Water Security: A Challenge Facing Sustainable Development Goals in the Arab Region

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Asian Population and Development Association (APDA)

Forum of Arab Parliamentarians on Population and Development (FAPPD)

Bahrain Shura Council

Overview

The Arab region is among the most water-scarce areas globally. Of the 22 Arab countries, 19 fall below the annual threshold for water scarcity in renewable resources, defined as 1,000 cubic meters per person. Additionally, 13 countries fall below the absolute water scarcity threshold of 500 cubic meters per person per year. This situation implies that approximately 392 million people in the Arab region live in countries facing water scarcity or absolute water scarcity.

Water scarcity in the Arab region poses a serious challenge, threatening the achievement of Sustainable Development Goals (SDGs) and the realization of the fundamental human right to access water and sanitation. Addressing this challenge requires coordinated action across different sectors and measures at all levels of society and governance. Water scarcity, as a barrier to development, extends beyond issues of water availability alone, impacting food and social security as well as biodiversity.

In this context, the **Forum of Arab Parliamentarians on Population and Development (FAPPD)**, in collaboration with the **Asian Population and Development Association (APDA)** in Japan and with support of the **Japan Trust Fund (JTF)** and **United Nations Population Fund (UNFPA)**, organized this meeting held on October 26, 2024, in the Kingdom of Bahrain. The gathering included Bahraini parliamentarians from committees focused on population and development, along with representatives from civil society organizations, experts, academics, and government officials.

Program

Time	Session
10:00–10:15	Registration
10:15–11:15	Session One: Water Security and Sustainable Development Goals
11:15–11:45	Discussion
11:45–12:00	Coffee Break
12:00–13:00	Session Two: Innovation for Sustainable Water Management
13:00–13:30	Discussion
13:30–14:30	Lunch Break
14:30–15:30	Session Three: The Importance of Water and Its Essential Role in Supporting Sustainable Development
15:30–16:00	Discussion
16:00–16:15	Coffee Break

16:15–16:30	Notes and Closing of the Meeting

At the beginning of the meeting, Dr. Mohamed Al-Samadi, Secretary-General of FAPPD, expressed his gratitude and appreciation to the Bahraini Parliamentary Committee on Population and Development for their tremendous efforts in organizing this meeting in the Kingdom of Bahrain to discuss an important issue: water security in the Gulf countries and SDGs. He highlighted the FAPPD role in supporting the efforts of parliamentarians and its ongoing collaboration with partners, including APDA, UNFPA, and JTF.

Session 1: Water Security and Sustainable Development Goals

In this session, His Excellency Dr. Muneer Ibrahim, MP and a member of the Committee on Water, Environment, and Public Utilities, presented on water security and SDGs. He stated that, globally, water is the fundamental pillar for achieving SDGs across their economic, social, and environmental dimensions, as water security is an essential requirement for their realization. The relationship between water and sustainable development is reciprocal, and this interconnectedness poses significant challenges in the Arab region, especially given the current water situation. This necessitates the development and implementation of effective policies and solutions to ensure sustainable water resources for various uses. The sessions in this section focus on the following key topics:

- Water Security in National and Regional Strategic Planning
- Economic and Social Assessment of Water Allocation
- Economics of Water Management
- Institutional Development and Governance as a Foundation for Enhancing Water and Sanitation Services

Based on the points mentioned above, water security involves ensuring that all members of society have continuous access to adequate quantities of safe water for all necessary uses. Water security is a high priority for many countries worldwide that face limited water resources. Researchers in the field of water science have set the water poverty line at 500 cubic meters per person annually, while 1,000 cubic meters of freshwater per person is considered the threshold for achieving water security. This is also linked to food security, with reports indicating that producing an individual's annual food supply requires over 2,000 cubic meters of water.

Thus, water security in the Arab world is now critically at stake, as annual usable water resources fall below 40 billion cubic meters. A large portion of these resources is lost to evaporation, infiltration into the soil, and additional amounts are necessary to sustain river flows to their endpoints. Any country that uses 40% or more of its total annual water resources is considered to be facing severe water scarcity according to the Water Scarcity Index, also known as the Water Sustainability Index.

He emphasized that the Arab world needs a Water Security Council composed of qualified experts with the authority to manage water resources and link them to shared interests. This council would also benefit from laws governing water distribution among riparian countries and accelerate progress on this issue. The council should be efficient and prudent in utilizing incoming water resources, balancing water inflows with usage, and prioritizing water use without exceeding renewable supplies. Additionally, it should ensure a strategic water reserve to address drought years effectively.

This requires consideration of water supply by managing water resources in a way that maximizes water availability in the Arab region. This can be achieved by increasing external water imports on one hand and boosting the volume of water harvested domestically on the other. On the demand side, water management must be scientifically approached to enhance the productivity of each water unit, with distribution among various uses based on their marginal outputs.

He also pointed out that each unit of water, whether in rivers, streams, irrigation channels, storage tanks in deserts, lakes, or household pipes, carries a cost—part of which is a social cost borne by society. This includes the costs of water storage, flow regulation, and protection from pollution through dams, barriers, management, and water harvesting efforts and expenses. Therefore, everyone involved in this field must calculate the cost per unit of water, which may vary from year to year and from place to place.

He also added that achieving SDGs for water in the Arab region requires transformative changes, including:

Changing how we manage water today: shifting from a linear use-and-disposal model to a circular economy model, moving towards more resilient infrastructure, valuing water, and diversifying water resources.

Changing how we finance water: involving the private sector, adjusting water pricing, and reducing the high levels of non-revenue water in the region.

Changing how we collaborate at various levels: ensuring no one is left behind, transitioning from siloed water management to a systems-thinking approach—linking sectors—and enhancing regional cooperation and agreements.

Session 2: Innovation for Sustainable Water Management

Hon. Hassan Ibrahim, MP and rapporteur of the Water Committee, presented on Innovation for Sustainable Water Management. He emphasized that resolving the water crisis is essential for a livable future on our planet. Whether water is overly abundant, severely scarce, or highly polluted, it presents a triple threat exacerbated by climate change, depriving billions of people of access to clean, safe water and sanitation services. This threatens economies, encourages migration, and may fuel conflict. We need global action to establish water security to enable inclusive and resilient green growth while addressing the interconnected relationship between water, climate, and conflict.

He added that despite the progress made, we are falling behind in achieving the Sustainable Development Goals related to water, which directly affect inclusive development. Current trends indicate that by 2030, 1.6 billion people will lack access to safe drinking water, 2.8 billion

will be deprived of safe sanitation services, and 1.9 billion will be without basic hygiene facilities.

He indicated that the four solutions for improving water management are investment, innovation, information, and institutions. The water sector needs a substantial increase in public and private funding to meet demand. Innovation can enhance efficiency, lower costs, and reduce waste and losses. Information—through data exchange and global knowledge—assists governments in improving water security and sanitation services, while also supporting the establishment of partnerships and targeted investments. Institutional reform can improve the investment-supportive environment, increase efficiency, boost economies, and create job opportunities.

He stated that investment in water supports people, the planet, and the economy—it plays a crucial role in accelerating the achievement of the Sustainable Development Goals. Globally, the investment needs for the water sector exceed $1.37 trillion and must increase sixfold from current levels to meet the sixth Sustainable Development Goal (ensuring availability and sustainable management of water and sanitation for all) by 2030. Currently, water accounts for less than 2% of public spending, and private investment levels in this sector are also low in low- and middle-income countries.

We need funding and action from both the public and private sectors, with a focus on countries and regions that are off track in achieving the Sustainable Development Goals related to water. This will yield significant benefits: every dollar invested in building resilience returns four dollars by reducing healthcare costs, increasing productivity, and enhancing quality of life and job opportunities, especially for women and youth. Increasing investment in water will improve the health of people and ecosystems, provide better services for farmers, enhance water storage facilities for long-term resilience, and deliver sustainable benefits at the level of public finances. The positive outcomes will be particularly tangible in countries vulnerable to climate risks and disasters, where conflicts and climate change exert immense pressure on communities.

He added, “Bahrain has adopted strategies and initiatives to improve the management of water resources, support the strategic water stock, and increase the area and sustainability of rainwater harvesting efficiency to enhance natural groundwater resources.” Bahrain is implementing advanced technical solutions to utilize treated wastewater for irrigation needs, which also helps reduce environmental pollution, address the impacts of climate change, and minimize the depletion of natural water resources.

He noted that Bahrain, through the Water Security Strategy 2030 launched by the Ministry of Energy and Environment, aims to ensure the sustainability and continuity of access to water under both normal conditions and extreme emergencies. The key targets of the strategy include reducing total water resource demand by 21%, increasing the water productivity index to $110 per cubic meter, lowering the water scarcity index by three degrees, and raising the percentage of treated water reuse to 95%.

He affirmed that Bahrain has been able to cover a significant portion of irrigation water needs by utilizing numerous wastewater treatment plants spread across the country. Bahrain has more than 40 wastewater treatment plants, in addition to several operated by the private sector. The total design capacity of the wastewater treatment plants nationwide is 3 million cubic meters, with an annual production of treated wastewater reaching 768 million cubic meters. Seventy-three percent of the treated water is reused primarily for irrigating green spaces in urban areas. According to the Sustainable Development Goals indicators, safe and well-managed sanitation services and treated wastewater services are excellently available to all residents in Bahrain.

Session 3: The Importance of Water and Its Essential Role in Supporting Sustainable Development

In this session, Dr. Karim Rashid, MP, delivered a comprehensive presentation on the importance of water and its essential role in supporting sustainable development. Water impacts all aspects of development and is closely linked to nearly every Sustainable Development Goal. It drives economic growth, supports healthy ecosystems, and is essential for life itself.

Approximately two billion people worldwide lack access to safely managed drinking water services, while around 3.6 billion suffer from inadequate sanitation services. Additionally, 2.3 billion people lack basic handwashing facilities. Factors such as gaps in access to water supply and sanitation services, a growing population, more water-intensive growth patterns, increasing variability in rainfall, and pollution in many areas combine to make water one of the greatest risks threatening economic progress, poverty eradication, and the achievement of sustainable development.

The repercussions of this are evident at local, national, cross-border, regional, and global levels in today's highly interconnected and rapidly changing world. The poorest and most vulnerable populations will feel these consequences disproportionately, as climate change manifests itself through water crises. Of every ten natural disasters, nine are water-related. Water-related climate risks will permeate through food, energy, and urban and environmental systems. If we are to achieve climate and development goals, water must be at the core of adaptation strategies.

To enable effective climate change adaptation, activities should reflect the importance of water management in reducing vulnerability to risks and building resilience against climate change, prioritizing the following actions:

- Moving Beyond Traditional Integrated Water Resources Management: Efforts to reduce greenhouse gas emissions also depend on providing reliable water resources, as all risk mitigation measures require water to achieve the desired success.
- Encouraging Investment and Solutions that Include Managing "Natural Infrastructure": This involves leveraging ecosystem services provided by healthy watersheds and coastlines, and recognizing their benefits in achieving climate-resilient development in the food and energy sectors.
- Supporting Large-Scale Actions to Build Resilience to Climate Change: This can be accomplished by integrating watershed management, sustainable infrastructure, and empowerment through adaptive institutions that learn and adapt.

Economic Growth: "An Activity That Requires Water": Water is crucial for production, and diminishing water supplies translate into slower growth rates. Some regions could see their growth rates decline by up to 6% of GDP by 2050 due to water-related losses in agriculture,

health, income, and overall prosperity. Ensuring sufficient and stable water supplies amidst increasing scarcity is vital to achieving global goals aimed at alleviating poverty.

- Maximizing Water Utilization: Improving planning and incentives can enhance welfare levels and increase economic growth rates. Effective implementation of economic tools such as water permits and pricing can improve the management and oversight of water resources.

- Increasing Water Supplies and Availability: This includes investments in water storage, reuse, recycling, and desalination where possible. These interventions should be accompanied by policies that encourage efficient water use and improve water distribution.

- Prioritizing "Water Resilience" Economies: This involves mitigating the impacts of extreme phenomena and uncertainties. Enhancing urban planning and increasing crop insurance to protect farmers, alongside community engagement, can build resilience and reduce the economic impacts of adverse events.

He added that water is essential for inclusive growth. Water is a resource for everyone; however, many are excluded from its benefits. Ensuring fair and sustainable water sharing requires an inclusive approach. Women, youth, people with disabilities, indigenous groups, and other underrepresented and marginalized communities need access to water and the ability to express their views and needs regarding water. The factors driving the exclusion of these groups are increasing, and estimates suggest that climate change will force more than 140 million people to migrate within their countries by 2050.

At the end of the session, he emphasized the necessity of political commitment and leadership, technological innovations, and the advancement of service delivery models and financing to support governments in fulfilling their commitment to achieve Target 6.2 of the Sustainable Development Goals—"to ensure access for all to adequate and equitable sanitation and hygiene services by 2030."

Dr. Walid Zubari, a water resources expert and president of the Arab Water Association, presented on the vital role of civil society institutions in raising water awareness to achieve water sustainability and address the challenges facing the water sector in Bahrain.

He stated, "Historically, before the rapid development that the Kingdom of Bahrain underwent starting from the late 1960s and early 1970s, groundwater was the main source of water supply in the kingdom for both municipal and agricultural uses. Water was obtained through natural springs, both terrestrial and marine, spread across many areas of Bahrain. However, with the rapid development that the kingdom experienced in the early 1970s, along with population and urban growth, groundwater could not meet the water quality requirements for the population. Thus, it became necessary to resort to desalination to cover urban demand."

Dr. Zubari emphasized the significant depletion of groundwater in recent years, noting that it has been extracted at rates exceeding its natural recharge. He stated that groundwater levels

have dropped, all natural springs have ceased to flow, and water quality has deteriorated due to seawater intrusion. He mentioned, “For the past fifteen years, the government has been working on rehabilitating groundwater and improving its quality by reducing withdrawal in the municipal sector through the expansion of treated water use and in the agricultural sector by utilizing treated wastewater. Fortunately, there are encouraging signs in this direction.”

He said, “Finally, wastewater entered the water budget at the end of the 1980s with the completion of sewage collection and treatment projects from homes in Manama and its surroundings. Its quantities are increasing with the rising consumption of the municipal sector, making it a renewable water source, and its quantities increase proportionally with urban expansion.”

Regarding civil society institutions, Dr. Zubari said, “It is important for them to play a role in water awareness. Once community members understand the implications of their behavior in dealing with water and there is a religious and moral incentive, it is likely that they will voluntarily rationalize their water usage. If this happens, the community and the executors will be in the same boat, enabling them to achieve water sustainability.”

The expert and water sector advisor at the Ministry of Water in the Kingdom of Bahrain, Eng. Mohammed Sawar, called for adopting a model transformation in the management of water resources in the GCC countries, shifting from the current focus on “supply sustainability” to “consumption sustainability.” His core objectives emphasize economic efficiency in water usage and financial sustainability of water services. Additionally, he highlighted the need to provide information to support policies and decision-making regarding the impacts of using economic tools to achieve sustainable water consumption patterns in the GCC countries, as well

as identifying challenges and opportunities related to the application of economic tools for sustainable water consumption under the prevailing social, economic, environmental, cultural, and political conditions in the Gulf Cooperation Council countries.

At the end of the meeting, the attendees expressed their gratitude and appreciation to the Japanese government for supporting the Arab Parliamentarians Forum on Population and Development in holding this important meeting on the topic of water and the Sustainable Development Goals. They also thanked and acknowledged the efforts of the Arab Parliamentarians Forum on Population and Development for its continuous communication with Arab parliaments to discuss population and development issues in Arab countries. They emphasized the necessity of continuing such meetings due to their important role in enacting legislation and laws that are in line with contemporary challenges.

List of Participants

	Parliamentarians
1	Muner Ibrahim
2	Hasan Ibrahim
3	Dr. Karem Rashed
4	Jamela Salmen
5	Reda Abdulla
6	Jawad Khayad
7	Abdulla Ali
8	Fatema qasem
9	Mohammad Amadi
10	Fatema Abedjabar
11	Jalal Kadem
12	Hanan Ahmed
13	Muhsen Ali
14	Mohammad Yousef
15	Hesham Awad
16	Dr. Khaled Saleh
17	Mohamed Musa
	FAPPD
18	Dr. Mohammad Al-Smadi
	Experts and specialists in the field of water security
19	Dr. Waled Zbarei
20	Dr. Mahamed Swaur
	Government Representatives
21	Ali suof
22	Mohmed Hajaj
23	Mosa Elyan
24	Waled Zaglol
25	Hamad Shaear