



NATURAL COOPERATION

FACING WATER CHALLENGES IN THE MIDDLE EAST

Aysegül Kibaroglu

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1761 N STREET NW
WASHINGTON, D.C. 20036

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Facing Water Challenges in the Middle East

Aysegül Kibaroglu



Middle East Institute

Regional Cooperation Series

ABBREVIATIONS

D.O.P.	DECLARATION OF PRINCIPLES
F.O.E.M.E.	FRIENDS OF THE EARTH MIDDLE EAST
I.P.O.E.	INTERNATIONAL PANEL OF EXPERTS
ISIS	ISLAMIC STATE IN IRAQ AND SYRIA
J.T.C.	JOINT TECHNICAL COMMITTEE
MENA	MIDDLE EAST AND NORTH AFRICA
N.B.I.	NILE BASIN INITIATIVE
N.G.O.	NON-GOVERNMENTAL ORGANIZATION
S.A.D.C.	SOUTHERN AFRICAN DEVELOPMENT COMMUNITY

CONTENTS

- 1 INTRODUCTION
- 2 EXISTING KEY WATER DISPUTES
- 7 WHERE ARE WE TODAY IN TERMS OF REGIONAL WATER COOPERATION?
- 13 WHERE WILL THE REGION BE IN 2030 WITHOUT COOPERATION?
- 16 THE BENEFITS OF REGIONAL COOPERATION
- 20 WHERE COULD THE REGION BE IN 2030 IN A SCENARIO INVOLVING SIGNIFICANT REGIONAL WATER COOPERATION?
- 24 ENDNOTES

SUMMARY

The Middle East and North Africa (MENA) is regarded as one of the most water-challenged regions in the world. The destabilizing impact of its resource constraints is compounded by the fact that some 60 percent of the region's water flows across international borders, generating and exacerbating political tensions between states. Water insecurity will increase in the MENA region if the current situation of minimal water cooperation persists under the disabling conditions of political volatility, economic disintegration, institutional failure, and environmental degradation. Experiences from around the world demonstrate that countries that have achieved regional water cooperation have prospered together and kept the threat of conflict a remote possibility. It is time for the countries in the Middle East to realize that there is no alternative to sustainable water cooperation.

KEY FINDINGS

- ◆ Water management is an important instrument for the prevention of conflict
- ◆ If MENA countries continue to pursue uncoordinated water-based development policies, the region may face severe food shortages by 2030-2040
- ◆ Historical examples show that there is a close relationship between peace and water cooperation and vice versa
- ◆ MENA has yet to witness a full-scale war over water, but it has proven to be a multiplier of factors causing conflict
- ◆ Lesson to be learned from Syria's civil war, where the severe drought for 2006-2010 had a catalytic effect

INTRODUCTION

The vital importance of water for human security and sustainable development has received worldwide attention. Much emphasis has been placed on the global status of water, namely water scarcity and a lack of access to clean water and sanitation. Certain regions are far weaker than others in terms of shared surface and groundwater resources between two or more countries. The Middle East and North Africa (MENA) is regarded as one of the most challenged regions in this regard. In addition

to the constraints of its natural water resources, MENA suffers from an abundance of issues that compound water security, including a rapidly

growing population, disparate economic development, limited amounts of irregularly distributed water supply, negative impacts of climate change and variability, and poor water management and allocation practices both within and between states.

The geopolitical importance of the region, and the conflicts that have consequently resulted, aggravate the usual problems of sharing water in a variety of MENA settings, such as in the transboundary river basins of the Jordan, the Euphrates-Tigris, and the Nile.

While MENA covers 4.9 percent of the total area of the world and contains 4.4 percent of its population, its water resources, which total 484 km³, are only about 1.1 percent of the total renewable water resources of the world. Moreover, large differences exist between MENA's countries and its sub-regions. Globally, the average per capita water availability is close to 7,000 m³/person/year, whereas in MENA, only 1,200 m³/person/year is available. Half of the region's population lives under conditions of water stress.¹

Moreover, with the population expected to grow from 300 million today to 500 million in 2025, per capita water availability is expected to halve by 2050, with serious consequences for the region's already-stressed groundwater and natural hydrological system.² Some 60 percent of the region's water flows across

“Half of the MENA region’s population lives under conditions of water stress.”

international borders, complicating the resource management challenge. Every major river in the region crosses one or more international border, and 50 percent of MENA's population depends on water flowing from another sovereign state. Political considerations of individual states exert pressure on water policies and often lead to policies that have unforeseen and serious consequences on populations and states downstream.

In addition to being one of the most arid regions in the world, MENA experiences high natural variability in precipitation. With global warming and climate change, variability and aridity are both likely to increase. Researchers

“50 percent of MENA’s population depends on water flowing from another sovereign state.”

have identified an increasing tendency in annual and seasonal drought intensity corresponding with an increasing

number of dry days in the rainy season.³ There is evidence that climate change is already beginning to influence droughts in the area by reducing winter rainfall and increasing evapotranspiration at rates higher than can be explained by natural variability alone. Recent climate simulations all indicate growing water-related risks from higher temperatures, increased evaporative water demands, reductions in future runoff levels, and changes in the timing of runoff.⁴

EXISTING KEY WATER DISPUTES

All the major transboundary river basins in MENA are in sub-regions that have experienced severe political tensions. These political circumstances have aggravated past water disputes, which otherwise might have been solved had the political climate been more favorable. In other words, water disputes were overlaid, or at least influenced, by multifaceted interstate conflicts involving disputes over security, borders, and other issues.⁵



JORDAN RIVER BASIN

The Jordan River system includes Israel, Jordan, Palestinian Authority, Syria and Lebanon. Total water availability in the Jordan basin is very limited. The riparians of the Jordan system place it among the countries with the lowest per capita water availability in the world. To complicate this harsh hydrological setting, the region has been the locus of a protracted political struggle.⁶ Since 1967, “resource capture” has been a cause for water disputes in the Jordan basin. Its occupation of the West Bank, Gaza Strip, and Golan Heights gave Israel almost total control over the headwaters of the Jordan River and its tributaries, as well as control over the major recharge region for its groundwater aquifers. Hence, much of the tension over water between the Palestinians and the Israelis relates to discrimination in water allocation, pricing, and delivery systems.⁷ Water consumption by Israeli settlers in the West Bank is roughly eight to ten times that of the Palestinians.⁸ With rapid population growth (3 percent per year), declining water availability in the West Bank is a tightening constraint on

agriculture and human use.⁹ To illustrate, water became a bone of contention between Israel and Lebanon in 2002. The Lebanese initiative to divert water from the Wazzani River—the main source of the Hasbani River, which contributes approximately 25 percent of the Jordan River’s water—deepened the rift between Israel and Lebanon. Israeli Prime Minister Ariel Sharon had described the project as a *casus belli*, arguing that Israel could not allow the project to proceed. A hot conflict between two states was averted through U.S. mediation.¹⁰ Hence, the water dispute in the Jordan basin is a distribution conflict embedded in a protracted political (Arab-Israeli) conflict, displaying all the characteristics of a zero-sum game.

NILE RIVER BASIN

In the late 1920s, under the full control of Britain, colonial water-sharing agreements were concluded throughout the Nile basin. Following the wave of independence in Africa in the 1950s, all upstream riparian states declared those agreements void, including the most important one, the 1929 Nile Water Agreement. This was later replaced by the still legally binding 1959 Agreement for the Full Utilization of the Nile Waters, under which the two riparians agreed to share the water with 75 percent and 25 percent for Egypt and Sudan, respectively.¹¹ The 1959 agreement has never been accepted by any of the upstream riparians, remaining a cause for recurring tensions. Egypt, so heavily dependent

“Water became a bone of contention between Israel and Lebanon in 2002.”

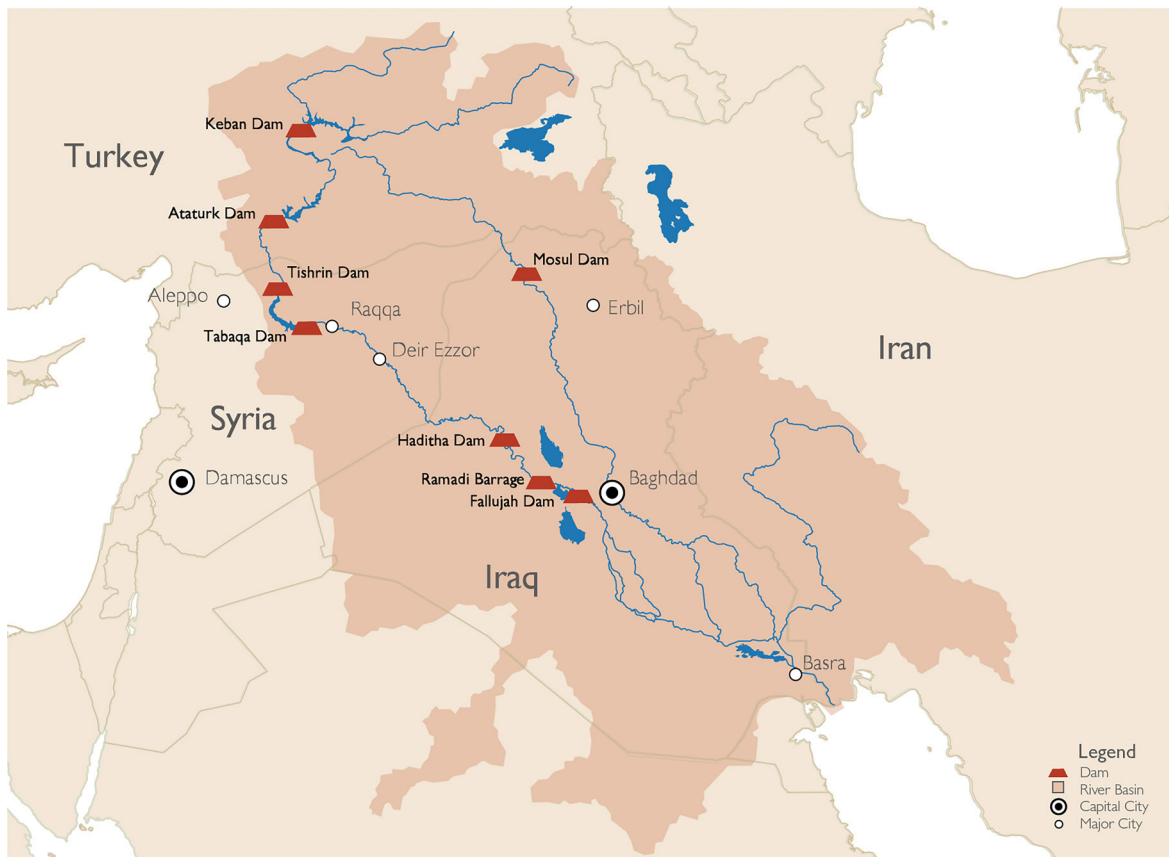
on the Nile waters, has used its military might and hegemonic status to threaten any upper riparian, primarily Ethiopia, from undertaking any projects that would risk Egypt’s share of the Nile.¹² Challenging this historical status quo, in March 2011, the Ethiopian government announced plans to construct a hydroelectric dam on the Blue Nile, the Grand Ethiopian Renaissance Dam, which is expected to generate approximately 6,000MW of electricity, becoming Africa’s largest power plant. Concerns have been raised over the dam’s impact on Egypt. Tensions over the dam increased in May 2011 when Ethiopia temporarily diverted the flow of the Blue Nile as part of the construction process. After exchanges of harsh rhetoric



between the heads of states, the foreign ministers of Egypt and Ethiopia met and agreed to hold further talks on the construction of the dam in June 2011.¹³ The current water dispute in the Nile basin intimately relates to the unfair clauses in the historical bilateral sharing agreements. The increasing ability and desire of the upstream states, namely Ethiopia, to challenge Egypt's status as hydro-hegemon and the overall status quo underpins the current tensions over water.

EUPHRATES-TIGRIS BASIN

The water question emerged on the regional agenda in the Euphrates-Tigris basin when the three riparians initiated major water and land resource development projects. Only since the 1960s have Turkey and Syria put forward ambitious plans to develop the waters of the Euphrates-Tigris river system for energy and irrigation purposes. At the same time, Iraq also announced new schemes for an extension of its irrigated area.¹⁴ As the national water development ventures progressed, mismatches between water supply and



demand occurred throughout the river basin. The ad hoc technical negotiations were unable to prepare the ground for a comprehensive treaty on equitable and effective transboundary water management. Hence, a series of diplomatic crises occurred in the region in the last quarter of the 20th century. Turkey started impounding the Keban Reservoir by February 1974 at the same time that Syria had almost finalized the construction of the Tabqa Dam. This was a period of severe drought. The impounding of both reservoirs escalated into a crisis in the spring of 1975. Iraq accused Syria of reducing the river's flow to intolerable levels, while Syria placed the blame on Turkey. The Iraqi government was not satisfied with the Syrian response, and the mounting frustration resulted in mutual threats bringing the parties to the brink of armed hostility. A war over water was averted with Saudi mediation, resulting in extra amounts of water being released from Syria to Iraq.¹⁵ In January 1990, Turkey temporarily intervened in the flow of the Euphrates River in Dam order to fill the Atatürk dam reservoir. Even though Turkey had notified its downstream neighbors by November 1989 of the impending event

and had sent delegations to Middle Eastern countries to explain the need for the impoundment and the measures taken, the Syrian and the Iraqi governments officially protested Turkey, and consequently called for an agreement to share the waters of the Euphrates, as well as a reduction in the impounding period.¹⁶ In 1998, Turkish-Syrian relations became tense when Turkey threatened Syria with military measures to prevent Syria from providing ample support to the Kurdistan Workers' Party. War was prevented by the mediation of Egyptian and Iranian leaders. This event paved the way for the conclusion of the Turkish-Syrian

Ceyhan
Security Agreement
in October 1998.¹⁷
Shortly after
signing, Syria
requested the
resumption of the
Joint Technical
Committee

“There is no regional institution that is capable of bringing together all the major countries in the region to negotiate and manage economic and political issues.”

meetings to enable the water issue to be considered. Hence, the water dispute in the basin originated due to the competitive, uncoordinated, and unilateral water development projects of the riparians; however, the political linkages established between transboundary water issues and non-riparian security issues also exacerbated the disagreements over water-sharing and allocation.

WHERE ARE WE TODAY IN TERMS OF REGIONAL WATER COOPERATION?

There is no regional institution that is capable of bringing together all the major countries in the region to negotiate and manage economic and political issues. The main intergovernmental regional organization, the Arab League, does not include Ethiopia, Turkey, Iran, and Israel, and the organization itself is beset with internal divisions. Under this non-cooperative regional framework, historically, transboundary rivers in the Middle East have been a source of tension between countries. In this context, although the claim that water was a major cause of the 1967 war is much disputed, there is little doubt that the

development of Israel's National Water Carrier in 1964 and subsequent Syrian attempts to divert the headwaters of the Jordan River played a part in the chain of events leading to the war.¹⁸

With regard to regional water cooperation, there are only rudimentary forms of cooperation and agreements in place. Comprehensive transboundary agreements or treaties that could help regulate potentially inharmonious claims by riparian states are not found. There are a limited number of bilateral, and sometimes outdated, protocols and other arrangements. Hence, the existence of a treaty on a water basin in the MENA region could not be accepted as evidence of cooperation. To illustrate, the volatile relations between the Arabs and Israelis occasionally witnessed attempts at transboundary water cooperation, albeit fruitless.¹⁹ Nonetheless, in the aftermath of the Gulf crisis in 1990, coupled with the end of the Cold War, the rules of engagement in the region drastically changed.

“With regard to regional water cooperation, there are only rudimentary forms of cooperation and agreements in place.”

With the political scene changed, U.S. President George H.W. Bush was in a position to convene the Madrid Peace Talks in October 1991.²⁰

In the treaties and agreements signed since then, water has been given utmost attention.²¹ In addition to the bilateral nature (Israel-Jordan; Israel-Palestinian Authority) of these agreements, Syria and Lebanon were excluded since they boycotted the Middle East Peace Process altogether. In the peace treaty between Israel and Jordan, Article 6 and Annex II are devoted to water problems. Even though the water stipulations of the treaty are rather balanced in terms of the emphasis on equitable and efficient use of available water resources, the rights of the Palestinians in the West Bank are totally ignored.²² The treaty did not detail what would happen to the prescribed allocations in a drought. In early 1999, the worst drought on record led to tensions as water deliveries to Jordan fell.²³ On the other front, the Oslo Accords between Israel and the Palestinian Liberation Organization incorporate, in the very detailed Article 40, “the Palestinian water rights in the West Bank,” but water rights of the Palestinians from the

surface water of the Jordan River are not discussed at all.²⁴ All in all, these agreements are bilateral and exclude the water rights of pivotal riparians, and they predominantly concern water quantity or border issues while neglecting vital and urgent issues such as drought management.²⁵

In 1987 and 1990 two bilateral protocols—acknowledged by all the riparian states as interim agreements—were signed, following a number of high-level meetings of top officials in the Euphrates-Tigris basin. In 1987, the Turkish-Syrian Protocol on Economic Cooperation was the first formal bilateral agreement reached on the Euphrates. Turkey promised a water flow of up to 500 m³ per second, or about 16 km³ per year, at the Turkish-Syrian border, with the intention of reaching an agreement with Syria on security matters.²⁶ On the other hand, the Syrian-Iraqi water protocol of 1990 designated Syria's share of the Euphrates waters at 42 percent and the remaining 58 percent was allocated

to Iraq as a fixed annual total percentage.²⁷ However, these bilateral accords have failed to include basic components of integrated water resources management, namely the exchange of water and land resources data, water quality

management, environmental protection, and stakeholder engagement. Indeed, data and information regarding stream flow, water removal, return flow, present water use, land use, and so forth have been generally incomplete and not regularly exchanged between riparian states. This constitutes a major limitation to proper assessment and management of water and land resources in the basin. Furthermore, both treaties failed to address fluctuations in flow, meaning that they contained no clauses referring to the periods of drought that occur frequently in the basin and cause drastic changes in the flow regime that require urgent adjustment to the use of the rivers.²⁸ The water-sharing protocols also lack an effective organizational backup, at least in the form of joint monitoring of these agreements.

“These bilateral accords have failed to include basic components of integrated water resources management.”

River basin organizations or technical water committees that might serve as platforms for the accommodation of water conflicts largely do not exist in the MENA region, and, if they do, they are unable to fulfill their mandate. In the early 1980s, the Euphrates-Tigris basin riparians managed to build an institutional framework, namely the Joint Technical Committee (J.T.C.), whose members included participants from all three riparians.²⁹ Yet, they couldn't succeed to empower the committee with a clear and jointly agreed mandate. Instead, the riparian countries continued unilateral and uncoordinated water and land development ventures. The J.T.C. meetings did not make an effective contribution to the settlement of the transboundary water dispute, and it did not provide a platform for delineating the co-riparians' priorities and needs as a basis for addressing regional water problems. In this respect, water use patterns

and the riparians' related legislation and institutional structures never had a chance of being discussed at the J.T.C. meetings.

“ There have been credible efforts to reach a joint management scheme for the entire Nile River Basin.”

National management and allocation policies were like “black boxes,” and water management practices within the various countries simply could not be debated during those negotiations.³⁰

On the other hand, there have been considerable cooperative efforts in the Nile River Basin, culminating in the founding of the Nile Basin Initiative (N.B.I.) in 1999.³¹ Under the auspices of the N.B.I., there have been many cooperative projects and negotiations to devise a Cooperative Framework Agreement (2010), which has so far been signed by six countries and ratified by three.³² So, despite the fact that there remain bilateral disputes over water-sharing (e.g., between Egypt and Ethiopia), there have been credible efforts to reach a joint management scheme for the entire river basin. Even regarding the status of the most controversial project, namely the Grand Ethiopian Renaissance Dam, the three concerned riparians (Egypt, Ethiopia, and Sudan) started consultations in 2011, which culminated in the establishment of the International Panel of Experts (I.P.O.E.) in May 2012. Based on the recommendations of the I.P.O.E.,

the three countries agreed to carry out selected specialized studies to quantify impacts and support the formulation of dam filling and operation guidelines.³³ Subsequently, the three countries signed the Declaration of Principles (D.o.P.) on March 23, 2015, the core of which involves the agreement by the three countries to formulate and agree on the first dam filling and operation guidelines and rules.³⁴ Years of deliberations in N.B.I. fora have helped the parties, first, to understand each other's concerns, and, second, to know each other better and thereby more effectively manage the rigor of such negotiations. However, despite the progress achieved by these cooperative institutions, these initiatives could not operationalize the globally agreed principles of customary international law, namely "the equitable reasonable utilization," "the obligation not to cause significant harm," and "the principle of protection and conservation of the river's ecosystem." All these principles have been referred to as the main constituents of cooperative framework agreements and institutions, yet the riparians have not been successful in putting them into practice and replacing the 1959 agreement.

“With no regional coordination, violent non-state actors have been able to use water as both a resource and a weapon.”

Notwithstanding the failures in interstate water cooperation, as well as the shortcomings and loopholes in existing water agreements, the present overarching challenge in the MENA region is to coordinate water resource management and to establish transboundary water cooperation in the midst of the current state of affairs. That is to say, the turmoil in Syria and instability in Iraq, which have had deep impacts and spill-over effects on their neighbors, demonstrate that, while the genesis of these conflicts have complicated narratives, water is a key part of them. The depletion of lakes and rivers, the lack of clean water to drink, and the loss of livelihood for farmers and fishermen dependent on these water resources are integral parts of these conflicts. With the rising violence and instability in the region, and with no regional coordination and poor security schemes along the rivers themselves, violent non-state actors, namely ISIS, have been able

to use water as both a resource and a weapon. Not only have they destroyed water-related infrastructure, such as pipes, sanitation plants, bridges, and cables connected to water installations, but they have also used water as an instrument of violence by deliberately flooding towns, polluting bodies of water, and ruining local economies by disrupting electricity generation and agriculture. To illustrate, in 2014, when the group shut down Fallujah's Nuaimiyah Dam, the subsequent flooding destroyed 77 square miles of Iraqi fields and villages.³⁵ In June 2015, they closed the Ramadi Barrage in Anbar Province, reducing water flows to the famed Iraqi marshes and forcing the Arabs living there to flee. The Mosul Dam gave ISIS control of nearly 20 percent of Iraq's electricity generation while it was in the group's possession for a few weeks in August 2014.³⁶ Furthermore, since the civil war erupted in Syria, ISIS has seized the opportunity to control territory

“The Mosul Dam gave ISIS control of nearly 20 percent of Iraq's electricity generation.”

in the conflicted region by joining the fight against the Assad regime.³⁷ By the end of 2012, ISIS controlled all of the country's major

dams, including the Tabaqa Dam, a centerpiece of water management in Syria.³⁸ ISIS lost the Tishrin Dam, located downstream from Tabaqa, in December 2015 after an alliance of rebel forces carried out major operations in the area.³⁹ Yet, ISIS still controls swathes of territory on the western bank of the Euphrates River from Raqqa to Jarablus on the border with Turkey.⁴⁰ At the same time, governments and militaries have used similar tactics to combat ISIS, closing the gates of dams or attacking water infrastructure under their control. But ISIS fighters are not the only ones hurt by these efforts—the surrounding population suffers too. The Syrian government has been repeatedly accused of withholding water, reducing flows, or closing dam gates during its battles against ISIS or rebel groups, and it has used the denial of clean water as a coercive tactic against many suburbs of Damascus thought to be sympathetic to the rebels. Water contamination then becomes widespread, with disastrous results and an increase in deadly water-borne diseases.⁴¹

WHERE WILL THE REGION BE IN 2030 WITHOUT COOPERATION?

Water is not just about providing a resource to people, it is also about security on the individual, national, and international levels. Water insecurity will increase in the MENA region if the current situation of minimal water cooperation persists under the disabling conditions of political volatility, economic disintegration, institutional failure, and environmental degradation. A lack of cooperation will precipitate economic decline and worsen the negative impacts of climate change on water resources and socio-economic development.

Despite the recent history of political turbulence, MENA has yet to witness a full-scale war over water, but the danger of such a confrontation is only mounting.

So far, Middle Eastern leaders have acted carefully when it has come to taking the risk of waging a war over water, despite strong rhetoric to the contrary. However, this historical pattern might not hold if leaders fail to establish sustainable

“A lack of cooperation will precipitate economic decline and worsen the negative impacts of climate change.”

cooperation over water. That is to say, water has recently become a weapon in sub-state level conflicts in the pivotal transboundary river basins of the region, namely the Euphrates-Tigris river basin. The ongoing spread of ISIS across the basin has led to “violent non-state actors” seizing control of water resources in Syria and Iraq.⁴² Continuation of the current situation means prolonged water shortages, causing severe problems for urban and rural people and generating serious agricultural and economic decline. Syria’s water crisis has already deepened alongside the civil war; water availability is about half what it was before the crisis began in 2011.⁴³ In conflict-affected areas, the availability of water per person has decreased to one-third of pre-crisis levels, from 75 to 25 liters per person per day. Treatment of sewage has decreased nationally from 70 percent before the crisis to 35 percent today.⁴⁴ Ongoing violence and heavy clashes have caused severe damage to pipelines and other water infrastructure.⁴⁵ The International Committee of the Red Cross reporting from Aleppo revealed

that water routinely gets cut in both government and rebel-held areas and that different sides continue to exchange blame over who is responsible for the lack of water. A similar situation exists in Damascus, where cutting the water supply has been used as a tactic by warring parties to exert pressure on the other.⁴⁶ Water shortages have also been a factor leading to displacement within and migration from the country. Since the eruption of civil war, 4.8 million Syrians have been forced to leave the country, and 6.5 million are internally displaced, making Syria the largest displacement crisis globally.⁴⁷

Economic integration and coherence among MENA states remains weak.⁴⁸ This phenomenon has direct reflection in domestic and transboundary water resources management. To illustrate, the riparian states of the Euphrates-Tigris river basin have adopted competitive economic development policies for food and energy security. Water and land resource development projects (i.e., the Southeastern Anatolia Project and the Euphrates Valley Project of Turkey and

Syria, respectively) were carried out unilaterally and mainly with a development focus with insufficient care for ecosystem protection. If these actors continue these

unilateral, uncoordinated, and competitive water-based economic development projects, their actions will aggravate tensions in the region and lead to prolonged, unsustainable use and management of resources and a loss of ecosystems.⁴⁹

Accessible water resources are unevenly distributed across the globe, with per capita resources particularly low in MENA. Within the region there are significant variations in water availability. Inequality within and between countries, communities, and households means that many people continue to have inadequate access to water. If MENA countries continue to pursue uncoordinated water-based development policies, the depletion of water resources will continue in the region, and by 2030-2040, the region may face severe food shortages.⁵⁰

On the other hand, the studies on climate change show that the surface temperature of the Middle East will increase by 2.5 to 5.5°C in the years to come, causing a 20 percent decrease in precipitation in the region.⁵¹ Water security

“The surface temperature of the Middle East will increase by 2.5 to 5.5°C in the years to come.”

in terms of accessing enough clean water and sanitation, as well as benefitting from water for economic, social, and cultural development, is in jeopardy due to human-induced climatic changes in MENA. There will be less water available for irrigation, energy production, and domestic and industrial use. Less water in the rivers will also increase the stress on the ecosystems along the rivers. Such events, which could be more frequent and intense in the future, could threaten water availability and food security and may cause further conflicts in the region.

The severe drought in the Euphrates-Tigris basin conveys important messages about what might happen in the MENA region in the future. Policy analysts have previously suggested that the drought played a role in the Syrian unrest, and scientific researchers addressed this as well, saying the drought had a catalytic effect.⁵² The uprising in Syria was, in fact, triggered by a series of contextual factors, including, growing poverty caused by rapid economic liberalization and the cancellation of state subsidies after 2005, a growing rural-urban divide, widespread

corruption, rising unemployment, the effects of a severe drought between 2006 and 2010, and a lack of political

“There is, without question, an indirect correlation between climate change, drought, and migration.”

freedom. All these elements are connected and have mutually influenced each other, making it difficult to untangle the importance of different “triggers” or to identify any single one as the definitive cause.⁵³ With all its complex reasons, the civil war in Syria has caused one of the largest refugee crises in recent world history. There is no doubt that increased efforts are needed to address not only the pressing humanitarian situation, but also the root causes of the refugee crisis. An important number of these causes are found in the nexus between climate change, water scarcity, poor governance, and conflict. Water scarcity, or stress, is not the only driver of migration, but there is, without question, an indirect correlation between climate change, drought, and migration. If unattended by the concerned regional authorities, climate change will aggravate existing social tensions and political instability and will likely add additional pressures on the states and regions that are already fragile and conflict-prone, as in the Syria case.

THE BENEFITS OF REGIONAL COOPERATION

There is an obvious and urgent need for regional water cooperation in the MENA region. In designing such a regional water cooperation framework in the Middle East, it is useful and inspiring to draw lessons from historical and contemporary models that exist in the world, which demonstrate that water and its sustainable management can be an excellent source of cooperation. Many countries around the world have proved that building strong institutions that effectively govern transboundary water resources in a collaborative manner is an effective tool to manage any natural calamity as well as to prevent conflicts based on other factors.⁵⁴

Water issues usually formed an important part of historical peace agreements in Europe. To recall, the Congress of Vienna (1815) established the regime for the Rhine River and the Central Commission for the Navigation of the

Rhine.⁵⁵ Likewise, the 1856 Paris Agreement established the European Commission on the Danube. Both commissions exist today in their modernized forms and are among the elements

of European stability.⁵⁶ These historical examples show that there is a close relationship between peace and water cooperation and vice versa.

Contemporary models of regional water cooperation demonstrate that the relationship between water and peace is not only a matter of post-conflict arrangements. Water management is an important instrument for the prevention of conflict. The establishment in 2010 of the Commission on the Administration of the River Uruguay, following the peaceful resolution of a bitter dispute between Argentina and Uruguay, is an example of the political necessity of administrating environmental matters in an effective, preventive manner.⁵⁷ Moreover, there exist other initiatives that lay down the foundations for long-term regional cooperation and stability. The Senegal River Basin Organization is probably the most far-reaching arrangement today. The organization controls the water assets in Mali, Senegal, Mauritania, and Guinea and manages them as a “regional common,” transcending national interests.⁵⁸

“Water management is an important instrument for the prevention of conflict.”

Water cooperation between countries sharing transboundary water resources is directly correlated with the security of nations involved in such cooperation and with peace in the continent or subcontinent to which they belong. The examples of the European Union, which used steel and coal to begin its process of cooperation, and the Southern African Development Community (S.A.D.C.), which used broad economic development as its starting point, clearly indicate that a regional approach is essential. Africans have learned from the European example and expanded on the S.A.D.C. to incorporate a number of other vital aspects, including a common water region for all member countries, even though some of them, such as Madagascar and Malawi, do not share common water resources.⁵⁹ These countries have found value in a shared policy framework and use that framework as the basis for negotiating basin-specific agreements. The wisdom demonstrated by countries in Europe and southern Africa can be relevant for those in the Middle East and elsewhere.

Examples of active water cooperation mechanisms indicate that it is not the size and nature of a country or its economy, or its recent history or political markup, but its political will and

“Countries that engage in active water cooperation, tend to move beyond their differences on other issues.”

commitment at the highest level that are the keys to success. There is also no all-encompassing set of formulae for such institutions and mechanisms. Over time, countries and regions have devised their own success stories. Yet, if we look closely, we realize that countries that engage in active water cooperation, which also includes cooperation concerning energy, environment, and other development factors, tend to move beyond their differences on other issues.

In this respect, one productive approach to the cooperative development of transboundary waters in the Middle East should be to take a regional view of the benefits to be derived from the river basins. When negotiations focus solely on water-sharing, upstream and downstream differences will be exacerbated, thereby giving greater prominence to water gains and losses. Taking a broader view of regional benefits has regularly required the riparian states to see water as more than just a commodity to be divided—a zero-sum, rights-based view—and to develop a positive-sum, integrative approach that ensures the

equitable allocation not of the water, but of the benefits derived from it. Adding development opportunities in other sectors may enlarge the area of possible agreement and make implementation more manageable. Inter-sectorial linkages may offer more opportunities for the generation of creative solutions, allowing for greater economic efficiency through a “basket of benefits.”⁶⁰

There is a possible scope for increasing water cooperation from quantity or quality issues to a broader set of issues and for moving from “sharing water” (i.e. allocating water resources among riparian states) to “sharing the benefits of water” (i.e. managing water resources to achieve the maximum benefit and then

“One of the factors often hindering better regional water cooperation is the lack of recognition of the benefits of cooperation.”

allocating those benefits among riparian states, including through compensation mechanisms).⁶¹

There is even greater scope for increasing

cooperation by moving from “sharing the benefits of water” to “realizing the broader benefits of water cooperation,” such as greater economic integration in the region. Those benefits can be realized by accelerating economic growth, increasing human wellbeing, enhancing environmental sustainability, and contributing to political stability and peace.

One of the factors often hindering better regional water cooperation is the lack of recognition of the benefits of cooperation. Countries generally cooperate when the net benefits of cooperation are perceived to be greater than the net benefits of non-cooperation, as well as when the distribution of these net benefits is perceived to be fair. The decision-makers in the ministries responsible for the environment, water resources, economics, and foreign affairs should realize the potential of regional water cooperation by providing an overview of the full set of benefits that can be exploited, an introduction to how the specific benefits can be assessed, as well as a guide on how the assessment of such benefits can be integrated into policymaking processes. A holistic approach to transboundary water cooperation should be adopted by looking at the environmental, social, and economic implications of water use.

Regional water cooperation, through improved water management, generates a range of economic, social, and environmental benefits. Although comprehensive identification, assessment, and implementation remains a challenge, most of those benefits are well-known in the water policy community, such as developing hydropower, producing food by irrigated agriculture, supplying water to urban and rural communities, as well as flood control and drought management. Below, Table 1 demonstrates the diversity of economic, social, and environmental benefits that can be derived from improved water management under a regional water cooperation framework. Moreover, it also displays how regional water cooperation could foster regional economic integration and generate peace and security benefits from enhanced trust.

TABLE 1. POTENTIAL BENEFITS OF REGIONAL WATER COOPERATION

	ON ECONOMIC ACTIVITIES	BEYOND ECONOMIC ACTIVITIES
FROM IMPROVED WATER MANAGEMENT	<p>ECONOMIC BENEFITS</p> <ul style="list-style-type: none"> ◆ EXPANDED ACTIVITY AND PRODUCTIVITY IN ECONOMIC SECTORS (IRRIGATED AGRICULTURE, ENERGY GENERATION, INDUSTRIAL PRODUCTION) ◆ REDUCED COST OF CARRYING OUT PRODUCTIVE ACTIVITIES ◆ REDUCED ECONOMIC IMPACTS OF WATER-RELATED HAZARDS (FLOODS, DROUGHTS) 	<p>SOCIAL AND ENVIRONMENTAL BENEFITS</p> <ul style="list-style-type: none"> ◆ HEALTH IMPACTS FROM IMPROVED WATER QUALITY AND REDUCED RISK OF WATER-RELATED DISASTERS. ◆ EMPLOYMENT AND REDUCED POVERTY IMPACTS ◆ IMPROVED ACCESS TO SERVICES (SUCH AS ELECTRICITY AND WATER SUPPLY) ◆ AVOIDED HABITAT DEGRADATION AND BIODIVERSITY LOSS
FROM ENHANCED TRUST	<p>REGIONAL ECONOMIC INTEGRATION BENEFITS</p> <ul style="list-style-type: none"> ◆ DEVELOPMENT OF REGIONAL MARKETS FOR GOODS, SERVICES, AND LABOR ◆ INCREASE IN CROSS-BORDER INVESTMENTS ◆ DEVELOPMENT OF TRANSNATIONAL INFRASTRUCTURE NETWORKS 	<p>PEACE AND SECURITY BENEFITS</p> <ul style="list-style-type: none"> ◆ ABILITY TO AVOID COSTS OF MILITARY CONFLICTS ◆ SAVINGS FROM REDUCED MILITARY SPENDING ◆ OTHER GEO-POLITICAL BENEFITS

SOURCE: "COUNTING OUR GAINS: SHARING EXPERIENCES ON IDENTIFYING, ASSESSING AND COMMUNICATING THE BENEFITS OF TRANSBOUNDARY WATER COOPERATION," POLICY GUIDANCE NOTE, 2014, ACCESSED AUGUST 29, 2016, [HTTP://WWW.UNECE.ORG/ENV/WATER/WORKSHOP_BENEFITS_COOPERATION_2014.HTML#/](http://www.unece.org/env/water/workshop_benefits_cooperation_2014.html#/)

WHERE COULD THE REGION BE IN 2030 IN A SCENARIO INVOLVING SIGNIFICANT REGIONAL WATER COOPERATION?

In order to design a modus operandi for a mechanism for regional water cooperation in the MENA region, one simply has to look back at the recent past. In 2010, in a historic series of meetings, proactive leaders of four countries in the Middle East, (Turkey, Syria, Jordan, and Lebanon) came together and forged ties for the creation of a future economic regional community. They had a vision to create a European Union for the Middle East and call it “Shamgen,” named after Syria’s historical name “al-Sham,” which stretched from Mesopotamia to the Eastern Mediterranean. Their vision would cover trade and transport, oversee banking and business laws, eliminate visa constraints, allow for the free movement of goods, and provide a new future for the people in the region. The international community lauded their efforts and was eager to aid in these endeavors. There was talk that the community and union could further expand in the future to cover other aspects of governance and life, such as water resource management, and could continue to grow in the future. The leaders of the four countries intricately connected by common history, people, and resources also invited Iraq to join in their journey. This invitation was born out of a realization that Iraq was closely linked to three of the countries in the “Shamgen zone.” It was expected that Iraq would join once it solved its internal constitutional constraints.

While, in view of the political volatility since 2011, such cooperation may appear to be a dream; the situation was different in the second half of 2010. The decision taken by the leaders in June 2010 to promote regional integration was promptly implemented through various policy measures, mechanisms,

and arrangements within a few months. The countries’ leaders called for region-wide cooperation on transport, banking, trade, and other sectors and could have laid the foundation for further agreements on

“In order to design a modus operandi for a mechanism for regional water cooperation, one simply has to look back at the recent past.”

“The “Shamgen” experiment of 2010 clearly demonstrates that cooperation is possible.”

the distribution of regional natural resources like water. Though ambitious, the ideas and sentiments behind the proposals had the power to transform that pivotal MENA sub-region.

No matter how bleak the future might look, the “Shamgen” experiment of 2010 clearly demonstrates that cooperation is possible. As soon as the next window of opportunity opens, the five countries, including Iraq, will have to demonstrate the same vision and foresight so as to create new means of cooperation. In fact, there is no alternative to cooperation.

Another attempt for cooperation over water resources is still in the process in the Nile basin. Egypt and Ethiopia, who had been locked in a bitter war of words over Ethiopia’s Grand Renaissance Dam project, managed to sign a deal (D.o.P.) in 2015 that paved the way for a joint approach to regional water supplies. The agreement included giving priority to downstream countries for electricity generated by the dam, a mechanism for resolving conflicts, and the provision of compensation for damages. Signatories also pledged to protect the interests of downstream countries when the dam’s reservoir is filled. The deal is important because it appears to mark a move away from Egypt’s historical insistence on maintaining colonial-era agreements on water rights.⁶² The Ethiopians also argue that the dam will transform their country, where only around one-third of the population has access to electricity, into a major electricity exporter to East Africa—raising living standards, spurring economic growth, and moving beyond a history of drought and famine.⁶³ Yet, still, the overarching management challenges in the Nile basin are poverty, water scarcity, and variability on the one hand, and weak relations between and political instability within many of the riparian states on the other. Since 1999, the N.B.I. has operated in the basin to manage basin activities, such as planning transboundary water projects that have the potential to transform food, water, and energy security. In order to reach a sustainable, efficient, and equitable water future in this vast sub-region of the MENA region, its members should clearly empower the N.B.I. to become a forum for joint planning, management, and development of the transboundary water resources

In the Jordan River basin, where transboundary water relations have always been a bone of contention, a cooperative spirit has emerged recently through creative ideas on innovative joint water development and management.

“Israelis and Palestinians can reach an agreement over the use of water resources even before they solve other thorny issues.”

Israel, Jordan, and the Palestinian Authority have been moving ahead, in a cooperative mood, with a plan to build a water-carrying canal from the Red Sea to the Dead Sea, which will rehabilitate the shrinking Dead Sea and supply drinking water to Israelis, Jordanians and Palestinians.⁶⁴ Yet, the project is not without problems. The Friends of the Earth Middle East (F.o.E.M.E.), a leading N.G.O. in the region, and other environmental groups have countered that the mega-project was fatally flawed from the outset. They argue that the only sustainable solution is to tackle the source of the problem by rehabilitating the Jordan River, which, since time immemorial, has fed the Dead Sea with fresh water. Such freshwater is now singularly lacking because of massive diversions in the form of dams, canals, and pumping stations constructed by Israel, Syria, Jordan, and the Palestinian Authority alike.⁶⁵ On the other hand, F.o.E.M.E. commissioned an interesting scientific proposal, which evidently demonstrated that Israelis and Palestinians can reach an agreement over the use of water resources even before they solve other thorny issues and can, thus, create a precedent for cooperation on a contentious matter. According to this proposal, new bilateral committees (instead of the problematic Joint Water Committee created by the Oslo Accords) would determine water allocation not by fixed quotas, as is the case now, but rather according to guidelines designed to protect the ecosystem and to benefit all. It would make key decisions on rates of pumping and transport of water based on advice from a subsidiary scientific body, which would operate under the auspices of the Palestinian Authority and Israel. A mediation board would deal with any complaints by groups opposing the decisions made by the new bodies. The proposal's main goal is to provide water to all parties and to secure efficient, equitable, and sustainable management of shared resources over the long term. The proposal serves interests on both sides, because it will ensure that the Palestinians receive more water and that the water used by Israel will be of good quality.⁶⁶

The MENA region, in fact, represents a diverse set of sub-regions, such as the Gulf. The natural features and climates of the Gulf states are similar, with each state having extremely arid climates with negligible precipitation. Natural water sources are scarce, and arable land is extremely limited. Human factors, such as high population growth, rapid urbanization, and gigantic industrial

and agricultural projects exacerbate the pressure on already strained water-supply systems. The Gulf states have had little choice but to secure alternative (un-conventional) water supplies. The most important of these alternatives are the desalination plants in the Gulf, which, as of 2014, accounted for some 70 percent of the world's desalinated water output. However, dependence on desalination has placed a severe strain on the national budgets of the Gulf states and has caused irreparable damage to local and regional ecosystems.⁶⁷ What Gulf countries need is a broad strategy for addressing water security that does not simply rely on energy export revenues to finance short-term solutions to the problem. They should strive to create a more conscientious society through environmental and social awareness campaigns and education programs. Investment in water recycling for irrigation and municipal use presents a great opportunity for reducing the demand for desalinated water. Furthermore, research and development in renewable energy for desalinization may provide sustainable, long-term fixes. Other creative solutions include the construction of dams that would improve rain capture and groundwater recharge and the use of cloud seeding to enhance rainfall. While there may be no quick fix, a competent strategy to tackle water security from both the supply and demand side is necessary for ensuring that the economic development that has defined this region in the previous decades continues for years to come.⁶⁸

Water cooperation in the MENA region does not develop overnight or even in the space of a few months; it takes time and requires a great deal of trust. The necessary change, involving various cooperative initiatives, is closely and intimately related to the change in overall political relations, with decisions being made at the highest level. However, the recent initiatives and efforts for water cooperation, particularly in the pivotal transboundary river basins of the region, are important steps in the right direction and have the potential to create long-lasting relationships between nations that can expand into other areas. Experiences from around the world demonstrate that countries that have achieved regional water cooperation have prospered together and kept the threat of conflict a remote possibility. It is time for the countries in the Middle East to realize that there is no alternative to sustainable water cooperation and to take the necessary steps to sail together in that direction.

“Water cooperation in the MENA region does not develop overnight.”

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ABOUT THE AUTHOR

Aysegül Kibaroglu is professor and faculty member in the Department of Political Science and International Relations at MEF University Istanbul, Turkey. She acted as a visiting professor at the University of Texas at Austin, LBJ School of Public Affairs in Spring 2016. Dr. Kibaroglu has published extensively on the politics of water resources with an emphasis on the Euphrates Tigris river basin including a book volume entitled *Building a Regime for the Waters of the Euphrates-Tigris River Basin* (Kluwer Law International, 2002). She has co-edited a volume, *Water Development and Poverty Reduction*, with Olcay Unver and Rajiv Gupta published by the Kluwer Academic Publishers (2003). Her latest co-edited volumes, *Turkey's Water Policy and Water Law and Cooperation in the Euphrates-Tigris Region* has been published in 2011 by Springer and in 2013 by Brill, respectively. She has also published articles in the *International Negotiation Journal*, *Water International*, *Water Policy*, *Journal of International Affairs*, and the *Global Governance*. She worked as Advisor to the President of the Southeastern Anatolia Project Regional Development Administration from 2001 to 2003. Prof. Kibaroglu is the founding member of the EuphratesTigris Initiative for Cooperation (ETIC), which was established in May 2005.

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