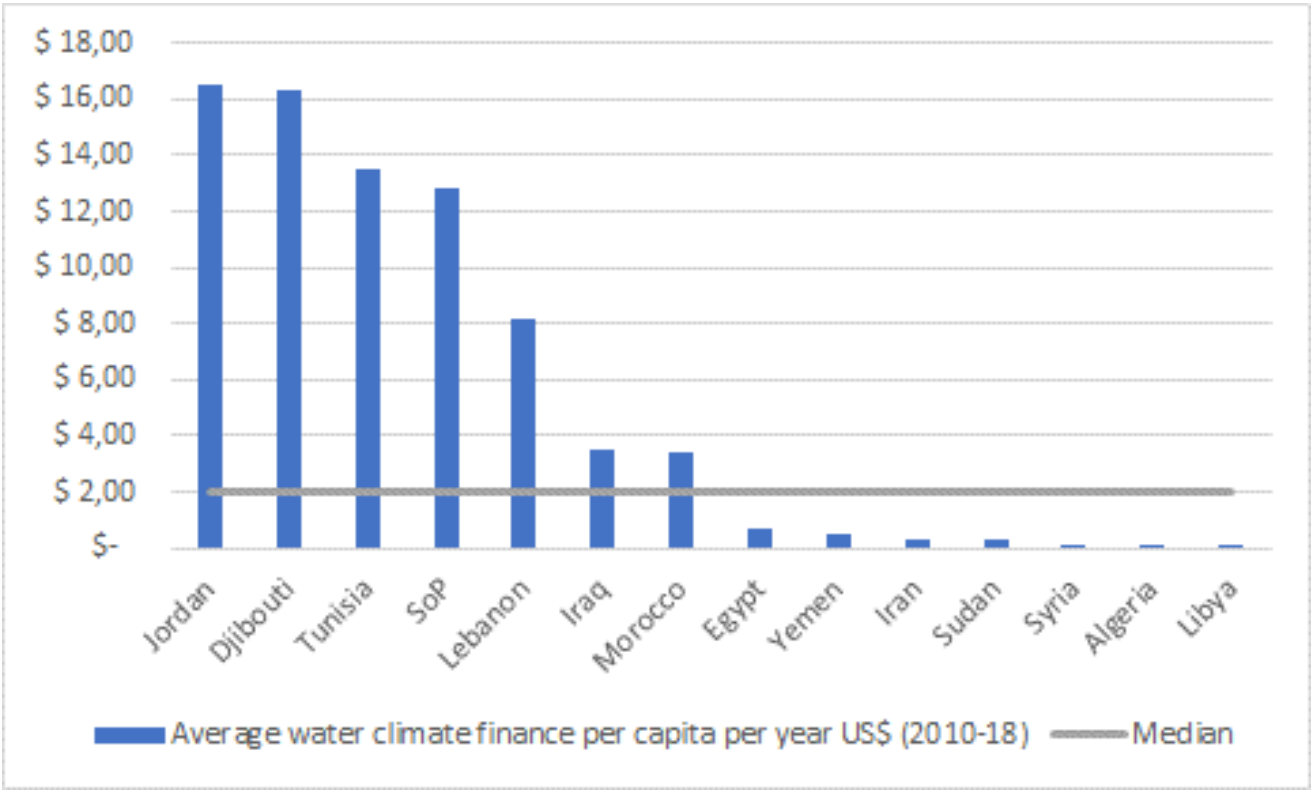
20 This is a sub-indicator of SDG 6.a1 measured through OECD's Creditor Reporting System
21 https://stats.oecd.org/Index.aspx?DataSetCode=crs1
22 United Nations, Department of Economic and Social Affairs, Population Division (2018). World Urbanization Prospects: The 2018 Revision, custom data acquired via website.
23 https://stats.oecd.org/Index.aspx?DataSetCode=crs1
24 An activity can be marked as significant (1) when the objective (climate change mitigation or adaptation) is explicitly stated but it is not the fundamental driver or motivation for undertaking it. An activity can be marked as principal when the objective (climate change mitigation or adaptation) is explicitly stated as fundamental in the design of, or the motivation for, the activity.
25 United Nations, Department of Economic and Social Affairs, Population Division (2018). World Urbanization Prospects: The 2018 Revision, custom data acquired via website.

Figure 10. Assessment of whether Finance is targeted to address water scarcity and climate change risks to water/WASH in the MENA region



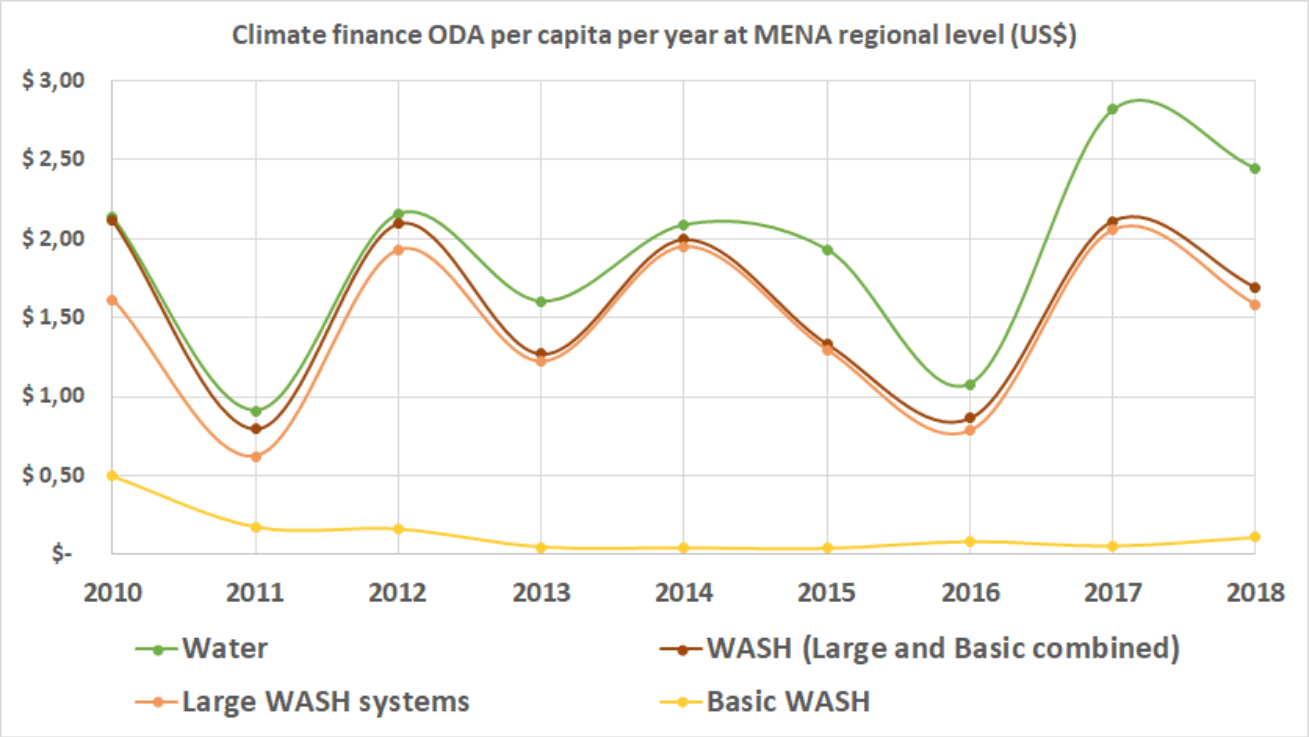
In terms of climate finance, there are large disparities in per capita per year climate finance for water received on average between 2010-18, ranging from US$16.54 in Jordan to US$0.01 in Libya (see Figure 11), with four countries receiving >US$10 per capita per year water related climate finance (Djibouti, Jordan, SoP, and Tunisia), in contrast to seven countries receiving <US$1. The case of climate financing for water and WASH in Tunisia is presented in the box below.

Figure 11. Average water related climate finance per capita per year by country between 2010-18



When aggregated to the regional level (Figure 12), there is no obvious increasing trend for climate finance for water, or for WASH over the period 2010-18. The majority of WASH related climate finance ODA was for large WASH systems[26], with basic WASH[27] receiving very little.

Figure 12. Climate finance ODA per capita per year by sector (water) and water sub-sector (WASH, Basic WASH, Large WASH) 2010-18 (OECD, 2019)



Conclusion and recommendations

These findings highlight that financing across the region has large disparities between countries, that climate finance has targeted large water infrastructure at the moment, and that basic WASH related climate finance is extremely limited in the region.

Recommendations:

- Shared the ODA figures with donors to highlight the large disparities between countries with a view to influencing donors to increase financing to those countries with very limited ODA financing, while not reducing the financing for those receiving more.
- Highlight to donors and governments alike that water related climate finance per capita did not increase over 2010-18 for the region and that in order to address increasing climate change risks and impacts to water and WASH more financing is required.

26 OECD Development Assistance Committee (DAC) classification of: a) Water supply - large systems: Potable water treatment plants; intake works; storage; water supply pumping stations; large scale transmission / conveyance and distribution systems; b) Sanitation - large systems: Large scale sewerage including trunk sewers and sewage pumping stations; domestic and industrial waste water treatment plants.
27 OECD Development Assistance Committee (DAC) classification of: a) Basic drinking water supply: Rural water supply schemes using handpumps, spring catchments, gravity-fed systems, rainwater collection and fog harvesting, storage tanks, small distribution systems typically with shared connections/points of use. Urban schemes using handpumps and local neighbourhood networks including those with shared connections; b) Basic sanitation: Latrines, on-site disposal and alternative sanitation systems, including the promotion of household and community investments in the construction of these facilities. (Use code 12261 for activities promoting improved personal hygiene practices.)

- It is also important to highlight that basic WASH receives very limited climate finance, yet basic WASH is a key measure in reducing vulnerability to climate change and therefore increasing community resilience. Efforts should be made to mobilise more climate finance for this neglected aspect.
- Specific further analysis could be conducted on country level national budget expenditures to assess how well they address water scarcity and climate change risks to water/WASH and what could be done to strengthen them.
- Although challenging, it would be useful to put ODA data in context through an analysis of all financial flows to water and WASH, for example, through using approaches such as TrackFIN[28]

CASE STUDY

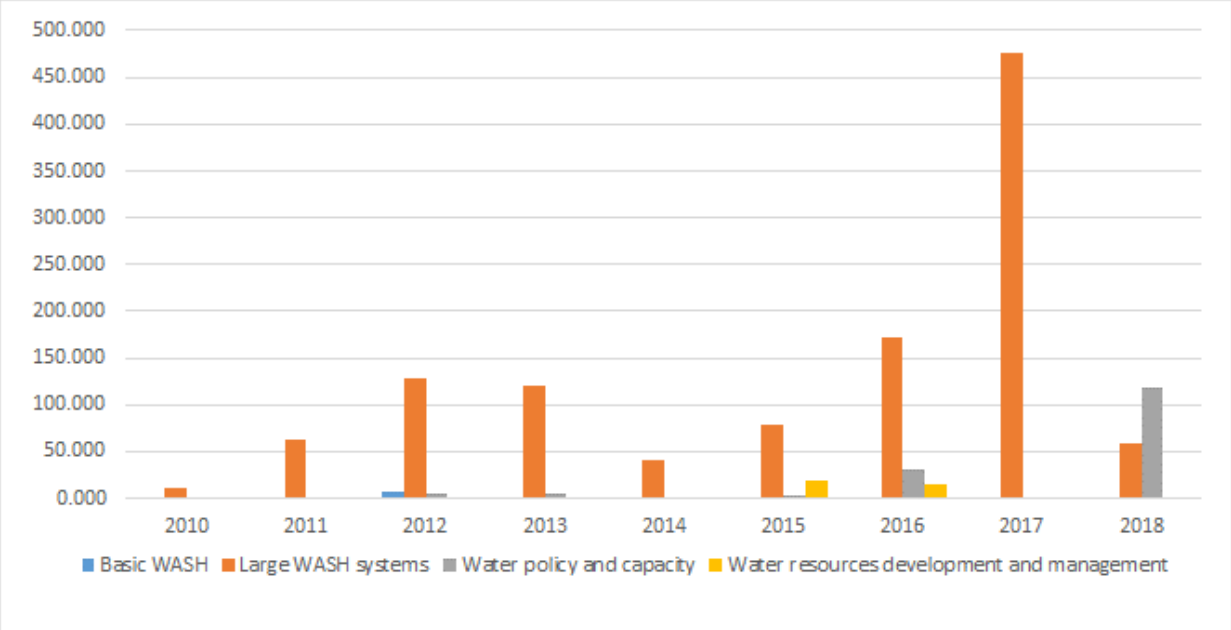
Climate financing for water and WASH in Tunisia

The water sector and WASH features relatively prominently in the climate finance landscape for Tunisia, when compared to other non-water related sectors. However, basic WASH is less prioritized than large WASH systems, at only 0.1% (US$ 111k) of Tunisia's water-related bilateral climate finance in 2019, and only 0.5% (US$ 7m) between 2010-18.

Between 2010-18:

- Water sector-related climate finance was >US$ 1,300m, which is the equivalent of US$ 13.49 per capita per year, which is above the MENA median of US$ 2.05 (OECD, 2019)
- The proportion for the water sector exceeded 50% of the country's annual total climate finance in 2012, 2013 and 2016
- Basic WASH received only US$ 7m (0.5%) of total water sector climate finance across the period compared to US$ 1,150m for large WASH systems, US$ 161m for water policy and capacity, and US$ 35m for water resources development and management.

The chart below shows the amount (US$m), of climate-related funding going to water-related sectors, in Tunisia (2010 to 2018).



28 https://www.who.int/publications/i/item/9789240028432

Planning, Monitoring, and Review

The Planning, Monitoring, Evaluation and Review Building Block assesses whether water scarcity and climate change are included in water related planning and monitoring systems.

Table 7. Method for the assessment of planning and monitoring

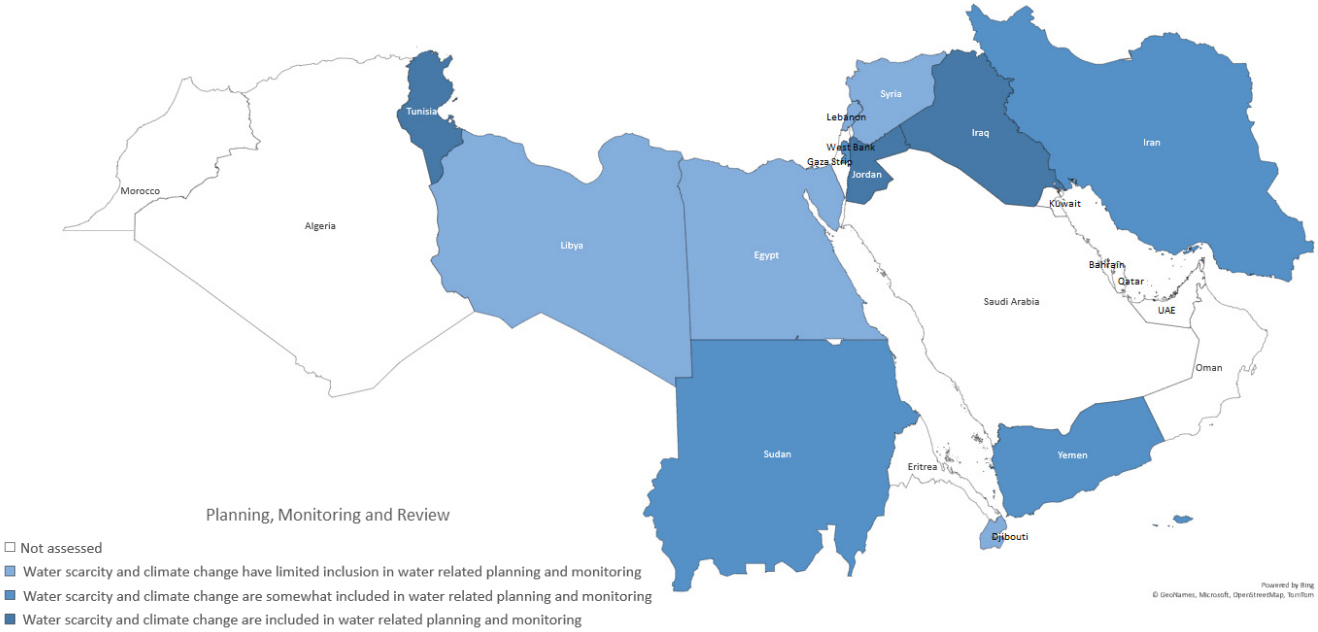
Criteria	Assessment Method
Criterion 1 – Planning: 1. Whether a multistakeholder planning exercise had been conducted for water in the last two years, where water scarcity and climate change were discussed.	Data collected through UNICEF CO surveys. Responses were triangulated with findings from desk review findings from the country reports
Criterion 2 – Monitoring: 2. Whether a drought early warning system is in place and functional	Data collected through UNICEF CO surveys. Responses were triangulated with findings from desk review findings from the country reports

Findings and discussion

The findings show that the majority of countries demonstrate limited inclusion of water scarcity and climate change issues in planning and monitoring activities, with the exception of three countries (Iraq, Jordan, Tunisia). It should be noted however that there are data gaps for three countries and they were not fully assessed (Morocco, Algeria and SoP).

There is also a noticeable difference in the assessed areas. In terms of planning, six countries (Iraq, Jordan, SoP, Sudan, Tunisia, Yemen) responded that there had been a multistakeholder planning exercise conducted for water in the last two years, where water scarcity and climate change were discussed. However, when considering the existence and functionality of a drought early warning system (DEWS), only one country (Algeria) responded that there is a DEWS in place and functional. The majority of countries responded that there are no DEWS in place.

Figure 13. Assess water and climate change level's of inclusion in water related planning and monitoring



Conclusions and recommendations

Findings highlight that there is still more that can be done to strengthen planning exercises for water to include more focus on water scarcity and climate change, and also that DEWS can be scaled up in the region.

Recommendations:

- Countries ensure that water scarcity and climate change always have a dedicated discussion during multi-stakeholder planning activities in the country. This might include examples such as risk informed WASHBAT (WASH Bottleneck Analysis Tool) workshops[29] or targeted climate change risks assessments and adaptation planning exercises for water and WASH.
- Early Warning Systems need to be scaled up in the region to tackle water scarcity and compounding climate change risks. EWS are needed especially for drought as well as for groundwater and surface water levels and quality, including saline intrusion.

Capacity Development

The Capacity Development Building Block assesses whether capacity development of water practitioners and institutions is supported through ODA finance.

Table 8. Methods for the assessment of Capacity Development

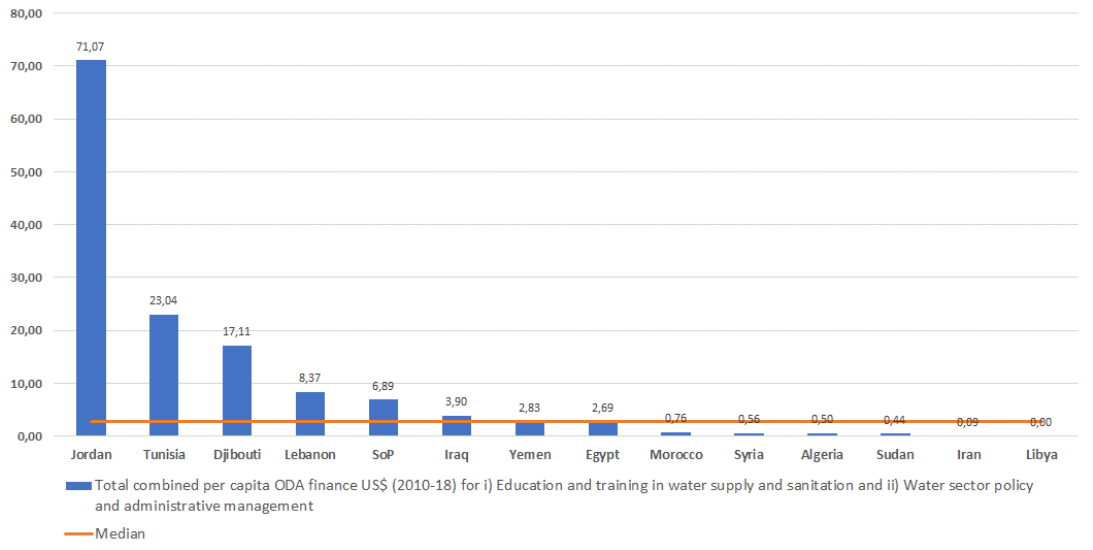
Criteria	Assessment Method
Criterion 1: Amount of ODA per capita over 2010-18 for "Education and training in water supply and sanitation for sector professionals and service providers"[30]	Data accessed through the OECD Creditor Reporting System[31] for the period 2010-18 and converted to a per capita figure by using the average population over 2010-18 using population data from UNDESA[32].
Criterion 2: Amount of ODA per capita over 2010-18 for "Water sector policy and administrative management"[33] which includes "institutional capacity development"	
Note: The rationale for using these indicators is that if a country and its practitioners have their capacity built and are supported in its policy, governance, regulation, planning and IWRM approaches, it can help to ensure an enabling environment setup for addressing water scarcity and climate change risks to water/WASH. *It is recognised that using ODA finance has its limitations, as it does not factor in capacity development activities not funded by ODA, e.g., by the government. In lower income countries therefore, the assessment may be more valid, as compared to higher income countries.*	

29 An explanation, examples and materials for the WASH Bottleneck Analysis can be found at https://www.washbat.org/
30 Education and training in water supply and sanitation ODA flows to education and training for sector professionals and service providers (OECD purpose code 14081). This is a sub-indicator of SDG 6.a1
31 https://stats.oecd.org/Index.aspx?DataSetCode=crs1
32 United Nations, Department of Economic and Social Affairs, Population Division (2018). World Urbanization Prospects: The 2018 Revision, custom data acquired via website.
33 Water sector policy and administrative management ODA flows to water sector policy and governance, including legislation, regulation, planning and management as well as transboundary management of water; institutional capacity development; activities supporting the Integrated Water Resource Management approach (OECD purpose code 14010). This is a sub-indicator of SDG 6.a1

Findings and discussion

Total combined per capita ODA finance (2010-18) for capacity development of practitioners and institutions ranged from >US$ 71.00 in Jordan to <US$ 0.01 in Libya. Three countries received >US$10 (Jordan, Tunisia, Djibouti), five received between US$1 and US$10, and six received <US$1.

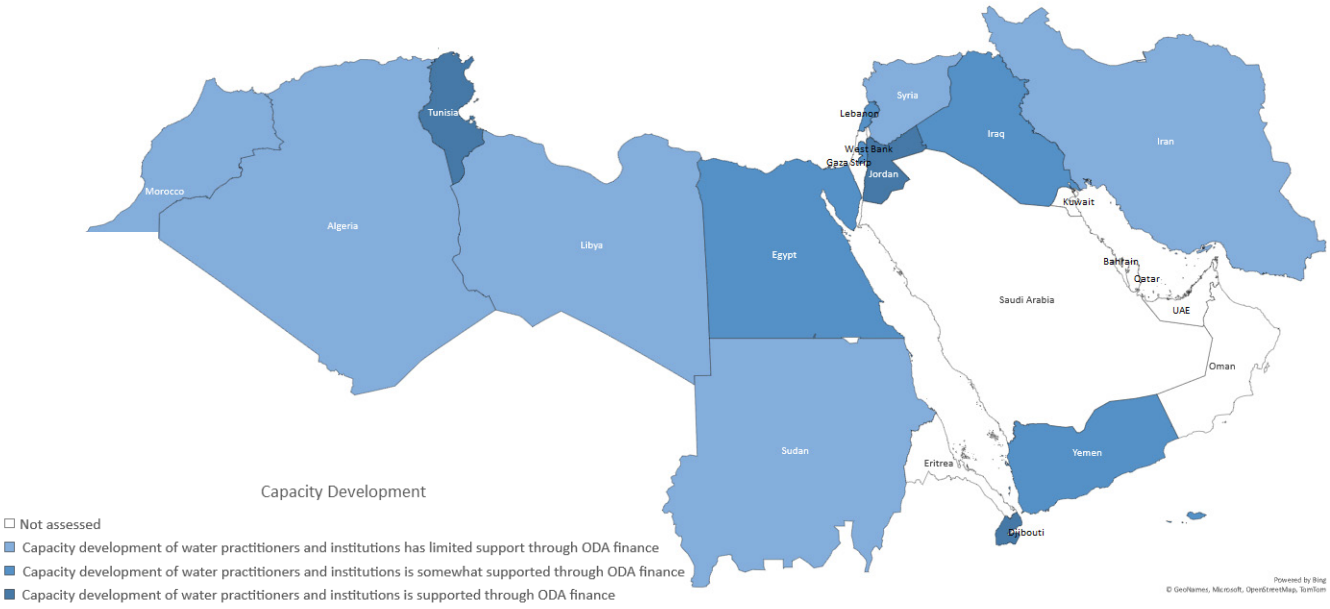
Figure 14. Total combined ODA per capita by country over 2010-18 for "education and training in water supply and sanitation" and "water sector policy and administrative management (including institutional capacity development)" (OECD, 2019)



In terms of the findings for two assessment criteria used, the regional average for capacity development for professionals and service providers (criterion 1 of the assement) is US$0.03 per capita compared to US$2.36 per capita for "Water sector policy and administrative management" (criterion 2 of the assessment) which includes "institutional capacity development".

It must be noted that high levels of ODA support to capacity development is not necessarily positive, as it may indicate that the country has larger capacity development needs, and/or it may indicate that a country is over reliant on ODA for capacity development activities.

Figure 15. Level of capacity development and institutions' support through ODA finance



Conclusions and recommendations

Findings highlight that there are large disparities between countries in ODA finance provided for capacity development and policy activities and that capacity development activities for practitioners receives very limited attention.

Recommendations:

- Advocacy for scaling up ODA financing for capacity development and policy, making it more equitable and targeted to countries where it is most needed.
- Conduct further analysis as to the level of national government spending on capacity development. At the same time, it would be useful to investigate whether countries have capacity needs assessments and development plans in place, specifically, whether those plans address water scarcity and climate change risks. Similarly, it would be interesting to determine if a country's tertiary education allows to study on water scarcity and climate change.

CONCLUSION

The assessment found that the best performing building blocks for countries in the MENA region are "Policy and Strategy" and "Institutional Arrangements", with "Financing" and "Capacity Development" (which was measured using financing criteria) performing the worst. Planning, Monitoring and Review building block had mixed results with some countries performing well, and others poorly.

The specific areas where countries generally performed well include:

- Climate policies and strategies in many countries addressed water scarcity and climate risks to water/WASH.
- Regulations to address water scarcity were found to be at least partially in place in all countries.
- Multi-stakeholder planning exercises for water that factored in water scarcity and climate change were held in many countries in the last two years.

Areas where countries generally did not perform so well, include:

- Water and/or WASH policies often do not consider water scarcity and climate change.
- Levels of ODA financing was found to be a particular issue in at least four countries: Algeria, Libya, Sudan, and Syria.
- Drought Early Warning Systems (DEWS) were not in place and functional in many countries.
- Joint Sector Reviews (JSRs) are often not happening, presenting a missed opportunity to focus on water scarcity and climate change issues.

In terms of recommendations

Policy and Strategy:

- Efforts should be made to ensure that climate change and water and WASH policies and strategies include water scarcity and climate change risks. At least five countries in MENA region (Algeria, Djibouti, Egypt, Libya, Sudan[34], Yemen) have not submitted an updated NDC and NAPs are under development in at least three countries (Iraq, Jordan, and Sudan). These processes represent opportunities for the sector.
- In order to robustly influence and inform climate change and water policies and strategies and for ensuring fit for purpose adaptation solutions, it is important develop a sound evidence-base. This can be done by undertaking climate change vulnerability or risk assessments, and related adaptation planning exercises for water and WASH at different scales within a country. This will provide the climate science basis and the rationale for the inclusion and prioritization of water/WASH in water and climate related policies and strategies.
- Even if a country strongly prioritised water or WASH in the most recent NDC or NAP, priorities can change for the next iteration (every 5 years). This makes it important that water and WASH stakeholders are aware and systematically contribute to NDC and NAP processes.

34 Sudan submitted a brief "Interim updated NDC" so it is envisaged that a full updated NDC is under development

Institutional Arrangements:

- Efforts should be made to establish a JSR process in countries where it does not exist and to ensure that water scarcity and climate change are a central focus of JSR discussions.
- Countries might consider undertaking a WASHREG[35] exercise, to undertake an in-depth analysis on how fit for purpose the regulatory environment is for addressing water scarcity and climate change risks to water/WASH and to develop a related regulatory reform action plan.

Financing:

- This assessment has highlighted that financing, including climate finance, is limited in many countries, and especially for basic WASH climate finance. This information should be communicated to influence donors to increase financing to those countries with very limited ODA financing while at the same time, not reduce financing for those already receiving more.
- It is recommended to highlight to donors and governments that water related climate finance per capita did not increase over 2010-18 for the region, and that addressing increasing climate change risks and impacts will require increased financing.

Planning, Monitoring and Review:

- Countries should ensure that water scarcity and climate change always have a dedicated discussion during multi-stakeholder planning activities in the country.
- Early Warning Systems need to be scaled up to tackle water scarcity and compounding climate change risks. EWS are needed, especially for drought as well as for groundwater and surface water levels and quality issues, including saline water intrusion. In addition, the design on the communication products and approaches needs to ensure that the EWS information is useful for water and WASH practitioners, in order that the information can be useful to inform decisions.

Capacity development:

- Financing, both ODA in origin, and national finance needs to be scaled up to build capacity of practitioners and institutions to meet the challenge of the growing water scarcity and climate change crisis in the MENA region.

35 https://www.unicef.org/reports/washreg-approach

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ACCOUNTABILITY FOR **SUSTAINABILITY**