An Institutional Framework for Facilitating Cooperation in the Euphrates-Tigris River Basin

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Abstract

Since the initiation of major development projects, riparians of the Euphrates-Tigris river system, namely Turkey, Syria and Iraq, have begun utilizing those water resources under conditions of complex interdependence. A number of crises have occurred in the basin due to the lack of regularized consultation mechanisms among the riparians. Nevertheless, there have been notable efforts to build up a negotiation framework for data sharing and project coordination. The paper describes the negotiation mechanisms and processes between Turkey, Syria and Iraq, as well as the bottlenecks and opportunities that exist over utilizing the waters of the Euphrates and Tigris rivers. Negotiations over the water issues involved, both at the technical level and higher levels, have been suspended since the mid-1990s. The paper asserts that there is a need to revitalize these negotiations. A clear understanding of the respective rights and obligations of the three riparians as well as an objective definition of such needs are prerequisites for sustaining the negotiation process. The paper concludes by elaborating on the modalities of institution building that would facilitate negotiations over the use of the waters of the Euphrates-Tigris river system.

Keywords: Euphrates-Tigris, crises, negotiations, institutions, regimes, equitable, efficient, water-based development.

Introduction

The Euphrates and Tigris river systems are often considered as forming one basin because they merge in the Shatt-al-Arab waterway shortly before emptying into the Persian Gulf.[1] Both rivers rise in Turkey and flow through or along Syrian territory before entering Iraq. Turkey occupies the upstream position on both rivers. Almost all the waters of the Euphrates and a large portion of the waters of the Tigris originate within Turkey's borders. The average annual discharge of the Euphrates is 32 billion cubic meters (bcm). Approximately 90 per cent of the water of the Euphrates is generated in Turkey, whereas the remaining 10 per cent originates in Syria. Iraq makes no contribution to the run-off. As for the Tigris and its tributaries, the average annual discharge is 50 bcm. Turkey contributes approximately 40 per cent of the total annual flow, whereas Iraq and Iran contribute 51 per cent and 9 per cent, respectively. No Syrian water drains into the Tigris. The amount of water carried by the Euphrates-Tigris river system can be said to be reasonably sufficient for various uses by the three riparians. However, physical characteristics of the rivers coupled with the initiation of major development projects by the riparians has put exceeding pressures on the supply of the river system. Hence, excessive demand for more water exacerbates tension in the relations of the riparians with each other (Kibaroglu, 1998a).

Emergence of the Water Dispute Among Turkey, Syria and Iraq

The relations of three riparians during the period between 1920 and 1960 can be characterized as harmonious. Although planning was done largely on a country by country basis, there were technical consultations among the three states through the early 1960s. None of the countries were engaged in major development projects that could have resulted in excessive consumptive utilization of the Euphrates-Tigris river basin waters. There was, therefore, no exigency during that period in devising a regime framework for better management and utilization of the waters in the basin. Even the inefficient and ineffective development and management practices of the three riparians did not have substantial negative impacts on the quantity and quality of the waters. Populations were at manageable levels, and the rivers' flows depended only on natural monthly and yearly variations in discharge. The only serious concern of the two

downstream riparians was the devastating effect of intermittent flooding (Kibaroglu, 1998b).

The water question emerged on the regional agenda when the three riparians initiated major development projects. 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. The uncoordinated nature of these supply-led developments as well as inefficient and ineffective demand management practices within the framework of national water policy and management of the co-riparians continue to be the principal causes of water imbalance in the Euphrates-Tigris river basin.

Specifically, the nature of water relations within the last 40 years has been closely shaped by the construction of major development projects, namely the Southeastern Anatolia Project (Turkish acronym GAP) of Turkey, and the Euphrates Valley Project of Syria. In the meantime a series of negotiations have taken place both before construction and after some of the facilities have been put into operation as the result of which several protocols have been signed.

Early Negotiations

The rise of the water dispute in the Euphrates-Tigris river basin goes back only about 30 years although the legislative history of the basin has a 65 year history (Belul, 1996). The first legal arrangement among the riparians was the agreement between France and Turkey with a view to promoting peace, signed in Ankara on 20 October 1921.[2] The 1923 Lausanne Peace Treaty[3], the French-Turkish Convention of 1926[4], the French-Turkish Protocol of 1929[5], and the 1930 French-Turkish Protocol[6] all contain components concerning the water use issue. One of the most important legal texts on the waters of the Euphrates-Tigris river system is the protocol annexed to the 1946 Treaty of Friendship and Good Neighbourly Relations between Iraq and Turkey.[7] The protocol provides a framework for the two parties to deal with their respective interests along the river system. The protocol emphasized 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.

The three riparians entered a new phase of their relationship over water upon the decision by Turkey to construct the Keban Dam on the Euphrates. The Keban Dam, while on the Euphrates, is not considered to be part of the GAP. Yet its presence makes it an integral element of the overall Euphrates development scheme. The Keban Dam was designed for electricity generation and had no feature which would change the water balance of the basin. Furthermore, the Keban Dam had a very positive impact upon the water storage facilities of Syria and Iraq by ensuring the regulation of variance in the flow of approximately 70% of the waters of the Euphrates (Bilen, 1997). However, the downstream riparians, particularly Iraq, insisted on guaranteed flows (350 m3/sec at minimum) to be released by Turkey during the impounding period. Iraq asserted that it would certainly agree to the building of the Keban Dam provided that such construction would not alter existing water usage in Iraq.

In order to provide the Syrian and the Iraqi officials with up-to-date information on the dam, copies of the feasibility report of the project were submitted to Syrian and Iraqi technicians. Hence, a first meeting was held on 22-27 June 1964 with the participation of Turkish and Iraqi experts. In that meeting, the Turkish delegation asserted that it was impossible to reach a single and final formula for the pattern of water to be released from the Keban Dam reservoir before impounding by the dam. This pattern, according to the Turkish delegation, depended upon the natural conditions that would prevail during the filling, and on the exact evaluation of the concerned countries' needs (Report, 1975). However, under pressure from the donors through an agreement signed in Ankara in 1966 with USAID, Turkey guaranteed to undertake all necessary measures to maintain a discharge of 350 m3/sec immediately downstream from the dam, provided that the natural flow of the river was adequate to supply the above discharge. This was confirmed orally to Syria and Iraq the same year. USAID was the acting donor for the Keban project while World Bank was the leading agency financing the Karakaya Dam further downstream. Both agencies insisted that guaranteed flows be released by Turkey to downstream riparians during the impounding and operation of the reservoirs. Through her experience with the donor agencies during

the construction of the Keban and Karakaya Dams, Turkey developed a negative stance towards the possibility of third-party mediation or so-called third-party intervention in the issue.(Gurun, 1994). Donors did not give much weight to the essential Turkish view that a fair distribution of Euphrates waters could be done by taking into consideration the long term projects and the needs of the three countries along with the possibility of transferring water from adjacent rivers, namely the Tigris. Turkey contended that the donors' intervention was solely in favor of protecting the rights of the downstream riparians and gave slight recognition of Turkish rights to develop and use the river system. Moreover, during this meeting, Turkey proposed to establish a Joint Technical Committee (JTC) which would inspect each river at its source to determine its yearly average discharge. In addition, the JTC would determine the irrigation needs of the three countries through joint field studies. The JTC would be authorized by calculating the riparians' needs for present and future projects to prepare a statement of main principles and procedures in order to reach an agreement on water rights.

A second meeting was held with Syria in Ankara in 1964. During the meeting both delegations exchanged information on the stages achieved in the development of the two major Keban and Tabqa projects. The Syrian delegation clarified its irrigation targets within the Euphrates Valley Project. The two countries equally emphasized the necessity of having joint meetings with the participation of Turkey, Syria and Iraq. After these bilateral meetings, in accordance with the recommendations of the Turkish delegation, the first tri-partite negotiation was held in Baghdad in 1965. In that meeting the three delegations exchanged technical data with regard to the Haditha, Tabqa and Keban Dams. The delegations then moved to discuss the question of setting up a JTC. The Iraqi delegation submitted a draft agreement which covered, among others, the issue of forming a permanent JTC to be entrusted with supervising the implementation of the agreement. The Turkish delegation strongly rejected the Iraqi draft agreement, and expressed that the JTC could only be authorized to maintain coordination of the present and future projects in the Euphrates-Tigris river basin. In line with the Turkish proposal, Syria suggested it would be convenient to include among the functions of the JTC a study of the water requirements of the irrigable lands in the three countries, and

subsequently to examine the possibility of covering possible shortages of water supplied by the Euphrates through diverting a part of the Tigris River's water to the Euphrates. Iraq strongly opposed this proposal and insisted on negotiating only the waters of the Euphrates. Thereafter, Syria changed its position during the 1980s and joined Iraq in advocating that the rivers be considered separately. This was done despite the Turkish view that both rivers form one watercourse system including territories of the three riparian countries.

During the course of the 1970s, the three delegations gathered on several occasions to exchange information about the technical issues pertaining to the Keban, Tabqa and the Habbaniye reservoirs. On 9 October 1972 the delegations agreed once again that a JTC should be formed. Hence, in 1972 and 1973 a series of JTC meetings were held, albeit on an *ad hoc* basis. No references were made to a water rights agreement. The major issue facing the tri-partite technical meetings continued to be ascertaining appropriate methods for filling the Keban and the Tabqa reservoirs while simultaneously meeting irrigation demands of downstream riparians (Minutes, November 1972).

However, during the meeting of the three delegations, a joint decision was taken to organize field trips to visit the main gauging stations and water resource development projects on the Euphrates. The three parties felt that the observations gained through these field trips would facilitate the development of an equitable method for filling the dams' reservoirs. In January 1973, a tri-lateral technical committee undertook field trips to the Tabqa project site, to the discharge gauging stations on the Euphrates, and to the major irrigation projects in Syria. Later in February 1973 the committee visited Iraq.

After completing these field trips, including a trip to the Keban Dam site, a sub-committee was formed to discuss and reach an agreement on the procedure and program for filling the dams so that the irrigation and energy requirements of the downstream riparians could be sustained (Minutes, October 1973). Based on observations accumulated during the field trips, the Turkish delegation submitted a report pointing out their severe doubts on the accuracy of the figures of 18 bcm that Iraq had presented as her water needs (Technical Delegation, May 1973). The Turkish delegation indicated

that Iraq did not calculate her real water needs based on objective criteria, and that Iraq insisted on exaggerated amounts in order to ensure her water rights before the upstream and midstream riparians continued with their development projects. Moreover, the Turkish delegation added that Iraqi irrigation water demands could not be justified under the existing wasteful and traditional water development and usage patterns which had been observed. Furthermore, during another technical meeting, the Turkish delegation proposed a joint study to achieve objective data related to the water requirements of each riparian (Minutes, May 1973).

However, the only substantial outcome of that meeting was the decision taken to exchange hydrometric information on daily water levels of the Keban and Tabqa reservoirs and weekly river flow measurements at gauging stations like Aboukemal and Hit. At a subsequent technical meeting a constructive decision was taken in terms of joint action. The three delegations agreed that some economic information regarding potential agricultural and power losses during the filling period of the reservoirs would be necessary to determine the filling program. Thereupon, the delegations agreed upon detailed directives for evaluating power and agricultural losses (Minutes, October 1973). However, efforts to harmonize the results of these studies failed in a follow-up meeting at Thawra, Syria.

Turkey started impounding the Keban reservoir by February 1974 at the same time that Syria had almost finalized the construction of Tabqa dam. No agreement was achieved at the end of numerous technical meetings, and Turkey and Syria went their own ways in determining impounding programs for the two reservoirs. The Tabqa and Keban dams were completed a year apart (1974-75). This was a period of continuous and particularly dry weather. The impounding of both reservoirs in the following two years escalated into a crisis in the Spring of 1975 (Kut, 1993). Iraq accused Syria of reducing the river's flow to intolerable low levels, while Syria placed the blame on Turkey. The Iraqi government was not satisfied with the Syrian response, and mounting frustration resulted in mutual threats bringing the parties to the brink of armed hostility. A war over water was averted when Saudi Arabia mediated that extra amounts of water be released from Syria to Iraq.

In 1974 Turkey started negotiating with the World Bank on a construction of a second dam just downstream from the Keban, namely the Karakaya Dam.[8] A series of tri-lateral technical negotiations were also held to determine appropriate methods for impounding the Karakaya reservoir (Belul, 1996). Despite difficulty in obtaining full outside funding, contract bidding for work on the Dam was called in 1976 (Kolars&Mitchell, 1991). No crisis was encountered during both the construction of the dam and the impounding of its reservoir. This was largely due to further guarantees by Turkey to release 500m3/sec of flow to Syria during the construction, initial impounding and operation of the Dam (Belul, 1996). The Karakaya Dam became operational in 1987.

An Institutionalized Negotiation Framework: The Joint Technical Committee

Contracts for a high dam at the Middle Karababa site, subsequently renamed the Atatürk Dam, were initiated in 1983 (Kolars&Mitchell, 1991). The Atatürk Dam which has been the centerpiece of the GAP became operational in 1992. It has a total storage capacity of 48.7 bcm and an installed electricity-generating capacity of 2,400 Megawatts. Meanwhile the construction of the Sanlıurfa Tunnels started in 1977. The Tunnels are the major units of GAP, consist of two giant irrigation tunnels which will discharge water from the Ataturk Dam reservoir. The first of the two tunnels was completed in 1994. The imminent use of the Euphrates and Tigris by Turkey created new demands for cooperation. Because the issues involved in hydropower schemes along the Tigris and Euphrates are so complex and far-reaching, the three riparians had to find ways of structuring the dialogue among them. Hence, this time Iraq took the initiative for the formation of a permanent Joint Technical Committee. At the end of the first meeting of the Joint Economic Commission between Turkey and Iraq in 1980, a new JTC was established to discuss and finalize the water issue among the riparians. Syria joined the JTC in 1983 whereupon Turkey, Syria, and Iraq held sixteen meetings up to 1993. The essential mandate given to the JTC was defined as to decide the methods and procedures which would lead to a definition of the reasonable and appropriate amount of water that each country would need from both rivers. The major items on the agenda of the JTC were the exchange of hydrological and meteorological

data and information on the Euphrates-Tigris Basin, the sharing of information on progress achieved in the construction of dams and irrigation schemes in three riparian countries, and the discussion of initial plans for filling the Karakaya and Atatürk Reservoirs.

With regard to the exchange of data, Turkey as the headwater riparian, provided complete information including the rules of operation of the reservoirs in its territory in order to ensure better water management in the Euphrates-Tigris Basin. However, after sixteen meetings, the JTC could not fulfill its objectives and the talks became deadlocked, and failed to produce even outlines of its meetings. However, the role of the Joint Technical Committee should not be underestimated. Although its meetings were infrequent and appear to have made little substantive progress on the question of water allocation, it was a useful channel for communication.[9] The major issues that led to the deadlock were related to both the subject and the object of negotiations: whether the Euphrates and the Tigris be considered a single system or whether the discussions could be exclusively limited to the Euphrates. In other words, the final objective of the JTC was to formulate a proposal for the "sharing" of "international rivers," or to achieve a trilateral regime for determining the "utilization" of "transboundary watercourses." Iraq and Syria consider the Euphrates an international river that should be treated as an integrated system. Both countries insist 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 is that international rivers are only those that constitute a border between two or more riparians (Jouejati, 1996). Turkey considers the Euphrates and Tigris as a single transboundary river system which crosses the common political border. Moreover, Turkey refuses to the downstream countries having the rights of co-sovereignty on the waters of the upstream country or vice-versa.

By mid 1980s, when the irrigation targets of the Southeastern Development Project (GAP) of Turkey had materialized, it was clear to the downstream riparians that Turkey would utilize 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/acquired rights to the Euphrates' waters, in particular before the irrigation projects within the GAP were fully realized. Syria indicated explicitly during the negotiations that unlike the Euphrates which provided the bulk of her surface water potential needs, the Tigris was not vital for Syrian uses as the result of topographical features (Minutes, March 1990). Moreover, Syria was well aware of the fact that if Iraq managed to win two thirds of the Euphrates flow (700 m3/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 uses, and therefore concentrated its demands solely on the Euphrates in order to gain a maximum share of that river.

With regard to the Turkish proposal of studying water transfer possibilities between two rivers, Iraq and Syria argued by giving priority to the Euphrates that the Euphrates and Tigris should be evaluated separately. This approach rejects the possibility of water transfers from the Tigris to the Euphrates in spite of very strong arguments in favor of such a move. However, the Turkish government has been eager to boost the agricultural potential in the region to expand its irrigated areas. Moreover, Turkey has asserted that the Euphrates-Tigris basin forms a single transboundary watercourse system which offers a unique opportunity to its downstream riparians, particularly Iraq. The Turks argue that all existing and future agricultural water uses need not necessarily be derived from the Euphrates, but may also be supplied from the Tigris.

Incidents of Water Crises in the Euphrates-Tigris River Basin

The Joint Technical Committee meetings did not fulfill the expressed aim of coordinating the development and use patterns of the three riparians. Hence, a number of crises occurred among the riparians during the 1980s and 1990s.

A major crisis among the riparians of the Euphrates-Tigris river basin took place during the impounding of the Ataturk dam in Turkey. On 13 January 1990, Turkey temporarily intervened in the flow of the Euphrates river in order to fill the Ataturk reservoir. The decision to fill the reservoir over a period of one month was taken much earlier. Turkey had notified its downstream neighbours by November 1989 of the pending event. In its note, Turkey explained the technical reasons and provided a

detailed program for making up for the losses. However, the Syrian and the Iraqi governments protested officially to Turkey, and consequently called for an agreement to share the waters of the Euphrates, as well as a reduction in the impounding period.

Another crisis occurred in 1996 after Turkey started the construction of the Birecik, an after-bay dam on the Euphrates river. The dam is designed to regularize the water level of the Euphrates during the generation of hydroelectricity at the Ataturk Dam during peak hours when downstream flow would reach its maximum. Both Syria and Iraq sent official notes to the Turkish government in December 1995 and January 1996 indicating their objection to the construction of the Birecik dam on the grounds that the dam would affect the quantity and quality of waters flowing to Syria and Iraq.

These crises reveal that the initiation of the major development projects caused increasing demands on the waters of the river system, which, in turn, exacerbated tensions among the riparians. On the other hand, the outcomes of the series of negotiations discussed above were fruitless. The reason behind this failure was that the parties could not reach any consensus on the basic principles and norms (rights and obligations) that would sustain the negotiation process. Hence, the following section endeavors to prepare an agenda consisting of the necessary institutions (i.e., an international regime) that would attain such a goal.

Interdependence, Cooperation and International Regimes[10]

Throughout a transboundary river basin, an interdependent set of relations can be observed among the riparians where the impact of physical effects generated in one state is delivered to the other via the river system. The Euphrates-Tigris river basin constitutes such a medium. Since the end of the 1960s when all three riparians initiated major development projects on the rivers, they began to function under the conditions of growing *interdependence.* In the case being examined here, interdependence specifies the degree of connectedness. It does not predict, however, what action shall be taken by the parties. A riparian's position can be cooperative or conflict-prone. If interdependence is not a sufficient condition for cooperation and may even result in conflict, *international regimes* may provide the necessary *linkage* between *interdependence* and *cooperation* (Levy *et al*, 1995).[11]

An international water regime through its institutions creates a clear legal framework in which parties to the dispute can identify their joint gains in the utilization of a transboundary watercourse in an equitable manner. Another major function of international regimes is to facilitate the making of specific agreements by preparing the necessary ground. In the final analysis, a basin-wide accord is needed to settle the necessary conditions for effective and equitable allocation and management of the waters of the Euphrates-Tigris river basin. However, the current physical and political setting of the basin is not ripe for concluding a sharing agreement as the two downstream riparians suggest.

In the Euphrates-Tigris river basin, the three riparians could not conclude a basin-wide accord mainly due to the lack of regularized institutions and incomplete information. Data regarding stream flow, precipitation, evapo-transpiration, water removals, return flow, salinity, and a host of other variables in relation to land resources are notoriously scarce, incomplete, and open to question in the basin. Information relating to water and land resources of the region is poor and not exchanged on a regular basis among the riparians. Negotiations between the parties contending for limited amounts of water can only succeed in the long-term if agreements are based on an accurate picture of the amount of water available. The quantity and quality of the information pertaining to the Euphrates-Tigris need to be improved before the parties engage in agreements which can be beneficial for all.

Under the rubric of the main features of a water regime in the Euphrates-Tigris river basin, the following paragraphs will present the suggested principles, norms, rules and decision-making procedures which are thought to constitute substantial tools that the riparians can make use of as attractive institutional arrangements to foster the bargaining process and to persuade others to come on board as supporters of such arrangements.

Principles

Principles of an international regime reflect the aims and premises of a regime, and the goals members are expected to pursue. In other words, principles give the regime its identity and reason for existence.

The major principle of the suggested regime is defined as follows: *The effective and equitable management and utilization of transboundary rivers is a key determinant in promoting cooperation*. This principle is derived partly from international water law (*Convention*, 1997) and partly from the accumulation of international conferences. The issue of equitable utilization of water resources was extensively discussed and reviewed during a series of international conferences such as the United Nations Conference on the Human Environment (Stockholm, Sweden, 1972), the United Nations Water Conference (Mar Del Plata, Argentina, 1977), the UNDP Symposium: A Strategy for Water Sector Capacity-Building, (Delft, the Netherlands, 1991), the International Conference on Water and the Environment (Dublin, Ireland 1992), the United Nations Conference on Environment and Development (Rio de Janeiro, Brazil, 1992). Hence, the combined framework of these successive conferences culminated in a set of general principles and norms that are acknowledged as *guidelines* for effective and equitable management and use of water resources (Kibaroglu, 1998b).

The principle of "equitable management and utilization of transboundary rivers" concentrates on factors which are more crucial and less arbitrary, such as the needs of the states, and is not simply a formula or a system for computing the most equitable allocation to which each watercourse state is entitled. This principle does not produce a clear and concise formula which, when all the data are inserted, produces a definitive division of the waters. The result of the application of this principle would not be an immediate comprehensive reallocation of all the waters in the watercourse. Rather, equitable utilization would enable and prescribe regional initiatives promoting efficiency, conservation, and economy of use.

To achieve effective water resources management, supply and demand management policies should go hand in hand. In that respect, Turkey has started to implement a massive development project in the southeastern region based on the increased utilization of the Euphrates and Tigris watercourses (Biswas&Unver, 1997). The Southeastern Anatolia Project was initially formulated as consisting of individual irrigation and hydropower projects on the Euphrates and Tigris Rivers. These were later combined in the 1970s in a comprehensive water and land resources development

package. The package included the construction of 22 dams, 19 hydropower plants and irrigation facilities to serve 1.7 million hectares of land, totally owned by the local population of the region. GAP represents an exemplary passage from simple water development to efficient water management. As a regional development project carried out within the frame of a contemporary and innovative approach aiming at the comprehensive development of a specific geographic region, GAP constitutes a significant example for the world as well as the co-riparians in the basin. On the other hand, GAP presents a unique case requiring examination, since a transboundary river system, namely the Euphrates and the Tigris rivers, is the major source for irrigation in the GAP area. Hence, improvements in the patterns and levels of use and management of this river system will not only contribute to increasing water use efficiency at the national level, but will also support policies extending the existing capacity of transboundary water resources in order to meet the growing demands of co-riparians. More importantly, experience gained in the GAP case in terms of attaining higher levels of productive efficiency through the adoption of advanced technologies and management options in the irrigation sector will also serve as a challenge to existing water use and management practices of its co-riparians Syria and Iraq.

The storage facilities which Turkey has built within the GAP region serve to regulate river flow which used to vary at extreme rates due to seasonal and annual variations in precipitation patterns (Kolars, 1991). Furthermore, GAP not only offers benefits in terms of supply augmentation, but has also introduced for the first time in the region many innovative ways of demand management. That is to say, the Project has brought new technical, economic and managerial institutions to make better use of the limited water resources of the region in major water dependent sectors, namely agriculture. Projects have been initiated to improve design, operation, management and maintenance of conveyance, distribution and on-farm irrigation systems in the GAP region. Canal regulation techniques have been changed from open canal systems to a more efficient conveyance network, namely pipelines which operate by downstream control. In addition, modern irrigation methods and techniques (drip and sprinkler irrigation) have been demonstrated and introduced at selected pilot project areas. Moreover, the

management, operation and maintenance of these large-scale irrigation systems in an appropriate manner constitute an essential part of the sustainable development of irrigated agriculture in the GAP region. As a result, many irrigation unions (water user associations) have been formed with farmer participation in order to manage water resources more effectively and equitably.

The two downstream riparians, however, have not recognized any of these positive developments that GAP has mobilized. Conversely, the achievements of the Project have caused deep concern both in Syria and Iraq which reportedly have tried to impede progress of the Project by influencing the donors to deny financial support to Turkey. However, in an integrative bargaining structure which operates with perfect information, the counterproductive stance of both Syria and Iraq could have been reversed with their understanding that Turkey is determined to finalize the Project. Turkey at the same time is ready to negotiate ways to coordinate the Project and other national water strategies with the development projects of the downstream riparians (Bilen, 1997)

Norms

The norms of an international regime can be regarded as a mandate for the rules and procedures of the regime. They indicate what members of the regime must or must not do, that is, what is legitimate or illegitimate. The general principles of the regime for allocation and management of the waters of the Euphrates and Tigris would be translated into specific norms through a water allocation and management agreement. The following statements could be evaluated as the primary norms of an international regime.

Norm 1. *The Euphrates and the Tigris rivers have to be considered as forming one single transboundary watercourse system, and managed accordingly.* Despite the fact that both Syria and Iraq have avoided discussing the Tigris together with the Euphrates, throughout the negotiations, this norm has been suggested to overcome the exceeding pressure on the Euphrates due to the massive irrigation projects of the upstream and midstream riparians.

Norm 2. *An Inventory of water and land resources should be drawn up and jointly evaluated.*

Norm 3. *Each riparian has the right to use, in an equitable and reasonable manner, the waters of the international watercourses in its respective territory*.

The latter norm relies basically on the doctrine of *limited territorial sovereignty*. A brief review of official statements of the two downstream riparians vis-a-vis 'the right to use the waters of the international watercourses in their respective territories' displays a significantly different stance. Iraq maintains that it has *acquired rights* relating to its 'ancestral irrigation' using the Euphrates and Tigris rivers. The Iraqi government claims that there exist two dimensions of such acquired rights. One of which outlines the fact that for thousands of years these rivers have given life to the inhabitants of Mesopotamia, and thus constitute an acquired right for these people. The second dimension of these acquired rights stems from the existing irrigation and water installations.

Syrian official arguments more or less overlap with the Iraqi ones. That is, Syria also claims that it possesses acquired rights dating from antique periods over the rivers that pass through Syrian territory. Iraq's, and to a lesser extent Syria's, claims to acquired rights would probably be ignored in line with the writing's of a well-respected scholar of international law that prior rights have no relevance to equitable water allocation (Lipper, 1967). Hence J. Lipper argues that this doctrine should not be applied to international disputes because it is wasteful and unconducive to the optimum economic development of river basins. The historical or acquired rights doctrine claimed by Syria, and more often by Iraq, are inadequate in the sense that prior uses of water by downstream countries represent only one of many factors that have to be taken into account in reaching an equitable utilization of a transboundary river (McCaffrey, 1991).

On the other hand, Turkey has been advocating the necessity of common criteria in allocating the waters of the Euphrates-Tigris basin, based on the principle of equitable utilization which is in turn grounded in the doctrine of *limited territorial sovereignty*. The needs-based approach of Turkey is simply a reflection of the limited sovereignty doctrine which combines the two contentious principles of international water law in an effective way: a) equitable right to use, and b) obligation not to cause significant harm (McCaffrey, 1991). In order to operationalize this doctrine the needs of each riparian

have to be determined through the exchange of reliable and accurate data. In addition, Turkey recognizes that all riparians in the basin have correlative entitlements and obligations regarding their use of water resources. To this end, Turkey embraces the principle of equitable utilization as the primary rule governing the allocation of the waters of the basin. Hence, obligations should be shared just like the benefits. Each riparian has to pay attention to the efficiency and equity criteria in utilizing its portion.

Rules

Rules of an international regime are prescriptions and guidelines for actions the member states are expected to perform or to refrain from performing. They are often stated explicitly in formal agreements on which regimes are commonly based, and they facilitate assessment of implementation and compliance. They define the relevant actors; the expected behavior; and the specific circumstances under which the rules are operative.

It is hardly possible to design 'rules' for the Euphrates-Tigris river basin because there does not exist any formal agreement or legislative text to comprise such prescriptions or guidelines. However, there are two formal agreements which in the present analysis constitute the 'use rules' between Turkey and Syria (i.e., the Protocol of 1987), and Syria and Iraq (i.e., the Protocol of 1990), respectively. *The Protocol of 1987 Between Turkey and Syria* was concluded during the Turkish-Syrian Mixed Economic Commission meeting on 17 July 1987. It was regarded as a temporary arrangement and embodied several articles pertaining to the water issue (Kibaroglu, 1998a).

Syria and Iraq perceived that the impounding of the Ataturk reservoir constituted tampering with the flow of the Euphrates and as the beginning of many such interruptions. Such interruptions would be the consequences of projects planned within the framework of the GAP. In line with this view, the 13th meeting of the JTC held in Baghdad on 16 April 1990, provided an occasion for a bilateral accord, the Protocol of 1990, between Syria and Iraq. Accordingly, 58 percent of the Euphrates waters coming from Turkey would be released to Iraq by Syria (Turkish Ministry of Foreign Affairs, 1996).

These bilateral accords which were largely products of the then-prevailing political atmosphere here in the Euphrates-Tigris river basin have not served the aim of achieving efficient and equitable allocation and management of the water resources in question. In response to urgent Syrian and Iraqi demands for the formulation of “sharing agreements,” and as a step towards such a goal, Turkey proposed a “Three Stage Plan for Optimum, Equitable and Reasonable Utilization of the Transboundary Watercourses of the Tigris-Euphrates Basin.” In the analysis of the present authors, such a proposal provides ample opportunity to initiate rules for a water use and management regime in the basin.

According to this plan, which in the present analysis would constitute the essential rule of the proposed regime, the inventory studies of water and land resources of the whole region comprising the territories of respective states would be undertaken and evaluated jointly (Turkish Ministry of Foreign Affairs, 1996). Based on these studies, "necessary means and measures to attain the most reasonable and optimum utilization of resources would be defined." The makers of the plan indicate that the problem in the basin stems basically from mismanagement as well as misallocation. By quantifying the problem through the implementation of the Three-Stage Plan, the water issue will become more manageable. Data-sharing would facilitate the negotiation process and foster the creation of many cooperative structures. With the Plan, Turkey calls for the establishment of a joint body for collecting, handling and exchanging data regarding water and land resources so that annual and seasonal variations can be incorporated in the calculations made to decide the allocations. Turkey argues that cooperation in the Euphrates-Tigris river basin will require an agreement on baseline data. Moreover, data gathering through joint efforts would enable the riparians to become accustomed to cooperation and to proceed with the discussions over water allocations. Along with reaching agreed criteria in data-sharing, negotiations could move on to talks on coordination of projects and the creation of joint projects.

The Three-Stage plan incorporates guidelines and prescriptions to be followed by the three riparians. The plan suggests the application of advanced and appropriate technologies in order to minimize water requirements for agriculture. This would inject

the norm of conservation as an essential solution to what is basically the problem of a scarce resource. Furthermore, the plan proposes to regulate the flow of the Euphrates river *according to seasonal needs of the downstream countries* instead of keeping a steady flow which may not match seasonal agricultural demands. Such adjustments would take place within the limits of the average annual flow of 500 m3/s (the amount that Turkey promised to release at the Turkish-Syrian border by the Protocol of 1987).

However, Syria and Iraq have insisted on increasing the minimum quota to 700-750 m3/s through *ad hoc* bilateral or trilateral sharing agreements. Both countries are concerned that they stand to lose the most (even receiving lower rates than 500 m3/s) if GAP is completed without having reached a water-sharing agreement. Hence, with a view to guarantee the bulk of the supply, Syria and Iraq have proposed *sharing* the waters of the rivers based on a simple arithmetic formula. This would mean that regardless of the discrepancies between the riparians' actual needs for water, the waters of the Euphrates-Tigris river basin would be shared simply "equally", but not necessarily "equitably" or "effectively." Moreover, dividing the waters by volume, as suggested by Syria and Iraq, does not take the seasonality of the Euphrates into account whose flow varies considerably on a seasonal and annual basis. Such *ad hoc* arrangements would inevitably require frequent negotiation of new quotas to adjust the shares to the existing flow rates of the river system. This would frustrate the relations among the riparians further. As noted, a regime framework with its authoritative institutions would foster negotiations that would lead to basin-wide settlement.

Decision-Making Procedures

Decision-making structures of regimes function as platforms where participating states meet regularly. Hence, a certain level of institutionalization tends to occur, although to a minimal degree at the beginning. Concerning the Euphrates-Tigris river basin, the Joint Technical Committee acted as a technical forum meeting regularly for general project discussions and the exchange of hydrological data. However, after 16 technical and two ministerial meetings, the JTC failed to fulfill its objectives and the JTC talks became deadlocked.

Apparently, institutionalized cooperation through a technical body or a joint commission is more successful in preparing necessary data for decision-makers, collecting and standardizing information, investigating facts, and considering special circumstances than as a medium for long range decision making. Such activities are the prerequisites of a more equitable determination of shared water benefits. As the demanded water for a basin begins to reach the limits of supply, the flexibility of decision-making procedures to respond to water stress conditions becomes crucial. Such flexibility is most needed to provide new forums for dealing with water allocation problems which take place both in time and space.

Conclusion

The above listed institutions are designed to support and determine the agenda of negotiations for effective and equitable use and management of the waters of the Euphrates-Tigris river basin. However, these can only become operational if the three riparians agree to commence the negotiation process on the use and management of the rivers. The authors strongly believe that there is a need to resuscitate the long stalled and deadlocked negotiations among the riparians. To avoid the current stalemate where none of the parties can claim to be better-off, negotiations within the JTC could prepare a ground on which the riparians might coordinate their efforts. With a fresh impetus the goal of using the existing water resources effectively and equitably could be achieved.

For the time being, the two downstream riparians continue to insist on concluding an immediate sharing agreement (comprising only the Euphrates river). Such an accord would entitle one third of the waters to Turkey and the remaining amount to downstream Syria and Iraq, which would be shared between them according to the Protocol of 1990. This paper has made it clear that simply sharing the waters of the Euphrates and Tigris rivers would by no means provide the riparians with an effective and equitable use formula. That is, sharing the already limited amounts of water would not constitute a long-term response to water scarcity, nor would it serve the goals of sustainable use and management of available water resources. Poor water use and management policies as well as the lack of crucial data relating to water and land resources, and inappropriate water supply networks suggest that the waters of the

Euphrates-Tigris river basin should be allocated solely according to the needs of the parties within a comprehensive institutional setting. Determining the real needs of the riparian states will have to rely on the application of scientific methods such as the inventory studies of water and land resources, as well as the collection, verification and analysis of accurate data on soil quality, salinity, stream flow, and precipitation. Hence, the JTC meetings that have been suspended since the early 1990s can again become a useful platform to coordinate the proper application of techniques envisaged in the Three Stage Plan presented by Turkey in 1984.

Notes

[1] This is more a Turkish view than the "two basin" view often exposed by Arab states.

[2] According to Article XII of this agreement on "Distribution and Removal of Waters" it was agreed that the waters of Kuveik shall be shared between the city of Aleppo and the district to the north remaining in Turkey, to satidfy the two parties.

[3] Article 109 of the Lausanne Peace Treaty states that, unless otherwise agreed, if due to tracing of a new border, the river system of a state is dependent on the facilities within the borders of another state or hydropower is utilized within the borders of a state that was established before the war, an agreement must be reached among the parties which is capable of safeguarding interests and the sovereign rights of each of them…

[4] Article XIII of the Convention of Friendship and Good-Neighbourly Relations between France and Turkey, May 1926 makes references to the water issue.

[5] The Protocol signed between France and Turkey on June 29, 1929 for the protection of present rights together with irrigation.

[6] The Final Demarcation Protocol of the Commission on the Demarcation of the Turco-Syrian Border, May 1930

[7] The Treaty of Friendship and Good Neighbourly Relations between Iraq and Turkey, Protocol on Flow Regulation of the Tigris and Euphrates rivers and of their tributaries, *United Nations, Legislative Texts and Treaty Provisions Concerning the Utilization of*

International Rivers for Other Purposes than Navigation, UN/Doc. ST/LEG/SER. B/12, 1963

[8] This was the first of the GAP dams.

[9] The final communiqués of the 16 Joint Technical Committee meetings were reviewed with the permission of the officials in the State Hydraulic Works (DSI) in order to come up with the above arguments.

[10] A detailed discussion on the issues covered in the following sections can be found in Kibaroglu, Aysegul (1998b).

[11] "International regimes are social institutions consisting of agreed upon principles, norms, rules, procedures and programs that govern the interactions of actors in specific issue areas." See Marc A. Levy, Oran R. Young and Michael Zurn, "The Study of International Regimes," *European Journal of International Relations*, Vol. 1, No. 3, 1995, pp. 272-74

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