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Overview of Shared Water Resources Management in the Arab Region for Informing Progress on SDG 6.5



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Abbreviations

DA	Draft articles on the law of transboundary aquifers
ESCWA	Economic and Social Commission of Western Asia
FAO	Food and Agriculture Organization of the United Nations
GA	General Assembly
GEF	Global Environment Fund
HLPF	High Level Political Forum
IAEG-SDGs	Inter-agency and Expert Group on SDG Indicators
ILC	International Law Commission of the United Nations
IWRM	Integrated Water Resources Management
JA	Joint Authority
NSAS	Nubian Sandstone Aquifer System
NWSAS	North Western Sahara Aquifer System
OSS	Observatoire du Sahara et du Sahel
SDG	Sustainable Development Goal
UNDP	United Nations Development Programme
UNECE	United Nations European Commission for Europe
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNGA	United Nations General Assembly
UNWC	United Nations Convention on the law of non-navigational uses of international watercourses

Executive Summary

Shared water resources in the Arab region are of great importance as two-thirds of all fresh water resources in the region cross one country border or more. The high dependency on shared water resources complicates achieving water security in many countries of the region and hinders the attainment of the Sustainable Development Goals.

At the global level several legal frameworks are available for the management of shared water resources and include the United Nations Convention on the Law of the Non-navigational Uses of International Watercourses, the Draft Articles on the Law of Transboundary Aquifers and the United Nations Economic Commission for Europe Convention on the Protection and Use of Transboundary Watercourses and International Lakes.

Under the 2030 Agenda for Sustainable Development, a dedicated Sustainable Development Water goal was adopted (SDG 6), which includes a specific target to encourage transboundary cooperation as a means for implementing integrated water resources management at all levels (SDG 6.5). The target includes an indicator (SDG 6.5.2) that encourages reporting on the status of operational arrangements for transboundary water cooperation, should they exist.

At the regional level, a Draft Framework Convention on Shared Water Resources in the Arab Region that supports shared water resources management between Arab States was prepared and reviewed by the member States of the League of Arab States under the auspices of the Arab Ministerial Water Council. Resolutions adopted in 2017 called for the legal instrument to be reformulated into a set of common guidance principles for shared water cooperation in the Arab region and for furthering the development for regional capacity for shared water resources management.

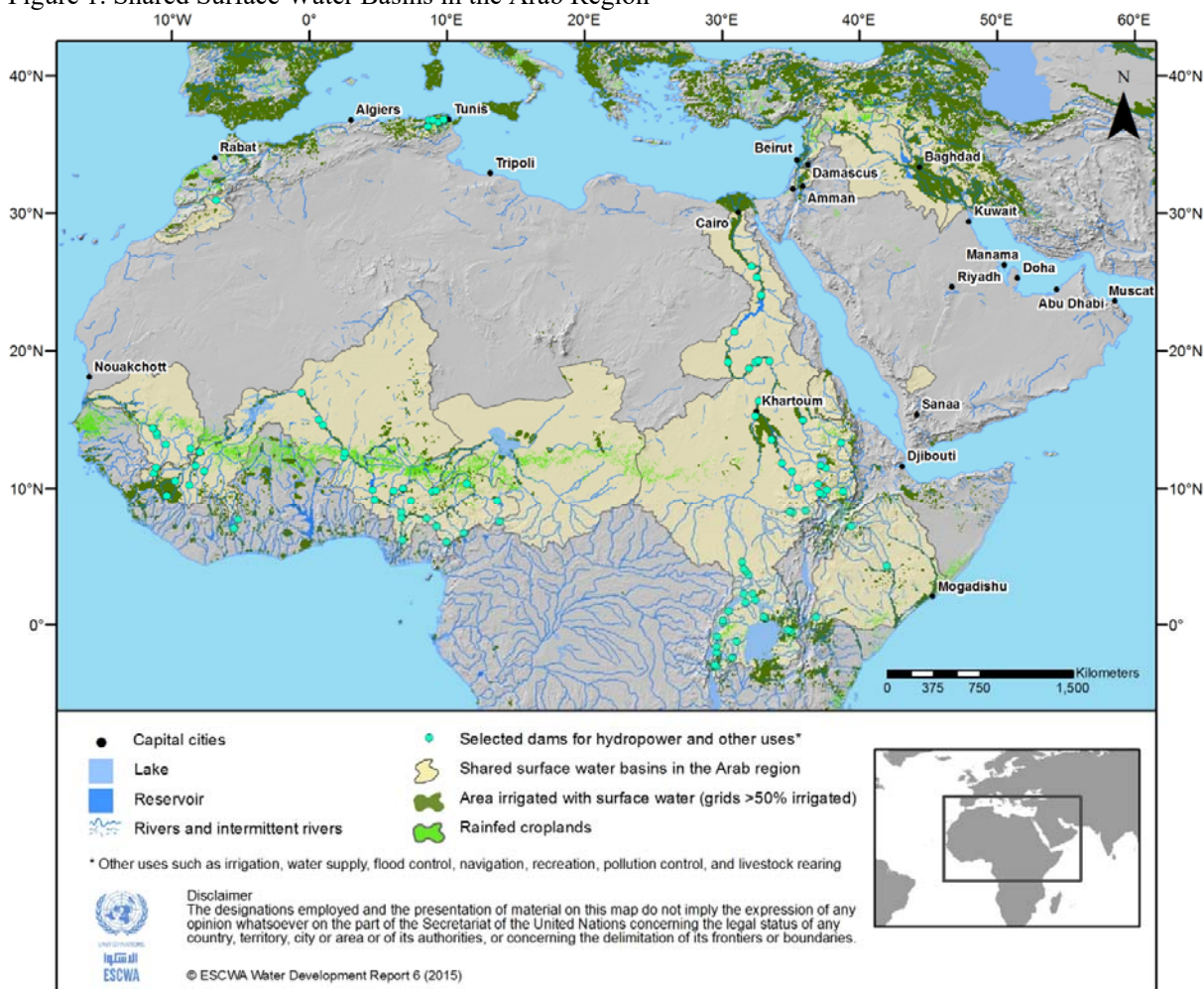
The dedication of a global SDG target and indicator focused on shared water resources management and the recent resolutions of the Arab Ministerial Water Council demonstrate the interest of member States to support continued work on shared water resources management in the Arab region. Factors of success for advancing cooperation in this area requires political will at the national and regional scale coupled with regional and international support.

I. Introduction

Most Arab States depend for their water supply on rivers and/or aquifers that are shared with neighbouring countries, within the region and with countries from outside the region. The Nile, the Tigris and the Euphrates, all three shared rivers with Arab, and non-Arab countries, account for most of the region's surface water. Other shared surface waters include the Jordan River, the Nahr Al-Kabir, and the Orontes. In the Arab region there are a number of shared surface water basins with 14 countries out of the 22 Arab countries being involved as riparian States^{1, 2}, as shown in Figure 1. Some of these surface water basins are shared with other Arab countries only while others are shared with non-Arab countries as shown in

Table 1. The management of these shared surface water resources and the alteration of their natural river flows have allowed for the development of large irrigation projects, hydropower generation and the storage of reserves that can be drawn from to support domestic and agricultural demands. However, the quantity, quality and seasonality of these flows for different purposes must be considered across riparian States to avoid potential negative impacts that upstream management schemes could have on downstream users, such as in the Tigris and Euphrates basins or in the Nile basin.

Figure 1. Shared Surface Water Basins in the Arab Region



Source: ESCWA, 2015.

¹ ESCWA and BGR, 2013.

² FAO, 2006.

Table 1. Shared Major Surface Water Basins in the Arab Region

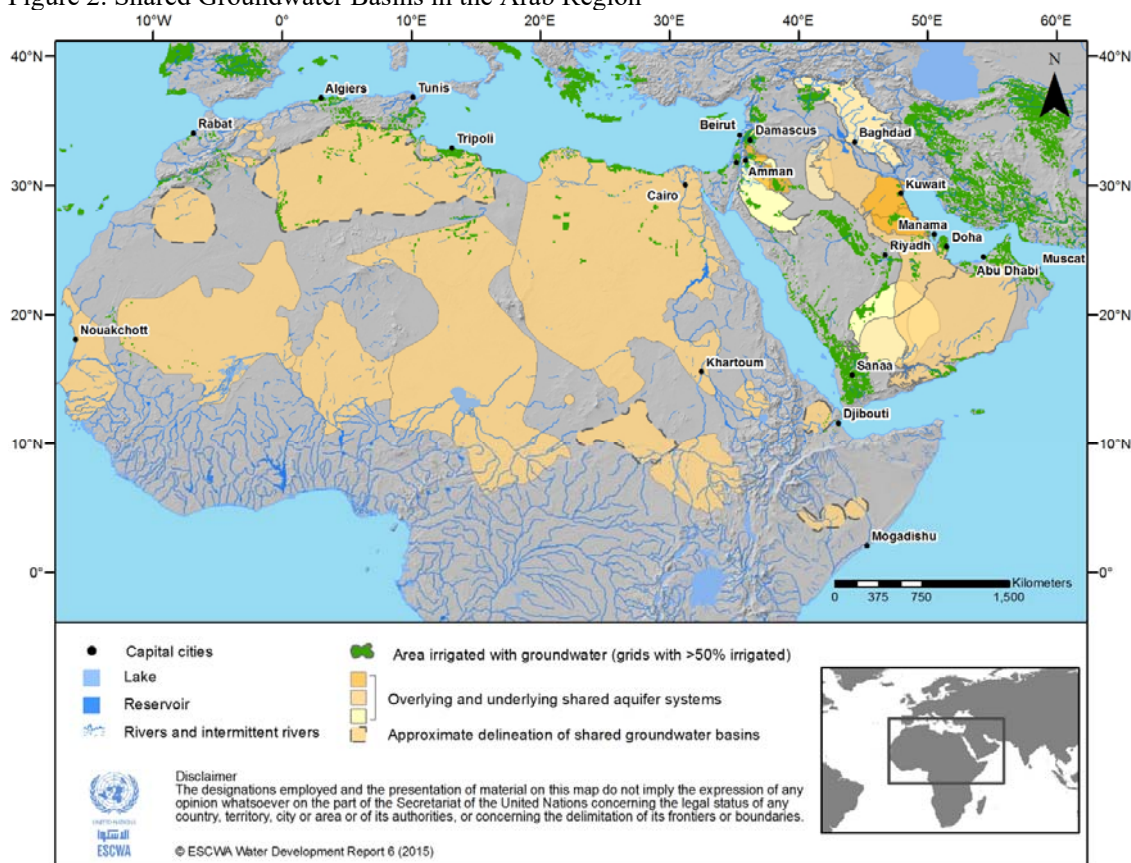
Shared Among	
Arab countries Only	An Nahr Al Kabir, Atui, Daoura, Dra, Guir, Medjerda, Oued Bon Naima, Tafna,
Arab and Non-Arab Countries	Orontes, Awash, Baraka, Congo/Zaire, Euphrates, Gash, Jordan, Juba-Shibeli, Lake Chad, Nahr El Kebir, Niger, Nile, Qweik, Senegal, Tigris

Sources: ESCWA and BGR, 2013.

UNEP-DHI and UNEP, 2016.

Located in an arid and semi-arid region, the Arab countries have also a heavy reliance on groundwater which is found in a number of shared aquifers such as the basalt aquifer between Jordan and Syria, the Palaeogene aquifer shared by Oman and the United Arab Emirates, the Disi sandstone aquifer shared by Jordan and the kingdom of Saudi Arabia, and the Nubian Sandstone Aquifer System (NSAS) shared by Chad, Egypt, Libya, and Sudan. The majority of territorially contiguous states in the Arab Region share both renewable and non-renewable aquifers. The number of shared groundwater resources in the Arab region outnumbers that of shared surface water basins, with 41 shared aquifers present in 21 out of 22 Arab countries as shown in ^{3,4}. Shared groundwater basins cover almost 58 per cent of the Arab region in terms of area, as shown in Figure 2. The extent of the shared groundwater aquifers and the advancement of pumping technology have prompted reliance on these resources by the agriculture sector and governments in their pursuit of food self-sufficiency, even though large volumes of groundwater are from fossil groundwater reserves and thus non-renewable.

Figure 2. Shared Groundwater Basins in the Arab Region



Source: ESCWA, 2015.

³ ESCWA and BGR, 2013.

⁴ IGRAC, 2015.

Table 2. Shared Groundwater Resources in the Arab Region

Label	Aquifer Name	Sharing Countries
AF38	Merti Aquifer	Kenya, Somalia
AF43	Dawa	Ethiopia, Kenya, Somalia
AF44	Jubba	Ethiopia, Somalia
AF45	Shabelle	Ethiopia, Somalia
AF53	Baggara Basin	Central African Republic, South Sudan, Sudan
AF56	Irhazer-Illuemedden Basin	Algeria, Benin, Mali, Niger, Nigeria
AF58	Senegalo-Mauretanian Basin	Gambia, Guinea-Bissau, Senegal, Mauritania, Western Sahara
AF59	Afar Rift valley / Afar Triangle Aquifer	Djibouti, Ethiopia
AF61	Gedaref	Ethiopia, Sudan
AF62	Disa	Chad, Sudan
AF63	Nubian Sandstone Aquifer System (NSAS)	Chad, Egypt, Libya, Sudan
AF64	Taoudeni Basin	Algeria, Mali, Mauritania
AF68	Système Aquifère de Tindouf	Morocco, Western Sahara, Mauritania, Algeria
AF69	Northwest Sahara Aquifer System (NWSAS)	Algeria, Libya, Tunisia
AF70	Système Aquifère d'Errachidia	Morocco, Algeria
AF74	Angad	Morocco, Algeria
AF75	Ain Beni Mathar	Morocco, Algeria
AF76	Chott Tigri-Lahouita	Morocco, Algeria
AF77	Figuig	Morocco, Algeria
AF78	Jbel El Hamra	Morocco, Algeria
AF79	Système Aquifère de la Djeffara	Tunisia, Libya
AF80	Triffa	Morocco, Algeria
AS1	Western Aquifer Basin	Egypt, Israel, Palestine
AS2	Coastal Aquifer Basin	Egypt, Israel, Palestine
AS3	Northeastern Aquifer	Israel, Palestine
AS4	Anti-Lebanon	Lebanon, Syria
AS10	Upper Jezira	Iraq, Syria, Turkey
AS123	Taurus-Zagros	Iran, Iraq, Turkey
AS124	Agh Darband	Syrian Arab republic, Turkey
AS125	Neogene Aquifer System (North-West): Upper and Lower Fars	Syrian Arab Republic, Iraq
AS126	Saq-Ram Aquifer System (West)	Jordan, Saudi Arabia
AS127	Wasia-Biyadh-Aruma Aquifer System (North): Sakaka-Rutba	Saudi Arabia, Iraq
AS128	Neogene Aquifer System (South-East): Dibdibba- Kuwait Group	Iraq, Kuwait, Saudi Arabia
AS129	Tawil Quaternary Aquifer System: Wadi Sirhan Basin	Jordan, Saudi Arabia
AS130	Umm er Radhuma-Dammam Aquifer System (North): Widyan-Salman	Iraq, Kuwait, Saudi Arabia
AS131	Wajid Aquifer System	Saudi Arabia, Yemen
AS139	Wasia-Biyadh-Aruma Aquifer System (South): Tawila-Mahra/Cretaceous Sands	Saudi Arabia, Yemen
AS140	Umm er Radhuma-Dammam Aquifer System (Centre): Gulf	Saudi Arabia, United Arab Emirates, Bahrain, Qatar
AS141	Umm er Radhuma-Dammam Aquifer System (South): Rub' al Khali	Oman, Saudi Arabia, United Arab Emirates, Yemen
AS142	Basalt Aquifer System (West): Yarmouk Basin	Jordan, Syria
AS143	Basalt Aquifer System (South): Azraq-Dhuleil Basin	Jordan, Syria

Sources: ESCWA and BGR, 2013.
IGRAC, 2015.

In a water scarce region such as the Arab region, the shared character of the water resources represents an additional water security challenge. Cooperation thus becomes imperative. The United Nations designated the year 2013 as the International Year of Water Cooperation recognizing that cooperation is essential to assess and define a balance between the different needs and priorities of the riparian countries and share the resource equitably. Furthermore, transboundary cooperation has been identified as an instrument for achieving the Sustainable Development Goals (SDGs) articulated in the 2030 Agenda for Sustainable Development, which was adopted by the United Nations General Assembly (UNGA) in September 2015.⁵ Specifically, Goal 6, which aims to ensure the “availability and sustainable management of water and sanitation for all,” includes a target on integrated water resources management (IWRM), which aims to advance the implementation of IWRM at all levels, “including through transboundary cooperation as appropriate” (target 6.5). An indicator has in turn been formulated to specifically measure the proportion of a transboundary basin area that is covered by an ‘operational arrangement for water cooperation’ (indicator 6.5.2).

At the Arab region level, a draft framework convention for shared water resources in the Arab region was under review by the Arab Ministerial Water Council for several years with a recent resolution to move towards developing common guidance principles for shared water management in the Arab region and further develop the capacity in the region on shared water resources management.

This paper presents the main international water law principles regarding the management of shared surface and groundwater resources and their application in the Arab region. It then reviews the sixth and last draft of the draft framework on Shared Water Resources in the Arab Region, Arab draft framework, and the comments transmitted by the Arab States. The report provides a legal perspective on the different views expressed and deliver recommendations for draft guiding principles on the management of shared water resources in the Arab region, and the progress on SDG 6.5

II. International Water Law

International water law developed historically for surface waters, and the primary concerns were about the right of navigation. The twentieth century has seen an increasing number of treaties dealing with non-navigational uses, with a first focus on quantitative issues, evolving towards a trend to protect quality. The United Nations Convention on the law of non-navigational uses of international watercourses (1997), also referred to in short as the United Nations Watercourse Convention (UNWC), is the first instrument at the global level adopted to govern the management of shared watercourses.⁶ It was developed by the United Nations International Law Commission (ILC), in charge of the progressive development and codification of international law, from 1974 to 1994, with the view of covering surface waters. Groundwater was introduced at a late stage in 1991. The final proposed definition of a watercourse covers a “system of surface and groundwaters constituting by virtue of their physical relationship a unitary whole and flowing into a common terminus”.⁷ Following this definition, groundwater falls under the scope of the UNWC when it is related to a surface water system *and* it flows to a common terminus.

Therefore, the Watercourse Convention left out of its scope a great number of shared aquifers, such as those not related to any surface water body or those not sharing the same terminus as the surface water system to which they are related. To fill this gap, the ILC, added in 2002 to its program of work the topic of “Shared natural resources” and prepared and adopted in 2008 the Draft articles on the law of transboundary aquifers (DA). The DA cover all transboundary aquifers even those that could fall under the UNWC. The UNGA approved four resolutions on the topic: 63/124 (2009), 66/104 (2011), 68/118 (2013), and 71/150

⁵ UNGA, 2015.

⁶ UNGA, 1997.

⁷ ILC, 1994.

⁸ Article 2(b) of UNWC.

(2016).^{9,10,11,12} The Draft articles are annexed to two of the resolutions, 63/124 (2008) and 68/118 (2013). In resolutions 63/124 (2009) and 68/118 (2013), the UNGA “encourages the States concerned to make appropriate bilateral or regional arrangements for the proper management of their transboundary aquifers, taking into account the provisions of these draft articles”. In 2013 and 2016, the UNGA changed its language to *commend* “to the attention of Governments the draft articles...as guidance for bilateral or regional agreements and arrangements for the proper management of transboundary aquifers”, expressing a probable intention to give the status of guidelines to the draft articles.

A third instrument covering shared water resources is the Convention on the protection and use of transboundary watercourses and international lakes (1992) adopted through the United Nations Economic Commission for Europe (UNECE), and also referred to as the UNECE Water Convention.¹³ This legal instrument was originally a regional convention for the Member States of the UNECE. However, since 2013, it is open to all United Nations member States. The UNECE Water Convention covers “any surface or ground waters which mark, cross or are located on boundaries between two or more States”.¹⁴ It covers therefore all shared waters; surface and ground, as long as they cross an interstate boundary.

The UNWC entered into force on 17 August 2014, and has 36 Parties, which include the following Arab States: Iraq (2001), Jordan (1999), Lebanon (1999), Libya (2005), Morocco (2011), Palestine (2015), Qatar (2002), Syrian Arab Republic (1998) and Tunisia (2009). The UNECE Water Convention is in force since 1996, and counts 41 Parties. Since its global opening, Iraq, Jordan, Lebanon and Tunisia have shown interest in joining, and have each initiated a national process for this purpose. These two conventions are binding for their Parties. However, they include principles that are part of international customary law which apply to all States. On the contrary, the DA are non-binding as they are included in UNGA resolutions which do not have any obligatory force. As mentioned above, the DA could serve as guidelines for the management of shared aquifers. At the same time, they include principles that are part of international customary law¹⁵, so applicable to shared aquifers in all cases.

These three instruments represent a complementary and coherent whole, including similar principles presented below. These principles refer either to substantive rules, meaning they establish the rights and obligations of States; or procedural ones, which represent the steps and processes for having a right or duty implemented.

A. Substantive Principles of International Water Law

1. Equitable and reasonable utilization

The principle of equitable and reasonable utilization is codified in the UNWC, the DA and in the UNECE Water Convention. This principle implies an “equality of rights” which does not mean an equal share of the uses and benefits of the watercourse. The quantity of water is not necessarily divided into identical portions. The principle implies the right to utilize the watercourse but also the duty to cooperate in the protection and development of the watercourse. The DA have specified the application of the principle to shared aquifers. It has for instance set an objective of “maximizing the long-term benefits derived from the use of water contained therein”, which reflects the concern of the sound use of non-recharging aquifers, one of the tools being a “comprehensive utilisation plan”. For recharging aquifers, the DA mention the obligation of maintaining their “effective functioning”, which establishes a control over the utilization level. The principle

⁹ UNGA, 2009.

¹⁰ UNGA, 2011a.

¹¹ UNGA, 2013.

¹² UNGA, 2016.

¹³ ECE, 2013.

¹⁴ Article 1,1 of UNECE Water Convention.

¹⁵ Eckstein and Sindico, 2014.

of equitable and reasonable utilization is intrinsically related to the precept of sustainable development. The DA and the UNECE Water Convention refer to the needs of the future generations.

The practical implementation of the principle requires a case-by-case assessment of factors. The UNWC and the DA have provided an *indicative* list of factors, with no priority order or weight assigned to any of them. However special regards are to be given to the vital human needs.

2. The Obligation Not to Cause Significant Harm

The second principle is the obligation not to cause significant harm,¹⁶ the no harm rule. Under this principle, States have the obligation to prevent “the causing of significant harm” to another riparian State while utilizing a shared watercourse or aquifer. The rule represents an obligation of conduct not of result, it is a due diligence obligation meaning that the harm to the other States through the use of the shared surface water body or the shared aquifer or also through “activities other than utilization of a transboundary aquifer or aquifer system that have, or are likely to have, an impact upon that transboundary aquifer” as mentioned in the DA is not caused intentionally or by neglect.

The harm caused has to be “significant”, which is determined on a case-by-case basis taking into account the specific circumstances in each basin or aquifer, meaning that what is significant in one case might not be in another case. The “significant” harm is “established by objective evidence” (ILC 1994) and is not “trivial”. “It needs not rise to the level of being substantial”.¹⁷ Both the quantity and the quality of the water are considered.

Like the equitable and reasonable utilization principle, the no harm rule offers the flexibility to adjust to the conditions and characteristics to each shared river and/or aquifer. If a significant harm occurs the States have the obligation to “take all appropriate measures ...to eliminate or mitigate such harm” as mentioned in Article 7.2 of the UNWC and in Article 6.3 of the DA. Under Article 2 of the UNECE Water Convention, the Parties have the obligation to “control and reduce” any transboundary impact” and to take “all appropriate measures”. The UNWC mentions the question of compensation where significant harm has occurred.

3. The protection of ecosystems

Another substantial principle is the protection of ecosystems. States have the obligation to take all appropriate measures to protect and preserve ecosystems of the shared river and aquifer (Article 20 of the UNWC, Article 10 of DA, and Article 2.2d UNECE Water Convention. In the case of shared aquifers States need to ensure that the quality and quantity of water in the aquifer and released through its discharge zones are sufficient.

B. Procedural Rules

The cooperation on shared water resources is also ensured through procedural rules. The main rules are summarized below.

1. The duty to cooperate

This is a general obligation of international law. Under Article 8 of the UNWC and Article 7 of the DA, cooperation is based on sovereign equality, territorial integrity, sustainable development, mutual benefit and good faith. The objective is to reach equitable and reasonable utilization and appropriate protection for the shared water resources. Cooperation is practiced through the establishment of joint mechanisms of

¹⁶ The UNECE Water Convention does not mention explicitly the word “significant”. However, the Guide to its implementation specifies that Convention codifies the customary international rule, whose aim is to avoid “significant harm”.

¹⁷ ILC, 1994.

cooperation. In a similar way, under Article 9 of the UNECE Water Convention, cooperation is based on equality and reciprocity, in the frame of bilateral and multilateral agreements providing for the establishment of joint bodies.

2. The regular exchange of data and information

The regular exchange of data and information is the first application of the general obligation to cooperate in Article 9 of the UNWC, Article 8 of the DA and Article 13 of the UNECE Water Convention. It presents the following specificities:

- As a first stage, the exchange of data should take place on a regular basis, and concerns the readily available data and information. Examples of the data to be exchanged are provided in the three instruments: hydrological/hydrogeological, meteorological, and ecological, and related to the quality of the water in the UNWC and DA; environmental conditions, application of best available technologies, results of research and development, emission and monitoring in the UNECE Water Convention.
- A second stage concerns shared aquifers only: in the DA, the obligation extends to the case where the “knowledge about (its) nature and extent is inadequate”. Aquifer States are then requested to employ “their best efforts to collect and generate more complete data and information”. The States concerned can act, individually or jointly, but also with the support and assistance of international organizations.
- A third stage concerns the request from another riparian State, either of the watercourse or of the aquifer, “to provide data and information” that “are not readily available” in Article 9.2 of the UNWC, Article 8.3 of the DA and Article 13.3 of the UNECE Water Convention. The requested State “shall employ its best efforts to comply” with the solicitation. The compliance could be under the condition of the payment by the requesting State “of the reasonable costs of collecting and, where appropriate, processing such data or information.”
- The last obligation under the regular exchange of data provision is transversal under this whole theme: States “shall employ their best efforts”, “where appropriate” to collect and process the data they communicate in a manner it can be used by the other riparian State in Article 9.3 of the UNWC and Article 8.4 of the DA.

3. Monitoring

This obligation appears only under Article 13 of the DA and in Articles 4, 9 and 11 of the UNECE Water Convention. Under these provisions States have the duty to monitor their shared waters. According to the DA, monitoring can take place:

- Individually, in which case States will exchange the monitored data,
- Jointly, when States have developed cooperation,
- If needed through international organizations.

The provision gives indications for the States to follow for the monitoring:

- To use an agreed or harmonized standards and methodology,
- To identify key parameters based on an agreed conceptual model,
- To include parameters on the condition of the aquifer (as for the regular exchange of data) and on its utilization.

The UNECE Water Convention under Article 9.2b, provides for joint monitoring, on water quantity and quality. The Parties under Article 11.2, “shall agree upon pollution parameters and pollutants whose discharges

and concentration in transboundary waters shall be regularly monitored”. Furthermore, under Article 11.4, Parties shall also “harmonize rules for the setting up and operation of monitoring programmes”.

4. Planned measures

The UNWC includes a whole chapter dedicated to “Planned measures”, while under the DA, the issue is covered with less details by one article. The UNECE Water Convention does not include any provisions related to planned measures, however it can be considered that the Convention under Article 9.2h, includes a strong obligation to enter into agreements establishing joint bodies, which shall “serve as a forum for the exchange of information on existing and planned uses of water and related installations that are likely to cause transboundary impact”.¹⁸

The general rule of prior notification, meaning that the riparian States of a shared watercourse or aquifer exchange information about a planned measure which could have possible effects on the water body, is considered as a customary international legal obligation.¹⁹ Both the DA and the UNWC refer to the environmental impact assessment as the tool allowing the evaluation of the possible effects of the planned measure. In the DA, the obligation of assessing the potential effects falls on a State only if there are “reasonable grounds” to believe the planned activity would have adverse effects, and if the assessment is practicable. The State undertaking a planned measure could be any State, not necessarily an aquifer State, as planned activities cover not only utilization of transboundary aquifers but also other activities that have or are likely to have an impact upon those aquifers²⁰. While the UNWC provides for a time frame for the notified State to reply, six months with a possible extension to another period of six months, and with the eventuality for the States to agree on a different period, the DA do not. The idea behind establishing a fixed period for the reply is to avoid any veto power from the notified State on the planned measure. The commentary under the DA mentions “a reasonable period of time”.²¹

5. Management

Both the UNWC under Article 24 and the DA under Article 14, address management. The DA, already refers to a utilization plan under Article 4.c on the equitable and reasonable use, and under Article 4.c mentions that the plan could be individual or joint. Both instruments mention the establishment of a joint management mechanism, which represents a joint institutional arrangement for the management of the shared water body. The UNECE Water Convention mentions management in two of its provisions, Article 2.2b “rational water management” and Article 3.1i “Sustainable water-resources management”. However, it has detailed provisions about the organization of the management, on the joint institutions and the joint monitoring among others.

Additionally, the instruments contain general miscellaneous provisions related to issues such as emergency situations, protection in time of armed conflict and data and information vital to national defence or security.

III. Review of the Draft Framework on Shared Water Resources in the Arab Region

The Arab Ministerial Water Council (AMWC) at the League of Arab States, has shown an early interest in shared water resources due to its importance to the region with a quick adoption after its establishment of two resolutions on this issue:

- The first one concerning the United Nations Convention on the law of non-navigational uses of international watercourses (1997) (UNWC) and intending to create an effort to converge the

¹⁸ Tanzi, 2011.

¹⁹ Rieu-Clarke and others, 2012.

²⁰ ILC, 2008.

²¹ Ibid.

viewpoints and the positions of the Arab countries on the Watercourses Convention.²²

- The second one on the Draft articles on the law of transboundary aquifers (DA), focusing on consolidating the regional views and perspectives on these provisions.²³

The interest and the focus on shared waters appear also as one of the elements of the Arab Water Security Strategy, which was prepared by the AMWC and approved in 2011. The Strategy covers various water-related challenges to the Arab region such as water and food security, climate change, lack of awareness on water issues, weak legal frameworks, shared waters, and water in occupied Arab territories. Regarding shared waters, the Strategy sets among its expected outcomes the establishment of “mechanisms and frameworks for cooperation between Arab States”.²⁴

Furthermore, the Arab Ministerial Water Council (AMWC) adopted a resolution in 2010 inviting the Center for Water Studies and Arab Water Security and the Economic and Social Commission for Western Asia (ESCWA) to prepare a draft legal framework on shared water resources in the Arab region, hereafter referred to as the draft Arab Water Convention.²⁵ ESCWA and other mandated organizations assisted in the preparation of the first draft which was reviewed at an intergovernmental consultative meeting in May 2011. The meeting concluded with a draft in the form of a binding convention to be submitted to the AMWC.²⁶ However, in 2011, the AMWC decided to limit the scope of the legal framework to cover shared groundwater resources only.²⁷ In 2012, during its fourth ministerial session in Baghdad, the AMWC decided to go revert its original plan of preparing a regional legal framework encompassing all shared fresh water resources, both surface and groundwater.²⁸ Revised versions of the draft framework convention were discussed during seven subsequent intergovernmental consultative meetings held between 2011 and 2016, inclusive.

The last version of the draft Arab Water Convention was discussed on from 15 to 16 March 2016 in Cairo at the 7th Intergovernmental Consultative Meeting. The draft included the following main provisions:

- Scope: The Convention is intended to cover shared surface and groundwater.
- General obligation to cooperate
- Regular exchange of data and information
- Planned measures
- Equitable and reasonable utilization
- Obligation not to cause harm
- Protection of the environment, which includes the protection of ecosystems and the prevention, control and control of pollution
- Emergency situations
- Settlement of disputes
- Water in occupied Arab territories
- Institutional arrangements

The draft convention contains the main principles of international water law, which were presented above, and codified in the international instruments on shared water resources.

However, some points of disagreements persist among the Arab States on various provisions which are detailed below:

²² Item 1 of resolution 6 adopted at the first meeting of the AMWC in Algiers, 27-28 June 2009.

²³ Item 1 of resolution 5 adopted at the first meeting of the AMWC in Algiers, 27-28 June 2009.

²⁴ League of Arab States, Arab Ministerial Water Council, 2012.

²⁵ Item 3 of resolution 20 adopted at the second meeting of the AMWC in Cairo, 1-3 July 2010.

²⁶ ESCWA, 2013.

²⁷ Items 4 and 5 of resolution 37 adopted at the third meeting of the AMWC in Cairo, 15-16 June 2011.

²⁸ Item of resolution 56 adopted at the fourth meeting of the AMWC in Baghdad, 29 May 2012.

On the scope

The last version of the draft Arab Water Convention covers both surface and groundwater, however there are some requests to return to an earlier decision which was to cover only groundwater. While it is true that the Arab region relies heavily on groundwater, which is often found in shared aquifers, and that most of its major rivers are also shared with non-Arab countries (Nile, Tigris and Euphrates, Jordan, Orontes...) it is still preferable to cover in one instrument shared rivers and aquifers, as it is the case in the UNECE Water Convention, which applies to all waters “which mark, cross or are located on boundaries between two or more States” as stated in Article 1.1. The same core principles such as the equitable and reasonable use and the no harm rule apply to both shared rivers and shared aquifers, with some specificities for aquifers, which could be detailed in another document such as was done under the UNECE Water Convention with the adoption of the Model Provisions on transboundary groundwater, intended to clarify the application of the Convention to shared groundwater. Choosing to apply the draft Arab Water Convention to only one kind of the water bodies (groundwater), would make it restrictive, even if the Arab States can rely on international law for surface water. If the Convention covers both, surface and groundwater, it can whenever the case apply to only one category, for instance in the case of a non-renewable aquifer. Furthermore, both surface and groundwater are often linked together, in which case it is more appropriate to refer to only one instrument.

Shared vs transboundary

So far, the Arab States have used and showed preference for the word “shared” over transboundary. They have for example expressed it in the comments provided at the request of the Secretary General of the United Nations on the draft articles on the law of transboundary aquifers or during the oral debates on the topic at the 6th Committee of the United Nations General Assembly, and have expressed this either individually – for example by Iraq (2008),²⁹ and Egypt and Libya (2011)³⁰ – or collectively through the League of Arab States.³¹ This has been the case as well as in their agreements such as in the recent agreement between Jordan and Saudi Arabia on the Saq/Disi aquifer,³² or in the Regional Strategic Action Programme for the Nubian Aquifer System which was signed by the Ministries in charge of water in the four riparian countries and the Chair of the Joint Authority.³³ From the legal point of view, there is no difference between the words “transboundary”, “shared” and “international”, and the three have been used at the international level, and there is no legal consequence to use one instead of the other. The United Nations ILC has introduced the topic of “Shared Natural Resources” under which the DA were prepared. The UNWC deals with “international” watercourses, the DA are about “transboundary aquifers and the UNECE Water Convention includes in its title both “transboundary” and “international”, but in its core, uses “transboundary” when mentioning water resources. It is therefore up to the Arab countries to select the word they wish to use as it has no legal consequence.

Planned measures (Article 7)

The draft provision Article 7 specifies that before undertaking a planned measure which could possibly affect the other riparian states, the concerned State shall provide other riparian states with prior notification in the time frame of six months at least. The second paragraph of Article 7 outlines the consultations and negotiations between the States in view of avoiding or alleviating the possible effects of the planned measures. The disagreement that arose between some of the states is about the addition or omission in the second paragraph of the wording “prior to the execution” after the obligation of consultations, and the eventual

²⁹ UNGA, 2008.

³⁰ UNGA, 2011b.

³¹ The League of Arab States has requested to add the word “shared” in the title of the DA to become « The law of shared international aquifers » (2011) (General Assembly (2011) A/66/116, (2013) A/C.6/68/SR.16 and (2016) A/C.6/71/SR.18.)

³² الجريدة الرسمية للمملكة الأردنية الهاشمية، 2015.

³³ This document was adopted as a result of the project “Formulation of an action programme for the integrated management of the shared Nubian aquifer”. During this project the countries have adopted a Transboundary Diagnostic Analysis of the situation of the aquifer which they have renamed “Shared Aquifer Diagnostic Analysis”.

negotiations which have to take place before the execution of the planned measure with the objective of alleviating its possible effects and of reaching an agreement. The addition of the proposed wording means that the planned measures cannot happen until the riparian States have reached an agreement. The UN Watercourses Convention has fixed the period of six months for the notified State to study and evaluate the possible effects of the planned measures and to communicate its findings to the notifying State, with the possibility of extension to another period of six months, or to agree on another period. During this period, the States can enter into consultations and negotiations about the planned measure. The notified State can request the notifying State to refrain from implementing for a period of six months unless otherwise agreed. The UNWC provides also that if within the applicable period the notifying State receives no communication, it may proceed with the implementation of the planned measures, in accordance with the notification and any other data and information provided to the notified States. The DA mentions “a reasonable period of time”. No similar procedure exists in the UNECE Water Convention.

In the case of the draft Arab Water Convention, keeping the current wording will prohibit the notifying State to undertake its planned measures until an agreement is reached with the other riparian states, which could be a very long time. In order to avoid deadlock, it is therefore advisable to delete the contested word, and to add a time frame, as in the case of the UNWC, with a possible extension in which the States can act. The mention of a time frame allows the notified State to study the received notification, and to eventually proceed with consultations and negotiations. The notifying State should not be impeached to proceed with a planned measure because of the lack of action of the notified State.

Equitable and reasonable utilization (Article 8)

Article 8 of the draft Arab Water Convention affirms the right of the riparian countries to the equitable and reasonable use of the shared water resource, qualitatively and quantitatively, without prejudice to the equitable and reasonable use right of the other riparian states. Under this provision, the Parties shall take all appropriate measures and coordinate their water plans to ensure benefits to all riparian states in an equitable, reasonable and sustainable way, taking into account the various related factors.

One of the comments raised by countries on this article is to add the word “vital” in paragraph 2. This addition restricts the meaning of the current and future water needs, which will be reduced to the basic needs. The present and future water needs are larger than the “vital” human needs. As it is probably not the intention, it is possible instead to add the word “vital” in paragraph 3 where the drinking water needs and essential domestic uses are considered.

Under paragraph 3 of Article 8, the current drafting of the provision gives priority to drinking water and the essential domestic uses on all other utilizations of the shared water resource, unless stated differently by an agreement or a custom. Further on, the paragraph imposes on the riparian States to determine the priority order for the other uses of a shared water body, such as irrigation, industry and the environment. An amendment has been suggested which would transform this obligation to a possibility for the States. The current practice in international water law is to give “special regards” to the vital human needs, meaning sufficient water to sustain human life, including both drinking water and water required for production of food.^{34,35} Regarding the other uses, it is considered that “no use of an international watercourse enjoys inherent priority over other uses” unless specified differently in an agreement or by a custom.³⁶ Arab States may opt for obligation or possibility, however; keeping the possibility seems to offer some flexibility for the countries to act, and what is important is the priority given to drinking water and essential domestic uses.

³⁴ ILC, 1994.

³⁵ ILC, 2008.

³⁶ Article 10.1 of the UNWC.

Obligation not to cause harm

In the draft Arab Water Convention, the obligation not to cause harm is drafted with the wording of “appreciable harm”, using “appreciable” and not “significant”, which represents a disagreement between the countries. Internationally, the word used is “significant”, as the harm concerned has to be more than simply trivial. There is no definition of what is “significant” as it is determined on a case by case basis through “factual considerations”.³⁷ What is considered as “significant” in one case may not be in another case. It is a flexible concept. However, “significant” is stronger than “appreciable”, and represents the international practice as reminded by the ILC in 1994 in the commentaries under the draft articles on the law of non-navigational uses of international watercourses which later became the UNWC. The international customary rule is therefore the “obligation not to cause significant harm”, and is binding on all States. The draft Arab Water Convention needs to be in conformity with international law and its universal rules. Adopting the word “significant” instead of the word “appreciable” should not represent a problem, because of the flexibility of the concept and its case-by-case definition, based on factual considerations, depending on the specific situation.

Emergency situations (Article 11)

The last paragraph of Article 11, proposes to the riparian States to prepare “when necessary” plans to face possible emergency situations in cooperation with other States which could be affected, as it is the case in Article 28 of the UNWC. This obligation is anticipatory rather than responsive action.³⁸ Under Article 17 of the DA, there is no such obligation. The obligation set forth in article 17 is a responsive one, it requires the cooperation of “potentially affected” States. In the UNECE Water Convention under Article 3.1j, States have the obligation to prepare contingency plans “to organize an effective response in case of emergency situations”.³⁹ These plans could either be adopted jointly by the riparian countries, or developed individually with their provisions harmonized. The three instruments remain flexible about the adoption of a joint emergency plan, the UNWC and the DA specify “where necessary”, and the UNECE Water Convention leaves it open for the countries either to adopt the plan individually or jointly, though the aim is to prepare a joint plan.⁴⁰

In the draft Arab Water Convention, it is proposed to delete “when necessary” from this provision. Deleting this wording would add an obligation on the States to prepare anticipatory plans for emergency situations, which is not the case with the mention of “when necessary”. This presents an added value to the importance of protecting water resources in a water scarce region.

Settlement of disputes (Article 12)

The current draft convention under Article 12 opens the possibility to the States in case of a dispute to resort to peaceful means of settlement such as negotiations, or request good offices or mediation or refer to fact-finding, conciliation or arbitration. One suggestion has been proposed by the States for the addition of “in case of disagreement” as a condition prior to fact-finding, conciliation or arbitration. The UNWC includes an article, 33, on the settlement of disputes which sets a process, starting with negotiations, and if the dispute is not solved the countries may recourse to a non-binding method such as good offices, mediation or conciliation by a third party, or a binding solution such as submitting the dispute to arbitration or the International Court of Justice. Finally, if they do not agree, the States must submit the dispute to fact finding. The proposal here tends to follow the example of the UNWC. The UNECE Water Convention under Article 22, provides that in case of a dispute the Parties “shall seek a solution by negotiation or by any other means of peaceful settlement of disputes”. In case the Parties had made a declaration of acceptance, they can recourse to either the

³⁷ ILC, 2008.

³⁸ ILC, 1994.

³⁹ ECE, 2013

⁴⁰ Ibid.

International Court of Justice or to the arbitration procedure.⁴¹ The UN Charter includes a chapter on the pacific settlement of disputes and in Article 33 it provides for the following solutions, without setting a process as the UNWC: negotiation, enquiry, mediation, conciliation, arbitration, judicial settlement, resort to regional agencies or arrangements, or other peaceful means of their own choice. The DA do not include any provision on the settlement of disputes. There is therefore flexibility on what the Arab States may adopt.

Shared waters with non-Arab States (Article 13)

Another suggestion by Arab States is regarding the change of the title of Article 13 from “Shared water between Arab and Non-Arab States” to become “Shared water between Arab and other States”, which seems clearer and more explicit. According to this provision, the State parties affirm the importance for the Arab States sharing water with non-Arab States to obtain their rights through the respect of existing agreements or *working* on establishing an agreement based on the principles of international law.

Another proposal on this article is to introduce a statement on active support from the Arab State which are parties to this Convention to the Arab States sharing water with non-Arab States to obtain their water rights. The proposed amendment is stronger, as it is not only an affirmation of the rights of the Arab States sharing water with non-Arab States, but an action from all the States to reach these rights.

Entry into force (Article 19)

The required number of ratification for the entry into force was initially set at seven in Article 19. A proposal has been made to increase this number to two-thirds of the members of the League of Arab States, but this would delay the entry into force, as the required number of States will be 15.

Amendments to the Convention (Article 20)

An amendment has been proposed under Article 20, requesting that the adoption of an amendment should be made by all the Parties. Such an amendment would delay the entry into force of the amendment. The UNECE Water Convention requests the ratification of an amendment by two-thirds of the Parties for its entry into force.

IV. Draft principles on shared water resources cooperation in the Arab region

The eighth ministerial session of the AMWC was held on 26 October 2016 in Cairo and reviewed the report of the seventh intergovernmental consultative meeting. Discussions resulted in the recommendation to postpone any decision on the Arab draft framework convention until the proper conditions for its success are assured and to convene a meeting to put in place a set of common guiding principles for cooperation that could be drawn upon by Arab States for supporting cooperation on shared water resources. This decision revealed the difficulty in reaching consensus among Arab States on the international water principles articulated in the draft Arab Water Convention framework agreement. Arab member States thus agreed to seek agreement on common guidance document first, which would then inform the adoption of a common set of principles through a more formal framework agreement or convention.

The guidance principles currently under discussion will represent a set of non-binding rules to assist the Arab States in the management of their shared water resources and encourage cooperation. Conversely, a framework convention, as is the case of the draft framework agreement, would have represented a legally binding instrument to its parties. The cooperation guidance principles like a framework convention establish the broad principles for the parties, and leave the definition of the specific targets to the agreements between the States. In the case of the guidance principles, the countries can choose to follow them or not. In all cases

⁴¹ Annex IV of the UNECE Water Convention.

the countries remain bound by the principles of customary international law such as the equitable and reasonable use, and the no harm rule, even if they are not formulated in the guidance principles.

The guidance principles could open with a preamble along the lines of the draft text already prepared in the last version of the Arab Water Convention. However, as the proposed text is now guidelines and not a binding instrument such as a Convention, it is recommended to refer to international water law and its customary rules. The preamble could also mention the SDGs, especially those related to integrated water resources management and transboundary cooperation.

The guidance principles should include provisions related to the following:

1. Scope: it is recommended that the guidance principles cover both surface and groundwater (aquifers). States would have the flexibility to adopt the principles in case of applicability of either shared surface or aquifers, or both. In addition, the principles could cover, following the DA, “Other activities that have or are likely to have an impact upon” shared aquifers, with the idea of giving due consideration of the vulnerability of aquifers. This last solution seems preferable for the proper management of the groundwater. The definition of the scope could follow the model of the UNECE Water Convention which covers under Article 1.1 all waters “which mark, cross or are located on boundaries between two or more States”.⁴²
2. General obligation to cooperate: the principles should remind of this obligation under general international law.
3. General principles of international water law: The principles should include a reference to the principles of international water law: the equitable and reasonable use, and the obligation not to cause significant harm. These principles are part of international customary law, so their mention here would only be as a reminder, and would not need to be detailed, unless the States desire to enter into specificities on these principles.
4. On the basis of the scope and the principles mentioned above, the guidance principles should include practical provisions on the establishment of cooperation such as:
 - The regular exchange of data: The principles could give details about what the data to exchange:
 - the readily available data, with possible mention of the data to be exchanged,
 - data needed to extend the knowledge, mainly for a shared aquifer,
 - any other data at the request of one riparian State.
 - Monitoring: the principles should mention monitoring especially if they address aquifers. The riparian States should agree on the parameters to monitor. It is preferable that monitoring takes place jointly. If not the States should exchange the data monitored.
 - Bilateral/multilateral agreements on the shared water body: each agreement will specify its scope, the basin or the aquifer, or both, or only part of the basin, part of the aquifer and the relevant issues the States agreed to cover, and how in terms of substantive and procedural rules,
 - Joint mechanisms for cooperation: The States can define in the agreement they adopted on the shared water resource the composition of the joint mechanism, its role and missions, which can be to handle the exchange of data, and the joint monitoring, to elaborate a common management plan, and any other responsibility.
 - The protection of ecosystems,
 - The prevention and reduction of pollution.

⁴² The Model Provisions on transboundary groundwaters of the UNECE Water Convention mention that they apply to the water and the geological formation containing the water and allowing its flow, in other words they apply to the aquifer.

Draft guidance principles for Arab cooperation in the management of shared water resources have been drafted in Arabic by ESCWA (Annex I) and presented at an intergovernmental meeting organized by ESCWA and the League of Arab States on 30 November 2017. This was preceded by an Expert Group Meeting that on 29 November 2018 that served to inform the deliberation on the guidance principles through a series of discussions on international and regional frameworks for shared water resources cooperation including the pursuit of transboundary cooperation with the 2030 Agenda for Sustainable Development context.

V. Advancing the implementation of SDG 6.5 in the Arab region

The 2030 Agenda for Sustainable Development includes 17 goals and 169 targets, which all countries have committed to implement.⁴³ The 2030 Agenda includes a dedicated water goal, SDG 6, which aims at ensuring the availability and sustainable management of water and sanitation for all. SDG target 6.5 is concerned with the implementation of “integrated water resources management at all levels, including through transboundary cooperation as appropriate”. Two indicators were adopted for this target:

- 6.5.1 Degree of integrated water resources management implementation
- 6.5.2 Proportion of transboundary basin area with an operational arrangement for water cooperation

Indicator 6.5.2 is meant to monitor and report on the percentage of transboundary basin area within a country that has an operational agreement or other arrangement for water cooperation. The basin area in this indicator is defined as the extent of the catchment for surface water and the extent of aquifer for groundwater. The arrangement for water cooperation could be a bilateral or multilateral treaty, convention, agreement or other formal arrangements, such as memorandum of understanding, among riparian countries that provide a framework for transboundary cooperation or water management. For an agreement to be considered operational under this indicator it would have to demonstrate substantive cooperation in water management consisting of four pillars including:⁴⁴

- There is a joint body, joint mechanism or commission for transboundary cooperation;
- There are regular, at least once per year, formal communications between riparian countries in form of meetings either at the political or technical level;
- There is a joint or coordinated water management plan(s), or joint objectives have been set;
- There is a regular exchange, at least once per year, of data and information.

To report on indicator 6.5.2 countries would have to first calculate the total surface area of each transboundary basin and the total sum within a country. This would be followed by verifying which transboundary basins are covered by an operational cooperation arrangement and finally calculating the share of transboundary basins covered by operational arrangements of the total sum of transboundary basin area and multiplying this by 100 to obtain a percentage. The aim is to achieve an indicator value of 100 per cent but it is up to each country to set their own progress target in the implementation of transboundary cooperation.

In late 2016 a template for data gathering was circulated to countries sharing transboundary waters with a deadline for submission of 31 March 2017. This was followed by a discussion on the experience with the reporting exercise at the UNECE meeting of the working group on Integrated Water Resources Management (IWRM) in July 2017. Reporting on this indicator would be presented to the High Level Political Forum (HLPF) to be held in July 2018 and would be included as part of the overall report on SDG 6 by UN-Water. It should be noted that this indicator was reviewed and reclassified as a tier 2 indicator from a tier 3 at the fifth meeting of the Inter-agency and Expert Group on SDG Indicators (IAEG-SDGs) in March 2017.⁴⁵ A tier 2 classification means that the indicator is conceptually clear, has an internationally established methodology

⁴³ UNGA, 2015.

⁴⁴ UN-Water, 2017.

⁴⁵ United Nations, DESA, Statistics Division, 2017.

and standards are available, but that the data are not regularly produced by countries. This classification may be due to the difficulty of answering the detailed survey that was sent to countries for reporting on the indicator.

There are several gaps in this indicator that apply globally and some that are more specific to the Arab region. One gap is where more than two riparian countries share a basin but not all of them have cooperation arrangements, in this case the indicator will not be able to reflect that a riparian country may not have a cooperation agreement with both the upstream and downstream neighbours. In the Arab region the ability of this indicator to truly reflect the transboundary cooperation becomes more difficult especially where the transboundary waters is shared between Arab and non-Arab countries or where part of the transboundary basin is under occupation or conflict. This indicator will not be able to reflect which of the riparian countries truly seek cooperation and which refuse to do so, and which countries are unable to do so due to conflict. On the operability component this indicator fails to reflect on the available means for countries to meet this objective. The operability of cooperation requires human and financial resources that several of the countries in the Region may not have available. Thus, the indicator will fail to differentiate between a lack of resources and a lack of intent or will to operationalize the cooperation. This operability component does not allow for partial fulfillment to be counted making the indicator very difficult to be met by various countries of the region that may have the legal basis for cooperation.

Cooperation modalities over shared waters are present in the Arab region. A number of formal inter-state agreements exist, with a more or less developed cooperation. Therefore, to meet the requirements of target 6.5, the Arab region needs to revitalize, and properly implement existing agreements, whenever they had been not active. Some of the existing agreements are suffering from the difficult political situation and conflict the region is experiencing. The region needs also to develop cooperation on shared basins where it does not already exist both for surface or groundwater.

Examples of such cooperation agreements in the Arab region include:

- Lebanon and the Syrian Arab Republic:⁴⁶
 - Orontes River: A bilateral agreement was signed in 1994 between Lebanon and the Syrian Arab Republic for the allocation of water resources of the Orontes,
 - Nahr Al Kabir Al Janoubi: An agreement was signed in 2002 between the two countries for equitable and reasonable utilization of the water resources and the construction of a joint dam. A joint technical committee was formed for the management of shared waters in the basin.
- Jordan and the Syrian Arab Republic:
 - Yarmuk River: In 1987, Jordan and the Syrian Arab Republic signed an agreement for the management of the Yarmuk river waters which also included the construction of a dam for hydropower generation.⁴⁷

The agreements between Syria and its neighbours are certainly affected by the current political crisis and certainly can't fulfil the operational conditionality of SDG 6.5.2.

- Chad, Egypt, Libya and Sudan:
 - Nubian Sandstone Aquifer System: In July 1992, Egypt and Libya established the Joint Authority for the Study and Development of the Nubian Sandstone Aquifer System in 1992. Chad and the Sudan joined the authority in the late 1990s.⁴⁸ This joint authority has been given responsibility for collecting and updating data, conducting studies, formulating plans and programmes for water resources development and use, implementing common groundwater management policies, training technical personnel, rationing the aquifer water,

⁴⁶ ESCWA, 2011.

⁴⁷ Ibid.

⁴⁸ Salman, 2017.

and studying the environmental aspects of water resources development. While the initiative had been in a stalemate for a while, there are recent positive signs that the situation might be changing.⁴⁹ If this joint authority were to fulfil its entire mandate, this would meet most of the operationality conditions set under SDG 6.5.2 but would lack the water management component.

- Algeria, Libya and Tunisia:
 - North Western Sahara Aquifer System (NWSAS): A Joint Ministerial Declaration for the establishment of the consultation mechanism for the aquifer system was signed by the three countries in 2008. The consultation mechanism is in the form of a steering committee comprised of representatives from each country. However, this committee is a communication tool and doesn't constitute an agreement on joint management which would satisfy the operationality condition of SDG 6.5.2.
- Jordan and Saudi Arabia
 - Al-Saq/Al-Disi aquifer: An agreement for the management and utilization of the groundwater in the Disi aquifer was signed by the two countries in 2015.⁵⁰ The agreement calls for the establishment of a Joint Technical Committee to hold regular meetings every six months or as the need arises. The Joint Technical Committee would be responsible for implementation of the agreement and collection and exchange of information and their analysis. This agreement if fully implemented could meet the conditions of operationality set in the SDG 6.5.2.

The listed agreements represent first steps of cooperation but not at the level of full joint management. For instance, the agreement on the Nubian Sandstone Aquifer System is about establishing the Joint Authority (JA), and it details its rules of functioning; however, it is not about water management. In the frame of a project "Formulation of an Action Programme for the Integrated Management of the Shared Nubian Aquifer", funded by the Global Environment Fund (GEF), implemented by the United Nations Development Programme (UNDP) and executed by the International Atomic Energy Agency (IAEA), the countries collaborated and exchanged data for the execution of the various activities. One major outcome of this project is the "Regional Strategic Action Programme for the Nubian Sandstone Aquifer System" (SAP), which was signed at high level by the Chair of the Joint Authority and the Ministers of water resources of the four countries. The SAP represents a regional policy document. The main focus in the SAP is to strengthen the existing cooperation through the JA and to extend its competence through new areas of cooperation such as ecosystems, biodiversity and climate change. A new project to implement the SAP, and therefore to develop cooperation, is under the process of submission for funding by the GEF and execution by UNESCO.⁵¹

The above is an example of the role that the international community can play to assist and support countries in developing their existing cooperation. The same effort could lead to assisting the countries in establishing mechanisms of cooperation. The countries of the North Western Sahara Aquifer System, Algeria, Libya and Tunisia had a long history of cooperation at the technical and scientific level, through internationally funded joint projects. To sustain the results achieved, the countries decided to establish a cooperation mechanism, which would continue what had started in the frame of an international funded project and to sustain the results through the exchange of data, and the update of the common database and the model of the aquifer system. With the support of a regional organization, Observatoire du Sahara et du Sahel (OSS) which has its headquarters in Tunis, the three countries established a Consultation Mechanism in 2008, and have continued since that time to exchange data, and the database and the model are being updated (Box 1).

⁴⁹ Information on the Joint Authority is available at <http://www.nsasja.org/>.

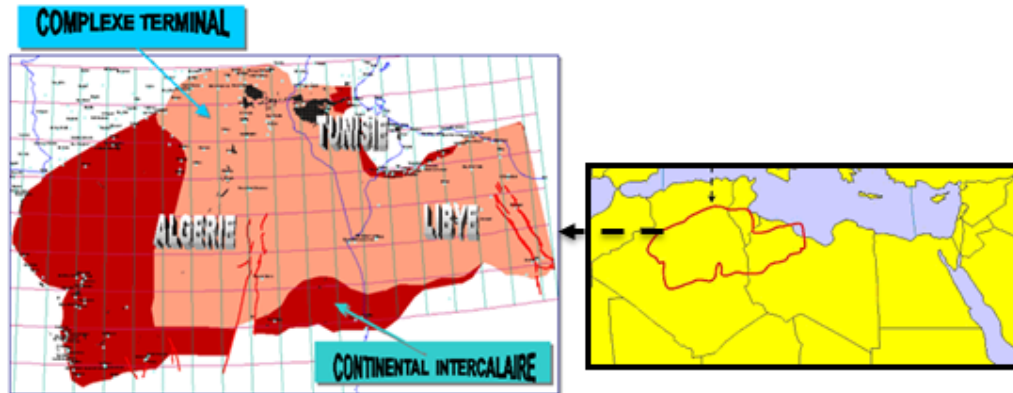
⁵⁰ الجريدة الرسمية للمملكة الأردنية الهاشمية، 2015.

⁵¹ GEF, n.d.

Box 1. Cooperation on the North Western Sahara Aquifer System

The North Western Sahara Aquifer System (NWSAS) is shared between Algeria, Tunisia and Libya. It expands over a surface area of one million squared kilometers, 69% of which is in Algeria, almost 8% in Tunisia, and 23% in Libya. The system receives very little recharge, and is considered therefore as non-renewable. Its reserves are estimated at about 60 million km³ and the total withdrawals at around 2.5 km³/year. A census performed in 2001 identified 8,800 wells tapping the NWSAS.¹ It represents the only source of water for about 5 million people. This heavy exploitation lead to serious signs of deterioration such as water salinization, disappearance of artesian flow wells, springs drying up and excessive drawdown in pumping wells.

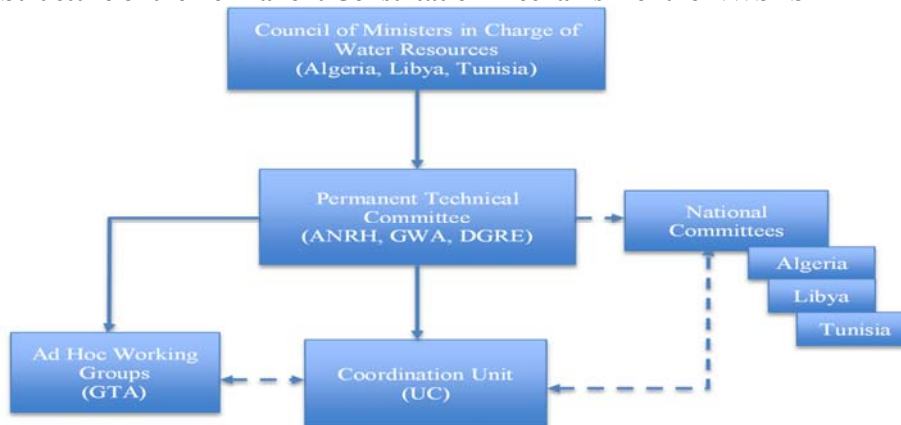
The North Western Sahara Aquifer System



Source: Chulli, Badiia (2017). Managing Shared Water Resources in Tunisia: Surface Water and Groundwater Perspectives. Presented at the ESCWA Expert Group Meeting on Pursuing Improved Shared Water Resources Management within the Framework of Global and Regional Agreements. Cairo, 29-30 November 2017.

Under the supervision of the Observatoire du Sahara et du Sahel, a regional organization based in Tunis, the three countries engaged from 1998 till 2002 in a first project. The main results were the establishment of a common database and a mathematical model of the aquifer system, which allowed simulations and developing scenarios. In view of sustaining these results and ensuring their continuous update, the countries agreed to establish a consultation mechanism to be hosted by OSS. The Water Ministers signed a declaration in 2006, and the mechanism was created in 2008 with the following structure:

Structure of the Permanent Consultation Mechanism of the NWSAS



Notes : ANRH = Agence Nationale des Ressources Hydrauliques (Algeria); GWA = General Water Authority (Libya); DGRE = Direction Générale des Ressources en Eau (Tunisia); GTA = Groupes des Travail ad hoc; UC = Unité de Coordination

The head coordinator is nominated for two years by each country on a rotating basis. The main mission of the mechanism is to offer a frame for exchange and cooperation between the three countries by:

- Producing indicators on the resource and the water demand
- The elaboration of management scenarios
- The update of the common database by the exchange of information
- The development and the management of common monitoring systems

After nine years of existence, the mechanism has achieved most of its missions, and its establishment is considered one of the few cases of successful cooperation on a shared aquifer even if it may not meet all the conditions set under SDG6.5.2.

Sources: Foster S. and P. Loucks (2006). *Non-renewable Groundwater Resources, A guidebook on Socially-Sustainable Management for Water Policy Makers*. Paris: UNESCO. Available from <http://unesdoc.unesco.org/images/0014/001469/146997e.pdf>.

Machard de Gramont, H. and others (2011). *Towards a Joint Management of Transboundary Aquifer Systems: Methodological Guidebook*. Agence Française de Développement, France. Available from <https://www.afd.fr/sites/afd/files/imported-files/03-VA-A-Savoir.pdf>.

Observatoire du Sahara et du Sahel (OSS) (2003). *Système Aquifère du Sahara Septentrional: Gestion Commune d'un Bassin Transfrontière*. Tunis (January). Available from http://www.oas-online.org/sites/default/files/fichier/rapport_de_synthese_0.pdf (in French).

While of course developing and building cooperation relies at first on the will of concerned States, starting to work together and to exchange within the framework of a project and with regional or international support provides the catalyst and incentive to initiate cooperation, which is progressive and needs time to reach its objectives.

VI. Conclusion

The preparation and the future adoption of cooperation guidance principles on shared water resources cooperation by the AMWC represents a first step at the high political level towards moving the region into the development of enhanced cooperation on the shared waters and the implementation of SDG 6.5. The guidance principles can therefore represent the tool to follow for the initiation and expansion of cooperation. Various possibilities can be deployed throughout the region in this direction, mainly:

- Inform and expand the knowledge about the issue of shared water resources in the Arab region, and on the cooperation principles when they are adopted, through regional meetings and conferences, with exchange of experience and lessons learnt from existing experience, even from other regions.
- Initiating and implementing pilot projects on specific shared basins/aquifers through regional and international support and financing to support shared water cooperation. The involvement of the riparian countries of the basin/aquifer would be essential in the success of such projects. The project should develop activities following the cooperation guidance principles and aim at raising awareness on the advantages of cooperation and enabling confidence building. These activities can include: developing knowledge on the shared water resource, identifying the needs of each countries and the challenges, assessing the legal and institutional frameworks and spotting gaps and overlaps and drafting recommendations for possible joint structure mechanisms. Such projects can be prepared either for basins/aquifers where an agreement already exists in view of enhancing its implementation or in basins/aquifers where cooperation activities or agreements are lacking.
- Develop capacity building and knowledge on issues related to cooperation over shared waters:

water diplomacy including international water law, but also on various technical issues such as monitoring, database, modelling and others. This meets the AMWC recent resolution to further develop the capacity in the region on shared water resources management.

The initiative of the AMWC on the issue of shared waters is certainly an important one and the adoption of cooperation guidance principles on shared water resources would demonstrate the political involvement of the region in making progress in the direction of developing cooperation and achieving the SDG 6.5 target. This first step would need to be followed by an implementation of the spirit of the cooperation guidance principles, and creating a dynamic in the region on shared waters. While actions as those mentioned above, and the support of regional and international organisations would represent an important asset, the political will at the national level remains a fundamental key. The basis for shared water cooperation exists where several cooperation initiatives exist in terms of memorandums of understanding or joint commissions or agreements but these need to be operationalized. The achievement of SDG target 6.5 in the Arab region has several difficulties in view of the complicated political scene under armed conflict and occupation and it remains up to each country to set their own progress target in the implementation of transboundary cooperation. Thus, the set indicator of cooperation, SDG 6.5.2, may not fully capture the specificities of the region on shared water cooperation where the will of cooperation exists and just needs the institutional framework and perhaps the financial sustainability in many cases.

An important entry point would be to perform a close analysis of the submitted country reporting on SDG 6.5.2 indicator for the Arab region and identify deficiencies either in cooperation agreements or operationalizing these agreements. Once this mapping is performed then an action plan on priority needs could be identified to assist the Arab States for achieving improved cooperation on shared water resources.

Annex I.

Draft principles on shared water resources cooperation in the Arab region

مسودة المبادئ الاستراتيجية للتعاون العربي في استغلال الموارد المائية المشتركة

ديباجة

إن المجلس الوزاري العربي للمياه،

بناءً على الخصائص التي تُميّز المنطقة العربية عن غيرها من الأقاليم،

وأخذاً في الاعتبار تفاقم ندرة الموارد المائية السطحية والجوفية وتدهور نوعيتها وتزايد الطلب عليها، وإيماناً منه بأهمية وضرورة حسن إدارة الموارد المائية المشتركة والعمل على الاستخدام الأمثل والمستدام لضمان حقوق الأجيال الحالية والمستقبلية في هذه المياه،

وتعزيزاً للثقة التي تربط الدول العربية وعملاً منه على تضامنها في مواجهة التحديات المائية، وسعيًا نحو تعزيز التكامل الاقتصادي العربي،

وتماشياً مع الأعراف والقوانين الدولية في مجال المياه المشتركة، وأخذاً في الحسبان التطورات الدولية المرتبطة بمجال المياه، منها أهداف التنمية المستدامة لعام 2030، خاصة الأهداف المتعلقة بإدارة الموارد المائية وبالأخص المشتركة منها،

وتأكيداً على الحقوق المائية الثابتة والمشروعة والتاريخية والمكتسبة للدول العربية في الموارد المائية الدولية المشتركة واضعين في الاعتبار الاتفاقيات الحالية الثنائية ومتعددة الأطراف التي اقترتها الدول المعنية واعتبار الأمن المائي عنصراً أساسياً من عناصر الأمن القومي العربي،

وتأكيداً على التمسك بالحقوق الثابتة والمشروعة في المياه العربية في الأراضي العربية المحتلة،

واستناداً إلى ميثاق جامعة الدول العربية الداعي إلى دعم الروابط بين الدول العربية وتوطيدها وتأمين مستقبلها وتحقيق أمانها وأمالها،

وتنفيذاً لمكوّنات استراتيجية "الأمن المائي في المنطقة العربية لمواجهة التحديات والمتطلبات المستقبلية للتنمية المستدامة"، المتعلقة بإدارة الموارد المائية المشتركة بين الدول العربية، وتنفيذاً لقرارات المجلس الوزاري العربي للمياه المتعلقة بإعداد مسودة المبادئ الاستراتيجية للتعاون العربي في استغلال الموارد المائية المشتركة، رقم (ق128 - د.ع. (8) م.و.ع.م - 2016/10/26) في دورته الثامنة ورقم (ق150 - د.ع. (9) م.و.ع.م - 2017/7/6) في دورته التاسعة.

يدعو الدول العربية الى الاستراتيجية بمبادئ التعاون التالية:

المبدأ 1: نطاق المبادئ الاستراتيجية

تعنى هذه المبادئ الاستراتيجية باستخدام الموارد المائية المشتركة بين دولتين عربيتين أو أكثر، وتدابير التعاون لتنمية وإدارة وحماية هذه الموارد.

تعنى الدول العربية بالاسترشاد بهذه المبادئ عند استخدام الموارد المائية المشتركة وتعزيز التعاون لتنمية وإدارة وحماية هذه الموارد.

المبدأ 2: استخدام المصطلحات

- (أ) المورد المائي المشترك: المياه السطحية و/أو المياه الجوفية في الحوض المائي المشترك.
- (ب) المياه السطحية: المياه على سطح الأرض، سواء أكانت راكدة أو جارية في مجرى مُحدّد أو في وادٍ أو ساقطة على سطح الأرض على هيئة أمطار أو ثلوج وقبل التسرب إلى باطن الأرض ويستثنى من ذلك مياه البحار والمحيطات.
- (ج) المياه الجوفية: المياه الموجودة في طبقة (أو طبقات) المياه الجوفية المشتركة أو الناتجة عن سريانها إلى سطح الأرض على هيئة ينابيع وعيون، وبغض النظر عما إذا كانت هذه المياه ناتجة من التغذية المائية خلال أزمنة معاصرة أو أزمنة قديمة.
- (د) طبقة (أو طبقات) المياه الجوفية المشتركة: تشكيل جيولوجي (أو عدد من التشكيلات الجيولوجية المتصلة ببعضها هيدروليكيًا) حاوي ونفوذ للمياه وتمتد أجزاءه في أكثر من دولة.
- (هـ) الحوض المائي المشترك: المنطقة الجغرافية الممتدة على أراضي دولتين أو أكثر من الدول المتشاركة والتي تحددها حدود المستجمع المائي.
- (و) المستجمع المائي: المنطقة الجغرافية التي تتجمع فيها مياه الأمطار الساقطة عليها والمشكلة بذلك المياه السطحية، كما تتضمن أيضاً حدود طبقة (أو طبقات) المياه الجوفية المشتركة ومناطق تغذيتها من الأمطار والمياه السطحية ومناطق تصريفها إلى منافذها الطبيعية مثل المجرى المائي، أو البحيرة، أو الواحة، أو الأرض الرطبة، أو إلى البحر.
- (ز) دولة متشاركة: أي دولة يقع في أراضيها أي جزء من المورد المائي المشترك.
- (ح) إدارة المورد المائي المشترك: التخطيط إلى أقصى قدر ممكن من الاستفادة للانتفاع من المورد المائي المشترك وتنميته وحمايته وتنظيم استخدامه بطريقة رشيدة.

المبدأ 3: اتفاقيات حول الموارد المائية المشتركة

1. لغرض إدارة المورد المائي المشترك، تعمل الدول المتشاركة على إبرام اتفاقيات أو القيام بترتيبات ثنائية أو جماعية فيما بينها، في حالة عدم وجود ذلك، دون الإضرار بالدول المتشاركة الأخرى. ويُمكن لتلك الاتفاقيات أو الترتيبات أن تتضمن المورد المائي المشترك بكامل نطاقه الجغرافي أو أي جزء منه متى ما دعت الضرورة لذلك، دون أن تؤثر تأثيراً ضاراً ذا شأن في استفادة الدول المتشاركة الأخرى من هذا المورد المائي المشترك.
2. يحق لكل دولة عربية من الدول المتشاركة أن تشارك في أي من المشاورات ذات الصلة بهذا المورد، ويحق لها المشاركة في التفاوض لتصبح طرفاً في أي اتفاق يسري على كامل النطاق الجغرافي للمورد المائي المشترك.

3. تشجع الدول العربية ووفقاً لهذه المبادئ الاسترشادية الدول المتشاركة الأخرى على الدخول في مفاوضات بهدف التوصل الى اتفاقيات دائمة عادلة ومنصفة بشأن الموارد المائية الدولية المشتركة ووفقاً للمبادئ والقواعد المتعارف عليها دولياً، وبما لا يتعارض مع المادة (11) من هذه المبادئ.

المبدأ 4: الالتزام العام بالتعاون

1. تتعاون الدول المتشاركة على أسس حسن النية والجوار بهدف تبادل المنافع وتحقيق أقصى قدر ممكن من الاستخدام المستدام والتنمية والحماية الكافية والإدارة الفعالة للمورد المائي المشترك.
2. تعمل الدول المتشاركة في انشاء أليات أو لجان مشتركة لتيسير التعاون ولاتخاذ التدابير والاجراءات اللازمة لإدارة وتنمية وحماية المورد المائي المشترك.

المبدأ 5: التبادل المنتظم للبيانات والمعلومات

1. تتبادل الدول المتشاركة فيما بينها، بصورة مباشرة وسلسة ومنتظمة وفي الأوقات المناسبة، البيانات والمعلومات والتنبؤات المتاحة والسيناريوهات المتوقعة عن المورد المائي المشترك، بما فيها البيانات والمعلومات ذات الطابع الجيولوجي والهيدرولوجي والهيدروجيولوجي والبيئي والمناخي، فضلاً عن تلك المتعلقة بإدارة المورد المائي المشترك ونوعية المياه فيه.
2. تبذل الدول المتشاركة، منفردة أو مجتمعة، قصارى جهودها وفي حدود إمكانياتها وبحسب الممارسات والمعايير المعتمدة دولياً في رصد وجمع وتحديث بيانات ومعلومات وافية حول المورد المائي المشترك.
3. تعمل الدول المتشاركة على وضع الترتيبات المؤسسية التي تتيح رصد ومتابعة هذا المورد بشكل جماعي وبالوسائل المناسبة والحديثة في حال عدم وجود اتفاقات أو ترتيبات لذلك.

المبدأ 6: الانتفاع المنصف والمعقول

1. يحق لكل من الدول المتشاركة، الانتفاع المنصف والمعقول كماً ونوعاً من مياه المورد المائي المشترك دون التأثير على الانتفاع المنصف والمعقول للدول المتشاركة الأخرى.
2. تقوم الدول المتشاركة، عملاً بمبدأ التعاون في مجالات استخدام وحماية وإدارة المورد المائي المشترك، باتخاذ جميع التدابير المناسبة وتنسيق خططها المائية لضمان انتفاع جميع الدول المتشاركة من هذا المورد بطريقة منصفة ومعقولة ومستدامة، مع الأخذ بعين الاعتبار أهمية تقييم العوامل والظروف ذات الصلة.
3. يحدد الوزن الممنوح لكل عامل من العوامل وفقاً لأهميته بالمقارنة مع العوامل والظروف الأخرى ذات الصلة. وعند تحديد ماهية الانتفاع المنصف والمعقول، يجب النظر في جميع العوامل والظروف ذات الصلة معاً والتوصل على استنتاج على أساسها جميعاً.
4. ما لم يوجد اتفاق أو عرف مخالف، تتمتع احتياجات الشرب والاستخدامات المنزلية الأساسية بالأولوية على جميع استخدامات مياه المورد المائي المشترك الأخرى ويمكن أن يتم تحديد أولويات الاستخدام للأغراض الأخرى كالري والصناعة والبيئة، حسب ما تتفق عليه الدول المتشاركة.

المبدأ 7: الالتزام بعدم التسبب بضرر ذي شأن

تتخذ الدول المتشاركة، عند الانتفاع بالمورد المائي المشترك في أراضيها، جميع التدابير المناسبة للحيلولة دون التسبب بضرر ذي شأن للدول المتشاركة الأخرى. ومتى وقع ضرر ذو شأن على دولة أخرى، تتخذ الدولة التي

تسببت في وقوع الضرر وبالتشاور مع الدولة المتضررة، جميع التدابير المناسبة من أجل إزالة أو تخفيف آثار هذا الضرر والقيام، حسب الحالة، بالتفاوض بشأن التسوية المناسبة.

المبدأ 8: الإخطار بالتدابير المزمع تنفيذها

1. قبل أن تقوم إحدى الدول المتشاركة بتنفيذ تدابير من شأنها أن تؤثر على الدول المتشاركة الأخرى، عليها أن توجه إلى تلك الدول إخطاراً بذلك قبل التنفيذ بفترة زمنية لا تقل عن ستة أشهر إلا إذا تم الاتفاق على خلاف ذلك. وعلى أن يتم إرفاق الإخطار بالبيانات والمعلومات الفنية المتاحة ونتائج أية دراسات لتقييم الآثار المحتملة للتدابير المزمع تنفيذها.
2. تتشاور الدول المتشاركة فيما بينها قبل التنفيذ، وإذا لزم الأمر، تتفاوض بشأن تجنب أو تخفيف الآثار المحتملة، وذلك بهدف التوصل إلى اتفاق في التدابير المزمع تنفيذها على المورد المائي المشترك. تمتنع الدولة التي وجهت الإخطار، أثناء المفاوضات، عن تنفيذ التدابير المزمع اتخاذها لفترة ستة أشهر إلا إذا تم الاتفاق على خلاف ذلك.

المبدأ 9: حماية البيئة

1. تعمل الدول المتشاركة، منفردة أو مجتمعة، على حماية النظم الإحيائية (الايكولوجية) للمورد المائي المشترك وحماية مصادره ومصباته.
2. تقوم الدول المتشاركة، منفردة أو مجتمعة، باتخاذ جميع الإجراءات المناسبة لمنع وتخفيض ومكافحة تلوث المورد المائي المشترك الذي يمكن أن يسبب ضرراً ذا شأن بغيرها من الدول المتشاركة أو ببيئتها، وبخاصة الضرر على صحة الإنسان أو سلامته، أو على استخدام المياه لأي غرض مفيد، أو على التنوع الحيوي للمورد المائي المشترك.
3. تقوم الدول المتشاركة باتخاذ جميع التدابير المناسبة لتنسيق سياساتها المتعلقة بحماية بيئة المورد المائي المشترك.

المبدأ 10: حالات الطوارئ

1. يُقصد "بحالة الطوارئ" الحالة التي تُسبب ضرر ذي شأن أو تُشكل تهديداً وشيكاً يمكن أن يحدث هذا الضرر للدول المتشاركة أو لدول أخرى، والتي تنتج بشكل مفاجئ من أسباب طبيعية أو من سلوك الإنسان.
2. على الدولة المتشاركة التي تعرضت لحالة طوارئ داخل أراضيها، أن تقوم بصورة عاجلة وبأسرع الوسائل المتاحة، بإخطار الدول المتشاركة الأخرى المحتمل تأثرها بجميع حالات الطوارئ المتعلقة بالمورد المائي المشترك.
3. على الدولة المتشاركة التي تعرضت لحالة طوارئ داخل أراضيها أن تقوم، بالتعاون مع الدول التي يحتمل أن تتأثر بهذه الحالة، لاتخاذ جميع التدابير العملية التي تقتضيها الظروف لمنع أو إزالة أو تخفيف آثارها الضارة.
4. تضع الدول المتشاركة خططاً لمواجهة حالات الطوارئ المحتملة بالتعاون مع الدول الأخرى التي يحتمل أن تتأثر بهذه الحالات.

المبدأ 11: المياه المشتركة بين الدول العربية والدول الأخرى

تؤكد الدول العربية على أهمية حصول الدول العربية التي تشترك في مواردها المائية مع دول أخرى على حقوقها المائية المشروعة والتاريخية والحفاظ عليها من خلال احترام الاتفاقيات القائمة فيما بينها أو العمل على إبرام اتفاقيات مبنية على مبادئ وقواعد القانون الدولي يتم التفاوض بشأنها بين الأطراف المتشاركة.

المبدأ 12: المياه في الأراضي العربية المحتلة

تؤكد الدول العربية على التمسك بالحقوق المائية المشروعة في الأراضي العربية المحتلة وأن تتمتع الموارد المائية في الأراضي العربية المحتلة بالحماية التي توفرها مبادئ وقواعد القانون الدولي الواجبة التطبيق في حالة الاحتلال، وعدم جواز استغلال هذه الموارد المائية استغلالاً ينتهك هذه المبادئ والقواعد.

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