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## Euphrates-Tigris river basin Water management as conflict prevention

### I. Transboundary water dispute: origin and development

The two greatest rivers of the Middle East, namely the Euphrates and the Tigris, originate in a particular climatic and topographic zone and end up in quite a different one. The Euphrates-Tigris (ET) basin is characterised by high mountains to the north and west and extensive lowlands in the south and the east. They begin, scarcely apart from each other, in a relatively cool and humid zone with the rugged high mountains of Anatolia, visited by autumn and spring rains, and winter snows. From there, the two rivers run separately onto a wide, flat, hot, and poorly drained plain. They continue more tranquilly through the plateaus of northern Syria and Iraq, where they cut deep beds in rocks so that their courses have remained stable over the millennia. In their middle courses, they diverge hundreds of kilometres apart, only to meet again near the end of their journey and discharge together into the Gulf.<sup>1</sup>

In conformity with the expert judgments of geographers, the Euphrates and the Tigris rivers can be considered as forming one single transboundary watercourse system. They are linked not only by their natural course when merging at the Shatt Al-Arab, but also as a result of the man-made Thartar Canal, which links the Tigris to the Euphrates through the Thartar Valley in Iraq.<sup>2</sup>

The waters of the ET basin stand to be significant and strategic for the major riparian states: Iraq derives the majority of its freshwater from the two rivers. Although the Euphrates basin is one of seven river basins in Syria, it is strategically the most important one because of

existing and potential uses for agricultural and hydropower purposes. The ET basin is one of 25 basins in Turkey, but accounts for nearly one third of the country's surface water resources and one fifth of its irrigable land.<sup>3</sup>

The water question emerged on the regional agenda in the ET basin when the three riparian states initiated major development projects for water and land resources. It is only since the 1960s that Turkey and Syria have 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. 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.<sup>4</sup> Hence, a series of diplomatic crises occurred in the region in the last quarter of past century. Turkey had started impounding the Keban reservoir by February 1974, at the same time that Syria had almost finalised the construction of 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 when Saudi Arabia negotiated the release of extra amounts of water from Syria to Iraq. In January 1990, Turkey temporarily

<sup>1</sup> Hillel, *Rivers of Eden: The Struggle for Water and Quest for Peace in the Middle East*, 1995.

<sup>2</sup> Kıbaroğlu, *Building a Regime for the Waters of the Euphrates-Tigris River Basin*, 2002.

<sup>3</sup> Kıbaroğlu and Scheumann, *Evolution of Transboundary Politics in the Euphrates-Tigris River System: New Perspectives and Political Challenges*, 2013.

<sup>4</sup> Kıbaroğlu, *An Institutional Framework for Facilitating Cooperation in the Euphrates-Tigris River Basin*, 2000.

intervened in the flow of the Euphrates river in order to fill the Atatürk dam reservoir. Even though Turkey had notified its downstream neighbours by November 1989 of the pending 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 against Turkey and consequently called for an agreement to share the waters of the Euphrates as well as a reduction of the impounding period.

Bilateral relations between Turkey and Syria have long been uneasy. Two principal sources of friction between them were: Syria's extensive logistical support to the separatist terrorist organisation PKK; and Syrian irredentist claims to the province of Hatay. Despite official denials by Damascus, Syria's support to subversive actions against Turkey since the early 1980s has been widely known and documented. Turkish authorities' frustration with Syria's unfriendly attitude reached its peak in October 1998. High-ranking Turkish military officers and politicians have made public statements that they wanted Syria to stop supporting the terrorists immediately. The Turkish initiative, the implications of which seemed to be clearly understood in Damascus, produced results and the Syrian authorities deported the head of the PKK soon after. On 20<sup>th</sup> October 1998, a framework security agreement namely the 'Adana Accords' was signed between the two countries. With this agreement, Turkey gained an effective instrument to monitor compliance of the Syrian side while Syria committed itself to not to give any more support to any groups that would damage the national interests of Turkey.<sup>5</sup> Shortly after signing the Adana accords, Syria requested the resumption of the Joint Technical Committee (JTC) meetings to enable the water issue to be considered. Hence, while the water dispute in the basin originated due to the competitive, uncoordinated and

unilateral water development projects of the riparian states, the political linkages established between transboundary water issues and non-riparian security issues exacerbated the disagreements over water sharing and allocation.<sup>6</sup>

In 1987 and 1990 two bilateral protocols – acknowledged by all the riparian states as being interim agreements – were signed following a number of high-level meetings of top officials in the ET 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 m<sup>3</sup> per second, or about 16 km<sup>3</sup> per year, at the Turkish-Syrian border, with the intention of reaching an agreement with Syria on security matters.<sup>7</sup> On the other hand, the Syrian-Iraqi water protocol of 1990 designated Syria's share of the Euphrates waters as 42 percent and allocated the remaining 58 percent to Iraq as a fixed annual total percentage.<sup>8</sup> 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. 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. The water sharing protocols also lack an effective organisational backup, at least in the form of joint monitoring of these agreements.

On the other hand, in the early 1980s, the ET basin riparian states managed to build an institutional framework, namely the JTC, whose members included participants from all three riparians.<sup>9</sup> However, they could not succeed in empowering it with a clear and jointly agreed

<sup>5</sup> Kıbaroğlu and Kıbaroğlu, *Global Security Watch-Turkey: A Reference Handbook*, 2009.

<sup>6</sup> Kıbaroğlu, *Facing Water Challenges in the Middle East*, 2016.

<sup>7</sup> Protocol on Matters Pertaining to Economic Cooperation Between the Republic of Turkey and the Syrian Arab Republic, 1987.

<sup>8</sup> Law No. 14, 1990.

<sup>9</sup> Turkish Ministry of Foreign Affairs, *Water Issues Between Turkey, Syria and Iraq*, 1996.

mandate. The major issues that led to the deadlock were related to both the subject and the object of the JTC negotiations: whether the Euphrates and the Tigris should be considered a single system, or whether the discussions should be exclusively limited to the Euphrates. Iraq and Syria considered the Euphrates an international river that should be treated as an integrated system. Both countries insisted on an immediate sharing agreement under which the waters of the Euphrates would be shared on the basis of each country stating its water needs. On the other hand, the Turkish position was that international rivers are only those that constitute a border between two or more riparian states, and it considered the Euphrates and Tigris as a single transboundary river system which crossed the common political border.<sup>10</sup>

By the mid-1980s, when the irrigation targets of the Southeastern Development Project (GAP) of Turkey had materialised, it was clear to the downstream riparian states that Turkey would utilise more water from the Euphrates than from the Tigris to irrigate the designated fields. This caused great anxiety in Syria and Iraq, and led them to claim historical and/or acquired rights to the Euphrates' waters, in particular before the irrigation projects within the GAP were fully realised. Syria indicated explicitly during the negotiations that unlike the Euphrates, which provided the bulk of its surface water potential needs, the Tigris was not vital for Syrian uses as the result of topographical features.<sup>11</sup> Moreover, Syria was well aware of the fact that if Iraq managed to win two thirds of the Euphrates flow (700 m<sup>3</sup>/sec) at the end of the negotiations, Syria would benefit greatly from that flow by virtue of being the midstream riparian. On the other hand, Iraq concluded that Turkey and Syria would not plan to develop the Tigris for consumptive use, and therefore concentrated its demands solely on the Euphrates in order to gain a maximum share of that river.

All in all, the JTC meetings did not make an effective contribution to the settlement of the transboundary water dispute. And, they 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 riparian states' related legislation and institutional structures never had a chance of being discussed at the JTC meetings. National management and allocation policies were like black boxes, and water management practices within the various countries simply could not be debated during the negotiations.<sup>12</sup>

## II. Challenges for transboundary water cooperation

Notwithstanding the failures in inter-state water cooperation, and the shortcomings and loopholes in the exiting bilateral water protocols as well as ineffectiveness of the JTC, the present overarching challenge in the ET basin is to coordinate water resources management and 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 spill-over effects on their neighbours, demonstrate that while the genesis of the conflicts has a complicated narrative, water is a part of it. The depletion of lakes and rivers, the lack of clean water to drink, and the loss of livelihood of farmers and fishermen dependent on the 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 the so-called Islamic State (IS) – 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

<sup>10</sup> Kıbaroğlu and Ünver, *An Institutional Framework for Facilitating Cooperation in the Euphrates-Tigris River Basin*, 2000.

<sup>11</sup> Minutes of the Fifteenth Meeting of the Joint Technical Committee, 1990.

<sup>12</sup> Kıbaroğlu and Scheumann, *Evolution of Transboundary Politics in the Euphrates-Tigris River System: New Perspectives and Political Challenges*, 2013.

by deliberately flooding towns, polluting bodies of water and ruining local economies by disrupting electricity generation and agriculture.<sup>13</sup>

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.<sup>14</sup> 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. Mosul Dam gave IS 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.<sup>15</sup> Furthermore, after the civil war erupted in Syria, IS seized the opportunity to control territory in the conflicted region by joining the fight against the Assad regime.<sup>16</sup> By the end of 2012, IS controlled all of the country's major dams in Syria, including the Tabqa Dam, the centrepiece of water management in Syria.<sup>17</sup> The group lost the Tishreen Dam, located downstream from Tabqa, in December 2015 after an alliance of rebel forces carried out major operations in the area, yet it is still active in the territory on the western bank of the Euphrates river from Raqqa to Jarabulus, on the border with Turkey.<sup>18</sup> At the same time, governments and militaries have used similar tactics to combat IS, closing the gates of dams or attacking water infrastructure under their control. But IS 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 IS or rebel groups, and it used the denial of clean water as a coercive tactic against many suburbs of Damascus thought to be sympathetic to the rebels. Water contami-

nation is widespread, with disastrous results of increased deadly water-borne diseases.<sup>19</sup>

On the other hand, the severe drought in the ET basin conveys important messages about what might happen in the region in the future under the negative impacts of climate change. Projections indicate substantial reductions in the runoff of the Tigris and Euphrates rivers. According to a high emissions scenario (SRES A2) simulation, the surface runoff in these basins will decrease by 23.5 percent and 28.5 percent for the Euphrates and Tigris basins respectively by the end of the present century (these figures are calculated for the Turkish portions of these basins).<sup>20</sup> The same simulation reveals that there will be little snow cover in the headwaters of these rivers in the late 21st century as the increase in regional temperatures will cause precipitation to fall mostly as rain (not as snow).

Both changes, i.e. runoff reduction and temperature increase, may have important implications for the future of the basin. 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. The severe 2008 drought in the basin served as a warning for what could happen in this area in the future. Such events, which could be more frequent and intense in the years to come, could threaten the water availability and food security, and may cause conflicts in the region.

Policy analysts have previously suggested that the drought played a role in the Syrian unrest, and researchers have addressed this as well, arguing the drought had a catalytic effect.<sup>21</sup> The uprising in Syria was in fact triggered by a series of

<sup>13</sup> Kibaroglu, *Facing Water Challenges in the Middle East*, 2016.

<sup>14</sup> Vishwanath, *The Water Wars Waged by the Islamic State*, 2015.

<sup>15</sup> Milner, *Mosul Dam: Why the battle for water matters in Iraq*, 2014.

<sup>16</sup> Hashim, *The Islamic State: From al-Qaeda Affiliate to Caliphate*, 2014.

<sup>17</sup> Hussein, *How IS uses water as weapon of war*, 2015.

<sup>18</sup> Losso, *Water as Weapon: IS on the Euphrates and Tigris*, 2016.

<sup>19</sup> Vishwanath, *The Water Wars Waged by the Islamic State*, 2015.

<sup>20</sup> Bozkurt and Şen, *Climate change impacts in the Euphrates-Tigris Basin based on different model and scenario simulations*, 2013.

<sup>21</sup> Gleick, *Water, Drought, Climate Change, and Conflict in Syria*, 2014.

contextual factors, including growing poverty caused by rapid economic liberalisation 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 freedom.<sup>22</sup> All these elements are connected and have mutually influenced each other, making it difficult to untangle the importance of different 'triggers' or identify any single one as the definitive. 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 regional authorities concerned, climate change will aggravate existing social tensions and political instability, and will likely add further pressures on the states and regions that are already fragile and conflict-prone, as noted in the Syria case.

### III. Water management as conflict prevention

Throughout the evolution of their transboundary water policies, the goal pursued by each riparian has not changed: Turkey has been keen to determine what is needed and how resources should be allocated, while Iraq and Syria have adopted the same line of reasoning, that a sharing agreement should be concluded on the basis of a declaration of riparian rights. Yet there was a change in what was done and how it was done in the basin in the first decade of the 2000s. The high-level contacts produced a framework for regional cooperation, of which water became an integral component. In 2008 and 2009, the governments of Turkey, Syria and Iraq embarked upon cooperative foreign policy initiatives. The political will expressed and sealed at the highest

levels is also reflected in cooperative initiatives related to transboundary water development and management in the Euphrates and Tigris region.

In this context, Turkey and Iraq signed the Joint Political Declaration on the Establishment of the High-Level Strategic Cooperation Council (HSCC) on 10<sup>th</sup> July 2008. A similar bilateral HSCC was created between Turkey and Syria on 22<sup>nd</sup> December 2009. The comprehensive and strategic nature of the HSCCs resulted in an innovative approach to transboundary water issues in that the water and diplomatic bureaucracies were empowered to draft and sign a series of protocols – Memoranda of Understandings (MoUs) – addressing problems associated with water development, management and use.

Broadening the scope of the cooperation agenda to take in sectors of socio-economic development, including water, and simultaneously fostering a situation of regional interdependence were in fact the main aims underlying the establishment of both the Turkish-Syrian and Turkish-Iraqi HSCCs. Thus, one productive approach to the cooperative development of transboundary waters in the ET basin should be to take a regional view of the benefits to be derived from the river basins. Past experience in the basin shows that when negotiations focused solely on water sharing, upstream and downstream differences were exacerbated, thereby giving greater prominence to water gains and losses. This 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. Intersectorial linkages may offer more opportunities for the generation of creative solutions, allowing for greater economic efficiency through a 'basket of benefits.'

<sup>22</sup> de Châtel, *The Role of Drought and Climate Change in the Syrian Uprising: Untangling the Triggers of the Revolution*, 2014.

Among the forty-eight MoUs which were signed between Turkey and Iraq on 15<sup>th</sup> October 2009 was one concerning water.<sup>23</sup> With this protocol, the two sides agreed to exchange hydrological and meteorological information as well as exchanging expertise in these fields. Both sides also emphasised utilisation and management of regional water resources in an efficient manner. The MoU identified particular issues requiring urgent transboundary cooperation, including: the assessment of water resources, which are tending to diminish because of increases in water use and climate change; the assessment and calibration of existing hydrological measuring stations; the modernisation of existing irrigation systems; the prevention of water losses from domestic water supply systems and provision of safe water; the construction of water supply and water treatment facilities in Iraq, with the participation of Turkish companies; the development of mechanisms to solve problems arising during the dry period; and joint investigation, planning, and projects for flood protection. It is interesting to note that rather than arguing over only their respective water shares, as happened at past JTC meetings, the Iraqi and Turkish authorities focused on common issues in transboundary water management and use. These issues are directly related to water development, use, and management practices at national level, which have direct effects on transboundary water policies and practices.

On 23<sup>rd</sup> and 24<sup>th</sup> December 2009, Turkey and Syria signed fifty MoUs at the first meeting of the HSCC in Damascus, including four which are related to regional waters, namely the Euphrates, Tigris and Orontes rivers. Issues of mutual concern – such as pursuing new water development projects through joint dam-building on the Orontes and pumping water from the boundary

Tigris river to Syria, as well as drought management, efficient management of resources, and the improvement of water quality – have constituted the main subjects of these series of water protocols (MoUs) between Turkey and Syria. To illustrate, for decades Turkey called for regulation of the waters of the Orontes River, which often fluctuated, causing severe flooding or drought in downstream Turkish towns and villages. However, Syria never agreed to build water development structures on the border, arguing that the Orontes is a national river. In this respect, the MoU of December 2009 marked a major change in Syria's attitude.<sup>24</sup> Already on 6<sup>th</sup> February 2011, the Prime Ministers of both countries celebrated the laying of the foundation stone of the Friendship Dam, however, construction came to a halt with the Syrian crises, which started in March of the same year.

The other two protocols signed by Turkey and Syria were the first official agreements concluded by the two countries on the protection of the environment, water quality management, water efficiency, drought management, and flood protection with a view toward addressing the adverse effects of climate change. Unlike the bilateral protocol concluded in 1987 on sharing the waters of the Euphrates, these protocols focused on how the riparian states were to use, manage, protect, and develop the diminishing water resources of the Euphrates and Tigris rivers.<sup>25</sup>

However, thorough analyses reveal that the change, involving various cooperative initiatives, is more closely and intimately related to the change in overall political relations, with decisions being taken at the highest level. It cannot be denied, therefore, that the overarching problem of deteriorating political relations in the region

<sup>23</sup> Memorandum of Understanding Between the Ministry of the Environment and Forestry of the Republic of Turkey and the Ministry of Water Resources of the Republic of Iraq on Water, 2009.

<sup>24</sup> Memorandum of Understanding Between the Government of the Republic of Turkey and the Government of the Syrian Arab Republic for the Construction of a Joint Dam on the Orontes River Under the Name "Friendship Dam," 2009.

<sup>25</sup> Memorandum of Understanding Between the Government of the Republic of Turkey and the Government of the Syrian Arab Republic in the Field of Efficient Utilization of Water Resources and Coping with Drought; Memorandum of Understanding Between the Government of the Republic of Turkey and the Government of the Syrian Arab Republic in the Field of Remediation of Water Quality, 2009.

has a counter-effect on the development of transboundary water cooperation. As political will faded away, particularly in Turkish-Syrian relations, technocratic and diplomatic bureaucracies have encountered serious difficulties in implementing the new water MoUs. They are closely linked to decision-making at the highest level.

But it should also be noted that since the early 2000s contacts have been made, existing networks have been revitalised, and new ones have been created. Thus a partial institutionalisation of water cooperation had already begun before it was abruptly halted in 2011 as overarching bilateral political relations worsened. When it has a chance to resume, transboundary water cooperation should start from a variety of perspectives and issues, which may again provide opportunities for regional cooperation.

No matter how bleak the future might look, the MoUs have clearly demonstrated that coopera-

tion is possible. As soon as the next window of opportunity opens, the riparian countries 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. It would not be baseless to argue that if Turkey, Iraq and Syria had taken the opportunity to act while the political conditions were favourable, they would have found it easier to collectively tackle the IS advance later on. Bodies of water in the region could have been managed in a coordinated manner, and thus the collective responsibility of all parties to ensure swift government reaction to protect water resources and their associated infrastructure from terrorism could have been assured. This, in turn, would have better protected the people and the areas surrounding the rivers and lakes in the region. Of course, it is easy to look back and lament actions not taken, but the point remains that there will be chances in the future for these countries to work collectively to protect water resources.

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*All internet sources were accessed and verified on Dezember 5, 2016.*