Euphrates-Tigris Rivers System: Political Rapprochement and Transboundary Water Cooperation

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1 Introduction

Water-related development projects on the Euphrates and Tigris rivers have been highly contested over the last four decades and have caused relations between the riparian states, i.e. Turkey, Syria and Iraq, to become highly strained and serious crises occurred. All co-riparian states are unilaterally strengthening their efforts to develop water resources to increase their hydropower potential, and to extend their irrigated agricultural areas. These activities pose the main threat to their mutual relations, and to date, the riparians have failed to achieve a common agreement. Since major non-water issues are now solved, or are at least approached, in a more pragmatic manner, the prospects for joint initiatives have improved. Figure 1 shows a map of the two rivers, their main tributaries and selected dams. Table 1 and Table 2 provide an overview of the context for cooperation on both rivers.

2 The Euphrates and Tigris rivers system[1]: geographical and hydrological setting[2]

The Euphrates and its tributaries drain an enormous basin of 444,000 square kilometers of which 33 percent lies in Turkey, 19 percent in Syria, and 46 percent in Iraq. On the other hand, the Tigris and its tributaries drain an area of 387,600

[1]Internationally, 'Euphrates' and 'Tigris' are the names used. In Turkish, the Euphrates is called Firat, and Al-Furat in Arabic. Tigris is named Dicle in Turkish, and Dijla in Arabic.

[2]This section draws from Kibaroglu 2002a.

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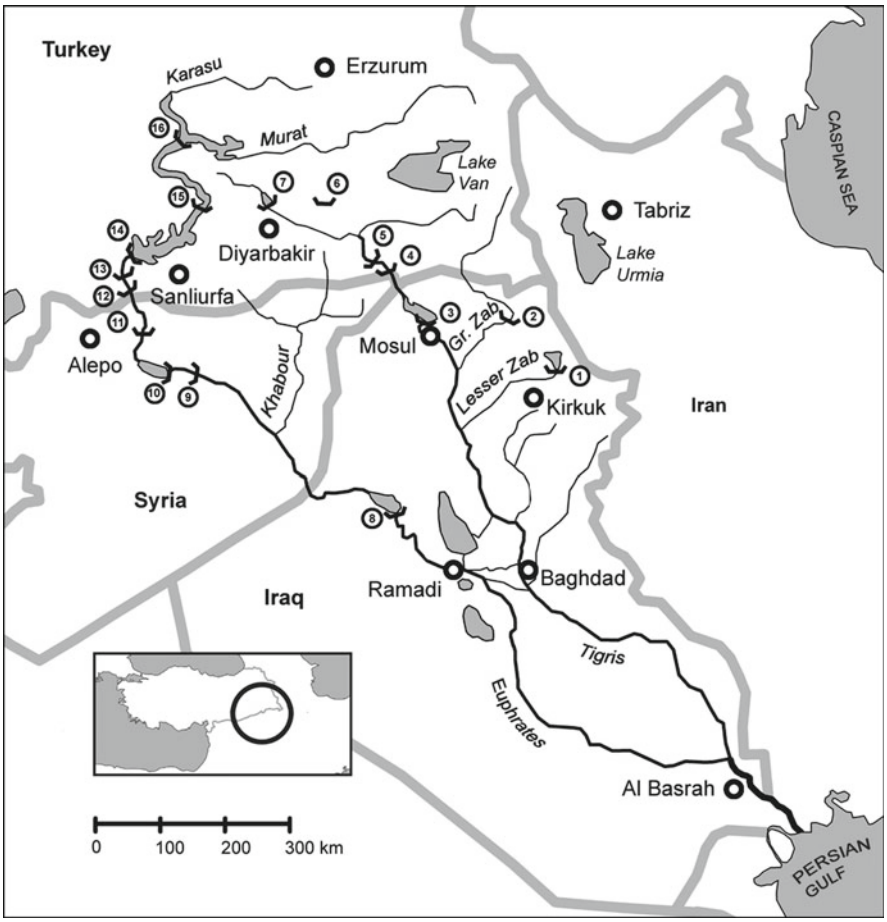

(1) Dukan Dam
(2) Bekhme Dam (unfinished)
(3) Mosul Dam
(4) Cizre Dam (planned)
(5) Ilisu Dam (planned)
(6) Batman Dam
(7) Kralkizi Dam
(8) Haditha Dam
(9) Al Baath Dam
(10) Tabqa Dam
(11) Tishreen Dam
(12) Karkamis Dam
(13) Birecik Dam
(14) Ataturk Dam
(15) Karakaya Dam
(16) Keban Dam

Fig. 1 Map of Euphrates, Tigris, main tributaries and selected dams

square kilometers of which 15 percent lies in Turkey, 0.3 percent in Syria, 75 percent in Iraq, and 9.5 percent in Iran. Both rivers originate in Turkey, scarcely 30km from each other, flow through Syria and Iraq, and form the Shatt-al-Arab watercourse north of Basra in Iraq before discharging into the Persian Gulf. These twin rivers have extremely high seasonal and multi-annual variances in their flow, and severe drought and destructive flooding have been common phenomena for millennia.

Table 1 Cooperational context in the Euphrates River

Euphrates Basin area: 444,000 km^2; mean annual discharge 32 BCM		
Riparian position	Basin area (percent of total) Contribution to annual discharge	Main water uses
Turkey upstream	146,520 km^2 (33 percent) 28.922 BCM (90 percent)	irrigation, hydropower, flood control
Syria downstream	84,360 km^2 (19 percent) 3.213 BCM (10.0 percent)	irrigation, hydropower
Iraq downstream	204,240 km^2 (46 percent) 0.0 BCM (-)	Irrigation, inhabitants of the Mesopotamian Marshes
Main agreements and covered issues		
Turkey - Syria	1987 - interim protocol, water quantity to be released at Turkish-Syrian border (see Annex 12) 2001 - Joint Communiqué 2003 - Implementation Protocol: exchange of expertise, training, joint projects; Joint Technical Committee 2009 - Memorandum of Understanding in the Field of Efficient Utilization of Water Resources and Combating of Drought 2009 - Memorandum of Understanding in the Field of Remediation of Water Quality	
Syria – Iraq	1990 - water sharing between Syria and Iraq	
Unsettled issues		
Quantity	No final tripartite agreement. No common approach	
Groundwater	Overuse on both sides	
Quality	At present, subordinate	
Protection/ restoration	Mesopotamian marshlands	

The *Euphrates* has two main sources, the Murat and Karasu rivers, which drain the high plateau to the north-west of Lake Van. The Keban Dam was built in the early 1970s where the streams meet in Kharput. Downstream of the Keban Dam, the main river stem joins numerous springs of various discharges; it then joins the Tohma tributary upstream of the Karakaya Dam and receives incremental contributions from the Kahta River (upstream of the Ataturk Dam) and from the Nizip tributary (downstream from the Birecik Dam). The Euphrates then first flows south-eastwards, then south-west and breaks through the mountains in a gorge near Hilvan, and crosses the Syrian border at Karkamis.

In Syria, the Euphrates has two tributaries, the Balikh and the Khabour Rivers. The Khabour sub-basin together with its transboundary tributaries and its springs is the most complicated element of the system; various branches of the Khabour originate either from Turkey or from Syria and are estimated to have a significant potential of 200 million cubic meters (MCM) per year. From there, over the remaining 1,000km of its course in Iraq, it gains no further increments of water. In Iraq, at a point 360km from the border, the Euphrates reaches its 100,000 square kilometers giant plain at Ramadi. Further downstream, near Nasiriye, the river

Table 2 Cooperational context in the Tigris River

Tigris Basin area: 387,000 km^2; mean annual discharge 52 BCM		
Riparian position	Basin area (percent of total) Contribution to annual discharge	Main water uses
Turkey	57,600 km^2 (14.9 percent)	irrigation, hydropower
upstream	20.840 BCM (40 percent)	
Syria	1,000 km^2 (0.3 percent)	
- border with Turkey / Iraq	–	
Iraq	292,000 km^2 (75.3 percent)	irrigation (diverts water through Thartar Canal to Euphrates), hydropower
downstream	26.571 BCM (51 percent)	
Iran	–	
- upstream on one tributary	4.689 BCM (9 percent)	
Main agreements and covered issues		
Turkey-Iraq	1946- flow regulation of the Tigris and Euphrates rivers and of their tributaries (see Annex 11)	
Turkey-Syria	2009 - Memorandum of Understanding on the Establishment of a Pumping Station in the Territories of Syrian Arab Republic for Water Withdrawal From the Tigris River	
Disputed issues		
	No consensus on procedure No consensus on whether Euphrates-Tigris forms one single watercourse system Dispute over Ilisu Dam construction	

becomes a tangle of channels some of which drain into the shallow Lake of Hammar and the remainder joins the Tigris at Qurna.

The *Tigris* originates from a small mountain lake, south of the city of Elazig in eastern Turkey, and flows through the basaltic district of Diyarbakir. It forms the border between Turkey and Syria, and Iraq and Syria. Its two major tributaries are the Great Zab and Lesser Zab, which join the river downstream of Mosul. The contribution of the Tigris tributaries to the river's potential is very significant and amounts to roughly 50 percent of the Tigris flow at Baghdad.

Downstream from Baghdad the river's slope is flat and it becomes exceedingly tortuous with the Tigris joining the Euphrates to form the Shatt al-Arab watercourse north of Basra. Most of the water in the lower part of both the Euphrates and Tigris is lost in a wide area of salinated swamps and marshlands. The combined area of lakes and swamps at the head of the Persian Gulf varies from 8,288 square kilometers at the end of the dry season to 28,490 square kilometers during spring floods.

In summer, the mean annual flow of the Euphrates is 32 billion cubic meters (BCM) per year of which about 90 percent is drained from Turkey, whereas the remaining 10 percent originates in Syria. As for the Tigris, the average total discharge is determined as 52 BCM/year, of which approximately 40 percent comes from Turkey, whereas Iraq and Iran contribute 51 percent and 9 percent, respectively.

Estimates for the total flow of the Tigris-Euphrates and their tributaries vary between 68 BCM and 84.5 BCM.

The catchment areas of both rivers experience a sub-tropical Mediterranean climate with wet winters and dry summers. As the snow melts in spring, the rivers are in spate, augmented by seasonal rainfall, which reaches its maximum between March and May. This climate prevails in south-eastern Turkey, as well as in northern Syria and Iraq. Winter precipitation ranges between 400 and 600mm and allows rain-fed cultivation of winter grain though supplementary irrigation raises yields and allows multiple cropping. In the Mesopotamian Plain annual rainfall is rarely above 200mm. The summer season is hot and dry, with midday temperatures approaching 50°C resulting in high evaporation and daytime relative humidity as low as 15 percent. Evaporation also reinforces water salinisation and water loss in major reservoirs in Turkey and Syria, as well as in Lake Habbaniya and the Thartar Canal in Iraq.

3 Water resources development

At present, irrigated agriculture - the greatest user of water - is unequally developed in the three riparian states. Iraq has used the Euphrates to irrigate 1 to 1.3 million hectares for a long time now. Syria started in the 1960s, and intensified irrigation in the Upper Euphrates after the completion of the Tabqa Dam in the mid 1970s. Prior to the completion of the Ataturk Dam (1990), irrigation in south-east Turkey was limited to groundwater and extended to about 114,000 hectares. A major threat to water resources, and to the riparians relations, is the envisaged enlargement of areas to be irrigated with water withdrawn from the Euphrates and the Tigris in all three countries: about 1.7 million hectares in Turkey as part of the Southeastern Anatolia Project (GAP), 640,000 hectares in Syria and 500,000 hectares in Iraq.

Variation in the flow of both rivers ranged from conditions of severe drought to destructive flooding before upstream reservoirs were built in Turkey that are capable of smoothing out such variances and providing a dependable year-round flow downstream. However, since the 1960s Turkey, Syria and Iraq have invested in large-scale water development projects, the largest of which is Turkey's GAP. A series of dams were built, first in Iraq, then in Syria and Turkey to provide irrigation water and to generate hydropower. The major dams on the Euphrates are, Keban, Karakaya, Ataturk, Birecik and Karkamis in Turkey; Tabqa, Al-Baath and Tishreen in Syria, three more dams can be found on the Khabour River (Khabour Dam, Eastern Khabour Dam, Western Khabour Dam) in Syria. Because a large portion of Iraqi territory rarely exceeds 300m in altitude, the topography limits the possibility of impounding the Euphrates behind large dams. However, since 1988 the Thartar Canal has linked the Tigris with the Euphrates in Iraq, in this way using the Tigris' water for irrigation. As is the case with Syria, most of Iraq's land is low-lying and afflicted by deposits of gypsum and salt; both of these are not compatible with irrigation (Kibaroglu and Unver 2000).

4 Incidents of crises over the Euphrates

As a result of supply-led developments, the water demands of the riparians exceed the actual amount of water that can be supplied by the Euphrates and Tigris rivers. If all irrigation projects envisaged are realised by 2040 (the completion date for all projects), total demand would far exceed supply.[3] Although consumption targets are very subjective, they nevertheless form the basis of the riparians' claims to the rivers' water. Rapidly increasing populations in these countries and the importance of food production have given further impetus for the utilisation of the rivers.

During the 1970s, 1980s and 1990s a number of crises occurred in the region, following the unilateral development of several water resource projects. Turkey started impounding the Keban reservoir in February 1974 at the same time as Syria had almost finalised construction of the Tabqa Dam. The impounding of both reservoirs in the following two years escalated into a crisis in 1975[4] with Iraq accusing Syria of reducing the river's flow to intolerably low levels, while Syria blamed Turkey. The Iraqi government was not satisfied with the Syrian response, and mounting frustration resulted in mutual threats. This was averted when Saudi Arabia mediated and ensured that extra water was released from Syria to Iraq.

Another major crisis occurred in the early 1990s when the Ataturk Dam in Turkey was filled. On 13 January 1990, Turkey temporarily reduced the flow of the Euphrates River in order to fill the Ataturk reservoir (January was chosen because it was the month with no demand for irrigation water). Turkey notified its downstream neighbours before November 1989 of its intension and in a communication it explained the technical reasons behind the action and also provided a detailed programme for the replenishment of the losses. Turkey also released twice the usual amount of water for two months prior to terminating the flow and sent delegations to the region to explain the need for the action, and the measures taken. The work was finished in three weeks, as opposed to the one month initially planned. However, the Syrian and the Iraqi governments still registered official complaints, and consequently called for an agreement to share the waters of the Euphrates, as well as for a reduction of the impounding period.

Finally in 1996, after Turkey started construction of the Birecik Dam, an afterbay dam on the Euphrates, both Syria and Iraq sent official notes to the Turkish government in 1995 and 1996 indicating their objections to construction on the grounds that it would affect the quantity and quality of waters flowing into Syria and Iraq. The issue became an international affair when Syria and Iraq requested that Arab League countries cease financial aid to Turkish projects and boycott European companies that had financed the dam (Scheumann 2003, 750). The Birecik Dam was not designed for consumptive purposes, but to regulate

[3]Iran's demand is not included; its supply amounts to 9 percent, i.e. 4.7 BCM/year. For details, see Belül 1996.

[4]The situation was exacerbated because impounding took place during a period of continuously dry weather.

the water levels of the Euphrates when power generation at the Ataturk Dam would be at peak.

5 The negotiation process and status of cooperation

Negotiations between Turkey and Iraq on the development of the Euphrates' water originally started in the 1940s[5]. However, since the early 1960s a new series of technical negotiations has attempted to foster new dialogue and information sharing for the region. The following sections highlight these negotiations. It appears that from this time until negotiations came to a close in the early 1990s, the riparians hardly changed their positions (Kibaroglu 2002b).

In the 1960s, the three riparians entered a new phase of their relationship over water, upon Turkey's decision to construct the Keban Dam on the Euphrates. The downstream riparians, particularly Iraq, insisted on guaranteed flows (350 cubic meters per second at minimum) to be released by Turkey during the impounding period. Hence, a first meeting was held in June 1964 with Turkish and Iraqi experts attending. At the end of negotiations, Turkey guaranteed to undertake all necessary measures to maintain a discharge of 350 cubic meters per second immediately downstream from the dam, provided that the natural flow of the river was adequate to supply this discharge. This was communicated to Syria and Iraq the same year. Moreover, during this meeting, Turkey proposed the establishment of a Joint Technical Committee (JTC), which would inspect each river to determine its average yearly discharge. The JTC would determine the irrigation needs of the three countries through joint field studies and would be authorised - by calculating the needs of the riparians for present and future projects - to prepare a statement of the main principles and procedures in order to facilitate an agreement on water rights.

Following this first technical meeting between Turkey and Iraq, a few more ad hoc meetings were held. Among these the most notable one - the first tri-partite negotiation - was held in Baghdad in 1965 where the three delegations exchanged technical data on the Haditha (Iraq), Tabqa (Syria) and Keban (Turkey) dams. In line with a Turkish proposal, Syria suggested that it would be beneficial to commission a JTC study of the water requirements of the irrigable lands, and subsequently to examine the possibility of covering possible shortages of water supplied by the Euphrates by diverting a part of the Tigris River's water to the Euphrates. Iraq strongly opposed this proposal and insisted on negotiating only on the waters of the Euphrates.

[5]One of the most important legal texts between Iraq and Turkey on the water resources of the Euphrates and Tigris rivers and tributaries is the Protocol annexed to the 1946 Treaty of Friendship and Good Neighbourly Relations (see Annex 11). The protocol provides a framework for the two parties to deal with their respective interests along the river system. It emphasised mainly the urgency of building up flood control works on the Euphrates and Tigris rivers and underlined the positive impact of storage facilities to be sited in the Turkish territory.

During the 1970s, delegations from the three countries gathered on several occasions to exchange information about technical issues relating to the reservoirs. No agreement was reached, and Turkey and Syria unilaterally determined the impounding programmes for their reservoirs.

In the early 1980s, the Turkish development plans created a new demand for cooperation. This time Iraq proposed the formation of a permanent JTC. At the end of the first meeting of the Joint Economic Commission between Turkey and Iraq in 1980, a JTC was established which Syria joined in 1983, whereupon Turkey, Syria, and Iraq held sixteen meetings up to 1993 (Kibaroglu 2003).

The mandate given to the JTC was defined as determining the methods and procedures, which would lead to a definition of a reasonable and appropriate amount of water that each country would need from both rivers. The main items on the JTC's agenda were the exchange of hydrological and meteorological data, the sharing of information on progress achieved in the construction of dams and irrigation schemes in the three countries, and the discussion of initial plans for the filling of the Karakaya and Ataturk reservoirs.

However, after sixteen meetings, the JTC could not fulfil its mandate, and the talks became deadlocked. The major issues that led to the deadlock related to both the subject and the object of negotiations: whether the Euphrates and the Tigris could be considered a single water system, or whether the discussions should be limited to the Euphrates.[6] The wording of the JTC's final objective, i.e. reaching common terminology, was also problematic: whether to formulate a proposal for the '*sharing*' of '*international rivers*', or to achieve a trilateral regime to determine the '*utilisation of transboundary watercourses*'. Iraq and Syria consider the Euphrates an *international* river and insist on an immediate sharing agreement under which its waters would be shared on the basis of each country's stated water needs. On the other hand, Turkey regards the Euphrates and Tigris as forming a *single transboundary river basin* where the waters should be *allocated* according to the identified needs.

During negotiations it emerged that the water potential was unable to meet the declared demands of the three riparians. And, more importantly, there were also uncertainties and inadequacies relating to the data on water and land resources. In response to Syrian and Iraqi demands to formulate urgent 'sharing arrangements' dependent on criteria put forward by them, Turkey proposed the *Three Stage Plan for Optimum, Equitable and Reasonable Utilization of the Transboundary Watercourses of the Tigris-Euphrates Basin* in 1984. The Three Stage Plan encompasses joint inventory studies of land and water resources of the region and

[6]The Turkish side regards the Euphrates and Tigris as one river system because both rivers form the Shatt al-Arab watercourse. This opinion is reinforced by the existence of the Thartar Canal, which was built by Iraq: it connects the Tigris with the Euphrates and diverts water from the Tigris to the Euphrates. This view is, so far, not shared by Iraq and Syria. With respect to these contradicting views, Article 2a of the UN Water Convention reads as follows: "'Watercourse' means a system of surface and groundwaters constituting by virtue of the physical relationship a unitary whole and normally flowing into a common terminus."

the estimation of water needs for the competing sectors, agriculture in particular. It was expected that this would provide the basis for optimum allocation of the available water resources related to the determined needs (Kibaroglu and Unver 2000). With the Three Stage Plan, Turkey also called for the establishment of a joint body to collect, handle and exchange data regarding water and land resources so that annual and seasonal variations could be incorporated in the estimates made, in order to determine allocations. Along with reaching a set of agreed upon criteria in data-sharing, it was hoped that negotiations could move on to coordinating development projects and create joint projects. However, the Turkish Three Stage Plan was coolly received by Iraq and Syria, and they continued to demand fixed water quotas (Kibaroglu 2007).

Syria and Iraq use mathematic formulae to define their water quotas. Syria proposed that the co-riparians should declare their demands for each river separately, i.e. the Tigris and the Euphrates rivers. If the claims exceed a river's discharge, the deficit will be proportionally deduced from each share. The Iraqi mathematic formula is somehow different and admits that each riparian should declare its claims for the realised projects, for those under construction and, finally, for any that are planned. Each country's water quota would be defined subsequently, i.e. first for the projects in operation, then for those under construction, etc., with the realised projects having priority over planned projects.

Although an agreement was not reached over procedures or over water quotas, in 1987 and 1990, two bilateral accords were concluded (see Box 1) which were largely products of the then prevailing political atmosphere.[7] They were, however, not the results of JTC negotiations, but were initiated at the highest political levels. Both are acknowledged as interim agreements by all riparians.

Box 1 Bilateral accords concerning the Euphrates River
The Turkish-Syrian Protocol of 1987 (see Annex 12)

The Turkish-Syrian Joint Economic Commission meeting on 17 July 1987 had an important effect on water issue negotiations. *The Protocol on Matters Pertaining to Economic Cooperation*,[8] signed by Turkey and Syria at the conclusion of the meeting, incorporated provisions for water, the temporary nature of which was recognised. Article 6 of the Protocol reads as follows:

During the filling up period of the Ataturk Dam reservoir and until the final allocation of the waters of the Euphrates among the three riparian countries the Turkish side undertakes to release a yearly average of more than 500 m^3/s at the Turkish-Syrian border and in cases where monthly flow falls below the level of 500 m^3/s, the Turkish side agrees to make up the difference during the following month.

(continued)

[7]See Scheumann (2003) for the relevance of non-water issues as disturbing factors.

[8]United Nations Treaty Series 87/12171, 17/7/1987.

As a basis for comparison, the long-term average flow of the Euphrates is about 1,000 m^3/s at the Turkish-Syrian border.

The Syrian-Iraqi water accord of 1990

Syria and Iraq perceived the interruption to the flow of the Euphrates (from impounding actions at the Ataturk Dam) as the first of many similar disruptions resulting from The Southeastern Anatolia Project (GAP) activities, and consequently signed a bilateral accord in 1990. The Joint Minutes (1) read as follows:

The Iraq water share on the border region between Iraq and Syria is 58 percent as a fixed annual total percentage (water year) of the water Euphrates River allowed to pass in Syria through the border with Turkey, and the Syrian share of water is the remainder quantity 42 percent of the water of Euphrates River allowed to pass through the border between Turkey and Syria.

However, the role of the JTC should not be underestimated; even if its meetings were infrequent and if it appeared that little substantive progress was made on the question of water allocation, it served as a useful channel of communication. Even though the JTC originated from the Joint Economic Commission, it focused on water allocation only. Its ultimate aim of ensuring cooperation and coordinated management of water resources could not be fulfilled because the riparians were persistently claiming their water rights.

6 International concerns on GAP

After the completion of the major dams on the Euphrates in Turkey such as the Keban, Karakaya, Ataturk, Birecik and Karkamis, the Ilisu Dam (which is a component of the GAP scheme) became a controversial issue, not just among the riparians, but between Turkey and export credit agencies (ECAs) and international non-governmental organisations. The dam, sited on the Tigris River, is expected to create a reservoir with a volume of 10.4 BCM and a surface area of 313 square kilometers. The Turkish authorities consider it to be a key project as it is their largest remaining power installation. The Ilisu and Cizre dams combined will produce about 5 billion kWh per year, and generate more than 400 million US$ for the Turkish economy. Hydropower generation is planned with an installed capacity of 1,200 MW with expected yearly electricity production of 3,800 GWh (Altinbilek 2000).

An international consortium of ECAs from Switzerland, the United Kingdom, Germany, Italy, Austria, Japan, Portugal, Sweden and the US, coordinated by the

Swiss Export Risk Guarantee, considered funding the project. The project itself and the policies of the ECAs were strongly criticised by environmental and human rights groups[9] on social, environmental and cultural grounds. In response, in December 1999 the ECAs announced that four conditions would have to be met by the Turkish Government before the project would receive export credit support. These conditions were as follows (quoted from European Rivers Network 2000):

1. Draw up a resettlement programme which reflects internationally accepted practice and includes independent monitoring;
2. Make provision for upstream water treatment plants capable of ensuring that water quality is maintained;
3. Give an assurance that adequate downstream flows will be maintained at all times;
4. Produce a detailed plan to preserve as much of the archaeological heritage of Hasankeyf as possible.

In October 2000, less than one year later, an international Fact-Finding Commission visited the area to assess the progress made. The Commission concluded that "the conditions have yet to be met, and that the prospect that they will be met in the near future is remote". Shortly before the report was released, a Swedish company which had a 24 percent stake in the consortium withdraw from the project, followed by Balfour Beatty and all the other foreign companies in the consortium in late 2001.

From a Turkish perspective, the Commission was criticized for not having paid enough attention to on-going archaeological rescue activities,[10] and to the Ilisu Dam Lake Area Sub-regional Development Plan project which were initiated by GAP Regional Development Administration (GAP RDA) back in the early 1990s. Both projects had to be deferred due to the state of emergency in the region for almost a decade. Thereafter, the salvage project for the documentation and protection of the archaeological heritage of the area started in 1998 with funds provided by GAP RDA. Educational institutes from within Turkey collaborated with international teams from the US, Germany, Italy and France to devise a comprehensive schedule for the work. Since then archaeological sites in the area have been extensively surveyed and recorded, and excavations and relief works have commenced (GAP 2005). However, the Ilisu Dam Lake Area Subregional Development Plan could only start in 2002, which caused a delay by changing resettlement projects through the development of preferable spatial alternatives (GAP RDA 2001).

The Turkish government reacted critically to the campaign which, it claimed, was led by UK-based activist groups. The Ministry of Foreign Affairs stated that the

[9]Friends of the Earth, the International Rivers Network, the Center for International Environmental Law, and the Washington Kurdish Institute (http://www.ilisu.org.uk); see also WCD Thematic Review, Regulation, Compliance and Implementation (2000) http://www.adb.org/Water/topics/dams/pdf/tr54main.pdf Accessed 28 May 2010.

[10]I.e. the project in Hasankeyf which is the major ancient town on the Ilisu Dam site.

dam would neither reduce the flow of the river nor cause pollution (Ministry of Foreign Affairs 2004). The *Turkey Country Report* to the Third World Water Forum also claimed that the actual facts were somewhat different than those asserted by the Fact-Finding Commission. With reference to the transboundary (downstream) issues involved, the report reads:

> The Ilisu Dam is not designed for irrigation, only for power generation: The water passing through the turbines has to flow back into the river bed. River water flowing into Iraq and Syria will not be polluted because the use of water for hydropower is non-polluting. As a result of Ilisu, new sewage treatment facilities will be built in the towns upstream, thus improving water quality. Ilisu will act as regulator holding back water during the winter floods and releasing it during the summer droughts (Republic of Turkey 2003, 76).

After the halting of the project in 2001, the Turkish Government has undertaken a renewed effort in July 2005 to seek funding based on an updated Environmental Impact Assessment (EIA) Report and an updated Resettlement Action Plan. In 2005, the project was awarded by DSI at a total price of EUR 1.1 billion to a Turkish-German-Swiss-Austrian construction consortium. German, Austrian and French private banks signed financing contracts in August 2007, and the Turkish Undersecretary of Treasury accepted the credit agreements in January 2008. The governments of Germany, Austria and Switzerland approved export credit guarantees for the project of approximately EUR 500 million.

It states that Turkey has informed and consulted the downstream neighbours and shared all the project-related documents with them in October 2006. It also states that scientific studies would be conducted to determine minimum flows to be released as well as keeping the water quality standards to be released to downstream neighbours during the filling and operation of the dams (DSI 2009). The Iraqi minister of water resources, Latif Rashid, complained to the Europeans about Turkey's Ilisu Dam project, asking them to prevent Ankara from going ahead with it. This came at a time when Turkey's environment minister, Veysel Eroglu, vowed to release significantly more water to Iraq (Kibaroglu 2009).

The Turkish Prime Minister Recep Tayyip Erdogan conducted a ceremonial groundbreaking for the dam in August 2006, and it was announced that the project would be completed by 2013. The construction of the project started in May 2008. But German, Swiss and Austrian ECAs called for a halt to the construction in December 2008, amid concerns that the project was failing to meet 150 international standards and World Bank safeguard policies for resettlement and environmental and cultural preservation. After a 180-day review period, they withdrew their pledged US$610 million in export credit in July 2009.

DSI posted detailed reports to explain that the Project Implementation Unit (PIU) had fulfilled at least 47 tasks out of 89 tasks indicated in the protocol signed jointly by the ECAs and DSI.[11] They also referred to the June 2009 report of the Committees of

[11]See for details the DSI website http://www.dsi.gov.tr/ilisu/ilisu_hasankeyf.swf http://www.dsi.gov.tr/ilisu/coe_reports/EMG_June_2009_Report.pdf http://www.dsi.gov.tr/pdf_dosyalar/ilisu_baraji_bilgilendirme_notu.swf Accessed 20 December 2009.

Experts[12] who acted as monitoring units and advisors to the PIU, which included a consensus decision on those tasks related to resettlement plans and environmental management to be completed by the PIU, whereas no consensus was reached on the implementation progress of the protection of cultural heritage. Shortly after the announcement of the funding loss, both the Minister of Environment and Forestry and the Prime Minister asserted that the dam would be built, and that Turkish public and private banks would step in to provide the financial services.

A further issue dating back to the early 2000s concerning the Ilisu Dam and other GAP dams were their anticipated negative impacts on the Mesopotamian Marshlands in Iraq. The Euphrates-Tigris rivers' system used to divide into many channels at Basra, forming an extensive marshland area. The marshes were, however, largely drained by Saddam Hussein's government in the 1990s as a means of driving out the rebellious Marsh Arabs. The study "The Mesopotamian Marshlands: Demise of an Ecosystem" of the United Nations Environment Programme claims:

> The Mesopotamian marshlands, which until recently extended over an original area of 15,000 to 20,000 km^2, have been devastated by the combined impact of massive drainage works implemented in southern Iraq in the late 1980s/ early 1990s and upstream damming (UNEP 2001, ix).[13]

Since the 2003 invasion of Iraq, drainage policy has been reversed and the Ministry of Water Resources in Iraq has embarked on a large programme of engineering to reorganise the whole drainage area, by removing many engineering installations and irrigation schemes and restructuring agricultural practices in the region in order to replenish the marshes. These efforts were supported by the Japanese Ministry of Foreign Affairs. It has provided funds through United Nations Environment Programme's (UNEP) Post Conflict Assessment Unit and is engaged through funding for GRID-Europe to develop an Iraq Marshlands Observation System. This is a decision-making support tool, to develop and implement a monitoring system to systematically acquire, analyse and exchange information about the Marshlands ecosystem; to develop information products and services based on the data gathered to support management of the restoration process; and to evaluate the success of wetland restoration and its impacts on the regional environment, including that of the northern Persian Gulf.[14] The Iraqi programme has so far managed to reclaim about 30 percent of the lost marshland.[15]

Despite these developments, the European Parliament, in line with general international opinion, has requested that Turkey "be sensitive to the water

[12]External Monitoring Group (2009) Ilisu Dam and HEPP Project. External Monitoring Group Report, June 2009. http://www.dsi.gov.tr/ilisu/coe_reports/EMG_June_2009_Report.pdf Accessed 28 May 2010.

[13]See also UNEP 2003.

[14]http://www.grid.unep.ch/activities/sustainable/tirgis/mmps.php Accessed 29 September 2005.

[15]Personal correspondence with Prof. Mukdad Ali, Baghdad University, College of Science, March 2005; see also www.grid.unep.ch/activities/sustainable/tigris/index.php accessed 28 May 2010 and UN Chronicle 2002 Issue 2 http://www.un.org/Pubs/chronicle/2002/issue2/0202p44_mesopot... Accessed 29 September 2005.

requirements of these countries, with particular reference to the lower Mesopotamian Marshes in Iraq and Iran, where water flows have been significantly reduced by the construction of the Ataturk Dam" (European Parliament 2004).

While the rate of marshland diminution, and its causes, has yet to be assessed and reviewed more accurately,[16] the case once more establishes the need to harmonise and coordinate basin-wide development efforts, not just by considering in-stream flows and sectoral water demands but also by looking at all uses and users. The Ilisu Dam should be taken by Turkey as an opportunity to re-consider the fact that environmental and social issues are more adequately dealt with at the planning and implementation phases. There is a need for improved participation as early as possible in the planning stage, and possibly in designing resettlement programmes. It is noted that European firms and ECAs apply the non-objection rule which makes approval of projects by riparian states conditional.

7 Recent developments and prospects for cooperation

7.1 Intergovernmental level

Relations between Turkey and Syria improved considerably following the Adana Protocol signed on October 20, 1998,[17] and new and promising initiatives have been undertaken since then. In 2001, Turkey's GAP RDA made contact with Syria by sending a delegation on the invitation of the Syrian General Organization for Land Development (GOLD), part of the Syrian Ministry of Irrigation. As a result, a joint communiqué was signed between GOLD and GAP RDA on 23 August 2001. Once again the water issue was relegated to the technical level and was handled by intergovernmental networks composed of technocrats. GAP-GOLD cooperation is based on the common understanding of the sustainable utilization of the region's land and water resources through conducting joint rural development and environmental protection projects, joint training programmes, expert and technology exchanges, and study missions. Syrian and Turkish delegations paid visits to each others' project sites. During these periods they had the opportunity to exchange experiences pertaining to the positive and negative impacts of the decades old water and land resources development projects. Unlike the technical negotiations in the 1960s, the GAP-GOLD dialogue included multiple issues such as urban and rural

[16]The UNEP/DEWA/GRID website considers that "positive signs of environmental recovery have been emerging [. . .] visible in new satellite images taken in May 2003." (UNEP/DEWA/GRID, 2004).

[17]Bilateral relations between Turkey and Syria had long been uneasy. Two principal sources of friction were Syria's extensive logistical support to the separatist terrorist organization, the Kurdistan Workers' Party (PKK) and Syrian irredentist claims to the province of Hatay in Turkey. Despite official denials by Damascus, Syria's support of subversive actions against Turkey since the early 1980s have been widely known and documented.

water quality management, rural development, participatory irrigation management and agricultural research.[18] Even though the dialogue between these two leading institutions could not materialize in concrete project implementation or regular exchange programs, it has served as a semi-formal consultation mechanism; it paved the way for forthcoming cooperative initiatives taken by other related government offices and the ministries in the years 2008 and 2009.

Furthermore, the improved political and economic relations among the riparians since the late 1990s have produced fruitful impacts on water-based development efforts in the region. Significant progress in the economic relations of Syria and Turkey can be observed in major sectors such as e.g. agriculture, energy and health. A series of government, private sector and civil society delegations have paid numerous mutual visits, reaching productive understandings and agreements on trade and economic matters. These culminated in the signing of the Free Trade Agreement in 2004, a real breakthrough in the advancement of bilateral economic relations. The years 2003 and 2004 witnessed the signing of two framework cooperation agreements on health and agriculture, respectively. Both agreements underlined the importance of enhanced cooperation and development in the two neighbouring countries. They included, among other things, discussion of water-related issues, such as soil and water conservation in agricultural practices and combating water-borne diseases (Kibaroglu 2006).

7.1.1 High-level cooperation between the riparians

Recently, the Turkish government has embarked upon cooperative foreign policy initiatives involving her southern neighbours, Syria and Iraq, in particular. The political reasons behind these initiatives can be analyzed at contextual, regional, bilateral and domestic levels. This is beyond the focus of this chapter. However, below the reader may find how the political will at the highest level in Turkey also refers to initiatives which relate to transboundary water development and management in the Euphrates, Tigris and the Orontes rivers.

Turkey and Iraq signed the Joint Political Declaration on the Establishment of the High-Level Strategic Cooperation Council on 10 July 2008. Accordingly, the first ministerial meeting between Turkey and Iraq under the title of the High-Level Strategic Cooperation Council, a mechanism of joint meetings of the Iraqi and Turkish cabinets, was jointly led by Turkish Foreign Minister and his Iraqi counterpart occurred on 17-18 September 2009 in Istanbul. The Turkish Foreign Minister was accompanied by seven executive ministers of the cabinet, including the ministers of trade, energy, transportation, agriculture and environment, while the Iraqi Minister was accompanied by nine executive ministers of the Iraqi Cabinet,

[18]A joint Communiqué between the Republic of Turkey, Prime Ministry, Southeastern Anatolia Project Regional Development Administration (GAP) and the Arab Republic of Syria, Ministry of Irrigation, General Organization for Land Development, 23 August 2001, Ankara, Turkey, on file with the authors.

who are the counterparts of the seven Turkish ministers, as well as three deputy ministers. The meeting between Turkish and Iraqi ministers came a day after Turkey and Syria signed a deal to create a similar mechanism of strategic cooperation during a visit by the Syrian President Bashar al-Assad to Istanbul on 16 September 2009.

A shadow cast over bilateral relations between Iraq and Turkey due to the presence of the outlawed Kurdistan Worker's Party (PKK) organization in northern Iraq gradually dispersed in 2008, while Turkey also improved its relations with the regional Kurdish administration in northern Iraq following a long hiatus after the U.S. invasion of Iraq. Seeds of multidimensional bilateral cooperation between Ankara and Baghdad were actually sown during Erdogan's July 2008 visit. Then, Erdogan and Maliki signed a strategic partnership agreement committing Turkey and Iraq to cooperation in the fields of politics, economy, energy, water, culture and security. The formation of the High-Level Strategic Cooperation Council was outlined during that visit.

According to the strategic partnership agreement signed between Ankara and Baghdad, the High-Level Strategic Cooperation Council will meet at least once a year, with the prime ministers of the two countries presiding over the meeting. The ministerial level mechanism, meanwhile, will meet at least three times a year, while technical delegations will meet four times a year. Decisions made at the High-Level Strategic Cooperation Council will be implemented through an action plan. Barham Salih, Iraq's former deputy prime minister, had called the agreement "the starting point of the Middle East common market" and likened improving relations between Iraq and Turkey to the relationship of France and Germany in the 1950s.[19]

On the other hand, the first High-Level Strategic Cooperation Council meeting between Turkey and Syria took place in Damascus on 22-23 December 2009. A short while after the Turkish-Syrian Strategic Cooperation Council Agreement was signed on 13 October, and following the ministerial meeting which took place in Aleppo and Gaziantep with the contribution of various ministers, the Council's meeting at the prime ministerial level gives clues about the progressive approach adopted in Ankara-Damascus relations, and possibly paves the way beyond good wishes towards more institutional and concrete steps and processes.

The protocols, projects and the revised memoranda, which were taken into consideration on 13 December, have been under study by delegations since then. On 22 December, at the Council in Damascus, the high level diplomats from both countries came together and made the final revisions for the protocols and projects which would be signed at the High-Level Strategic Cooperation Council. It was hoped that the signing of the protocols would not only strengthen Turkish-Syrian relations, but would also represent the first concrete results for the Strategic Cooperation Council. Some commentators argue that the Turkish-Syrian Strategic Cooperation Council Meeting is an indication of the fact that relations between Ankara and Damascus are developing towards a goal of integration. In the same

[19]"Iraq, Turkey want to integrate economies, transform Mideast," Today's Zaman, E-Gazette, September 18, 2009.

manner, the Prime Minister and the Minister for Foreign Affairs in Turkey pointed out that the Strategic Cooperation Council not only promotes relations between two countries, but also aims at finding joint solutions for regional and international problems.

These cooperative initiatives taken at the highest political level have made possible to deal with prolonged disputes in Turkish-Syrian relations. Thus, by the leadership of two ministers: the Minister of Irrigation, Syria and the Minister of Environment and Forestry, Turkey, a commission composed of technocrats and diplomats of the two countries met on 8 December 2009 in Ankara to prepare the framework and contents of an agreement concerning building a joint dam on the Orontes/Asi River. During the meeting, other issues related to water management and use in the Euphrates-Tigris rivers system were discussed, including, the construction of a water pumping station to be located on the Syrian side of the Tigris River that would enable Tigris waters to be used for irrigation in northeastern Syria as well as additional agreements on improving water quality in transboundary rivers and joining efforts to fight against drought (Ayhan 2009).

7.1.2 New water protocols - new water use rules

Among the forty eight Memorandum of Understandings (MoU) which were signed between Turkey and Iraq on 15 October 2009, one was on water. With that protocol the two sides agreed to exchange hydrological and meteorological information as well as exchanging expertise in these fields. Both sides also emphasized the utilization and management of regional water resources in an efficient manner.

On December 23 and 24, 2009 Turkey and Syria signed fifty MoUs at the first meeting of the High-Level Strategic Cooperation Council in Damascus including four MoUs related to regional waters:

- The MoU 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." According to this, both countries will share costs of the dam, which will be built at the border. It will produce energy for both sides and irrigate 20,000 hectares of agricultural area in Turkey and 10,000 hectares in Syria. Although the details of the dam will be ironed out in the feasibility study, it is expected to be approximately 15m high and have a capacity of 110 MCM of water storage. Of that total, 40 MCM will be used to prevent flooding and the rest for energy production and irrigation. The foundation of the dam is expected to be laid out in 2010.
- The MoU Between the Government of the Republic of Turkey and the Government of the Syrian Arab Republic on Establishment of a Pumping Station in the Territories of Syrian Arab Republic for Water Withdrawal From the Tigris River. With this protocol, the quantity of water drawn annually from the Tigris River by Syria, when the flow of water is within the average, will be 1.25 BCM. The water

withdrawals are arranged according to monthly flows, and it is indicated that pumping will be done when time and place allows.[20]
- The MoU 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 Combating of Drought.
- The MoU between the Government of the Republic of Turkey and the Government of the Syrian Arab Republic in the Field of Remediation of Water Quality.[21]

7.1.3 JTC meetings-revitalized

On 22 March 2007, on an occasion to inaugurate an international conference in Antalya, Turkey, the Turkish Energy and Natural Resources Minister invited the Syrian Minister of Irrigation and Iraqi Water Resources Minister to discuss how to set up a cooperative framework to deal with regional water issues. The Ministers decided that periodic meetings of the JTC, held between 1982 and 1992 before being suspended, would be reconvened. Hence, a series of JTC meetings were conducted since then: the first one being convened in Syria on May 7-11, 2007, followed by a tripartite ministers meeting on January 10-11, 2008 in Syria. At another JTC meeting on February 24-25, 2009 in Istanbul, officials decided that they would share data (current and historical) regarding meteorological patterns and water quality in the Tigris and Euphrates rivers. Another JTC meeting took place in Syria in 2009.

Moreover, in March 2008, the three ministers agreed to establish a water institute in Turkey. It was decided that each riparian appoints fifteen water engineers with an aim to conduct studies on water use efficiency and better water management in the region. The institute would map water resources in the region and draw a report on measures that the respective countries must take for effective management of these resources. The engineers from the three countries have been meeting to exchange information and know-how. In this context, the first training activity was on modern irrigation practices in the region; the second one was about construction and safety of the dams. An interest has arisen within the group to study climate change and its impacts on regional waters. The training institute in Istanbul hosted the third training programme for the experts on this issue.[22]

[20]In 2002, a bilateral agreement between Syria and Iraq was signed concerning the installation of a Syrian pump station on the Tigris River for irrigation purposes. The quantity of water drawn annually from the Tigris River, when the flow of water is within the average, will be 1.25 km^3 with a drainage capacity proportional to the projected surface of 150,000 hectares. Personal communication with the Turkish officials at Ministry of Foreign Affairs and DSI, January 2010.

[21]"Joint Statement of the First Meeting of the High-Level Strategic Cooperation Council between Syria and Turkey," December 24, 2009, Syrian Arab News Agency.

[22]Personal communication with officials at DSI, Ministry of Environment and Forestry, March 2010.

Additionally, at the Fifth World Water Forum convened in Istanbul in March 2009, Turkey and Syria called for Iraq to conduct negotiations regarding reasonable utilization and allocation of the transboundary rivers. Two months later, in May 2009, the Iraqi Parliament adopted a resolution which stipulated that it would block any agreements with Syria or Turkey that did not include recognition Iraqi water rights. The decision taken by the Iraqi Parliament can be interpreted as "despite the recent instances of cooperation, the underlying problems remain." Yet, the following month, in June 2009, both Turkey and Syria agreed to help alleviate the drought in Iraq by increasing water flow.

On 3 September 2009, Turkey, Syria and Iraq held a meeting at which they decided to cooperate to initiate water training programmes and to monitor and exchange information related to climate change and drought conditions in the three countries. In addition, they agreed to erect new ones and modernize water flow gauging stations. After talks between the Iraqi Foreign Minister and the Turkish Environment Minister, Turkey also agreed to provide 550 cubic meters per second of water from the Euphrates River to Iraq until 20 October 2009. The three states scheduled their next meeting for January 2010 in Baghdad, which is currently postponed due to parliamentary elections in Iraq.

7.2 Non-governmental level: ETIC - a network of professionals[23]

One significant development in the region is the Euphrates-Tigris Initiative for Cooperation (ETIC) established in May 2005 by a group of scholars and professionals from the three major riparian countries.[24] The overall goal of the initiative is to promote cooperation among the three riparians to achieve technical, social and economic development in the Euphrates-Tigris region. The composition and the role of ETIC remarkably fit the epistemic community theory and its role in institutional bargaining. Epistemic communities are a "network of professionals with recognized expertise and competence in a particular domain and an authoritative claim to policy-relevant knowledge within that domain or issue-area" (Haas 1992, 349).

The origin of ETIC may be traced to early meetings among the concerned scientists from Iraq, Syria, Turkey and the United States in 2004.[25] This group of

[23]This section is mainly drawn from Kibaroglu A (2008) The Role of Epistemic Communities in Offering New Cooperation Frameworks in the Euphrates-Tigris Rivers System. Journal of International Affairs. vol 61, no 2, 191-195.

[24]The co-author of this chapter, namely Aysegul Kibaroglu is the co-founder of the Euphrates-Tigris Initiative for Cooperation (ETIC).

[25]As a spin-off from a project conducted by the International Center for Peace at the University of Oklahoma, some Iraqi, Syrian and Turkish participants in the said project have decided to launch a cooperation initiative, in collaboration with the University of Oklahoma and Kent State University. See http://www.ou.edu/ipc/etic/.

dedicated scholars has been meeting with flexible agendas. During the first stage of these gatherings, the participants shared information concerning national water policies and raised the significance of water issues in the countries' socio-economic development targets. In a short period of time, the members of the group have been able to develop a common understanding of the existing conditions, pressing problems and needs in the region. In doing so, these concerned scientists have decided to turn their expertise and experience into the joint initiative of the ETIC.

ETIC is a track-two effort, meaning that it is voluntary, non-official, non-binding, non-profit seeking and non-governmental. It is not affiliated with any government, but it aims to contribute positively to efforts, official and unofficial, that will enhance the dialogue, understanding and collaboration among the riparians of the Euphrates-Tigris system. As a multi-riparian initiative, ETIC has been unique in that it looks beyond water rights, per se, to themes related to environmental protection, development and gender equity, water management, governance and grass-roots participation in a holistic, multi-stakeholder framework.[26]

The ETIC members contend that awareness of socio-economic development is compulsory to understand the real dynamics of the region. Hence, the vision of the ETIC is defined by the founders as "ensuring the quality of life for people in all communities, including rural and urban areas, is improved, and harmony among countries and with nature in the Euphrates-Tigris region is achieved". The aim is to promote cooperation for technical, social and economic development in the Euphrates-Tigris region.[27] In line with its vision and overall goal, ETIC prepares and implements joint training and capacity building programmes[28] as well as research and projects[29] with an aim to respond to the common needs and concerns of the people in the region.[30] Towards this end ETIC has built partnerships with international organizations (United Nations Educational, Scientific and Cultural Organisation - UNESCO, UN Food and Agriculture Organization - FAO and United Nations Development Programme - UNDP); with non-governmental organizations (Stockholm International Water

[26]Summary statement presented at the conclusion of the XII World Water Congress, November, 26 November 2005, New Delhi, India; ETIC Newsletter 1, no. 3, ETIC workshop synthesis document (World Water Week, Swedish International Water Institute, Stockholm, 21 August 2006). On file with the authors.

[27]See http://www.etic-org.net/. Accessed 30 May 2010.

[28]ETIC organized a training program in 2006 on dam safety in collaboration with the United Nations Educational, Scientific and Cultural Organization (UNESCO) for professionals from Iran, Iraq, Syria and Turkey. ETIC organized a workshop on Knowledge Technology in March 2009 in Gaziantep, Turkey for participants from Iraq, Syria and Turkey. The last training workshop was organized by ETIC in Aleppo in January 2010 on Geographical Information Systems and their implementation in natural resources management. See http://www.etic-org.net/. Accessed 30 May 2010.

[29]ETIC has been pursuing a research activity entitled "Collaborative Planning and Knowledge Development in the Tigris-Euphrates Region". The stakeholders in this activity are Iraqi, Syrian and Turkish universities faculty members. On file with the author.

[30]ETIC Newsletter (2006) vol 1, no 4. On file with author.

Institute (SIWI) and Advancing the Blue Revolution Initiative)[31] and with the universities (Bahcesehir University, University of New Mexico and the American University in Beirut).

8 Challenges for long-term and sustained cooperation

Delli Priscoli and Wolf analyze the transformation of water conflicts in four stages (2009, 97). In line with their analyses, it is possible to claim that water dispute in the Euphrates-Tigris river basin has already passed *Stage I*, where negotiations were often *adversarial* with an emphasis on water rights. Trust building has been accomplished between Turkey and Syria. However, there are still some concerns between Turkey and Iraq. Even though a new water protocol was signed between Iraq and Turkey, and the negotiation mechanisms (at the prime ministerial and ministerial levels) have been either newly established or revived such as the case of the JTC, Iraq preferred to act unilaterally regarding the deliberations on the Ilisu Dam and also took the decision on assurance of the water rights to the parliament. Yet, the riparians have managed to establish various levels of contacts starting from the highest political level to the concerned bureaucracy as well as engaging business and private entities. Above all, they were innovative in convening a "joint cabinet of ministers" to seal that the riparian governments act very closely with each other in taking decisions related to regional economy and social-cultural affairs. It is also possible to assert that the negotiations have moved forward to *Stage II*, where negotiations have progressed to a *reflexive* stage with an emphasis on needs. Turkey has released 550 cubic meters per second (more than the average amount promised in the 1987 Protocol) of the Euphrates flows to Syria, to enable the Syrian and Iraqi governments to cope with the recent droughts. Moreover, Turkey has been responsive to the needs of Syria from the Tigris River and signed the MoU on the pumping of the Tigris boundary waters by Syria for irrigating about 150.000 hectares of land in northeastern Syria.

It has been observed recently that the riparians through the leadership of highest level politicians preferred functional cooperation adopting a benefit-sharing approach. Thus, one productive approach to the development of transboundary waters is to examine benefits in the basin from a regional perspective. The Euphrates-Tigris case supports the observation that when negotiations focused solely on water sharing, upstream and downstream differences were reinforced, which made water gains and losses more prominent. The opportunities to broaden the scope of the negotiation agenda to involve other sectors beyond water (energy, trade), should be seized in the current political atmosphere. This regularly has required the riparians to get past looking at water as a commodity to be divided – a zero-sum, rights-based approach – and rather to develop an approach that equitably allocates not the water but the benefits derived there from a positive-sum,

[31]See http://www.dai.com/work/project_detail.php?pid=190. Accessed 21 July 2010.

integrative approach. Adding sectors can widen the zone of possible agreement and can make implementation more manageable. Multi-resource linkages may offer more opportunities for creative solutions to be generated, allowing for greater economic efficiency through a "basket of benefits."

However, the biggest challenge now is to operationalise the numerous agreements (MoUs) related to various aspects of cooperation ranging from trade, investment, water, environment, agriculture, education, energy to security issues by establishing a regime framework, which could mobilize the relevant actors and actions to implement benefit-sharing projects and distribute the benefits equitably. Hence, the success or the failure of the recent high level cooperation between the riparians will be tested through the systematic analyses of the changes in the socio-economic status of regional people: whether their social and economic status are better-off in terms of increasing income levels and distribution of the benefits fairly.

Even though the political will is expressed and initial actions have been taken at the highest level, it all depends on the institutional capacity of the riparians to implement these cooperative agreements. Hence, a regime framework with its institutions (principles, norms, rules and decision-making procedures) should be built to make the recent cooperative initiatives sustainable and permanent. In this context, track two (unofficial, professional networks) initiatives such as the ETIC should be supported as it provides necessary scientific cooperation to operationalise the cooperative agreements related to water and socio-economic sectors. ETIC is flexible to bring diverse stakeholders together. It adopts a holistic, development focused, multi-sectoral approach as opposed to one aiming at sharing the river flow. The latter has proven to be divisive and unproductive.

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