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Water and Sanitation in the Arab Region



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1. Progress in Achieving Access to Water and Sanitation in the Arab Region

Important strides have been made on improving access to water supply and sanitation services over the last two decades. Between 1990 and 2012, 2.3 billion people across the globe gained access to an improved drinking water source,¹ while the annual number of children deaths from diarrheal diseases, which are strongly associated with access to poor water, sanitation and hygiene (WASH), fell from approximately 1.5 million to just over 600,000 during the same period.²

However, 748 million people still lack access to an improved source of drinking water, billions lack access to safe and reliable water supply, 2.5 billion people live without access to basic sanitation, and hundreds of millions are not supplied with clean soap and water.³ Consequently, inadequate WASH policies and practices are increasing mortality, morbidity and fuelling the spread of disease in households, schools and health centers. For instance, the rapid spread of Ebola in West Africa has been partially attributed to poor water supply and hygiene conditions in local communities and health facilities.⁴

The water-related targets of Goal 7 of the Millennium Development Goals (MDGs) sought “to halve, by 2015, the proportion of people without *sustainable* access to safe drinking water and *basic* sanitation.” Moreover, heads of state agreed at the 2002 World Summit on Sustainable Development “to halve, by 2015, the proportion of people lacking *improved* sanitation.” These targets are now being elaborated upon in deliberations on the sustainable development goals (SDGs) and targets that will frame the post-2015 development agenda. Specifically, the outcomes of the Open Working Group deliberations on the Sustainable Development Goals (SDGs), which were accepted by the United Nations General Assembly as the basis of their deliberations on the post-2015 development agenda, propose a dedicated water goal (Goal 6) that aims to ensure the availability and sustainable management of water and sanitation for all, through access to safe and affordable drinking water for all and access to adequate and equitable sanitation and hygiene for all.⁵ Challenges affecting the achievement of this visionary goal and its associated targets include critical gaps in monitoring and reporting, weak country capacities in planning and implementation, and insufficient investment and finance in the water sector.⁶

An understanding of progress in achieving access to water and sanitation in the Arab region is thus needed to put into perspective the deliberations on a new set of water-related goals and targets in a post-2015 development agenda. According to the WHO/UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation, out of a total Arab population estimated at 364 million people in 2012, approximately 15% (nearly 55 million people) still do not have access to an improved drinking water source, and 18% (nearly 66 million people) do not have access to an improved sanitation facility.⁷ While this is an improvement on figures for the year 2000, the categories that define what constitutes an “improved water supply source” and an “improved sanitation facility” fall short of considering the level and quality of water and

The WHO/UNICEF Joint Monitoring Programme (JMP) disaggregates data based on the following classifications:

- **Improved drinking water:** piped water, public tap, tubewell, protected dug well, protected spring, collected rainwater.
- **Unimproved drinking water:** unprotected well, unprotected spring, cart with tank, tanker truck, surface water, bottled water.
- **Improved sanitation:** flush or pour-flush to a piped sewer system, septic tank or pit latrine, ventilated improved pit latrine, pit latrine with slab, composting toilet.
- **Unimproved sanitation:** flush or pour-flush system not piped to sewer system, septic tank or pit latrine, open pit latrine, bucket, hanging toilet, shared facilities of any type, open defecation.

Source: WHO/UNICEF JMP Definitions and Methods, <http://www.wssinfo.org/definitions-methods/watsan-categories>

sanitation services actually accessed by people on a daily basis. This is largely because the categorization developed by the JMP was initially conceived to monitor public health improvements and to reduce the risk of unimproved water sources and sanitation facilities spreading disease. While important issues to consider, the ability to access clean, reliable and affordable drinking water and sanitation services under conditions of freshwater scarcity is also of priority concern for Arab countries.

Furthermore, the country-level figures often referenced from the JMP report mask significant differences between rural and urban areas, as well as sub-regional progress and achievements. For instance, 69% (nearly 38 million) of the 55 million people without access to drinking water in the Arab region are located in rural areas, with 60% (33 million) residing in the region’s Least Developed Countries (LDCs). Similarly, more than 73% (48 million) of the 66 million people without access to improved sanitation are located in rural areas, with 71% (47 million) residing in the LDCs (see Figure 1).

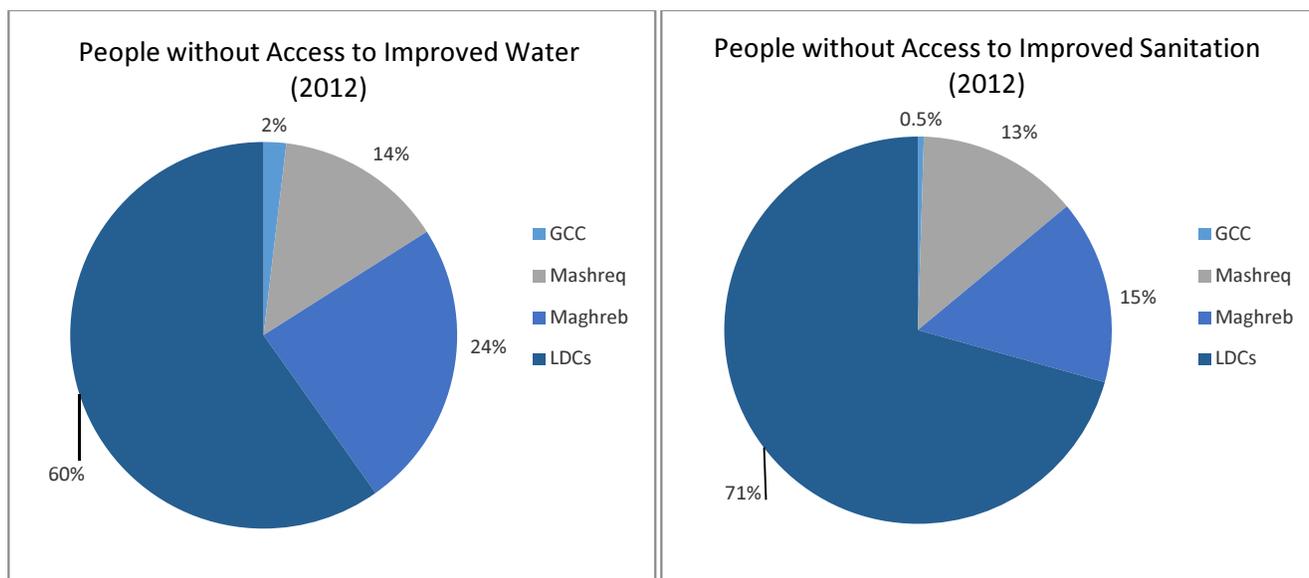


FIGURE 1 SUB-REGIONAL DISTRIBUTION OF PEOPLE WITHOUT ACCESS TO IMPROVED WATER AND SANITATION IN THE ARAB REGION - 2012

Source: Calculations by ESCWA, based on national data sets available on the online database of the WHO/UNICEF Joint Monitoring Programme (2014), available at: <http://www.wssinfo.org> – accessed 10 November 2014.

Figure 2 and Figure 3 present the relative progress of the four sub-regions between 1990 and 2012 regarding access to drinking water at the national, urban and rural levels. While these results are influenced by population dynamics, rural/urban migration, investment efforts, water availability and water management policies, and the impact of climate change and variability, they nevertheless reveal important shifts in the relative contributions at the Gulf Cooperation Council (GCC), Mashreq, Maghreb and LDC clusters to the water and sanitation services delivery deficit in the region.

The following sub-regional clustering of Arab States is used for the purpose of presenting data in this report:

- **Gulf Cooperation Countries (GCC):** Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and United Arab Emirates;
- **Mashreq:** Egypt, Iraq, Jordan, Lebanon, Palestine and the Syrian Arab Republic;
- **Maghreb:** Algeria, Libya, Morocco and Tunisia;
- **Least Developed Countries (LDCs):** Comoros, Djibouti, Mauritania, Somalia, Sudan and Yemen.

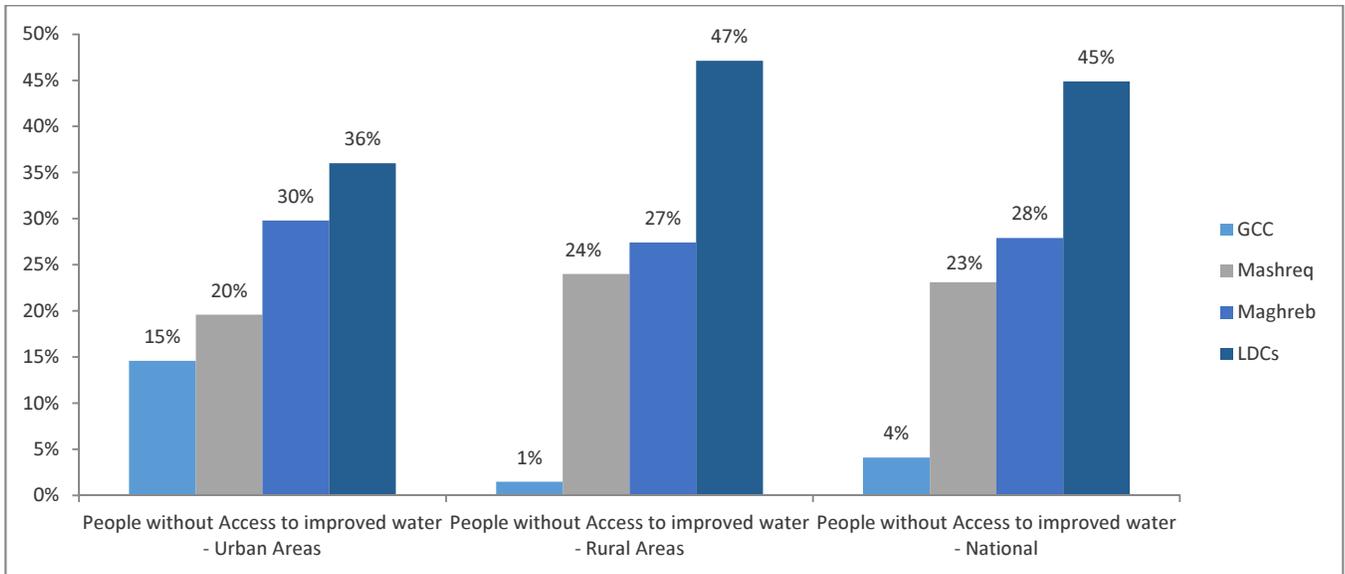


FIGURE 2 SUB-REGIONAL CONTRIBUTION TO DEFICIT IN ACCESS TO IMPROVED WATER IN THE ARAB REGION - 1990

Source: Calculations by ESCWA, based on national data sets available on the online database of the WHO/UNICEF Joint Monitoring Programme (2014), available at: <http://www.wssinfo.org> – accessed 10 November 2014.

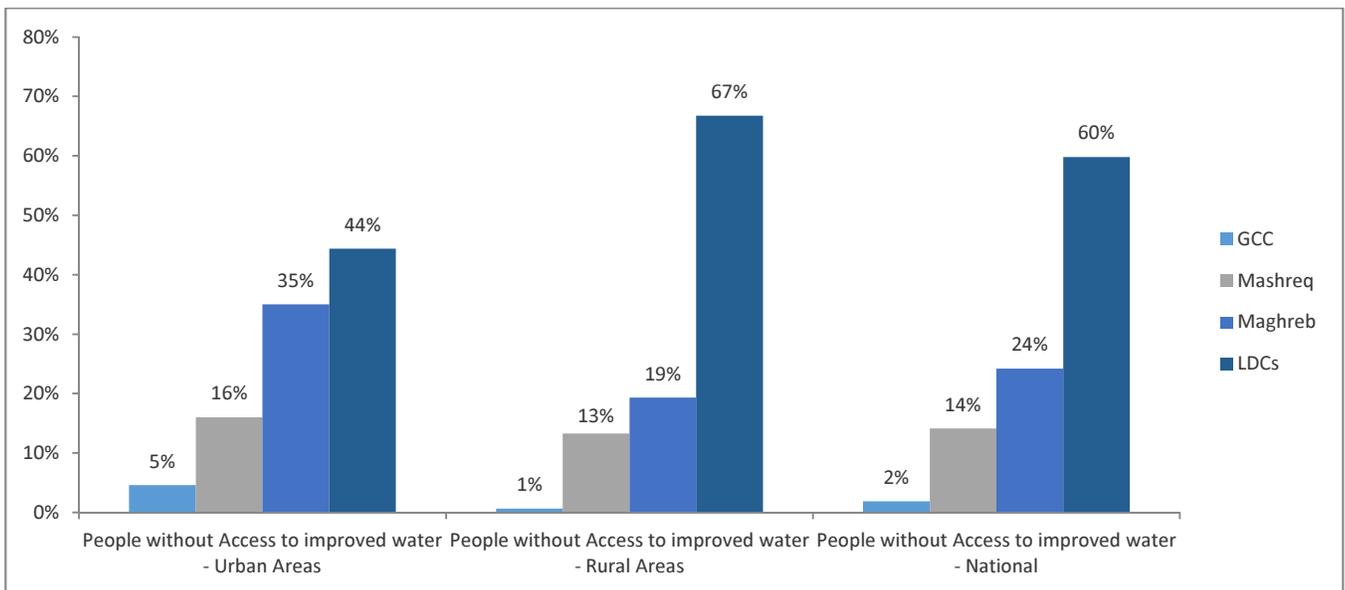


FIGURE 3 SUB-REGIONAL CONTRIBUTION TO DEFICIT IN ACCESS TO IMPROVED WATER IN THE ARAB REGION - 2012

Source: Calculations by ESCWA, based on national data sets available on the online database of the WHO/UNICEF Joint Monitoring Programme (2014), available at: <http://www.wssinfo.org> – accessed 10 November 2014.

Between 1990 and 2012, the JMP data shows, at a national level, a marked progress on the MDG on water of the Maghreb and Mashreq sub-regions. Contrarily, access to an improved water source in LDCs fell during the

same time period, partially due to population growth. In 2012, 60% of the Arab region’s population without access to improved water resided in the LDCs, compared to 45% in 1990.

Distinguishing between the urban and rural areas reveals interesting supplementary results, most notably:

- A significant decrease in the GCC countries’ share in the total number of urban people without access to improved water, from 15% in 1990 to 5% in the 2012;
- A small increase of the total number of urban people living in the Maghreb without access to improved water, where in 2012 more than 1 out of 3 urban people (35%) in the Arab region do not have access to improved water;
- A significant increase in the number of rural people living without access to improved water in LDCs, where in 2012 more than 2 out of 3 rural people who do not have access to improved water reside in an LDCs, compared to only 1 out of 2 in 1990.

Similarly, the relative progress of the four sub-regions between 1990 and 2012 regarding access to sanitation, at the national, urban and rural levels can be examined in Figure 4 and Figure 5. Results show important progress in the Maghreb and more so in the Mashreq cluster, particularly in rural areas. For instance:

- Only 1 out of 4 urban people without access to basic sanitation lived in the Mashreq in 2012, as compared to 1 out of 3 urban people in 1990, with progress in rural areas even more significant;
- Only about 1 in 7 rural people without access to basic sanitation lived in the Maghreb in 2012, compared to about 1 in 4 in 1990;
- However, 3 out of 4 rural people without access to basic sanitation in the Arab region live in LDCs.

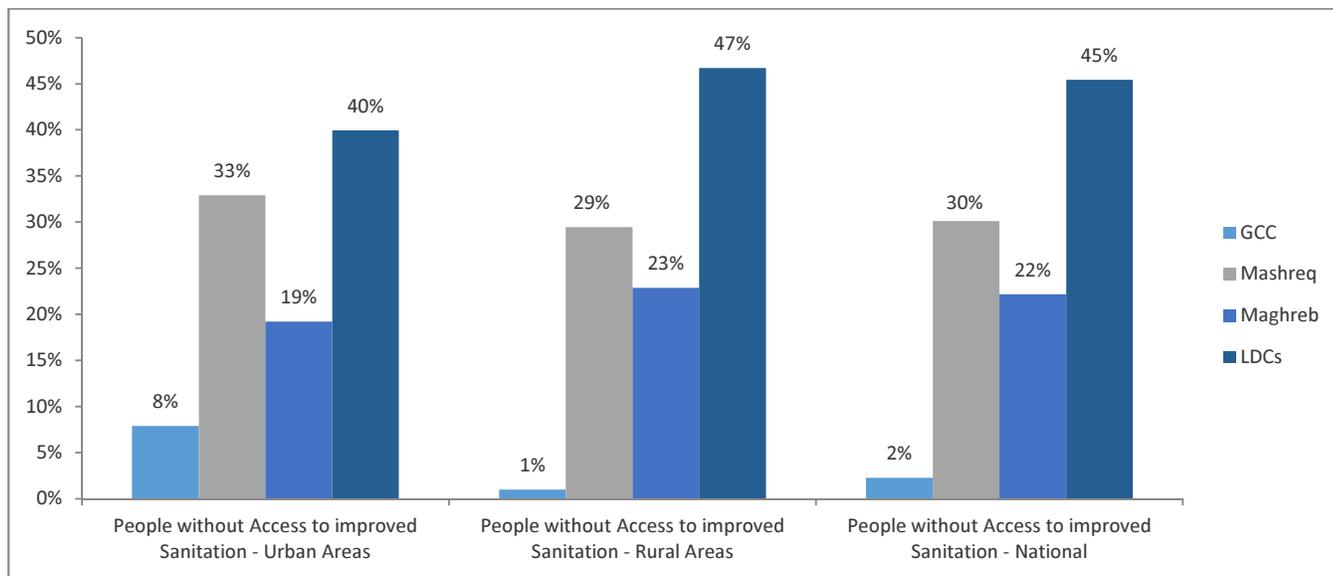


FIGURE 4 SUB-REGIONAL CONTRIBUTION TO THE REGIONAL DEFICIT IN ACCESS TO BASIC SANITATION IN THE ARAB REGION- 1990

Source: Calculations by ESCWA, based on national data sets available on the online database of the WHO/UNICEF Joint Monitoring Programme (2014), available at: <http://www.wssinfo.org> – accessed 10 November 2014.

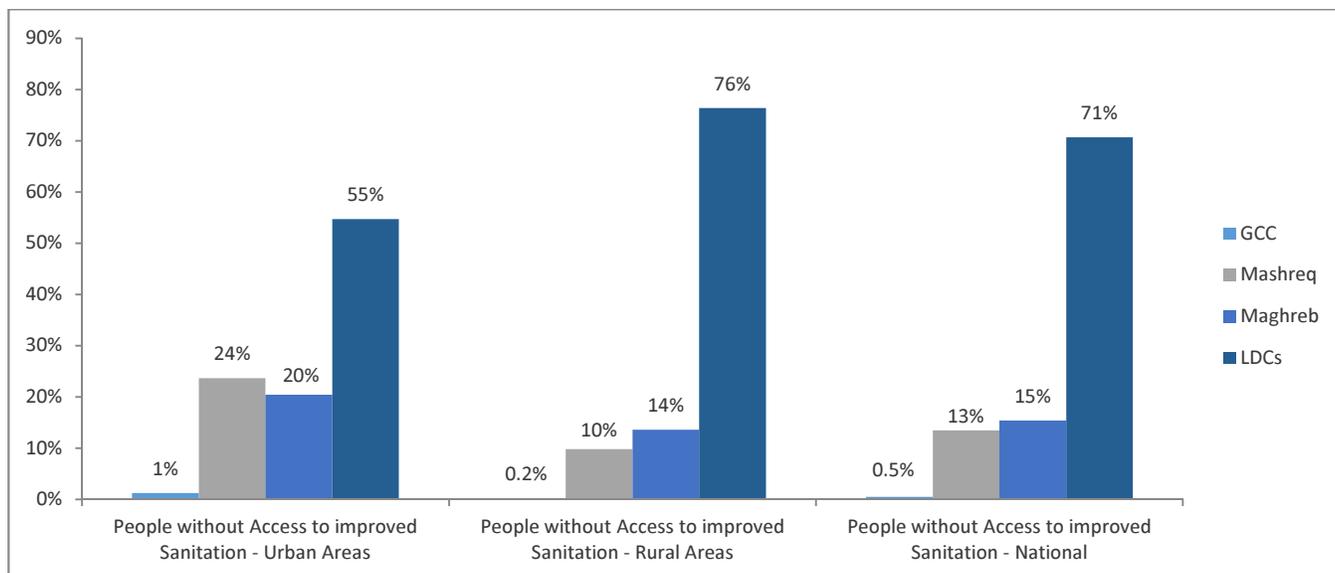


FIGURE 5 SUB-REGIONAL CONTRIBUTION TO THE DEFICIT IN ACCESS TO SANITATION IN THE ARAB REGION - 2012

Source: Calculations by ESCWA, based on national data sets available on the online database of the WHO/UNICEF Joint Monitoring Programme (2014), available at: <http://www.wssinfo.org> – accessed 10 November 2014.

In an effort to present a more detailed view of the progress achieved on the water-related MDG drinking water target at a regional level, Figure 6 compares access to drinking water from unimproved sources, improved sources and “piped on premises” sources (e.g., house connection to water network) for the years 1990 and 2012 in percentage and net population terms.⁸ The figures reveal significant progress in different types of access to drinking water in the Arab region. In terms of percentage coverage, access to improved water sources only increased by 3% (from 82% to 85%) between 1990 and 2012, but significant progress was made in the type of service improvement that took place with 17% (62 million) more people benefiting from a “piped on premises” water supply service. Nevertheless, those without access to improved water sources have increased by 14 million, reaching 15% of the population in 2012. This reflects the need to reorient investments in the water supply sector by giving priority to the unserved cohort before investing in improving the level of service for those already receiving an acceptable level of basic water supply services. Moreover, an apparent obstacle to improving water supply services in particular and sustainable development in general is the high level of population growth that seems to be offsetting the progress made in the region (ESCWA, 2013).

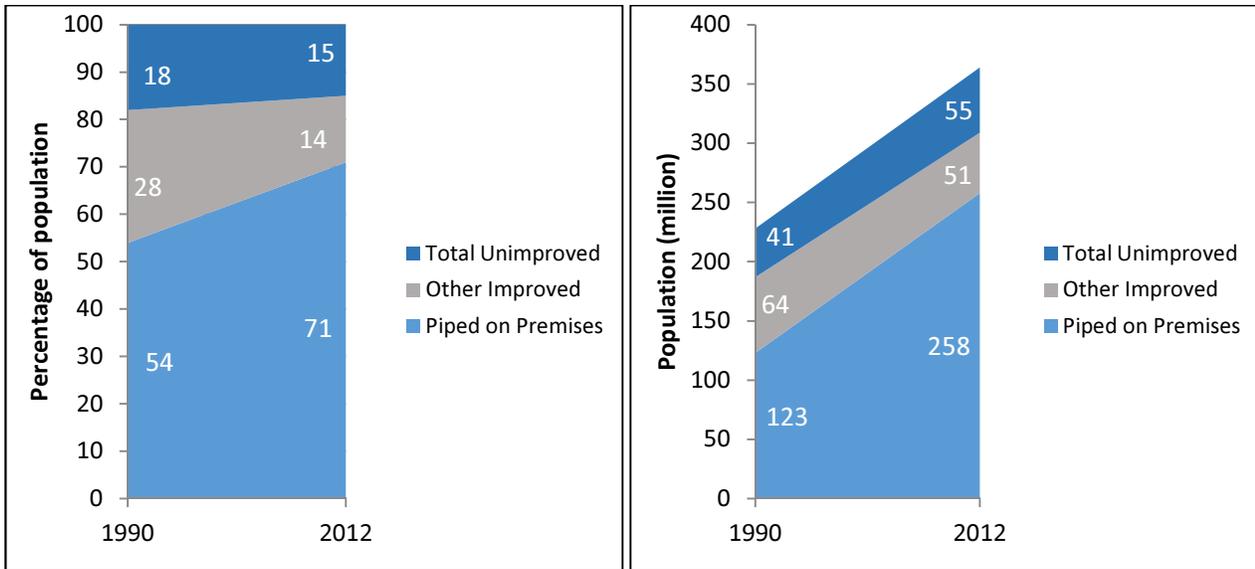


FIGURE 6 ACCESS TO DRINKING WATER SOURCES FOR 1990 AND 2012 IN THE ARAB REGION (IN PERCENTAGE AND POPULATION TERMS)

Source: ESCWA, based on the online database of WHO/UNICEF Joint Monitoring Programme (accessed 10 November 2014). In 1990, data are not available for Palestine and Somalia. In 2012, data are not available for Comoros, Libya, Qatar, Lebanon, Kuwait, United Arab Emirates and Tunisia.

The difficulty of ensuring universal access is further revealed when the figures are disaggregated between urban and rural areas, as shown in Figure 7. As of 2012, 92% of the urban population has access to improved drinking water sources compared to only 76% of the rural population. With around one in every four people living in rural areas still lacking access to an improved water source, and rural-to-urban migration increasing in many Arab countries and fostering social discontent, this indicates a need for governments and donors to include improved access to drinking water sources in their rural development investment portfolios, noting the multiplier effects that access to clean water has for socio-economic development, health and girls education in unserved and underserved areas (ESCWA, 2013).

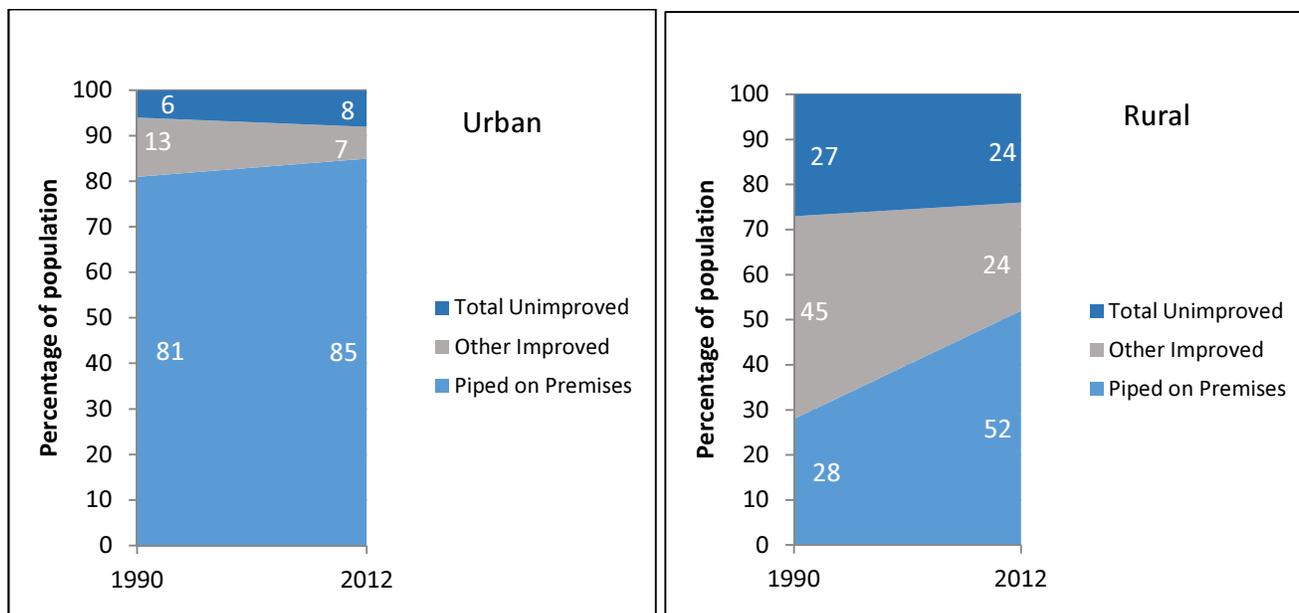


FIGURE 7 ACCESS TO DRINKING WATER SOURCES IN 1990 AND 2011 IN URBAN AND RURAL AREAS OF THE ARAB REGION

Source: ESCWA, based on the online database of WHO/UNICEF Joint Monitoring Programme (accessed 10 November 2014). In 1990, data is not available for Palestine, Libya, Qatar, Lebanon, Kuwait and United Arab Emirates. In 2012, data is not available for Comoros, Libya, Qatar, Lebanon, Kuwait, United Arab Emirates and Tunisia.

Figure 8 provides a detailed view of progress related to the MDG target on sanitation between 1990 and 2012 at the regional level. Access to improved sanitation facilities in the Arab region increased from 67% in 1990 to 82% in 2012, which translates into an additional 136 million people served. Despite this progress, the segment of the population relying on unimproved sanitation facilities decreased by only 9 million people between 1990 and 2012, which is attributed to the high population growth rate.

The disparity between urban and rural areas is wider for access to improved sanitation facilities compared to that of drinking water. As presented in Figure 9, while 92% of the urban population had access to improved sanitation facilities in 2012, only 69% of the rural population had access to such services. This inequality between urban and rural areas is a cause for concern and an indicator of the need for more balanced investment and development policies in the water sector.

Compared to the baseline year of 1990, improvements were achieved in many countries of the Arab region. Egypt, for example, witnessed a substantial decrease in the number of people without access to improved sanitation, with a reduction from approximately 16 million persons in 1990 to less than 3.3 million in 2012. Sudan, on the other hand, witnessed a significant increase in the number of people without access to improved sanitation, with an increase from 19 million people in 1990 to 28.5 million in 2012.

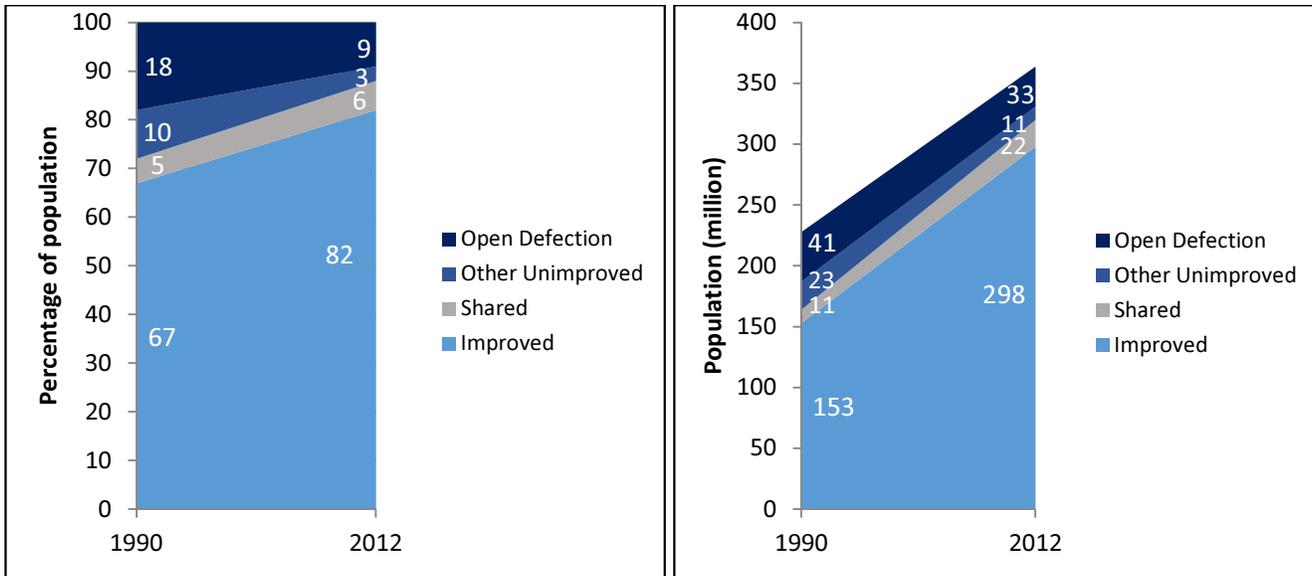


FIGURE 8 SANITATION COVERAGE TRENDS FOR THE YEARS 1990 – 2012 FOR THE ARAB REGION (IN PERCENTAGE AND POPULATION TERMS)

Source: ESCWA, based on the online database of WHO/UNICEF Joint Monitoring Programme – updated data 2012 (accessed 10 November 2014). In 1990, data were not available for Palestine, Iraq, Lebanon and Somalia. In 2012, data is not available for Comoros and Lebanon.

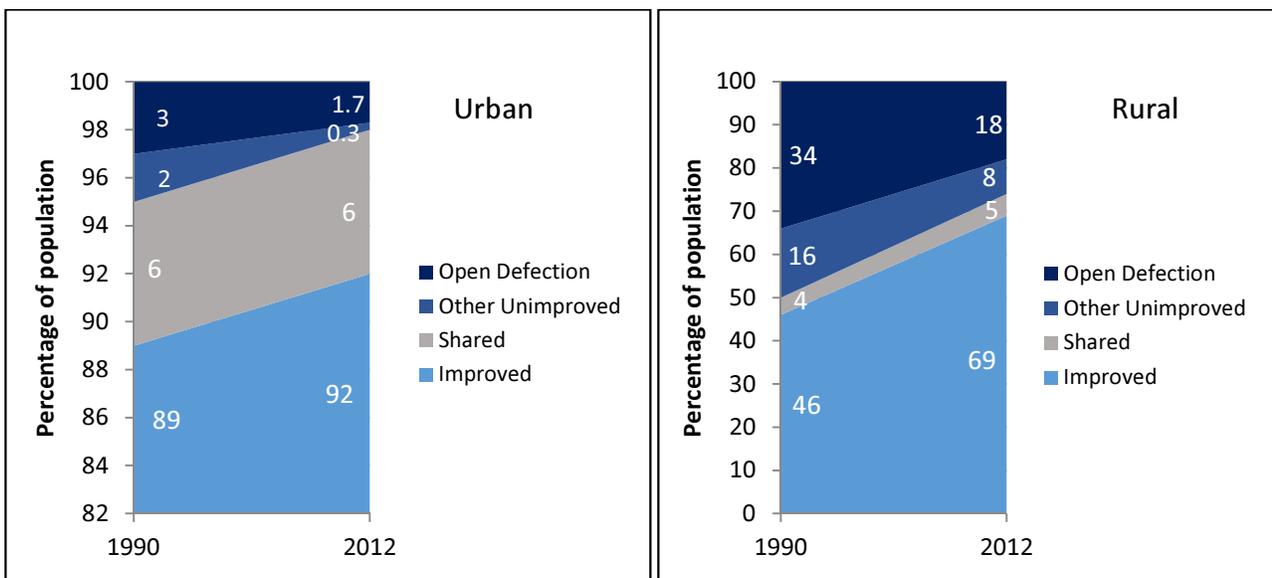


FIGURE 9 URBAN/RURAL SANITATION COVERAGE TRENDS FOR THE YEARS 1990 – 2012 FOR THE ARAB REGION

Source: ESCWA, based on the online database of WHO/UNICEF Joint Monitoring Programme (accessed 10 November 2014). In 1990, data are not available for Palestine, Iraq, Lebanon and Somalia. In 2012, data are not available for Comoros and Lebanon.

An analysis of the progress towards the MDG targets on water and sanitation at the sub-regional levels in terms of urban and rural access is also revealing. The JMP snapshot report for Western Asia issued in 2011 indicated that Western Asia, as a regional grouping, is on track to meet the MDG drinking water and sanitation target, though reaching the last 10-15 percent of the population would remain a challenge.⁹ However, looking at different sub-regional groupings for the Arab region leads to different conclusions.

Furthermore, looking at the achievement from a regional scale does not differentiate whether the progress was achieved in each country constituting the region, as long as the regional target is reached. Viewing the achievement from a national perspective requires that all countries achieve the target individually,¹⁰ and by doing so, collectively reflect success at the regional and global level as well. It is thus important to consider the constitution of the different regional and sub-regional groupings when conducting this type of analysis, as well as differences in access at the country level. The following section thus briefly considers the progress of urban and rural areas at the sub-regional levels in achieving the MDG water-related targets, assuming on one hand national and sub-regional target setting, and rural and urban areas on the other.

Based on the JMP database and the baseline information provided for the year 1990, sub-regional targets for halving the population without access to improved water sources and sanitation facilities needed to achieve the water and sanitation MDG target have been calculated, at the national level, as well as for rural and urban areas.¹¹

As presented in Figure 10, while the GCC and the Mashreq clusters have met or are on track of meeting the MDG target on water, the Maghreb and the LDCs will not meet the target by 2015.¹²

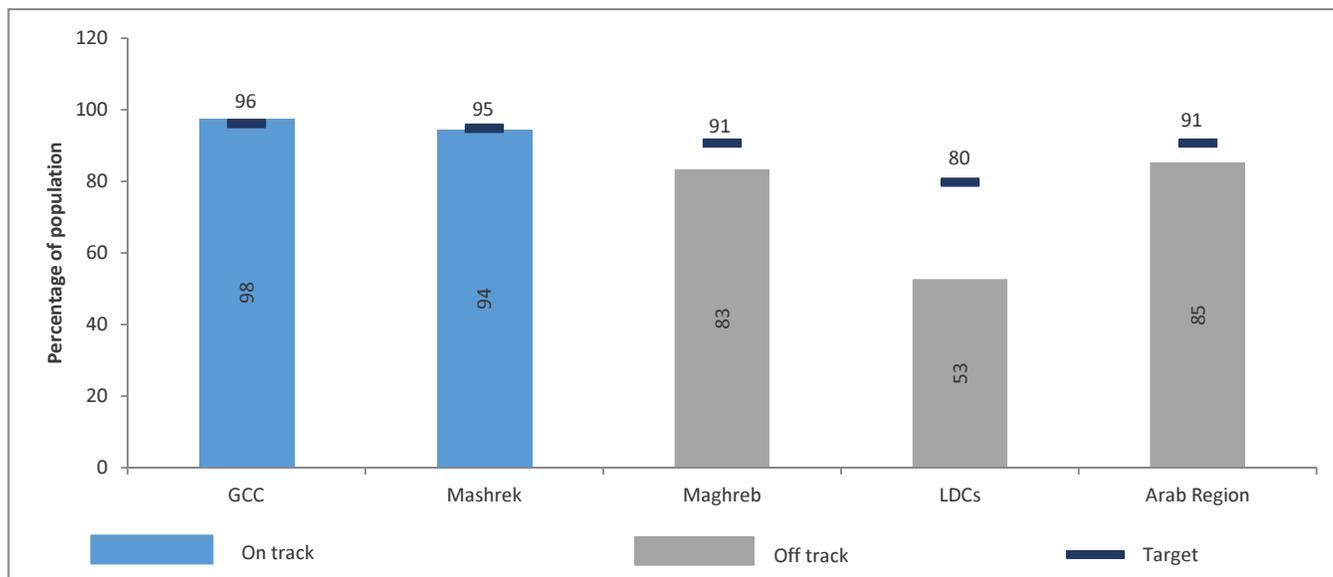


FIGURE 10 PROPORTION OF POPULATION USING IMPROVED WATER SOURCES (2012): SUB-REGIONS THAT ARE ON THE TRACK TO MEET THEIR MDG DRINKING WATER TARGET, AT THE NATIONAL LEVEL

Source: ESCWA, based on the online database of WHO/UNICEF Joint Monitoring Programme (accessed 10 November 2014).

In addition, when considering the urban and rural areas separately, the deficits in service provision is more apparent in the rural areas in both the Maghreb and LDCs sub-regions, as can be observed in Figure 11 and Figure 12.

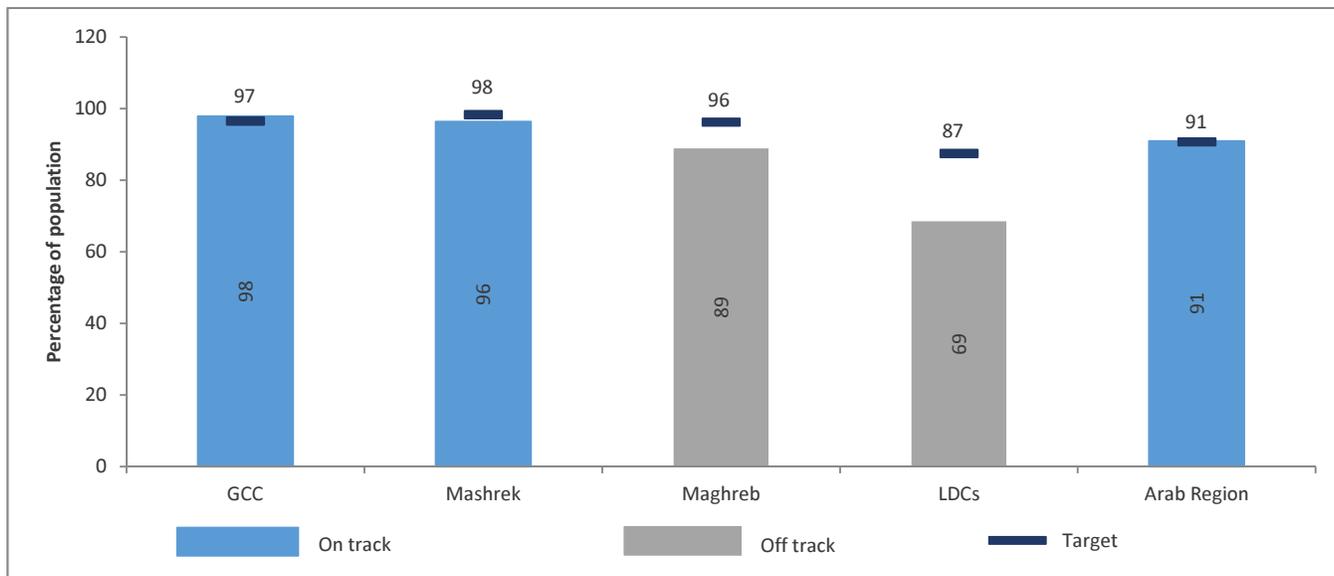


FIGURE 11 PROPORTION OF POPULATION USING IMPROVED WATER SOURCES (2012): SUB-REGIONS THAT ARE ON THE TRACK TO MEET THEIR MDG DRINKING WATER TARGET, URBAN AREAS

Source: ESCWA, based on the online database of WHO/UNICEF Joint Monitoring Programme (accessed 10 November 2014).

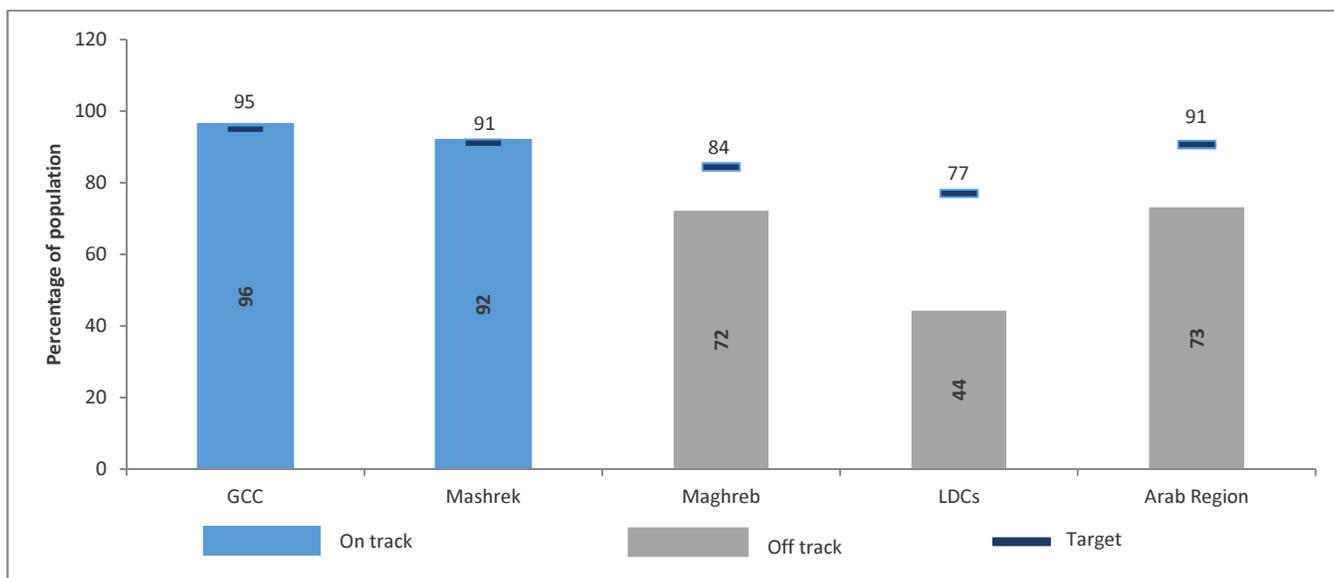


FIGURE 12 PROPORTION OF POPULATION USING IMPROVED WATER SOURCES ARAB REGION (2012): SUB-REGIONS THAT ARE ON THE TRACK TO MEET THEIR MDG DRINKING WATER TARGET, RURAL AREAS

Source: ESCWA, based on the online database of WHO/UNICEF Joint Monitoring Programme (accessed 10 November 2014).

Regarding the access to improved sanitation facilities (see Figure 13, Figure 14 and Figure 15), only the LDCs were found to be off track, with only one out of three countries, and only one out of five rural people in the LDCs, having access to improved sanitation facilities in 2012. Specifically, Djibouti, Mauritania, Somalia, Sudan and Yemen are not expected to be able to meet the MDG sanitation target by 2015.¹³

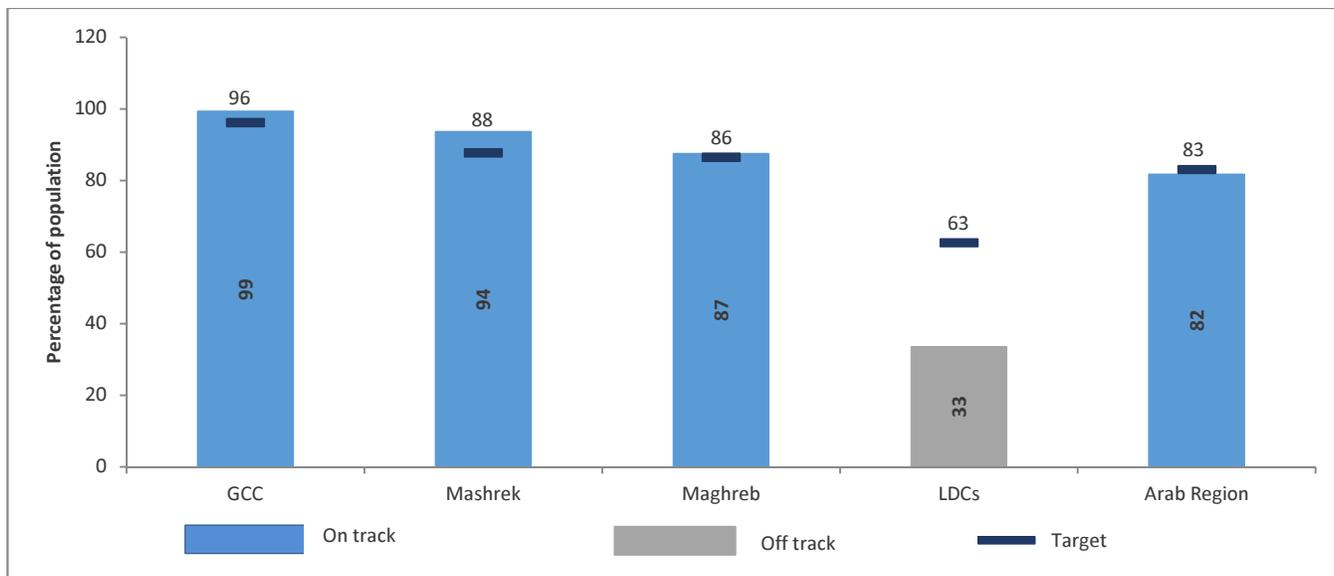


FIGURE 13 PROPORTION OF POPULATION USING IMPROVED SANITATION FACILITIES ARAB REGION (2012): SUB-REGIONS THAT ARE ON THE TRACK TO MEET THEIR MDG SANITATION TARGET, AT THE NATIONAL LEVEL

Source: ESCWA, based on the online database of WHO/UNICEF Joint Monitoring Programme (accessed 10 November 2014).

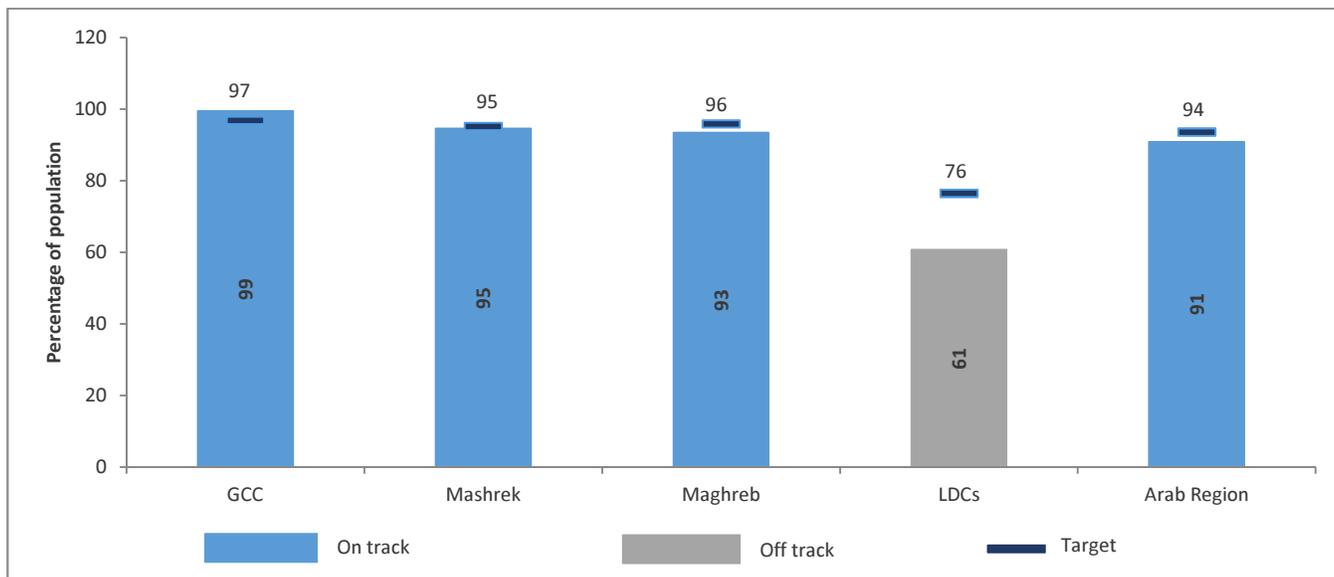


FIGURE 14 PROPORTION OF POPULATION USING IMPROVED SANITATION FACILITIES ARAB REGION (2012): SUB-REGIONS THAT ARE ON THE TRACK TO MEET THEIR MDG SANITATION TARGET, URBAN AREAS

Source: ESCWA, based on the online database of WHO/UNICEF Joint Monitoring Programme (accessed 10 November 2014).

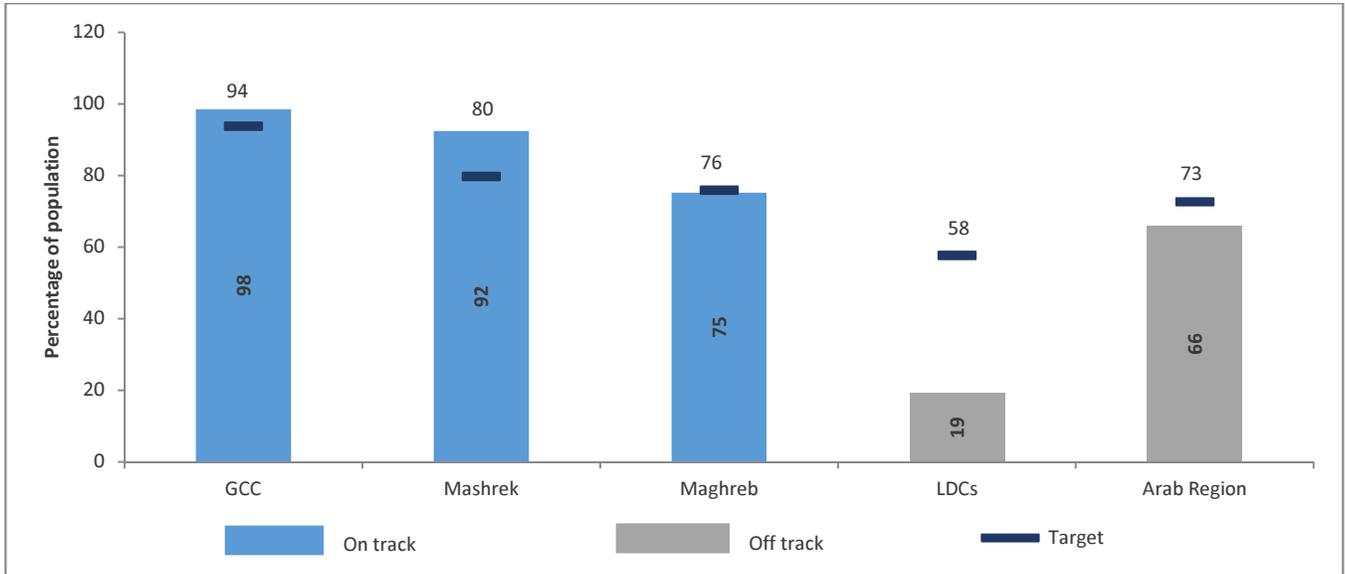


FIGURE 15 PROPORTION OF POPULATION USING IMPROVED SANITATION FACILITIES IN THE ARAB REGION (2012): SUB-REGIONS THAT ARE ON THE TRACK TO MEET THEIR MDG SANITATION TARGET, RURAL AREAS

Source: ESCWA, based on the online database of WHO/UNICEF Joint Monitoring Programme (accessed 10 November 2014).

A factor that may have contributed to the low progress in access to improved water sources is water scarcity and the difficulties faced by the rural population, in particular, in accessing improved water sources. Indeed, about half of the Arab population currently lives under extreme water scarcity (less than 500 m³ per capita annually), while 18 of the 22 Arab countries fall below the water poverty line of 1000 m³ per capita per year, as seen in Figure 16.

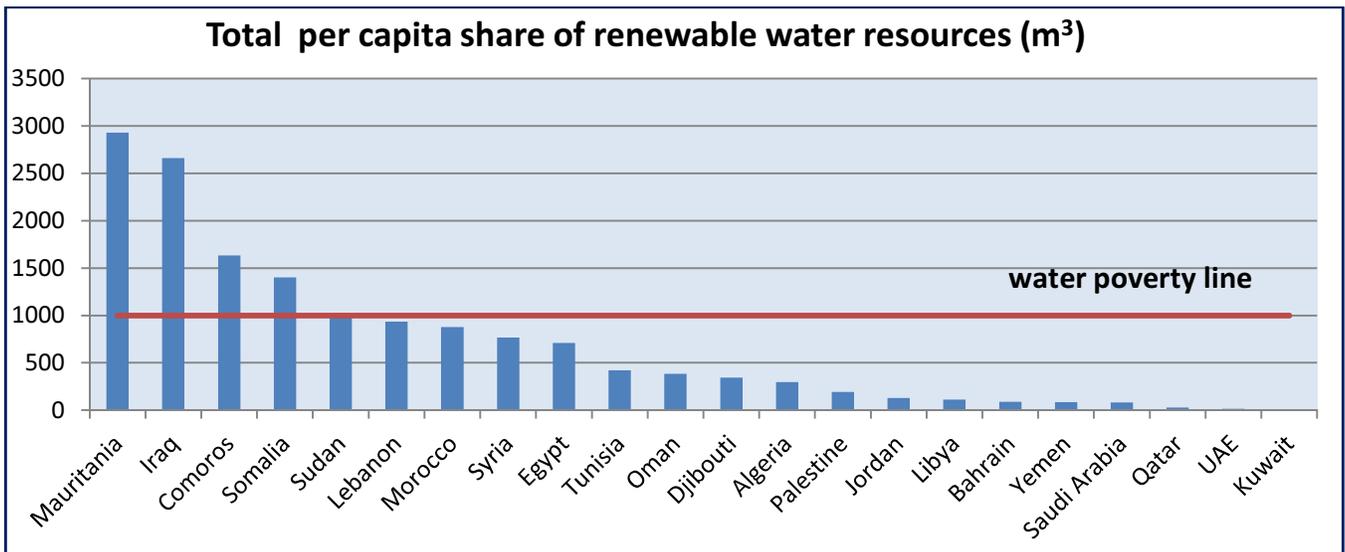


FIGURE 16 PER CAPITA SHARE OF RENEWABLE WATER RESOURCES IN ARAB STATES, 2012

Source: FAO, AQUASTAT (accessed 10 March 2015)

These water scarce conditions are important to consider as countries aim to improve access to improved water services and to satisfy the water needs of rural communities (ESCWA, 2013). The high population growth rates coupled with increasing urbanization of the Arab region exacerbate water scarcity and exert pressure on the technical and financial elements of the water supply and wastewater systems and demand the upgrade and expansion of existing infrastructure. The growing water shortages has also increased the frequency of water supply service interruptions, to the degree that intermittent supply patterns have become the norm in many countries of the region (ESCWA, 2013).

It should be mentioned that water resources management is further addressed in the MDGs under target 7A, which aims to “Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources”. This target is translated into indicator 7.5, which calls for monitoring the “Proportion of total water resources used”, without, however, setting a quantitative target against which progress and achievements will need to be measured. Table 1 presents the monitoring on this indicator as per national MDG reports.

TABLE 1 PROPORTION OF TOTAL WATER RESOURCES USED AS A PERCENTAGE OF TOTAL RENEWABLE WATER RESOURCES IN THE ARAB COUNTRIES (%)

Country	1990	1995	2000	2005
Algeria	38	--	52.7	--
Bahrain	161.1	--	--	205.8
Comoros	--	--	0.8	--
Djibouti	--	--	6.3	--
Egypt	--	102.3	113.8	--
Iraq	56.6	71.9	87.3	--
Jordan	100	--	--	90.5
Kuwait	--	0	2075	--
Lebanon	--	29.3	31.8	18.6
Libya	793.3	766.7	711.3	--
Mauritania	--	--	14	--
Morocco	38.1	38.8	43.5	--
Oman	85.5	--	94.1	83.9
Qatar	--	537.7	336	381
Saudi Arabia	680.8	--	--	936.2
Somalia	--	--	22.4	22.4
Sudan	24	20.1	57.6	--
Syrian Arab Republic	--	83.7	94.1	99.8
Tunisia	66.8	61.6	61.3	--
United Arab Emirates	--	1405	1556	1867
Yemen	139.1	--	161.1	168.6

Source: United Nations Statistics Division, Millennium Development Goal indicators, available at: <http://mdgs.un.org/unsd/mdg/data.aspx> (accessed 10 November 2014).

Note: In accordance with the articulated target, no data is reported for the years after 2005.

However, establishing such targets could be an important measure in water scarce regions like the Arab region, where growing water demand and limited water availability result in a negative trend for this indicator, and could also affect achievements otherwise reported for indicators measuring progress in accessibility to drinking water and sanitation. This has marginalized the importance of considering water resources management as a central factor that influences the achievement of the other MDG goals and targets, particularly in water scarce regions.

In addition, indicator 7.5 measures unsustainable use of water resources as a ratio of water use to water availability, and hence may be considered an indicator of natural water availability or scarcity within the context of the environmental sustainability goal. It thus fails to provide a holistic picture of all the external and internal factors that may also contribute to an unsustainable situation. Such factors could include natural aridity, low water use efficiency, or dependency on non-conventional water resources. Given the strong influence of these mostly natural factors that determine water availability, this indicator alone does not sufficiently reflect the efforts being exerted nationally or regionally to enhance water resources management through policies, plans, programs and projects. For instance, in water scarce regions, progress might well appear limited or negative, despite significant efforts being made to improve water resources management locally. Hence this indicator is not sufficient to reflect upon or measure progress or efforts that drive a development agenda towards better management of freshwater resources (see ESCWA, 2013). These are shortcomings of the MDGs raised in the post-2015 deliberations on the water-related SDGs.

2. The Proposed Water-related SDGs and Targets from an Arab Perspective

The Open Working Group (OWG) proposal for Sustainable Development Goals issued in July 2014 features a stand-alone goal on water (Goal 6), which includes targets related to drinking water, sanitation and hygiene. References to water are also found in the chapeau of the text as well as in 10 other proposed goals that include water-related targets associated with climate change, water-borne diseases, natural resources management, resource efficiency, pollution, production and consumption patterns, and oceans.

The Chapeau of the text emphasizes the Rio+20 outcome document, by noting that it "reaffirmed the importance of freedom, peace and security, respect for all human rights, including the right to development and the right to an adequate standard of living, including the right to food and water, the rule of law, good governance, gender equality, women's empowerment and the overall commitment to just and democratic societies for development." This demonstrates support for proposing universal access to human rights and basic services needed for development, which is consistently echoed in the universal visionary goals proposed by the Open Working Group.

Proposed Goal 6 (Ensure availability and sustainable management of water and sanitation for all) is entirely focused on the water sector and features 6 targets. Target 6.1 calls for a universal and equitable access to safe and affordable drinking water for all by 2030, while Target 6.2 calls for adequate and equitable sanitation and hygiene for all by the same target year, with special emphasis placed on the needs of women, girls and those in vulnerable situations. The omission of the mention of universal access to safe water in schools and health centers from Target 6.1, which featured in previous versions, is to be noticed and represents an important shortcoming, especially given that the water does not appear in Goal 4 (Ensure inclusive and equitable quality

education and promote life-long learning opportunities for all). Furthermore, ensuring "sustainable" sanitation, in addition to "adequate and equitable" sanitation in Target 6.2 would have been welcomed.

Target 6.3 tackles the issues of water quality, and wastewater treatment and reuse. The importance of water-use efficiency and sustainable withdrawals to substantially reduce the number of people suffering from water scarcity are covered in Target 6.4 and are of particular relevance to the Arab region. In addition, Target 6.5 features the implementation of integrated water resources management, including through transboundary cooperation, which is the first time that the management of shared water resources is referenced in a global development target. Target 6.6 tackles the protection and restoration of water-related ecosystems, and the importance of capacity building and participatory approaches for improving water supply and sanitation.

Other proposed goals also feature water-related issues and targets relevant for the Arab region. Proposed Goal 1 (End poverty in all its forms everywhere) stresses the importance of reducing the exposure and vulnerability of the poor to climate-related extreme events (Target 1.5), which are primarily water-based in the Arab region.¹⁴ In addition, Proposed Goal 2 (End hunger, achieve food security and improved nutrition, and promote sustainable agriculture) also refers to the need to enhance capacity for adaptation to climate change and extreme weather events, such as droughts and floods, particularly with regards to strengthening the resilience of the agricultural sector (Target 2.4); as well as to promoting sustainable agriculture and enhancing adaptation further entail raising agricultural water productivity (Target 2.3). This is further iterated in Goal 13, which aims to strengthen resilience and adaptive capacity to climate related hazards and disasters (Target 13.1) and strengthen capacity on climate change adaptation (Target 13.3), which are both pursued through water-related measures in the Arab region.

Proposed Goal 3 (Ensure healthy lives and promote well-being for all at all ages) emphasizes the importance of combating water-borne diseases (Target 3.3), and reducing hazards for water, and soil pollution and contamination (Target 3.9), which opens opportunities for explicitly linking water pollution to the achievement of human health targets.

Proposed Goals 4 and 5 in turn introduce gender consideration in the delivery of water services. Goal 4 highlights the importance of gender sensitivity when building and upgrading education facilities, which requires consideration of separate sanitation facilities for women and adolescent girls (4.a). Goal 5 aims at gender equality, including equal rights to natural resources, in accordance with national laws (5.a). The water-education nexus is well documented, most notably given the opportunities it offers for dealing with inequity in education, health conditions and disaster recovery (see Kitamura et al, 2014).

Goals 8 and 9 in turn suggest resource efficiency targets, which would need to take into consideration water resources in the Arab region. Specifically, Goal 8 aims at improved global resource efficiency in consumption and production (Target 8.4), and sustainable tourism (Target 8.9), which requires the development of strategies to ensure sustainable water resources management and delivery of sustainable water services to support the tourism sector in the region. The promotion of safe and security working environments for women migrants (Target 8.8) may also be considered to include access to gender-sensitive sanitation facilities that do not put women at risk. Goal 9 in turn focuses on resilient infrastructure and sustainable industrialization, and includes a target to increase resource use efficiency and the adoption of clean and environmentally sound technologies by 2040 (Target 9.4), which should include provisions to improve water use efficiency and reduce water pollution.

Proposed Goal 11 (Make cities and human settlements inclusive, safe, resilient and sustainable) specifically aims at ensuring access to housing and basic services (Target 11.1) and the reduction of the number of deaths related to water-related disasters (Target 11.5), which complements the targets raised in Goals 1 and 2 described above.

Proposed Goal 12 (Ensure sustainable consumption and production patterns) complements Targets 3.3 and 8.4, by explicitly highlighting the importance of achieving "environmentally sound management of chemicals and all wastes" and "reduce their release to air, water and soil to minimize their adverse impacts on human health and the environment". Proposed Goal 15 (Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss) introduces the concept of ecosystems services in Target 15.1, including the conservation, restoration and sustainable use of inland freshwater ecosystems, while Target 15.8 sets the year 2020 as a deadline to introduce measures to reduction of the impact of invasive alien species on land and water ecosystems. This is extended to the conservation and sustainable use of oceans and seas in Goal 14.

Analysis

The negotiations that took place under the umbrella of the Open Working Group were informed by a UN-Water paper that recommended a global water goal as well as a move away from a silos approach to managing water and sanitation. The proposed holistic approach considered the inter-linkages and interdependencies between the water sector and other development objectives by focusing on five clusters of issues related to the water sector, namely water resources; drinking water, sanitation and hygiene; wastewater pollution and water quality; water-related disasters and water governance (UN-Water, 2014b; UNDESA/UN-Water, 2014).

The OWG in its 10th Session (March-April 2014) also examined the inter-linkages between the water and sanitation goal, and the goals related to poverty eradication, sustainable agriculture, food security and nutrition, health and population dynamics, education, energy, economic growth, industrialization, sustainable cities and human settlements, and ecosystems and biodiversity.¹⁵ In addition, following the Swiss Position Paper on Water (2013)¹⁶ which was further supported by the United Nations Secretary General Advisory Board (UNSGAB) and the Global Water Partnership (GWP), the successive OWG focus areas documents have stressed that a water-secure world entails the consideration of the whole water cycle.¹⁷

A critical look at the dedicated water goal (Goal 6) reveals strong social inclusion components, namely, target 6.1, "universal and equitable access to safe and affordable drinking water for all", and target 6.2, "achieve access to adequate and equitable sanitation and hygiene for all". In addition, Goal 6 includes areas omitted from the MDGs, most notably hygiene and water pollution.

However, while the goals articulated in the OWG final document are strong in their reference to supporting universal access 'for all' in various sectors, the present formulation of their associated targets need further development to be measurable and actionable. For instance, Target 6.6 on ecosystems is difficult to measure, while Target 6.5 raises the importance of integrated water resources management (IWRM) and transboundary water cooperation, but seemingly avoids recommending any means for measuring progress. Indeed, while the adoption of IWRM plans was articulated as a goal in the MDGs, the implementation of those plans remained elusive, which may be why the need for implementation is simply addressed in the target. Reference to IWRM

may also be a means through which more integrated approaches to natural resources management efforts may be eventually introduced into the SDGs, since the final document expressly avoids reference to a water-energy-food nexus, as was the case during negotiations on the Rio+20 outcome document.

An important striking omission from the OWG proposal is that water is not referenced in the proposed Goal 7 (Ensure access to affordable, reliable, sustainable, and modern energy for all), which may be because of political reservations associated with referencing the water-energy nexus, despite the importance of highlighting the inter-linkages between these two sectors at the global and regional levels. The constraints water scarcity places on energy services provision, and vice-versa, are well documented at a global level (see WWAP, 2014 and ESCWA, 2015b) and are of particular relevance for the Arab region, given, in particular, the high levels of hydrocarbons production in the region, as well as the region's desalination needs which are highly energy intensive and raise important environmental concern.

When fiscal space allowed it, several countries in the Arab region turned to water desalination to secure water supply, making the region the largest desalination market in the world and the Gulf Cooperation Council countries host to nearly half of the world's desalination production capacity. However, the energy requirements and environmental impacts of desalination processes on coastal waters are important to consider. On one hand, energy is a significant factor in the economics of desalinating waters, and the high energy and capital intensities of the desalination industry increase the opportunity costs of water investments and raise energy security concerns, even in the case of the oil-exporting countries in the region. On the other hand, energy consumption for water can significantly impact sectoral, national and regional energy intensity levels, and is an important determinant of the carbon footprint and other environmental externalities related to water services delivery. The energy costs of managing and minimizing the environmental impacts of desalination (i.e. brine management and disposal) are further concerns, as are the energy intensities of groundwater extraction, water pumping, water purification and transfer systems, and water treatment.

The issue of produced water in the oil and gas sectors is of further concern for water security and environmental sustainability in the case of the Arab region. According to the International Energy Agency, by 2035, global oil production will have to increase to 97 million barrels per day to meet projected growing demand, while global gas production will have to reach 5 trillion cubic meters per year. At this horizon, the Arab region, which accounted for approximately 33% and 16% of the global oil and gas supply respectively in 2012, is expected to play an increasing central role on the global hydrocarbons markets. With worldwide average production of produced water estimated at around 210 million barrels per day, an approximate average water cut of 3 to 1 (which reaches 10 to 1, in many cases), the economic and environmental values embedded in co-produced water are being increasingly recognized, with the oil and gas industry (but also governments, the civil society, and other stakeholders) progressively looking at produced water as a commodity. Given the region's large hydrocarbons endowments which cohabit with water scarcity, taking stock of these developments and appropriately reaping the economic and environmental benefits of produced water constitutes an important opportunity for the region.

The absence of mention of the special conditions of conflict-affected and transition economies is also a serious omission for an Arab perspective, even though some of the concerns are partly covered in Goal 16. Donor related challenges in conflict affected economies should be more mainstreamed in the proposal, in particular in view of the importance of these funds in financing WASH infrastructure in the LDCs.

Finally, the absence of the mention of the human rights to water and sanitation, except when the Rio+20 outcome document is cited in the Chapeau, is to be noted. Indeed, a paradigm shift at the global level has occurred in the way in which access to drinking water and sanitation should be pursued by development practitioners, namely the determination that access to basic water services should be considered a human right (see ESCWA, 2013). This has been reiterated in United Nations forums since its articulation by the United Nations General Assembly in resolution 64/292 (July 2010), and by the United Nations Human Rights Council in its resolution 15/9 (October 2010). The recognition of this right will lead to the realization that drinking water and sanitation services become a legal entitlement that requires governments to ensure the development and provision of these services to all citizens without discrimination. The shift towards a human rights approach based on universal access for all necessitates reconsidering the current monitoring indicators to include additional criteria like availability, reliability, and affordability. While partly addressed in the OWG proposal, these concerns should be more clearly presented, with due attention paid to ensuring the water rights of occupied peoples.

Furthermore, the following issues should be considered with regards to the current and prospective challenges facing the water sector within the Arab region:

- The impacts of climate change and climate variability;
- Droughts, which currently affect over two-thirds of the land area of ESCWA member countries;
- Flash floods which continue to ravage human settlements in some parts of the region;¹⁸
- The dependency of Arab States on transboundary water resources; and
- The impacts of conflicts on governance and the sustainable delivery of water and sanitation services.

Unaccounted for water, damage to water networks due to armed conflicts, increasing energy costs associated with pumping water from more distant or deeper water sources are further concerns which are leading to intermittent water supply and questionable water quality in the region. Sea water intrusion (notably due to over pumping), naturally contaminated deep groundwater (salinity, heat, fluoride), and water pollution from domestic and industrial wastewater are also important issues to consider in the case of the Arab region.

Looking ahead, high economic growth, population dynamics, changing lifestyles, increased urbanization, as well as other developmental and societal transformations, will continue to stress the region's scarce water resources and strain the ability of Governments to ensure sustainable access to water supply and sanitation services for all. In this context water scarcity appears as one of the main developmental challenges in the Arab region.

However, competing demands, trade-offs and opportunities for synergies in integrated natural resource management play out differently at the sub-regional level. For instance, the concerns and prospects of the hydrocarbons endowed GCC countries, with important financial resources and high per capita consumption levels, high urbanization rates, relatively well developed physical infrastructure, and developing industrial sectors, markedly differ from the challenges of the LDCs with limited fiscal space, high poverty levels, important rural populations, high share of the agricultural sector in total national employment, and relatively more water resources. In addition, the Arab countries differ in their sources and quality of available water resources; natural and built infrastructure and technologies for water storage, distribution, treatment and usage; fossil fuel endowments and energy mix; land use and land cover; system ecological characteristics; and

observed and projected precipitation and temperature patterns. This signals the importance of ensuring a flexible SDGs framework that allows national level target-setting to address complex idiosyncratic local development challenges.

The Post-2015 Agenda will have to include in a coherent framework, effective accountability mechanisms which are inclusive, participatory, bottom-up, decentralized, and multi-layered, engaging regional and national levels through their specificities. The water goal, through its transversality and many inter-linkages with most of the other sustainable development goals, challenges the design and implementation of such a framework, perhaps the most.

3. A Regional Success Story: The MDG+ Initiative

As elaborated above, the current MDG water and sanitation targets fall short of clarifying the level and quality of the services accessed by people. For instance, while the JMP report estimates that 85% of the population in the Arab region has access to improved water sources, this does not mean that 85% of the total population has regular, reliable or affordable access to water supplies, or that the quality of water supplied is fit for drinking. Arab Governments recognized this shortcoming at the first session of the Arab Ministerial Water Council held in 2009, and called for the formulation of a set of regional-specific indicators and the establishment of a regional monitoring mechanisms to better assess access to clean drinking water and improved sanitation in the Arab region.¹⁹

The resulting Regional Initiative for Establishing a Regional Mechanism for Improved Monitoring and Reporting on Access to Water Supply and Sanitation Services in the Arab Region (MDG+ Initiative) was launched under the auspices of the Arab Ministerial Water Council in 2010. The initiative builds upon the JMP indicators, by also taking into consideration the quality, sustainability, reliability, and affordability of the water supply and sanitation service in Arab States, as well as other environmental considerations like wastewater collection, treatment and reuse. Table 2 lists in the MDG+ indicators that were approved by Arab water ministers.²⁰

TABLE 2 MDG+ INDICATORS FOR MONITORING ACCESS TO WATER SUPPLY AND SANITATION SERVICES IN THE ARAB REGION

MDG+ Indicators	
Water Supply	Sanitation
<ul style="list-style-type: none"> • Water consumption • Continuity of supply • Water quality • Distance to source • Tariff structure • Affordability 	<ul style="list-style-type: none"> • Treated quantity • Treatment type • Reuse utilization • Reuse type • Tariff structure • Affordability

The collection of data on the MDG+ indicators is institutionalized at the regional and national levels. Country teams are headed by a representative of the water ministry and water utilities, who are supported by a statistical focal point. Training, monitoring and reporting on indicators is provided by ESCWA and an MDG+ Unit and knowledge platform hosted by the Arab Countries Water Utilities Association (ACWUA). Annual reports and progress reports are presented to the Arab Ministerial Water Council. The initiative is financially supported by the Swedish International Development Cooperation Agency (Sida).

4. Conclusion

Hence, Arab States are seeking to improve monitoring and reporting on access to water supply and sanitation services, are considering water resources management issues alongside factors affecting the delivery of basic services. They are also pursuing implementation through a regional lens that takes into consideration regional circumstances and conceptions. These efforts are further evidenced by the adoption of the Arab Strategy for Water Security in the Arab Region to Meet the Challenges and Future Needs for Sustainable Development 2010-2030 by the Arab Ministerial Water Council in 2012, and its associated action plan in 2014.

These global and regional perspectives aimed at strengthening water policies for the achievement of water goals are also echoed in country-level. For example, the new constitution of Tunisia, adopted in January 2014 establishes the human right to water and the preservation of water and its rational use as an obligation of the state and society (MARSAD, 2014). The adoption and achievement of a set of water-related sustainable development goals will thus require political will, effective instruments of implementation and sound monitoring and reporting mechanisms that take into consideration regional and national specificities in a post-2015 development agenda.

Endnotes

¹ WHO/UNICEF Joint Monitoring Programme on Water Supply and Sanitation, *Progress on sanitation and drinking-water – 2014 update*. Geneva, World Health Organization, 2014, available at: http://www.wssinfo.org/fileadmin/user_upload/resources/JMP_report_2014_webEng.pdf (accessed 10 November 2014).

² WHO, *Preventing diarrhoea through better water, sanitation and hygiene: Exposures and impacts in low-and middle-income countries*. World Health Organization, Geneva, 2014.

³ *ibid.*

⁴ United Nations, World Bank, European Union and African Development Bank, "Recovering from the Ebola Crisis: A summary report", 2015, pp. 10, 19, available at: <http://www.social-protection.org/gimi/gess/RessourcePDF.action?ressource.ressourceId=50558> (accessed on 7 April 2015).

⁵ United Nations General Assembly, "Report of the Open Working Group of the General Assembly on Sustainable Development Goals," A/68/970, 12 August 2014.

⁶ UN-Water, *Investing in Water and Sanitation: Increasing Access, Reducing Inequalities, UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water (GLAAS 2014)*, WHO, 2014.

⁷ After the adoption of the Millennium Declaration, the United Nations system has largely adopted the WHO/UNICEF JMP as the official instrument to measure progress towards achieving the MDG drinking water and sanitation target. The JMP publishes reports and updates that show the progress achieved at the country level in terms of the percentage of population (national, urban and rural) that have access to drinking water sources and sanitation facilities. However, there are slight discrepancies between the results presented in JMP published reports and those in the country updates available on line, which is largely attributed to rounded estimates published reports. JMP publications and country level data files are available at: www.wssinfo.org.

⁸ Due the lack of complete data sets for all Arab countries, available national averages were used in calculating the regional and sub-regional trends between 1990 and 2012.

⁹ WHO/UNICEF JMP, 2011. "Snapshot of Drinking-water and Sanitation in the MDG region of Western Asia – 2010 Update: A regional perspective based on new data from the WHO/UNICEF Joint Monitoring Program for Water Supply and Sanitation," p.3, available at: http://www.wssinfo.org/fileadmin/user_upload/resources/1284626555-Western_Asia_snapshot_2010.pdf

¹⁰ For country level analysis, see *ESCWA Water Development Report 5: Issues in Sustainable Water Resources Management and Water Services in the Arab Region*, E/ESCWA/SDPD/2013/4, 13 December 2013, chapter II.

¹¹ As in ESCWA (2013), targets are calculated as follows, noting TU = Target of proportion of people without access to safe drinking water and basic sanitation: $TU = 0.5 * (\text{proportion of people without access to safe drinking water and basic sanitation in 1990 (baseline year)})$. Then, target of proportion of people with access to safe drinking water and basic sanitation = $100 - TU$.

¹² Bahrain, Djibouti, Egypt, Iraq, Jordan, Kuwait, Lebanon, Morocco, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, Tunisia and the United Arab Emirates have met or are on track to meet the MDG drinking water access target, while Algeria, Mauritania, Palestine, Somalia, Sudan, and Yemen still face major challenges. See ESCWA (2013).

¹³ No complete estimates are available in the JMP online database for Comoros and Lebanon for 2012.

¹⁴ Climate change assessment and adaptation is largely a water resources management challenge in the Arab region; for more information see the United Nations-League of Arab States Regional Initiative for the Assessment of the Impact of Climate Change on Water Resources and Socio-Economic Vulnerability in the Arab Region (RICCAR) at: www.escwa.un.org/RICCAR.

¹⁵ See Open Working Group on Sustainable Development Goals 10th session, 2014, "Annex 1: Interlinkages".

¹⁶ The Swiss Position Paper on Water (2013) featured "A Water-secure World" an overarching global goal on water; and three sub-goals related to WASH, Wastewater Management and Water Quality. see <http://www.gwp.org/Global/About%20GWP/Publications/Reports/Country%20Consultation%20Reports/Swiss%20Position%20Paper%20on%20Water.pdf>

¹⁷ The High Level Panel (HLP) and UN Global Compact also proposed a dedicated goal for water and sanitation. Meanwhile the Sustainable Development Solutions Network (SDSN) suggested that water-related targets should be positioned under goal areas to which they have the strongest links (UNDESA/UN WATER, 2014; ESCWA, 2013).

¹⁸ Most notably Oman, Palestine, Saudi Arabia and Tunisia.

¹⁹ For more information on the MDG+ Initiative, see ESCWA (2013), ESCWA (2015a) and visit <http://www.acwua.org/mdg/>

²⁰ The indicators and a standard unified template for collecting data on the MDG+ indicators were approved at the third session of the Arab Ministerial Water Council in June 2011 through Resolution 35, Item 2.

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