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# ACHIEVING SUSTAINABILITY IN ORONTES TRANSBOUNDARY RIVER BASIN: NEXUS APPROACH AND THE ANALYSIS OF 'FRIENDSHIP DAM'

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## ABSTRACT

**Purpose:** The main objective in writing this paper is to conceptually frame not only problems but also proposed solutions, particularly the Friendship Dam between Syria and Turkey, associated with problems in the Orontes River Basin.

**Design/methodology/approach:** The research took the Friendship Dam project as a proposed solution to problems in the Orontes Basin, and evaluated in the context of Nexus thinking, highlighting the lacking dimensions in the project.

**Findings:** According to Nexus thinking, there are basically two missing links: environment (EIA) and resettlement issues remains unresolved, this limiting the sustainability of the project.

**Originality/value:** The Friendship Dam between Syria and Turkey, as a multipurpose project, has not been studied in the light of Nexus approach, which has a potential to enable one to critically assess the pros and cons of the project that is mainly aimed at sustainability in the transboundary basin of Orontes. Findings of this paper could be used in order to improve the project so that it could yield greater results in terms of *societal* and *environmental* sustainability.

**Keywords:** Orontes; Turkey; Syria; transboundary waters.

## INTRODUCTION

Recent years witnessed an increase in the number of studies on various dimensions and time-frames of Turkey-Syria relations (Altunisik and Tur, 2006; Aras and Koni, 2002; Hinnebush and Tur, 2013; James and Ozdamar, 2009; Kent, 2007; Moubayed, 2008). One of the main reasons behind this increase is attributable to the thaw in relations starting from 1998, the Adana Protocol. After more than a decade of gradual rapprochement, Turkish-Syrian relations once again entered in a phase of deterioration following the outbreak of internal conflict in Syria and Turkey's disagreement over the acts and legitimacy of Assad regime in the face of civil strife in this country. Water has always appeared to be one of the central issues in relations between Syria and Turkey, regardless of the political climate. This is basically because of the interwoven nature of water with other political issues like sovereignty, recognition, security and economy.

This article analyses the once 'the jewel in the crown' of Turkish-Syrian rapprochement. That is, the Friendship Dam on Orontes River<sup>1</sup>, vis a vis the nexus approach which focuses on the interrelatedness between water, and environment, energy and food. Firstly, the path toward the laying down of the foundation of the Friendship Dam in early 2011 will be presented. This part will emphasise the multidimensionality of water issue in Turkish-Syrian relations. Secondly, the basic tenets of the nexus approach will be discussed, with an intention to pave the way for testing the Friendship Dam against the 'Nexus' background, thereafter. Thus, thirdly, the Friendship Dam project will be evaluated in light of the framework of the Nexus thinking.

## THE ORONTES RIVER BASIN: GENERAL OUTLOOK OF TRANSBOUNDARY WATER RELATIONS

The Orontes River Basin is a transboundary basin with a total area of about 25,000 sq. km. of which 70% is located in the Syria, 23% in Turkey and 8% in Lebanon (Lehner et al., 2008). The river originates on the Bekaa Valley in Lebanon and flows north and enters into Syria after flowing approximately 40 km in Lebanon. Orontes enters Syrian territory to the north-east of the town of Hermel (Lebanon) and passes through the cities of Homs and Hamah. It crosses through the fertile region of Al-Ghab where intensive irrigation systems have been established, and constitutes 56 km of the Syrian-Turkish border (Korkmaz and Karatas, 2009) before entering into Turkey. Orontes then turns to south-west in Turkey, passes through Antakya, and discharges into the Mediterranean Sea near Samandag, in Hatay Province of Turkey.

Regarding the water use, Syria is the biggest user in the basin. It has been using around 90% of the total flow, which reaches an annual average of 1.2 billion cubic meters at the Turkish-Syrian border (AQUASTAT, 2008). Turkey receives very small amounts of water from Orontes after Syrian uses. Turkey does not receive water from Orontes during most of summer months.

In August 1994, Syria and Lebanon agreed on a water sharing scheme concerning the Orontes River. According to this agreement, Lebanon would receive 80 million cubic meters of water annually while it would release 335 million cubic metres of water are for Syria provided that the volume of Orontes inside Lebanon reaches 400 million cubic metres or more during that year. If the annual flow of the Orontes decreases below this number, Lebanon's share would be proportionately reduced. It has been argued that this agreement took into consideration of hydrological variability in the basin. It has also been suggested that two countries resolved their

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<sup>1</sup>Asi in Arabic and in Turkish.

problems of water sharing in a mutual understanding setting, without a significant conflict. However, it also holds true that the agreement was concluded without involvement of Turkey, the down-stream riparian of Orontes.

Turkey claims that, as a downstream riparian, it should have a proportional access to waters of the Orontes. Syria, who abstracts very much the lion's share of the Orontes water, justifies this action by claiming that it has sovereign rights to the river because the majority of its flow lies in Syrian territory. In addition to this, Syria, for long, did not recognise Hatay as Turkish territory and thus rejected any discussions over Orontes waters. Syria has been insisting on its return to Syrian Sovereignty. Some Syrian maps still portray Hatay Province as being part of Syrian territory. So, for Syria, the Orontes River was an internal watercourse. In this respect, Turkish-Syrian transboundary relations were nothing more than a standstill for quite some time. Developments in wider political setting between two countries were also not conducive for transboundary water cooperation. Indeed, a positive atmosphere regarding transboundary water affairs between Syria and Turkey could only have found a chance to thrive after the general political atmosphere enabled parties to go further.

## ROAD TO FRIENDSHIP DAM

The optimism accompanied to the laying down the foundation of the Friendship Dam by Prime Ministers (PMs) of Turkey and Syria on 6 February 2011 was rather a culmination of gradually ameliorating relations between two countries in a lengthy period extending well beyond a decade. Construction of a joint multi-purpose dam was on the agenda of water bureaucracy of two countries since early 1990s. Indeed, since flooding was a serious concern in downstream Turkey, first studies towards prevention of flooding of Orontes dates back to late 1960s. (DSI, 2012) These studies gradually culminated in need of a joint dam on Turkish-Syrian border. However, problematic setting of political relations between two countries was an impediment against achieving such a joint project.

Beginning with the establishment of Syrian Arab Republic after the II World War, in 1946, Turkish-Syrian relations followed a rough path. In addition to the fact that Syria did not recognise Hatay as a Turkish territory from the beginning, it also supported the terrorist organization PKK against Turkey throughout 1980s and 1990s which ultimately became unbearable for Turkey. Amid Turkish threats for use of force in 1998, a change of tide occurred when two countries signed the Adana Security Protocol in October same year.

In 2000, Hafez Assad died and his son Beshar Assad came to power which further caused Turkish-Syrian relations to foster. In December 2004, during Turkish PM Erdogan's visit to Damascus, a Free Trade Agreement was signed between the parties (Kibaroglu et al., 2005). According to some experts this Agreement means that Syria recognised – at least in an indirect fashion-political boundaries of Turkey which includes Hatay. Another milestone occurred when High Level Strategic Cooperation Council (HLSCC) was established during Syrian President Assad's visit to Turkey in 2009. The HLSCC would include relevant ministers from both Syria and Turkey and would be led by PMs of each country. The first meeting of HLSCC was held in October 2009, while the first meeting of the Council at PM level occurred in December 2009. In October 2009 two countries abolished requirements of visa from each other's citizens. These meetings resulted in signing of 50 Memoranda of Understanding between two countries on areas including water, environment, security, energy, transport, education, cultural and scientific cooperation. On the practical level, fruits of the ameliorating relations were being harvested: trade volume between countries climbed from 796 million USD in 2006, to 2.5 billion USD by 2010 (Duran, 2012).

However, despite the rapprochement between two countries as summarised above, the Friendship Dam was not put on track for a long period of time mainly because of two categories of reasons. One is political, the other is more technical. Hatay has long been a stumbling block to the Dam project. Following the signing of the Free Trade Agreement between Turkey and Syria, as stated above, the Hatay issue appeared to be resolved practically. The second category relates to rather technical matters. According to the Turkish view, the Dam should have been built near Hacıpasa village in Reyhanli, Hatay. Syria, however, arguing that groundwater resources near town of Harim (in Syria) would be lost if the Dam would be built on the site that Turkey wants the Dam to be built, was constantly rejecting the project. As late as May 2009, there was no agreement on the Dam site (Dener, 2009). A consensus was reached when two sides agreed to a new site for the Dam, namely Ziyaret village near Altinozu, Hatay and Al-Lani village on the Syrian side (Today's Zaman, 2011). This new site is approximately 8 km north of the previously designated site.

Finally, in 2009, Republic of Turkey and the Syrian Arab Republic have agreed in principle to develop the 'Friendship Dam', to be built on the Orontes River on the border between Syria and Turkey. A Memorandum of Understanding (MoU) was signed on 23 December 2009, in Damascus, between two countries clarifying details of the project. Article 1 of the Memorandum defines the responsible authorities in each country regarding the Dam:

"The Government of the Republic of Turkey and the Government of the Syrian Arab Republic decide to cooperate on the construction of a dam and a hydroelectric power plant on the Orontes River, as well as the operation and creation of the reservoir of it. The Ministry of Environment and Forestry, from the Turkish side and the Ministry of Irrigation from the Syrian Arab Republic are responsible for the implementation of the MoU and coordination of the related activities in this context" (MoU, Article 1).

According to the Memorandum, a technical working group was to be established under the co-chairmanships of the General Director of the State Hydraulic Works of the Ministry of Environment and Forestry of Turkey, and the General Director of the Water Resources General Commission of Syria (MoU, Article 2). It was decided that, following the studies of the technical working group, the construction work would commence through signing of 'A Contract on Construction of the Friendship Dam' between Turkey and Syria on the one hand and the company/companies on the other (MoU, Article 5). It was also agreed in the Memorandum that all hydrological and meteorological data, maps and operation programs of the dams on the Orontes, and all information on water use in the Basin that can be required during the process of preparatory studies would be exchanged between two countries without delay (MoU, Article 6). It should be noted that this stipulation is quite significant beyond the realm of the project of Friendship Dam. Prior to the Memorandum, the lack of data sharing was appalling between two countries. Thus, the requirement of Article 6 could be seen as a milestone in transboundary water relations between two countries.

The memorandum adopted a rather flexible approach regarding the cost-sharing. According to this, the cost of the construction would be shared between two countries 'in proportion to deriving benefits from the dam' (MoU, Article 8). Regarding the operation of the Dam, a Permanent Commission would be established with members from two countries. One of the important tasks of the Permanent Commission would be deciding on the amount of water to be used by agricultural sector in both sides (MoU, Article 11).

According to feasibility studies, the Dam will produce electricity of 13.47 Gwh/year with an installed capacity of 8.94 MW. The Dam will irrigate some 8000 ha of land in Turkey and will

protect 6000 ha of land from flooding (DSI, 2012). The dam is expected to be approximately 15 m high with a capacity of 110 to 147 million cubic metres<sup>2</sup>. 40 million cubic metres of water will be used to prevent flooding and the rest for energy production and irrigation.

However, despite the optimistic outlook in February 2011, the outbreak of internal violent conflict in Syria soon changed the fate of the Dam. By June in the same year, DSI authorities from the area declared that the construction works has significantly slowed down (Haberturk, 2011). As of early 2012, the slurry-trench works aiming at impermeability of the reservoir floor started on the Turkish side. Turkish Minister of Forestry and Water Affairs, Veysel Eroglu declared in June 2012 that the construction of the dam would continue. Nonetheless, escalating conflicts in Syria prevented construction works from mid-2012 onwards (Today's Zaman, 2012).

## NEXUS APPROACH: AN OVERVIEW

Nexus approach is relatively novel understanding of the interdependency between water, energy and food security (The Water EFSN, 2012). Nexus approach tries to better understand the interlinkages between sectors of water, energy and food without ignoring the influence of economic and climate policies (policy recommendations 3). As a holistic framework, Nexus approach looks at Water-Energy-Food (W-E-F) as an 'interrelated system' (The Water EFSN, 2014). In this sense, the nexus approach could be defined as

“a decision making framework which employs systems thinking to identify cross-sectorial impacts (externalities), explore feasible trade-offs and help policy makers achieve greater policy coherence” (The Water EFSN, 2014).

The aim is to shift to developmental paths which are 'resource efficient, equitable and sustainable' (The Water EFSN, 2014). In this way it seeks a balance regarding the triangle of the need of sustainable growth, resource constraints and security of access to basic services (The Water EFSN, 2014).

It was after 2011 that Nexus approach received an international recognition thanks to mainly German support. It has gained momentum since then and become focus of significant conferences Bonn2011 Nexus Conference and, Nexus 2014 conference hosted by the Water Institute at the University of North Carolina in 2014 (Bradshaw, 2014).

Nexus perspective helps to identify mutually beneficial responses and provides an informed and transparent framework for determining trade-offs to meet demand without compromising sustainability and exceeding environmental tipping points. It aims to bring economic benefits through more efficient utilisation of resources, productivity gains and reduced waste. This is a particular challenge in today's economic climate, yet the consequences of inaction would become increasingly severe on people's welfare, economic growth, jobs and the environment (The Water EFSN, 2012).

## NEXUS AND THE FRIENDSHIP DAM: A PARTIAL OVERLAP OR A PERFECT EXAMPLE?

According to Nexus approach, not only the water-food-energy sectors should be understood with a view taking due account of interlinkages among them, but also people's welfare and

<sup>2</sup>Second figure has started to be used very recently.

environmental wellbeing should be incorporated into this thinking. In other words, societal and environmental sustainability should be sought. Nexus approach is generally positive for multi-purpose dams since they are accepted as efficient means for reaching water, food and energy. In this respect, the Friendship Dam is a project to be promoted. It is a multipurpose dam which aims balanced development in a number of sectors around water resources including hydropower production, irrigation development as well as flood protection.

A closer look to the Friendship Dam in relation to Nexus approach reveals several limitations, however. Firstly, resettlement dimension of the Dam needs explanation. According to Nexus approach, peoples basic rights are central (The Water EFSN, 2011)<sup>3</sup>. With this in mind, Scheumann (2014) concluded that the resettlement issues are unclear in the Dam project. It is known that the inundated area will cover agricultural fields of several villages from two countries. It is, nevertheless, not very clear that whether village centres will be inundated as well. Both assets and people to be affected from the construction of the Dam is yet to be disclosed, and expropriation plan regarding these to be shared with the public. Ziyaret and Kiyigoren villages on the Turkish side, and Al-Lani, Dalbiyah and Jakarah villages on the Syrian side are among the villages that will be greatly affected from the Dam. Jakarah village, in particular, is situated very close to Orontes River, at an altitude of 110 m, just 10 m above the river banks.

Secondly, the environmental dimension of the project is not yet firmly studied. One of the pillars of Nexus approach, as stated by the Messages from Bonn2011 Conference (2011), is 'environmentally sound development'. As noted by Scheumann (2014), the Environmental Impact Assessment works concerning the Dam have not been completed. These studies will shed more light on the impact of the Dam over environmental flows, sedimentation, wetlands and biodiversity in the region. Within this context, for instance, the Dam project could be complemented with detailed plans on reducing the waste. Since Nexus approach is greatly related with waste management, integrating joint projects on treatment of wastewater (Scheumann, 2014) could be thought as good practices towards making the Dam more Nexus-compliant. In addition to these, there are doubts that studies on the scenarios about the expected impacts of global climate change in the sub-basin around the Dam site are not sufficiently discussed.

Thirdly, Nexus approach is also about local commitment:

“involving local communities, including indigenous and women’s groups fully and effectively in the planning and implementation processes related to water, energy and food nexus for local ownership and commitment is listed as one of the three overarching principles of Nexus thinking” (The Water EFSN, 2011).

In this vein, local populations could and should be incorporated both planning and implementation phases of the Friendship Dam. Apparently, there is big room for improvement in this respect. The basic features of the Dam project could be discussed with local people via workshops with an aim of increasing the awareness about the benefits to be harvested by people living in the region. Education programs could be designed in order to expand areas of benefit sharing across Syrian and Turkish communities. These educational programs will also help reducing the wasteful use of common water resource of the reservoir and exhaustive uses of other benefits of the dam (e.g. fish resources, recreational use).

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<sup>3</sup>For instance, Messages from the Bonn2011 Conference: The Water, Energy and Food Security Nexus – Solutions for a Green Economy states “putting people and their basic human rights at the centre of the nexus” as one of the three overarching principles of Nexus approach (p.2).

## CONCLUSION

Turkish-Syrian relations are sometimes evaluated as demonstrating a cyclical pattern. Increasing cooperative atmosphere between two countries rapidly deteriorated amid internal conflict in Syria and Turkey's attitude vis a vis the Syrian regime during the crisis from mid-2011 onwards. Transboundary water relations including the proposed Friendship Dam has also been affected from ups and downs in political relations of two neighbours. It is now unclear whether the Friendship Dam would be finished in foreseeable future. All in all, it represents one of the most important developments in Turkish-Syrian relations.

This article evaluated the Friendship Dam in relation to Nexus approach which focuses on the interconnectedness around water, food, energy and climate. It is argued here that although the Friendship Dam is a good example of multi-purpose dams to which Nexus understanding does not take a critical stance overall; it still needs to be complemented in several ways so that it could become a 'model project' in Nexus framework. In other words, there is room for improvement. Notable limitations of the project are, lack of a detailed analysis on the resettlement issues, ignorance of climate change related strategies (both adaptation and mitigation related) and environmental impact assessment procedures including the discussions on environmental flow scenarios, issues related to irrigation extensions, sedimentation, so on. All in all, given the actual unspecified delay in the project, authorities have sufficient time for improving the Friendship Dam project in various dimensions towards sustainability which is central to Nexus approach.

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