



**THE AMERICAN
UNIVERSITY IN CAIRO**

Department of Public Policy and Administration

SCHOOL OF
**GLOBAL AFFAIRS
AND PUBLIC POLICY**

PPAD

Working Paper Series

Issue 6, 2018

Egyptian-Ethiopian Water Relations: Cooperation Beyond the Nile



International Commission
on Accreditation of Public
Administration Education
and Training



PPAD

Working Paper Series

Shahjahan Bhuiyan
Editor-in-Chief

Laila El Baradei, Hamid Ali, Ibrahim Awad, Allison Hodgkins, Ghada Barsoum,
Hussein Amin, Bahgat Korany, Ibrahim Hegazy, Thomas Skouteris, Hassan El-Fawal
Editorial Board

Mariez Wasfi
Designer and Coordinator

Rights and Permissions

All rights reserved

Copyright ©2018

Department of Public Policy & Administration
School of Global Affairs & Public Policy
The American University in Cairo
New Cairo 11835, Egypt.

E-mail:
ppadworkingpaperseries@aucegypt.edu

ISSN: 2536-9369

Objective

The key objective of PPAD Working Paper series is to provide a platform whereby work in progress by the **GAPP/PPAD** research community can be made accessible to the wider national, regional and international group of scholars, professionals, intellectuals, policy-makers and implementers. The Working Paper Series welcomes submissions by all members of this community, including graduate students, who want to engage a critical analysis of the juncture of theory and practice.

Views expressed in this Working Paper Series are those of the author(s) and do not reflect the opinion of The American University in Cairo. Copyright is held by the author(s) unless otherwise stated. Requests for permission to quote or use any content should be addressed to the author(s) directly.

Egyptian-Ethiopian Water Relations: Cooperation Beyond the Nile

Menna Nasr Atwan*

Working Paper No. 6

*This paper is based on the author's MGA project entitled "Egyptian-Ethiopian Water Relations: Cooperation Beyond the Nile" submitted to the Department of Public Policy and Administration in Fall 2017. Any questions or queries related to this working paper may be sent directly to mennaatwan@aucegypt.edu.

Abstract

This paper examines the Egyptian-Ethiopian water relations especially over the question of the Grand Ethiopian Renaissance Dam (GERD). The paper investigates the possibilities of conflict and cooperation in the future of the Egyptian-Ethiopian water relations. Accordingly, it highlights the main factors that can stimulate conflict or cooperation between Egypt and Ethiopia. Given the magnitude of untapped benefits that could be achieved from cooperation, the paper puts forward the idea of issue-linkage and cooperation beyond the Nile File as a much-needed step to transcend long-standing water sharing issues. In other words, the paper argues that the current issue of the GERD needs to be allocated within a broader framework in order to create a wider room for negotiation and trade-offs. Since the GERD project is a *fait accompli*, there needs to be a visualization of future water relations between Egypt and Ethiopia. In order to find a way out of this stalemate, the two countries need to think of win-win solutions that cause no harm to any party involved by looking into different cooperation opportunities.

1. Introduction: Conflict or Cooperation?

In hydro-political relations, there is a growing debate in both the policy and scientific literature that water can be a driving force of conflict and war between riparian countries (Elliot, 1991; Gleick, 1993; Homer-Dixon, 1994; Elhance, 1999). On the contrary, there are other studies that completely negate the water conflict scenario and strongly argue that water is a tool for cooperation (Wolf, 1998; Salman & de Chazournes, 1998; Turton, 2000; Sadoff & Grey, 2002). Accordingly, researchers have grouped transboundary water issues into three types: (a) collective issues, (b) negative externality issues and (c) positive externality issues (Marty, 2001 cited in Mostert, 2003). Collective issues are those problems that trigger similar concerns in all countries involved, such as climate change issues (ibid). Negative externality issues occur when projects or activities in one country cause negative effects in another country, such as water diversions (ibid). Positive externality issues are those that result from activities that aim to achieve overall benefits to all countries concerned (ibid).

Concerning the above-mentioned issues, water conflicts are most likely to happen when there are negative externality issues, while cooperation is most expected in the presence of collective issues (Mostert, 2003) and/or positive externality issues. Yet, cooperation may still occur in extreme negative externality issues as a result of countries' willingness to maintain good neighborliness with one another (ibid). In addition, with respect to collective issues, conflicts may arise if there is mistrust or poor international relations between concerned countries (ibid).

Aside from the common conflict-cooperation debate, other researchers view water interactions as very complex, involving a wide range of different events in which conflict and cooperation co-exist at various intensities and levels (Mirumachi & Allan, 2007). Craig (1993) argues that conflict and cooperation are not at two opposing ends of a continuum, they co-exist at different intensities (cited in Mirumachi & Allan, 2007). For example, conflicts may range from minor disagreements and competition to the level of violent tensions that threaten international peace and security (Vinogradov et al., 2003). Cooperation can also come in different forms and scenarios. It can range from nominal informing to joint projects (Tesfaye, 2014).

In the context of the Egyptian-Ethiopian water relations, the two countries share a long history of water conflict and cooperation. However, the hydro-political relations between Egypt and Ethiopia have been recently deteriorating over the Grand Ethiopian Renaissance Dam (GERD) project. The GERD project has been considered the spark that ignited water tensions between the two countries. The ups and downs in the nature of water relations between Egypt and Ethiopia raises many question marks over the future of the hydro-politics of the Blue Nile, especially upon the GERD completion and operation. Some prophecies contend that the GERD could trigger violent war between the two countries. Other prophecies view the GERD as an excellent opportunity of enforcing sustainable cooperation between Egypt and Ethiopia, if utilized wisely and strategically.

This paper is divided into four sections. Apart from section 1, section 2 discusses the Egyptian-Ethiopian conflict and cooperation in the context of four different factors, unilateralism, divergent interests, asymmetric relations and interdependence. Section 3

provides some areas of cooperation between the two countries beyond the Nile file.

Section 4 succinctly concludes the paper.

2. Conflict and Cooperation at the Egyptian-Ethiopian Level

In the literature of transboundary water management, there are a number of factors that shape water relations between Egypt and Ethiopia. These factors can easily stimulate conflict or cooperation between the two countries depending on each country's disposition. These factors include: unilateralism, divergent interests, asymmetric relations and interdependence.

2.1 Unilateralism

Unilateralism has been identified as a common behavior in the Nile Basin countries that has prevailed throughout their history of cooperation (Waterbury, 1997; Waterbury & Whittington, 1998; Erlich, 2002; Swain, 2002; Waterbury, 2002). Egypt and Ethiopia have both unilaterally developed projects on the Nile in order to promote their national interests (Mahmoda, 2003: 29). Unilateral behavior in the Nile Basin has been viewed as a direct threat to effective cooperation as it weakens the states' desire to cooperate (ibid).

Throughout the history of the Nile, several projects have been unilaterally executed by the governments of Egypt and Ethiopia (Mahmoda, 2003). In the 1970s, Egypt commenced technical studies of its project to transfer the Nile waters to irrigate Israel's Negev Desert (Mbaku & Kimenyi, 2015). This unilateral action was highly condemned by Ethiopia and other Nile riparians, as Egypt did not consult with any of them before announcing the project (Kendie, 1999). In the 1990s, Egypt started several

ambitious agricultural projects in the desert including the 1997 Toshka project (ibid). This project was estimated to use more than 5 Bm³ of water every year through transferring the waters from Lake Nasser to the Toshka depression (Cascão, 2009). This action faced opposition from many neighboring Nile riparians, particularly Ethiopia (ibid). Ethiopia's objection to the Toshka project was mainly due to the contradiction in Egypt's Nile policy, as the country constantly opposed development projects in the upstream part of the Nile, while it was actively using the waters for major irrigation projects (Thomson, 2005).

In the 1990s, Ethiopia also commenced feasibility studies for several hydropower and irrigation projects on the Nile River (Cascão, 2009: 254). The conclusion of the Cooperative Framework Agreement (CFA) by the upstream states without Egypt's and Sudan's consent had marked another unilateral action in the history of the Nile Basin hydro-politics (ibid). Another recent unilateral move by Ethiopia is the construction of the GERD, which commenced in 2011 without any consultations with the downstream states. It is worth noting that Egypt and Ethiopia were moving forward with their unilateral projects while simultaneously engaging in multilateral cooperation through different Nile Basin initiatives (ibid).

2.2 Divergent Interests

The Nile Basin riparians have different interests and priorities in regard to the Nile waters. Thus, each country has different expectations of a basin-wide cooperation (Mason, 2004). The interests of the Nile Basin states in water cooperation mainly rely on their geographical location and economic development (ibid: 168). Ethiopia's interests in

the Nile waters stems from its need to utilize the water resources for its development and poverty alleviation (ibid). This study further argues that hydroelectric power generation and irrigation are considered to be the main interests of Ethiopia with concern to the Nile waters. Ethiopia puts the issue of reallocating the shares of the Nile waters as a precondition to a basin-wide cooperation (Mahmoda, 2003). From Ethiopia's point of view, a basin-wide cooperation will only become effective if the 1959 agreement is renegotiated and a new water distribution agreement is formed in order to satisfy the interests of all the Nile Basin states (ibid).

Given that Egypt is the most downstream Nile riparian country, it constantly underlines its heavy dependence on the Nile waters. Therefore, the issue of reallocating the Nile shares is a matter of security (Mahmoda, 2003). According to the study, despite Egypt's strategy of water security, the country has been interested in maintaining goodwill with its neighbors through encouraging general cooperation and regional development (ibid). Consequently, Egypt's interest in water cooperation is mainly to consolidate its present share of the water and to secure more water through information sharing and development projects, such as reforestation of the Ethiopian highlands and ecological conversation (ibid). It is important to note that divergent interests of Egypt and Ethiopia do not necessarily lead to conflicts around the Nile. Therefore, this could eventually result in 'win-win' trade-offs between the two countries (Mason, 2004: 198). For example, Egypt could support development projects in Ethiopia, and in return Ethiopia could commit to securing water flow to Egypt (ibid).

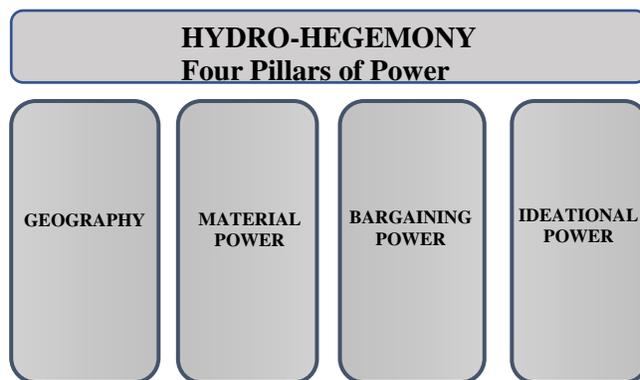
2.3 Asymmetric Relationship

Relationships between co-riparian states are naturally asymmetric (Gleditsch & Marit, 2012: 520). Beginning with geographical asymmetries in upstream/downstream natural configuration, upstream states get the upper-hand in managing the river affairs since they control the origins of the waters (ibid). Moreover, upstream states receive environment-specific powers (Sjostedt, 2008) as activities taken by upstream countries usually affect the quality and quantity of the water for the states downstream (Gleditsch & Marit, 2012). Besides geographical asymmetries, co-riparian states usually have asymmetric characteristics. Countries differ in their population growth, GDP per capita, and access to natural endowments (Just & Netanyahu, 2012).

Power asymmetry is another integral element of hydro-relations between co-riparian states. Powerful states do not necessarily have to be upstream, they could also be located middle or even downstream (Daoudy, 2008). Mark Zeitoun and Jeroen Warner (2006) initially conceptualized 'power' as being based on three dimensions, which was later further modified to incorporate four important pillars (Zeitoun & Cascão, 2010: 31). The first pillar includes state's military, political, economic and technological capabilities, or what is called structural power (ibid). The second pillar discusses states' bargaining power or relational power and its ability to control of 'the rules of the game' and 'set the agenda' (Zeitoun & Warner, 2006: 442). Thirdly, the ideological power through which strong states have the knowledge power to trick weaker states into following their self-serving ideology is mentioned (ibid: 443). Finally, the authors discuss state's geographical location (Zeitoun & Cascão, 2010).

Power asymmetry and hegemony are two sides of the same coin. “Power determines who the hegemon is” and hegemony allows a better understanding of asymmetric power interactions (Zeitoun & Allan, 2008: 9). Hegemony can be understood as a mix of force ‘sticks’ and consent ‘carrots’ (Gramsci, 1935 cited in Zeitoun & Allan, 2008). Based on the notion of hegemony, the Framework of Hydro-Hegemony (FHH) has been conceived (Zeitoun & Warner, 2006). The concept of Hydro-Hegemony is defined by Zeitoun and Warner (2006) as, “Hegemony at the river basin level, achieved through water resource control strategies such as resource capture, integration and containment.” They further explained two facets of ‘Hydro hegemony’: leadership and dominance (ibid: 439). Leadership or the ‘positive’ form of ‘hydro-Hegemony’ means managing the stability and order of water affairs to provide an overall benefit to both strong and weak states (ibid). Whereas, the dominant or the ‘negative’ form of ‘Hydro- Hegemony’ occurs when weaker states are denied their rightful shares to water resources due to the actions of the more powerful states (ibid).

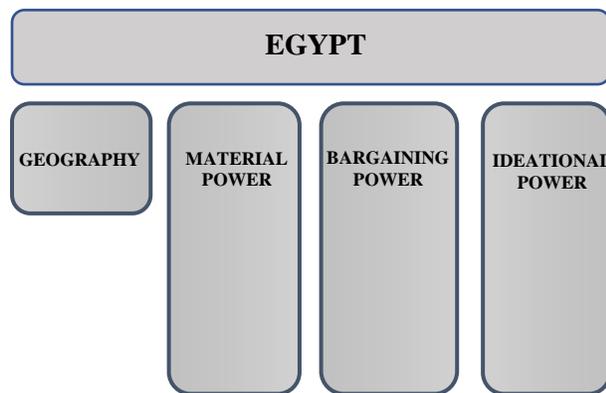
Figure 2: Four Pillars of Hydro-Hegemonic Power



Source: Zeitoun & Cascão, 2010.

The Nile River Basin has been characterized by a high degree of power asymmetry between upstream and downstream states (Cascão, 2009). Egypt has been identified as a dominant hydro-hegemon that possesses enough material, bargaining and ideational powers to maintain its position as a Nile hegemon for many years (Zeitoun & Cascão, 2010). Besides Egypt's possession of strong military power, the country has maintained good relations with the world's greatest powers, such as the US and the European Union, and has thus achieved predominance in terms of both economic and bargaining powers in the Nile Basin (Grandi & Hussein, 2017). Moreover, Egypt has had strong commercial relations with its Nile co-riparians that helped in expanding its political and economic capacities (ibidf). The combination of all these powers has portrayed Egypt within a hydro-hegemonic position in the basin.

Figure 3: Egypt's Four Pillars of Power



Source: Zeitoun & Cascão, 2010.

Ethiopia, on the other hand, has not been able to exercise its geographic power as an upstream state due to many internal issues and divisions that distracted its involvement in any water-related activities (Tegegne, 2015). However, the hydro-politics of the Nile Basin have significantly changed since the 1990s, which has contributed to balancing

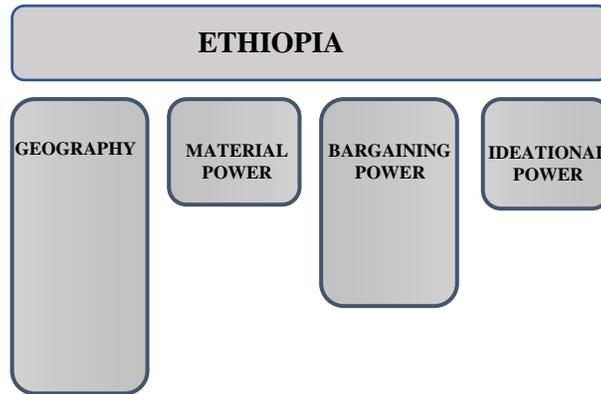
power asymmetries between Egypt and Ethiopia (Cascão & Nicol, 2016). The Nile cooperative projects initiated in the 1990s onwards have notably increased the ideational and bargaining powers of Ethiopia (ibid). Ethiopia and upstream states have started to possess both human and institutional capacities to manage information, data and communication of the Nile affairs. Thus, they have started to play an active role in knowledge management, agenda-setting and policy planning (ibid).

In terms of bargaining power, upstream states have succeeded in building strong sub-alliances among each other to strengthen their bargaining positions vis-à-vis the downstream riparians (Cascão & Nicol, 2016). This study further notes that Ethiopia has started to take the lead and bring issues to the table for discussion, including the issue of hydraulic development in the upstream countries and the long-standing issue of equitable utilization of the Nile waters (ibid: 561). The increase of Ethiopia's bargaining power is most visible in its alliance with the equatorial riparian neighbors to unilaterally sign the Cooperative Framework Agreement (CFA), despite the reservations of both Egypt and Sudan (ibid).

Ethiopia has also succeeded in building a strong alliance with Sudan based on a plan of benefits exchange, including hydro-power trade and sediment control (Cascão & Nicol, 2016). As for economic power, China's involvement in financing the (GERD) has had a significant impact on balancing power asymmetries between Egypt and Ethiopia (Tegegne, 2015). More importantly, Ethiopia's energy development plans play a critical role in expanding the country's economic powers (Grandi & Hussein, 2017). According to this study, Ethiopia has already signed energy trade agreements with Djibouti, Kenya and Sudan (ibid). If successful, Ethiopia could easily expand its influence in the Nile

Basin by trading relatively cheap hydroelectric power in exchange of political alignment (ibid).

Figure 4: Ethiopia's Four Pillars of Power



Source: Zeitoun & Cascão, 2010.

The notable development in Ethiopia's regional influence has been explained as a counter-hegemonic strategy (Zeitoun & Allan, 2008; Zeitoun & Cascão, 2010). Cascão developed her theory of Counter-Hegemony on the basis of Zeitoun and Warner's Framework of Hydro-Hegemony in order to explain the resistance of non-hegemonic states towards dominant hegemonies (Hanke, 2013). Cascão divides the 'Counter-Hegemony' strategy into two phases: a) the reactive phase during which non-hegemonies resist and contest the *status quo* and b) the active phase when non-hegemonies start building an alternative regime (Cascão, 2008 cited in Hanke, 2013: 30). As far as the Nile Basin is concerned, Ethiopia has contested Egypt's hegemony through applying a number of reactive and active strategies (Cascão, 2008 cited in Tawfik, 2015). These strategies have included: advocating for the principle of 'equitable utilization', forming coalitions,

fund raising for development projects and participating in cooperative initiatives in order to challenge the status quo (ibid).

According to Lowi (1993), asymmetric relations in transboundary water settings can trigger conflicts only if this is in the interest of the most powerful state (cited in Daoudy, 2008). Nevertheless, asymmetries could reinforce effective cooperation if influenced or challenged (Jagerskog & Zeitoun, 2009). According to the authors, asymmetries can be rendered in a way that produces ‘win-win’ or ‘positive-sum’ outcomes to satisfy all pertinent parties (ibid). The benefit-sharing model offered by Grey and Sadoff (2002) is one example of influencing asymmetries (ibid). Asymmetries can also be challenged by leveling the players or the playing field (ibid). Leveling the players occurs by empowering the weaker states, or ‘non-hegemons’, by enhancing their technical and bargaining powers (ibid). As for leveling the playing field, this can be done through effective legislation and regulating the water system at the sub-national and international levels (ibid).

2.4 Interdependence

Interdependence can simply be defined as, “situations characterized by reciprocal effects among countries or among actors in different countries” (Keohane & Nye, 1977 cited in Nye, Jr. & Keohane, 1987: 730). In the field of international relations, the notion of interdependence between states was first introduced from an economic/commercial perspective by Richard Cobden in 1850 (Copeland, 1996 cited in Eynon, 2016). Based on the classical trade theory, trade interdependence allows states to sell the goods they are best at in exchange for other goods that they cannot produce (Barbieri, 2002 cited in

Nijenhuis, 2012). Therefore, states become part of an interdependent unit in which violent conflicts are unlikely to take place as it would obstruct trade activities and negatively affect states' income (ibid).

In his theory of neo-functionalism, Ernst Haas was the first to introduce the link between economic interdependence and political integration in his analysis of the European Community (Haas, 1958). According to Haas's theory, economic interdependence between states promotes further political integration among them (ibid). Following Haas's work, Keohane and Nye broadened the concept of interdependence to include other linkages between states and developed the concept of Complex Interdependence (Eynon, 2016). Keohane and Nye defined the concept of complex interdependence as, "a situation among a number of countries in which multiple channels of contact connect societies; there is no hierarchy of issues; and military force is not used by governments towards one another" (Nye, Jr. & Keohane, 1987: 731). Keohane and Nye also introduced two dimensions of interdependence: sensitivity and vulnerability (Keohane & Nye, 1977 cited in Rana, 2015). Sensitivity means the extent to which states are sensitive to external changes (ibid). More sensitive states would incur more costs to control changes than the other states who are not as sensitive (ibid). As for vulnerability, it means the degree to which states can control their responsiveness to the sensitivity (ibid). The less vulnerable state does not necessarily have to be less sensitive, however, it means that it would suffer less from altering policies or changing events (ibid).

International river basins naturally create an inevitable network of complex interdependencies among riparian states (Elhance, 1999). This complex network includes political, economic, environmental and security interdependencies (ibid). Multiple water

uses and benefits, threats of resource scarcity and population growth are all factors that create economic interdependence among co-riparian states (Nijenhuis, 2012). Co-riparian states are also bound by basin-wide institutions, water treaties and international law, which establishes political interdependencies among them (ibid). As for environmental interdependence, it comes from rising global warming issues and its threat to water availability (ibid).

Interdependence between co-riparian states is viewed as a source of either conflict or cooperation. Wolf et al. (2006) argue that interdependence prevents conflicts between states, “water fuels greater interdependence. By coming together to jointly manage their shared water resources, countries can build trust and prevent conflict”. Wolf et al. (2006) based this interdependence-cooperation argument on the findings of the BAR (Basins at Risk) study that presented historical evidence of cooperative events among interdependent co-riparian states that outweighed conflictual ones. Wu et al. (2013), on the other hand, argue that overestimation of the interdependencies among co-riparian states can adversely affect cooperation for many reasons. One problem is that overestimated interdependence can create anxiety among co-riparian’s regarding their expectations of cooperation, and thus, hamper any further process of integration (ibid). Another problem is that overestimation of interdependencies may distract states from proceeding with important and simple water development projects due to perceived advantages from other interdependent projects (ibid).

With regard to the Egyptian-Ethiopian hydro-relations, a water war scenario is highly unlikely in the complex interdependent world that Keohane and Nye put forward. As assumed by the complex interdependence theory, security is not achieved by military

force, but rather with possible means of cooperation (Eynon, 2016). In this regard, according to Eynon's study, the issue of the GERD is not likely to create a military conflict between Egypt and Ethiopia, as it would produce unbearable consequences for the two parties (ibid). Therefore, "the influence deriving from favorable asymmetries in sensitivity is very limited when the underlying asymmetries in vulnerability are unfavorable" (ibid). With the rise of new security threats, such as climate change, consideration of the interdependent characteristic of the issue would be the rational solution as the survival of one state becomes dependent on the survival of the other states (ibid). As Whittington et al. argue, "cooperation is viable because adaptation to climate change is likely to be expensive, and more importantly, the risks are highly tangibly detrimental" (Whittington et al., 2014: 605).

Besides the natural interdependence between Egypt and Ethiopia as two riparian states sharing the Nile, it is argued that the Nile Basin Initiative (NBI), with all its programs and projects, has increased the overall level of interdependence among the Nile riparian's (Kaasa, 2015). One of the key characteristics of Complex Interdependence is multiple channels of contact, which refers to the effect of transnational relations on increasing sensitivity of states to one another (Keohane & Nye, 1972 cited in Eynon, 2016). Therefore, the NBI has opened opportunities for dialogue, communication and investments, and thus increased the degree of interdependence among the Nile riparians (Kaasa, 2015). As for economic interdependence, it is argued that trade relations decrease during times of tension (Copeland, 2002 cited in Eynon, 2016) and the announcement of the GERD project in 2011 had indeed disrupted trade relations between Egypt and Ethiopia (Eynon, 2016). However, this tension has not lasted for long and old trade ties

have been incrementally restored between the two countries since 2013 (ibid). Several trade and investment agreements have been signed between Egypt and Ethiopia including twenty bilateral deals on education, health and trade (BBC, 2014). Also, it has been announced that three Egyptian projects worth \$50 million are to be established in Ethiopia's first industrial zone (Daily News Egypt, 2013 cited in Eynon, 2016).

3. The Way Forward: Benefit-Sharing- Cooperation Beyond the Nile

File

As discussed by Phillips (2009: 101), “negotiating on a project by project can easily result in a stalemate-whereas the basket of benefits approach means opportunities can be modified and changed until an acceptable outcome is agreed by all”. In other words, Egypt and Ethiopia need to start tying water to non-water issues in order to create ‘bigger baskets’ of benefits that can be achieved by all involved parties (Tollison and Willett, 1979 cited in Daoudy, 2008). This is known as issue linkage, or broadening the basket of mutual benefits. In an attempt to broaden the basket of benefits, this paper suggests exploring potential benefits beyond the river, which refers to possible issue linkages between the Nile water issues and other non-water cooperation opportunities, such as trade deals and joint investments.

There are various opportunities for cooperation between Egypt and Ethiopia. However, these opportunities have not been exploited in an effective way that could generate mutual benefits. Theoretically speaking, it should be possible to reinforce mutual cooperation between Egypt and Ethiopia based on the comparative advantages in each country that should yield more trade and investment deals (Wichelns et al., 2003).

For example, Egypt has skilled human resources and advanced technical experience in diverse fields, such as medicine and agricultural technology (ibid). On the other hand, Ethiopia is rich with agricultural products and livestock and the country is endowed with a surplus of labor force (ibid).

3.1 Technical and Scientific Cooperation

One very important aspect of cooperation between Egypt and Ethiopia is technical cooperation and the exchange of the know-how (Al-Saidi et al., 2017). The African Region is subject to critical future challenges, such as those related to climate change, and the Blue Nile sub-Basin is no exception (ibid). Thus, the two countries need to cooperate to create a hydro-climatic infrastructure to be able to study, monitor and mitigate climate-related risks such as floods and droughts (ibid). Currently, according to the study, full access to information, frequent reporting and exchange of data among Nile riparian states is either very limited or underdeveloped (ibid). Accordingly, transboundary collaboration is necessary to improve the role of pertinent ministries and research institutions through capacity-building workshops and training (ibid). Technology and scientific cooperation should not be confined only to the field of hydro-meteorological services, it should extend to other important domains, such as health and education (Ayenew, 2015).

3.2 Health Cooperation

As noted earlier, Egypt has a strong comparative advantage over Ethiopia in the fields of technology and science, which gives it great opportunity to lead cooperative initiatives with its African neighbors in various domains, including health and medicine.

Some of these initiatives have already taken place. Among them is a series of medical convoys led by the Egyptian heart surgeon Sir Magdi Yacoub, who traveled with a 27-member team to perform cardiac surgeries for those in need in Ethiopia (State Information Service, 2017). This initiative has been operating since 2014 and continues to this day (ibid). The project is led by the Magdi Yacoub Foundation in collaboration with the Egyptian Agency of Partnership for Development (EAPD) and the Cardiac Center of Ethiopia.

Another ongoing initiative in the health domain is led by the Egyptian 57357 Health Sciences Academy in collaboration with the EAPD to train and assess pediatric oncology hospitals in Ethiopia and Kenya (All Africa, 2016). The training includes different courses on clinical pharmacy, nursing, child care and health care equipment (ibid). All these initiatives are very positive and promising; however, they are mostly done on a project-by-project basis without clear long-term plans.

These initiatives should be incorporated in a bigger plan to further strengthen Egypt's relations with Ethiopia and other African states. Therefore, health projects need to cover wider specializations and be scheduled on a more regular basis. They should also follow an organized agenda so that the outcomes of such projects become more effective and structured.

3.3 Investments and Trade Cooperation

There are promising investment scenarios in different sectors depending on each country's resources and expertise (Al-Saidi et al. 2017). For instance, according to the study, Ethiopia is rich in arable land resources which opens the door to many

opportunities for land investments, which are mainly used in food production. Land investments in Ethiopia account for almost one million hectares (ibid). In recent years, Ethiopia has been very active in promoting land investments as part of its development plan, so this can be a good investment opportunity for Egypt (ibid). The Al-Saidi et al. study further notes that investing in arable land has become very strategic, especially with the mounting food demands in Africa. Here, the need for regional cooperation becomes very critical in order to increase agricultural efficiencies.

A second possibility involves investment in irrigation facilities. Egypt has around 4.4 million hectares of cultivable areas which are almost entirely dependent on irrigation (Al-Saidi et al., 2017: 112). Thus, the country has well-established experience with modern irrigation systems, such as sprinkler and drip irrigation that can be used to optimize irrigation infrastructure in Ethiopia (ibid). Ethiopia also needs investments in its irrigation system as 20.5 percent of its total cultivable area (13.2 million hectares) is suitable for irrigation. Hence, agricultural production in Ethiopia is to a large extent dependent on rainfall, which varies substantially from one year to another (Wichelns et al., 2003). Investments in irrigation facilities in Ethiopia would considerably enhance the volume of its agricultural products and livestock, and, in turn, this should provide Egypt with more affordable exports of agricultural and meat products (ibid). This can be a good opportunity for Egypt to consolidate its relations with Ethiopia through enhancing its agricultural activities and exporting the know-how with regards to irrigation technologies.

A third opportunity involves negotiating free trade agreements that enable the two countries to import and export products with minimal restrictions (Wichelns et al, 2003:

549). Despite the variety of products and resources in both Egypt and Ethiopia, the level of imports and exports between them is still very limited. For instance, Egypt imports around 40 percent of 98 meat products from many countries around the world to meet its national demands for production and consumption (Ayenew, 2015). However, Ethiopia alone has the capacity to cover Egypt's demand of meat as it is a large livestock producer (ibid). In addition, Egypt is a major importer of food crops including sugar, wheat and coffee which Ethiopia produces in large amounts, and thus has enough capacity to export them to Egypt (ibid). Food-related trade, also known as 'Virtual Water Trade', in the Blue Nile sub-Basin is very critical to ease pressures on the Nile River waters (Al-Saidi et al, 2017).

A fourth scenario includes trade in energy resources. Egypt has moderate reserves of oil and gas and it exports more than 150,000 oil barrels per day (Ayenew, 2015), whereas Ethiopia has very limited oil reserves and imports large amounts of oil to meet its national demand (Al-Saidi et al., 2017). This could be a trade opportunity between Egypt and its Blue Nile neighbors. On the other hand, Ethiopia has rich agricultural lands that can be used to produce biofuels (ibid). Trade in biofuels introduces an interesting energy source to be included in bilateral trade agreements between Egypt and Ethiopia. The bilateral trade activities between Egypt and Ethiopia have significantly increased due to the preferential arrangement under the Common Market for East and Southern Africa (COMESA) (Ebaidalla, 2016). The political turmoil caused by the announcement of the GERD construction has certainly affected the trade and economic relations between Egypt and Ethiopia in a negative way, however, the economic tensions have not lasted for long as the two countries have instead used trade and investment as a remedial

'pacifying' tool. Despite this notable increase, the bilateral trade between the two countries is still considered limited in comparison with the trend of the bilateral trade deals between each of the two countries and their other trade partners. It is noteworthy that Egypt's exports to Ethiopia tremendously exceeds its imports between the years 2011 and 2016. This traditional view of the African Market as an exclusively export market needs to change. Egypt needs to invest more in industrial and infrastructure projects in Ethiopia and other African countries.

4. Conclusion

Although the GERD project is considered to be a negative externality issue, this paper nullifies the likelihood of a water war breaking out between Egypt and Ethiopia based on a number of academically-sound reasons. First and foremost, the idea of an upstream-downstream water war is strategically irrational (Gebreluel, 2014). If the reason for war is a dam project in the upstream state and the downstream state is militarily capable of attacking the project site, any violent action towards the dam would result in mutual destruction (ibid). Secondly, the balance of powers between Egypt and Ethiopia makes a water war a less likely scenario. On the one hand, Ethiopia has a geographical advantage over Egypt due to its upstream position. On the other hand, Egypt is militarily stronger than Ethiopia. This balance of power makes Egypt and Ethiopia very vulnerable to each other's actions. Thirdly, the multifunctional nature of water and the complex interdependent characteristics of transboundary river basins opens the door to cooperation opportunities through forming the right linkages between various water and non-water

issues. Fourthly, the history of water relations between Egypt and Ethiopia has never witnessed a water war even at the bitterest of times.

Therefore, this analysis does not mean the complete absence of conflict, but simply shows how water conflict and cooperation could co-exist at different intensities and levels between Egypt and Ethiopia. Although the two countries have witnessed many times of fiery rhetoric and mutual suspicion over water-related issues, they have also succeeded in taking part in many cooperative actions including Hydromet (1967), the UNUGU (1983), the TECCONILE (1992) and, finally, the NBI (1999).

References

- Al-Saidi, M., Elagib, N. A., Ribbe, L., Schellenberg, T., Roach, E., & Oezhan, D. (2017). *Water-Energy-Food Security Nexus in the Eastern Nile Basin: Assessing the Potential of Transboundary Regional Cooperation*. *Water-Energy-Food Nexus: Principles and Practices*, 103-113.
- All Africa News (2016). *Ethiopia: Egyptian 57357 Health Sciences Academy Delegation to Jimma*. Retrieved on December 9, 2017, from <http://allafrica.com/stories/201604221121.html>
- Ayenew, M. M. (2015). Ethio-Egypt Beyond the Nile File. *African Perspectives*, 13(43), 30-34.
- BBC. (2014). *Ethiopia-Egypt trade deals to ease River Nile row*. Retrieved on September 18, 2017, from www.bbc.com/news/world-africa-29878714
- Cascão, A. E. (2009). Changing Power Relations in the Nile River Basin: Unilateralism vs. Cooperation? *Water Alternatives*, 2(2), 245-268.
- Cascão, A. E., & Nicol, A. (2016). GERD: new norms of cooperation in the Nile Basin? *Water International*, 42(4), 550-573.
- Daoudy, M. (2008). Asymmetric Power: Negotiating Water in the Euphrates and Tigris. *International Negotiation*, 14 (2), 361-391.
- Ebaidalla, E. M. (2016). *Trade between Egypt, Sudan and Ethiopia: Prospects and Challenges for Trilateral Trade Integration*. In Economic Research Forum Working Papers (No. 1057).
- Elhance, A. P. (1999). *Hydropolitics in the Third World: Conflict and Cooperation in International River Basins*. United States Institute of Peace Press.
- Elliott, M. (1991). Water Wars. *Geographical Magazine* (May), 28-30.
- Erlich, Haggai. (2002). *The Cross and the River: Ethiopia, Egypt, and the Nile*. Boulder, Colorado: Lynne Rienner.
- Eynon, K. (2016). *Complex Interdependence: Watering Relations between Ethiopia and Egypt*. Cape Town: University of Cape Town.
- Gebreluel, G. (2014). Ethiopia's Grand Renaissance Dam: Ending Africa's Oldest Geopolitical Rivalry? *The Washington Quarterly*, 37(2), 25-37.
- Gleditsch, N. P., & Marit, B. (2012). Shared Rivers and Conflict-A reconsideration. *Political Geography*, 31(8), 519-527.
- Gleick, P., 1993. Water and Conflict: Fresh Water Resources and International Security. *International Security*, 18(1), 79-112.
- Grandi, M., & Hussein, H. (2017). Dynamic Political Contexts and Power Asymmetries: The Cases of the Blue Nile and the Yarmouk Rivers. *International Environmental Agreements: Politics, Law and Economics*, 17(6), 1-20.
- Hussein, H., & Grandi, M. (2017). Dynamic Political Contexts and Power Asymmetries: The Cases of the Blue Nile and the Yarmouk Rivers. *International Environmental Agreements: Politics, Law and Economics*, 17(6), 795-814.
- Haas, Ernst, B (1958). *The Uniting of Europe: Political, Social and Economic Forces*. Stanford: Stanford University Press.

- Hanke, N. (2013). *East Africa's Growing Power: Challenging Egypt's Hydropolitical Position on the Nile?* Doctoral Dissertation. Stellenbosch: Stellenbosch University.
- Homer-Dixon, T. F. (1994). Environmental Scarcities and Violent Conflict: Evidence from Cases. *MIT Press Journals*, 19 (1), 5-40.
- Jagerskog, A., & Zeitoun, M. (2009). Confronting Power: Strategies to Support Less Powerful States. *Stockholm International Water Institute*, 25, 9-14.
- Joseph S. Nye, J., & Keohane, R. (1987). Power and Interdependence Revisited. *International Organization*, 41(4), 725-753.
- Just, R. E., & Netanyahu, S. (2012). International Water Resource Conflicts: Experience and Potential. In: *Conflict and Cooperation on Trans-Boundary Water Resources*. Springer, 1-26.
- Kaasa, R. V. (2015). *Integrated Management of the Nile's Water: The Institutional Effects of the Nile Basin Initiative*. Master's Thesis, Ås: Norwegian University of Life Sciences.
- Kendie, D. (1999). Egypt and the Hydro-Politics of the Blue Nile River. *Northeast African Studies*, 6(1), 141-169.
- Mahmoda, D. Y. (2003). Nile Basin Cooperation. *Current African Issues*, (26), 4-34.
- Mason, S. A. (2004). *From Conflict to Cooperation in the Nile Basin*. Zürich: Swiss Federal Institute of Technology.
- Mbaku, J. M., & Kimenyi, M. S. (2015). *Governing the Nile River Basin: The Search for a New Legal Regime*. Brookings: Brookings Institution Press.
- Mirumachi, N., & Allan, J. A. (2007). *Revisiting Transboundary Water Governance: Power, Conflict, Cooperation and the Political Economy*. In: Proceedings from CAIWA International Conference on Adaptive and Integrated Water Management: Coping with Scarcity. Basel, 12-15 November.
- Mostert, E. (2003). Conflict and Co-operation in International Freshwater Management: A Global Review. *International Journal of River Basin Management*, 1(3), 267-278.
- Nijenhuis, J. (2012). *Complex Interdependencies in the Mekong River Basin: Explaining Water Cooperation*. Nijmegen: Radboud University.
- Phillips, D. (2009). *The Transboundary Waters Opportunity Analysis as a Tool for RBOs*. Gaborone: SADC.
- Rana, W. (2015). Theory of Complex Interdependence: A Comparative Analysis of Realist and Neoliberal Thoughts. *International Journal of Business and Social Science*, 6(2), 290-297.
- Sadoff, C.W. and Grey, D. (2002). Beyond the river: The benefits of cooperation on international rivers. *Water Policy*, 4(5), 389-403.
- Sadoff, C. W., & Grey, D. (2005). Cooperation on International Rivers: A Continuum for Securing and Sharing Benefits. *Water International*, 30(4), 420-427.
- Salman, M. A., & Boisson de Chazournes L. (1998). *International Watercourses: Enhancing Cooperation and Managing Conflict*. Proceedings of a World Bank Seminar, World Bank Technical Paper (414).

State Information Service. (2017). *Magdi Yacoub to perform cardiac surgeries in Ethiopia for needy*. Retrieved on December 1, 2017, from www.sis.gov.eg/Story/114905?lang=en-us

- Sjostedt, G. (2008). Resolving Ecological Conflicts: Typical and Special Circumstances (pp. 225-245). *The SAGE Handbook of Conflict Resolution*, London: Sage.
- Swain, Ashok. (2002). The Nile River Basin Initiative: Too Many Cooks, Too Little Broth. *SAIS Review*, 22(2), 293–308.
- Tawfik, R. (2015). *Revisiting Hydro-Hegemony from a Benefit-Sharing Perspective*. Bonn: German Development Institute.
- Tegegne, M. Y. (2015). The Nile Hydro-Politics: A Historic Power Shift. *International Journal of Political Science and Development*, 3(2), 101-107.
- Tesfaye, A. (2014). Conflict and Cooperation and the Evolution of the Nascent Nile Basin Regime. *Northeast African Studies*, 14(1), 123-144.
- Thomson, M. (2005). *Nile Restrictions Anger Ethiopia*. BBC News. Retrieved on November 3, 2017, from news.bbc.co.uk/2/hi/africa/4232107.stm 113
- Turton, A.R. (2002). *Water and state sovereignty: The Hydropolitical Challenge for States in Arid Regions*. London: School of Oriental and African Studies, University of London.
- Vinogradov, S., Wouters, P., & Jones, P. (2003). *Transforming Potential Conflict into Cooperation Potential: The Role of International Water Law*. UNESCO.
- Waterbury, J. (1997). Between Unilateralism and Comprehensive Accords: Modest Steps toward Cooperation in International River. *Water Resources Development*, 13(3), 279-289.
- Waterbury, John; Whittington, Dale (1998). Playing Chicken on the Nile: The Implications of Microdam Development in the Ethiopian Highlands and Egypt's New Valley Project. *National Resources Forum*, 22(3), 64-155.
- Waterbury, John. (2002). *Nile Basin: National Determinants of Collective Action*. Yale: Yale University Press.
- Whittington, D., & Wu, X. (2006). Incentive Compatibility and Conflict Resolution in International River Basins: A Case Study of the Nile Basin. *Water Resources Research*, 42(2), 1-15.
- Whittington, D., Waterbury, J., & Jeuland, M. (2014). The Grand Renaissance Dam and Prospects for Cooperation on the Eastern Nile. *Water Policy*, 16(4), 595-608.
- Wichelns, D., Barry, Jr, J., Müller, M., Nakao, M., Philo, L. D., & Zitello, A. (2003). Co-operation Regarding Water and Other Resources will Enhance Economic Development in Egypt, Sudan, Ethiopia and Eritrea. *International Journal of Water Resources Development*, 19(4), 535-552.
- Wolf, A.T. (1998). Conflict and Cooperation along International Waterways. *Water Policy*, 1(2), 251-265.
- Wolf, A. T., Kramer, A., Carius, A., & Dabelko, G. D. (2006). *Navigating Peace*. Woodrow Wilson International Center, 114, 1-6.

Wu, X., Sadoff, C., Whittington, D., & Jeuland, M. (2013). Interdependence in Water Resource Development in the Ganges: An Economic Analysis. *Water Policy*, 15(S1), 89-108.

Zeitoun, M., & Allan, J. A. (2008). Applying Hegemony and Power Theory to Transboundary Water Analysis. *Water Policy*, 10(S2), 3-12.

Zeitoun, M., & Cascão, A. E. (2010). *Power, Hegemony and Critical Hydropolitics*.

Transboundary Water Management. Routledge.

Zeitoun, M., & Warner, J. (2006). Hydro-Hegemony-a framework for analysis of transboundary water conflicts. *Water Policy*, 8(5), 435-460.