The Great Ethiopian Renaissance Dam - Likelihood of Cooperation or Conflict between Ethiopia and Sudan?*

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Abstract

In this study, the existing challenges and prospect of the Ethio-Sudanese relations over the hydropolitics of the Nile, particularly after the commencement of the Great Ethiopian Renaissance Dam (GERD) project, were critically examined. In addition, an attempt was made to examine whether the common water resource of the Nile might lead the two countries into conflict in the future. Within qualitative methodology, case study research design was employed. Major theories of hydro-politics were also critically reviewed to explain current relations and to predict likely future scenarios.

The analysis reveals that Egypt's strong sphere of influence over the region has been one of the existential threats to the Ethio-Sudanese relation. Besides, the implications of the two parallel international legal regimes over the Nile water resource utilization during the colonial as well as the post-colonial periods have been existential challenges to the bilateral relations over the Nile question. However, rewarding practical lessons that Sudan has learnt from Ethiopia's previous projects on the Nile River, has recently been creating an opportunity for an improvement of international relations. Finally, critical analysis of existential relations of the two neighboring states over the hydro-politics of the Nile also implies the recognition of cooperation over conflict as to the future prospect of their relationship. This is basically because of various forms of pragmatic hydro-diplomatic drives the two neighbors to settle existential and emerging challenges over the Nile water resource management.

Keywords: Conflict, Cooperation, Grand Ethiopian Renaissance Dam, International Relations

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Introduction

Control of water resource implies control of life. Riparian states, that share trans-boundary water resource, could not only face various reciprocal challenges but also enjoy opportunities because of their competing as well as complementary national interests over the development and utilization of the resource. Besides, trans-boundary water discourses constitute the issue of states' sovereignty, national governments and communities of riparian states over the development and utilization of the resources. Thus, the utilization and development of such a resource cannot be totally subjected to unilateral policies, decisions and actions of individual states because it is shared with the other riparian states.

Through a critical review of the dominant theories of hydro-politics and using the empirical data gathered through various instruments, this study attempted to critically examine the existential hydro-political opportunities, challenges and prospect of Ethio-Sudan relation, particularly after Ethiopia's commencement of the Great Ethiopian Renaissance Dam Project.

Methodologically, a qualitative case study research design was employed, and the main theoretical scenarios of international relations and that of hydro-politics has been formulated. Besides, both primary and secondary data had been considered. Accordingly, data had been collected through semi-structured interviews and focus group discussions with prominent Ethiopian and Sudanese scholars, and by consulting relevant documents (textbooks, articles, international treaties and official letters). Informants were purposively selected, and scholars of hydro-politics and government officials from the ministry of foreign affairs of both Sudan and Ethiopia were main data sources. Immediately after the completion of the data collection task, the data were transcribed in order to smoothly conduct thematic analysis. The information gathered from the interviews, focus group discussions and documents were thematically categorised and analysed accordingly.

2. Conceptual and Theoretical Frameworks

2.1. Understanding Hydro-Politics

In fact, life is impossible without water, the latter is increasingly acknowledged as a scarce resource, which is essential for life, health and welfare. The condition where more people compete for and rely on declining water resources is the fundamental driving force behind hydro-politics. Therefore, water has become a contested terrain and a political issue. Thus, hydro-politics, the politics of international relations regarding water resources, the interest in and recognition of 'politics' as a central theme is growing in the water resources discourse (Cascão and Zeitoun 2010). Accordingly, hydro-politics could be understood as the authoritative allocation of values in society with respect to water.

Hydro-politics is a subject matter that deals with the systematic analysis of interstate conflict and cooperation regarding international water resources development and management (Morgenthau 2004). Besides, it deals with conflict and co-operation; involving states as the main actors; and taking place in shared international river basins. It is also the systematic investigation of the interaction between states, non-state actors and a host of other participants, like individuals within and outside the state, regarding the authoritative allocation and/or use of national and international water resources (Cascão and Zeitoun 2010). This definition shows that hydro-politics is: an investigation into the interaction between state and non-state actors which includes individuals and other participants both within and outside of the state, about the authoritative allocation or use of water, and with the water in question potentially being both international and national in its origin, thereby implying some kind of sovereignty over this water.

Central to any understanding of hydro-politics is the issue of scale, ranging from the individual, to the household, village, city, social, provincial, national and international levels with a number of undefined levels in between. These can be best understood as a horizontal dimension of the discipline of hydro-politics (Morgenthau 2004). In reality, the range is infinitely wide, including issues such as conflict and its mitigation, states and non-state actors, water service delivery, water for food, the social value of water, the political value of water, the psychological value of water, water demand management, water as a target of aggression, water as an instrument of peace, water and gender, water and ecosystems, and water as a critical element in sustainable development.

As the highest level of politics of water resources, hydro-politics is the level of inter-state politics regarding the allocation, distribution, control and quality of water resources (*ibid*). The state in hydro-politics is usually a sovereign state, as in this particular context, water resource issues between Ethiopia and Sudan. In this case, more than one sovereign state controls territory in a hydrological basin, which for optimal use would require an integrated approach to resource management. The core issue at this level is how states do or do not reach agreement on sharing the development and use of the water resources they jointly depend on. In this regard, the question how conflicts can be avoided and cooperation achieved is the main focus of hydro-politics.

2.2. Theories of Hydro-politics

There are two dominant theories defining the nature of relationships (conflict and cooperation) between or among various international actors, particularly of states at the international level. The first theory, realism has been the dominant perspective propounding the view that world politics is dominated by conflicting self-interest of states, which are inherently aggressive, and obsessed with national interest motives (Morgenthau 2004: 92). Accordingly, this school of thought has developed the idea that interstate relations are based on the struggle for dominance. On the contrary, the second theory, liberalism strongly holds the view that states can preserve their national interest in the international arena through cooperation, laws and diplomacy. Besides, advocates of this theory believe that such activities provide opportunities for cooperation and mutual reciprocities rather than conflict among states. Moreover, they believe that with the right conditions set, the international system provides opportunities for not only cooperation but also increases shared security and international responsibility amongst international actors, particularly of states.

In light of the above arguments, trans-boundary Rivers raise the problem of sovereignty among riparian states over the resource. Accordingly, the resources cannot be totally subjected to a country's policies because they are common belongings shared with the other riparian states. In the case of trans-boundary Rivers, water is also a matter of national and international security variable. Accordingly, widespread growing interest on the resources, due to higher demand and a lower offer in quantity and quality, in some cases has brought tensions among riparian states. Some authors (Sironneau 1997) claim that water is the new gold and it has been, and will always be, a reason or a tool for international conflict, while others (Wolf 2000) assert that competition over water has never brought about armed conflicts in the past, and will always be solved peacefully. At any rate, in light of the following theoretical scenarios, this research attempts to critically investigate the existential hydro-political challenges, opportunities and prospects of the Ethio-Sudan relation, particularly after the announcement of the Great Ethiopian Renaissance Dam.

2.2.1. Hegemony and Counter-Hegemony Scenarios

Hegemony is defined as political power that flows from effectiveness and efficiency of intellectual and moral leadership within the interactions of diverse actors. Hegemony includes leadership, legitimacy, but more importantly ideas, knowledge and consent. Accordingly, it may not be the use of coercion, but instead it is the power of ideas and knowledge to influence others (Karpowicz 2013). Thus, an essential feature of hegemony is the formal equality that reigns between the hegemonic and non-hegemonic actors. It is worth noting that the equality is by definition 'formal' and that asymmetries of power persist beneath the surface so that cooperation in international river basins is usually imposed by the hegemonic power.

The concept of hegemony logically implies that conflict and cooperation are not mutually exclusive, but complementary. The term conflict, as used in this discussion, is not the synonym of war or armed conflict, but refers to its sociological meaning, whereas cooperation means the process of working together, regardless of the underlying motives and characteristic qualities of this process (such as voluntariness). Asymmetrical power relations and, more basically, the notion of power are integral to the understanding of hegemony. In its most basic definition, power can be understood as the ability to influence the behavior of others with or without resistance.

The framework of hydro-hegemony, as an emerging body of scholarship, stipulates the idea that water related conflicts will be the reality of the near-term future because of a rapidly growing population, environmental degradation and climate change will act as multipliers, pushing individuals and countries to compete more fiercely over access to water resources. This is inevitable, because there is no substitute for water resource: it is an absolute necessity to sustain the survival of all living creatures (Cascão and Zeitoun 2010).

The proponents of hydro-hegemony argue that conflict may not necessarily be just violence between militaries, but also occurs whenever one party attempts to exert its authority over another in order to achieve its self-interest goals. Therefore, conflict can actually exist under the veil of cooperation, when the most powerful state (the hegemony) in a basin is able to effectively influence other riparian states in its favor over the utilization of their shared water resource. Accordingly, the hegemonic state of the basin may employ three different dimensions of power: hard power, bargaining power, and ideational power to manipulate others. The former is comparatively easily measured in economic and military terms, while the following two instruments do qualify 'soft power', the ability to get what you want through attraction rather than coercion or payments (Cascao and Zeitoun 2010). Bargaining power depends on words, whereas ideational power exists in the abstract realm of ideas and perceptions. Bargaining power must be understood in relational terms and involves strategies aimed at worsening the opponent's alternatives and affecting mutual perceptions, thus ultimately altering the parties' bargaining positions and the structure of interaction. Ideational power, or the diffusion of ideas and values, is arguably the most effective form of power as it works in such subtle ways that those under its influence are usually not even aware of its presence. An actor that exerts ideational power manages to make others perceive issues in his or her preferred way and to make them want to take the same actions as him- or herself in order to tackle them. In a simplified way, one could say that hard power is material and based on force, whereas soft power is immaterial and rests on persuasion (Ibid). In general, it is the ability to combine the various forms of power that may be the most salient feature of power and hegemonic control.

Applied to trans-boundary river basins, therefore, hydro-hegemony is, simply put, "hegemony at the river basin level, achieved through water resource control strategies such as resource capture, integration and containment. In other words, cooperation in international river basins is advocated or imposed by, hence ultimately contingent upon, the hegemonic power, as noted (*ibid*). Based on this theory, Egypt has assumed a hegemonic position without necessarily enforcing physical dominance. While at times it has used threats against upstream riparian countries, quite often these threats have been used hand-in-hand with political leadership, for example, power of negotiation skills (Yacob 2007,). Egypt employs this strategy mainly to maintain and consolidate the status quo in favor of its hegemonic power. In Egypt's case, the objective is to continue its dominance over the Nile River water.

On the other hand, counter-hegemony refers to attempts to dismantle hegemonic power discourse. In other words; it is a confrontation and/or opposition to existing status quo and its legitimacy in practice. If a counter hegemony grows large enough it is able to subsume and replace the historic bloc it was born in. It attempts, through persuasion or propaganda, to increase the number of people who share its view on the hegemonic order; in a war of movement the counter hegemonic tendencies which have grown large enough overthrow, violently or democratically, the current hegemony and establish themselves as a new historic bloc. Thus, what counter-hegemony does is to resist hegemonic pressure, and build up a hegemonic alternative strategy. This is exactly what upstream riparian countries, such as Ethiopia, are doing to challenge Egypt's traditional monopoly of the Nile River water. Besides, by threatening to mobilize its own as well as international economic resources to build unilateral projects that may interfere with Egypt's water allocations, Ethiopia has been able to increase its own bargaining power vis-a-vis Egypt. This increment in Ethiopia's relative power helps to explain why it has been finally successful in forcing Egypt to come to the negotiating table. As a result, Ethiopia managed to unite the majority of Nile riparian states for the first time in the Nile basin's hydro-political history to vote in favor of a draft document, Cooperative Framework Agreement that endorses the principles of equitable utilization, effectively isolating Egypt's claim of historic rights over Nile water resource (Cascão and Elisa 2008).

2.2.2. The ABC-Model

In the study of conflict and cooperation regarding common water resources, there is a fairly large literature which focuses on water as a potential conflict creator. Jon Martin Trondalen (2002), proposed the ABC-model, three parameters representing his arguments for the likelihood of future conflicts among riparian states over their common trans-boundary water resource.

The A-model is the first model, which attributes incompatible goals related to, control over, and unsustainable use of international river systems. The water can in turn be divided into consumptive and non-consumptive uses which might be the underlying cause of conflict between states. Examples of non-consumptive use are for instance navigation and commercial fishing. And, the consumptive use consists of variables such as domestic and municipal use, irrigation, industrial purposes and hydroelectric power generation. Large-scale dams usually have several main purposes. They might be constructed in order to increase a state's hydroelectric power generation, or to regulate the water flow so that water is available when it is needed. This, in turn, affects the downstream countries. Conflicts over water can also be directly related to dam construction since these kinds of projects lower the flow of water to the downstream countries and negatively affect them (*ibid*:117-124).

The B-model is the second parameter that focuses on externalities from utilizing river systems as causes of conflicts, also consists of different variables. The variables are: irrigation (salinity as a result of irrigation may negatively affect the water quality in the downstream country), industrial sector (which might cause water pollution downstream), erosion and siltation (erosion upstream leads to land slips which might impair storage), resettlement (water projects inevitably force people to move) and health (dam-construction in warm climates might increase the risk for the proliferation of water-related diseases). Besides, water diversion and reservoir projects might be a source of water-related conflict (*ibid*: 125-127).

The C-model focuses on externalities from other activities affecting river systems and water quality as causes of conflict. Accordingly, pesticides (ecological problems that exists in many developing countries because of the usage of persistent pesticides), soil erosion and siltation of water sources, wildlife (different national views on how to protect wildlife from water projects might cause conflicts and problems) and social implications and economic aspects (negative effects that might arise as a result of dam construction and need to be minimized). Conflict management faces tough challenges in order to prevent conflicts from occurring, since the riparian states' respective water policies must be correlated to a high degree in order to function. Often a state's policy is a reflection of that particular state's location in the river system making conflict a more likely outcome than cooperation (ibid: 130).

2.2.3. United Nation University's (UNU) Three Approaches

The exclusion of people in decisions that affect their welfare, often lead to a violation of basic human rights and possibly to public protests and obstruction to the implementation of decisions. Ending global thirst depends upon providing the public with a voice in water resource decisions that directly affect them. To this effect, an international symposium was organized in October 2003 by the United Nations University (UNU) and Tokyo University of Agriculture and Technology (TUAT). The central objective of the symposium was to identify successful mechanisms, approaches and practices for promoting public involvement in water resources management. In promoting public involvement in water resources management to ensure the public their basic access to water, the UNU symposium therefore explored the following three approaches (UNU 2005.

The conventional approach is based on processes to inform, consult, involve the general public as well as different stake holders in the decision making process concerning the management and development of trans-boundary water resource. It entails different levels of participation, from the lower, where the public is kept informed, to the highest, where every decision is taken in a participatory manner. The Information Technology approach is aimed at promoting the public as well as other stake holders' participation concerning the management of their common water resources through emerging communication technologies: the internet and its various applications, and geographical information systems. The international approach is based on regional and international organizations, with the goal to enhance public participation in decision-making and monitoring tasks. In this regard, permanent international basin organizations play a long-term role for data dissemination, consultation, participation and financing of trans-boundary cooperation among riparian states (*ibid*).

In short, according to UNU approaches, foreign policy can help to improve trans-boundary water governance which can give foreign policy makers a toehold for making progress on regional integration and conflict prevention. In cases where basin relationships are unstable, hydro-diplomacy may be able to build on technical collaboration to facilitate stability and peace. Such collaboration can and should

simultaneously be used to foster regional integration by supporting the spill-over of cooperative practices into other sectors, such that water may become the nucleus of more formal integration via legal rules and shared institutions.

2.2.4. Wolf's Four-Stage Model

Wolf, one of the prominent scholars in the field of cooperation and conflict over common water resources, developed in 2002 a four-stage model: a historic argument, a strategic interest's argument, a shared interest's argument, and an institutional resiliency argument. The historical argument posits that previous historical experiences can provide evidence against the likelihood of conflicts over water. According to Wolf, however; there has never been a single war fought over water. Historically, over 3600 water-related treaties have been signed and there have been so little international violence (Wolf 2002:187- 192).

The second model, the strategic interest's argument, has its main focus on the goal of the potential conflict. To launch an attack, the aggressor must be both downstream and the regional hegemonic actor, since a weaker state would have to be reckless to launch an attack against a stronger opponent. By launching an attack, the aggressor must also take into consideration of the outcome of the attack. The outcome of an attack on a dam or on a similar project could very well lead to a worse outcome for the aggressor than for the attacked (*Ibid*: 192). Thus, violent conflict triggered by the downstream hegemonic actor against any potential weak lower riparian state could not be a strategically viable option for the aggressor according to this model.

The third model, the shared interest's argument, instead of seeing water as a potential catalyst for conflict, views it as a peacefully shared resource among states. It is in the interest of all parties that this vital resource is used for the common good. Thus, hostile riparian states also tend to act more modest against one another regarding water issues. This shared interest strategy has been best clarified by the great number of treaties which have been signed over the years.

The fourth model, an institutional resiliency argument, propounds the idea that treaties, when they are finally established, also tend to be very resilient over a long time period (ibid: 193-194).

To sum up, Wolf's Four-Stage Model stipulated above basically rests on the idea that the task of transnational management of trans-boundary water resources shall be taken as a collective duty of all riparian states for mutual cooperation and shared visions. This approach could ultimately promote and facilitate regional peace, economic integration, and cooperation among riparian states on a variety of matters. Moreover, it also offers the bargaining power to weaker states that could grant something in return to an equitable water management. Furthermore, vulnerability to water shortage and climate change may constitute not only threat multipliers, but also opportunity multipliers. Besides, multilateral and bilateral donors have facilitated and encouraged international treaties in many basins, along with the establishment of River Basin Organizations (RBOs) to support cooperative behavior and contain conflict over shared waters. Accordingly, foreign policy engagement on trans-boundary water governance is needed to contain the conflict potential of shared waters to generate the political space necessary to address other contentious issues.

3. Methodology

In 2011, Ethiopia announced to start the construction of the Grand Ethiopian Renaissance Dam over the Nile River. The dam, when finished, will have the potential to generate 6000 megawatts of electricity. Geographically, it is located at 20 to 40 km from Ethio- Sudanese border at the place called Guba, which is 750 km from Addis Ababa. The cost of the project is estimated at 4.7 billion US dollars. It will have about 74 BCM storage capacity, 1780 meters length, 145 meters heights, stretched around 246km and 1874 Sq km total area of the reservoir. Also, it is expected to increase Ethiopia's actual power generation by 200%. The project has reached 60 % of its accomplishment (IPoE, 2017). The Ethiopian government has also decided to construct the Great Ethiopian Renaissance Dam (GERD) entirely by generating internal resources and financial inputs ignoring cautionary words and steps of international financial institutions.

A qualitative case study research design had been employed. It has been chosen one unit of analysis, Ethio-Sudan relations over the Nile post-GERD Project, in order to answer the research questions. In addition, theories have been consulted. Besides, an attempt has been made to examine which of the aforementioned theories could best explain the case. Also an attempt has been made to identify the existential challenges and opportunities of Ethio-Sudan bilateral relations over their shared water resource of the Nile, including the factors that influence their cooperation. Methodologically, the theories should be able to point out the crucial explanatory factor, and also allow the identification of the mechanism making x causes y. The more implications that are obtained from the theory and then tested, the higher the likelihood that the explanation a researcher find in the end will be the correct one (Svensson and Teorell, 2007: 247). The study systematically applies theories with distinct explanatory factors, which enable the process of tracking. And, the chosen theories contained a number of identifiable parameters which could easily be operational.

When selecting cases for a case study, one uses different strategies. The strategies could be to find cases which are crucial and supplement an extensive result (Svensson and Teorell, 2007:222). In the area of cooperation and conflict regarding shared water resource, the Nile is highly relevant and essential case since it greatly affects the people and the states within the region. The case is also relevant since Sudan is a lower riparian state where as Ethiopia (the largest contributor for the Nile water) is an upper riparian state. Moreover, Ethiopia has begun construction of the largest dam in Africa over this shared River. Accordingly, the construction of this project has contributed a lot for emerging arguments concerning the hydro-politics of the Nile, particularly of Ethio-Sudan bilateral relation over the utilization the resource.

Based on existential opportunities and challenges of Ethio-Sudan relation, we tried to explain, instead of generalization, the most likely outcome between cooperation and conflict when it comes to the Nile question, particularly with regard to the construction of the Grand Ethiopian Renaissance Dam.

Informants were fully and freely involved in interviews and focus group discussions. Besides, they expressed their individual consent so that their real name could be disclosed at any published works.

4. Discussion and Analysis

In the following section, themes have been identified to represent those specific research questions and their respective answers from our data sources so as to achieve the general objective of this study;

critical assessment of the opportunities, challenges and prospect of Ethio-Sudan relation, particularly after Ethiopia's introduction to construct the GERD project over the Nile River. Besides, additional subthemes have been presented under each of those research questions. Moreover, the data collected for this study was examined using previous theoretical frameworks.

4. 1. Existential Opportunities of Ethio-Sudan Relation over the Nile

Based on those primary and secondary data sources, the findings reveal the following opportunities for Ethio-Sudan relation over the Nile, particularly after the GERD Project:

4.1.1. Sudan's Practical Lesson from Ethiopia's Tekeze Dam

In recent times, there has been a gradual improvement on the position of ordinary Sudanese and the government of Sudan towards Ethiopian GERD project. This is primarily because of the practical lessons that the Sudanese have got from previous projects of Ethiopia over the Nile river, particularly of the Tekeze Hydro-power dam, which has proved to them sustainable water flow towards their territory throughout the year by avoiding unnecessary flooding. Besides, evidence from focus group discussions with both Ethiopian and Sudanese experts attests that recently both have recognized the potential comparative economic advantages of GERD for them in irrigation and hydropower trade. Accordingly, Sudan has begun to appreciate the construction of dams in Ethiopia because the water that could be stored in Ethiopia reduces water losses via evaporation and can easily be delivered to its agricultural land by gravity flow. Moreover, such projects in Ethiopia could reduce siltation of dams and answer the water supply problems of the downstream states of the basin. Meanwhile, Sudan does not have good topographic sites to build storage dams to catch huge amount of water coming from Ethiopia (interviews with Engineer Simegnhu, Dr. Islam, FGD with Ethiopian and Sudanese Scholars, 2 April, 2015).

Ethiopia's practical initiatives to communicate the above positive externalities of its dams including the GERD project to citizens of basin countries, particularly the Sudanese, through its diplomatic channels has also played a significant role (Daniel 1988; Kinfe 2003: 73; interview with Dr. Musedeq and Dr.Tahya, 2 April, 2015). Thus, the Sudanese have gradually realized the fact that Nile water saving schemes project in Ethiopia could have positive contribution for the overall integrated development of the basin and should not be taken as a threat to the hydrological and climatic conditions of the basin.

4.1.2. The Growing Ethio-Sudan's Reciprocal Quest for Hydropower Trading

The Nile basin has the greatest hydropower potential in Ethiopia, three times larger than the combined national hydroelectric potentials of both Sudan and Egypt. If harnessed properly, this potential could change the living condition of the people of the basin in the hydro-power integration. Consequently, there is a potential for power trade between Ethiopia and the Sudan which is being explored under the Nile Basin Initiative (NBI). The Sudan is keen to get hydropower from Ethiopia, which has abundant hydropower potential, with a comparatively lower price (Michael 2005:157-168; interview with Dr. Demeke, 2 April, 2015). Thus, as it has also been reflected in the focus group discussions with Ethiopian and Sudanese experts, the development of huge hydropower potential sites that have been identified in Ethiopia will also be in the interest of both Ethiopia and Sudan since it maximizes the productivity of water in agriculture and hydropower generation and minimizes environmental problems and the burden of petroleum expenses. Besides the power of economic diplomacy, particularly of boarder trade and foreign direct investment have been creating ample opportunities for the holistic and growing mutual relationship between the two neighboring states.

4.1.3. Ethio-Sudan's Reciprocal Commitment against Political Rhetoric over the Nile

Beyond their traditional political rhetoric over the Nile, in recent times, however both Ethiopian and Sudanese governments have fortunately been giving priority to objective and scientific evidences and position over the Nile issue in general and that of GERD project. In this regard, adhering to UNU's conventional and communicative approaches, the growing sprit of mutual trust, information exchange and cooperation among Ethiopian and Sudanese governments, intellectuals and experts over the Nile water resource have recently been opening a new chapter on Ethio-Sudan relation so that the latter has been openly supporting the recent GERD project. There is a political will and commitment from both the Ethiopian and the Sudanese government to inform their respective citizens with knowledge based and scientific explanations about the potential advantages of GERD for Ethiopia, Sudan and indeed to Egypt (interviews with Mr. Zerihun, Dr.Deneke, 2 April, 2015; Dr. Marwan and Dr. Ekiram, 10 April, 2015). In addition to the above opportunities, as it has also been reflected in focus group discussions with both Ethiopian and Sudanese experts, Sudan's informed trust on the expertise of SALINI Construction Company, which is in charge of GERD, has been eroding the existential fear among ordinary Sudanese citizens over the possible collapse of the Dam.

To avoid unnecessary misconception and misunderstanding concerning GERD, there has also been the recent declaration of principles among Sudan, Ethiopia and Egypt regarding the Grand Renaissance Dam stipulating the principles of not causing significant harm, equitable and reasonable utilization of the Nile water resource, cooperation, and regional integration among themselves (interviews with Mr. Zerihun and Dr. Demeke, 2 April, 2015). This could also be taken as a huge breakthrough in the hydropolitical history of the Nile as it could maintain the mutual trust among these three historically hostile states of the Nile basin by recognizing the above principles governing the utilization of trans-boundary water resources, which have been emerging foundations of hydro-diplomacy of recent times. Thus, it is important to keep in mind that the parties have attached great hopes to the recent declaration of the principles

In line with UNU's conventional and communicative approaches, Ethiopia's government political will and commitment in its foreign policy orientation towards the Sudan in communicating technically objective and scientific information about Nile water resource management and development in general and that of GERD has been contributing to the growing Ethio-Sudan diplomatic relation(interviews With Dr. Ekram, et al, 10 April, 2015). Moreover, Ethiopia established and institutionalized Tana Sub-Basin Organization (TaSBO) based on Proclamation No.534/2007 with an objective of realizing knowledge based, integrated and sustainable Nile water resource management and development for an equitable, fair and reasonable utilization of this cross-boundary resource (interview with an anonymous Expert in TaSBO,15 April,2015; TaSBO Proclamation No.534/2007). Thus, as it has also been reflected in focus group discussions with both Ethiopian and Sudanese experts, all the above positive developments and reciprocities between the two countries have been contributing to their improving bilateral relations over the Nile. To sum up, Ethio-Sudan reciprocal commitment to avoid unnecessary emotional appeals concerning the Nile and their emerging quest for hydro-diplomacy, communication of relevant and scientifically objective facts about the resource, and adherence to emerging principles of international water law, could be taken as existential opportunities for their bilateral relation.

4.1.4. Growing Ethio-Sudan Diplomatic Cooperation

In recent years, Ethiopia has emerged as an important ally of Sudan in international diplomacy. In this regard, it has supported President, Omer Hassan Elbashir, when he faced criminal charges from the International Criminal Court for his alleged involvement in the Darfur conflict. Besides, Ethiopia has shown its commitment to the stability of its neighbors, Sudan, by contributing its international peace keepers in Sudan's Darfur. Beyond this, Ethiopia has also sustained neutral position over the North and South Sudan's boundary claims and counter-claims over territories across their boarders so that it has been the leading contributor of international peace keepers in the Abyei region (interviews with Mr. Zerihun, Dr. Deneke, 2 April, 2015; Dr. Marwan and Dr. Ekiram, 10 April, 2015). Moreover, as it has also been reflected in focus group discussions with both Ethiopian and Sudanese experts, the growing cooperation between the two nations on inter-state and regional security concerns has been opening a new opportunity towards the mutual cooperation of the two neighbors on different domestic, regional and international affairs including the Nile question. Finally, Ethio-Sudan's bilateral relations in the sphere of public diplomacy, primarily because of the historically strong socio-cultural ties between peoples of the two nations, have also been additional assets for the mutual diplomatic relation of the two neighboring states within the Nile Basin.

4.2. Existential Challenges to Ethio-Sudan Relation over the Nile

In addition to the existential opportunities discussed above, there have also been various challenges to Ethio-Sudan diplomatic relation concerning the hydro-politics of the Nile. Accordingly, the findings reveal the following existential challenges to Ethio-Sudan relation over the Nile, particularly after the GERD Project: Legal challenges, Egypt's influence, lack of information and environmental impact.

4.2.1. Legal Challenges

All over the world, the legacies of the colonial era treaties have enduring impact on the inter-state relation among states sharing trans-boundary water resource. In this particular context, during the colonial period, the British were well aware of Egypt's strong dependence on the Nile water and its interest will be protected if there is secured flow of the Nile water (Woldeamlak 2007: 6). The British had sought to secure their interest, mainly in the Nile basin waters in order to ensure the production and export of long staple cotton for their industry at home at the expense of the upstream countries (Zewdie 1994: 25-261). As a result, they had planted the idea of historical or natural right on the use of the shared resources of the Nile water through the 1929 Anglo-Egyptian Agreement, which created enormous differences between the riparian states in terms of actual utilization of the resource (interviews with Mr. Zerihun, Dr. Deneke, 2 April, 2015; Dr. Marwan and Dr. Ekiram, 10 April, 2015).

After independence, without considering the interest and consent of other riparian countries including Ethiopia, Egypt and Sudan had also concluded the 1959 bilateral agreement over the Nile water resource which in essence had still made Egypt the largest beneficiary over the recourse. The whole exercise of this agreement was therefore directed mainly to the protection and promotion of the downstream interests of Egypt and the Sudan without giving any due attention to the interests of the source states, mainly Ethiopia. Moreover, using this agreement, Egypt and the Sudan also had a veto power over the projects planned and implemented by upstream states (Yacob 2007). This doctrine of historical rights or absolute territorial integrity which has been enduring legacy of colonial and post-colonial era treaties has also been foreign policy orientations of the political leaderships of the downstream states, mainly Egypt. Another adverse effect of the 1959 agreement is the fact that it made the Sudan the prisoner of Egypt as

the former cannot unilaterally terminate the terms of its international obligation without the prior consent of the latter. In other words, though Sudanese knew that this agreement is unfair and contrary to its interest, which demands nullification, they are unable to do it to avoid international responsibility (interviews Mr.Zerihun and Dr.Demeke, 2 April, 2015). All the above historical anomalies at any rate in essence imply that the Ethiopia is supposed to sacrifice the use of the Nile water to Egypt as well as the Sudan and experience drought and desertification.

To correct the above unilateral colonial and post-colonial legal regimes concluded between Egypt and the Sudan, Ethiopia has recently been crafting an appropriate legal regime that deals with fair, equitable, reasonable and sustainable utilization of the Nile water recourse. Accordingly, for the last 16 years, it has been initiating the Nile basin countries to negotiate over legal and institutional arrangements to ensure sustainable, equitable and reasonable use of the resource. The countries have negotiated and agreed on a Cooperative Framework Agreement and established the Nile Basin Commission. However, the Sudan and Egypt have not been contracting parties to this agreement claiming that it would violate those colonial and post-colonial bilateral agreements. Besides, as it has been discussed before, Sudan's reservation to the New Cooperative Framework Agreement is basically because of its international status as a prisoner of the 1959 agreement with Egypt (interviews with Mr. Zerihun and Dr. Demeke, 2 April, 2015).

To sum up, the influence of those colonial as well as post-colonial era treaties has still been one of those existential challenges to Ethio-Sudan relations since the Sudan has still been the main actor of those previous treaties, which meant to totally nullify Ethiopia's ontological status as a sovereign Nile riparian state. Besides, the implication of having two parallel legal agreements, colonial as well as post-colonial legal regimes between Sudan and Egypt on one hand and the New Cooperative Framework Agreement among other riparian countries on the other hand, is unclear and the issue will also remain a challenge for the basin countries and the international community to consistently and validly settle the Nile issue.

4.2.2. Egypt's Sphere of Influence in Sudan's Internal Affairs

Egypt has historically been considered as the hegemonic power over the Arab world. This has been primarily because of the fact that it is geo-politically centered at the strategic position controlling the Suez Canal, being the diplomatic centre of the Arab nations, and being the central actor influencing Arab-Israel conflict. Based on the above variables, witnessing its strong bargaining power in the region, Egypt has also a strong historical profile in shaping the domestic political affairs of the Sudan in order to create weak and submissive regime establishment in Sudan. As a result, in the past, Egypt was successful to impose its policy orientations easily on the Sudan particularly on the Nile question (interviews with Dr Ekram, et al, 10 April, 2015; Mr. Zerihun and Dr. Demeke, 2 April, 2015).

The existential influence of Egypt on the extremely volatile nature of Sudan's domestic politics (South-North Sudan's border disputes, internal conflicts in Darfur, South Kordofan, and Blue Nile States, and the rise of Islamic fundamentalism as an ideology of some Sudanese political parties) may possibly result in three possible scenarios. First of all, Egypt may exploit this opportunity to easily influence the existing regime in Sudan to drop its moderate foreign policy orientation towards Ethiopia over the Nile. Secondly, if the existing regime of Sudan objects such an Egypt's offer, the latter may exploit Sudan's existing volatile internal political environment to work on regime on change there. And, such a regime change in Sudan may ultimately change the position of Sudan towards Ethiopia particularly on the Nile issues. Finally, exploiting unpredictable security situation in Sudan, Egypt may work to destabilize

Ethiopia by arming Ethiopian insurgents along Ethio-Sudanese boarder. Moreover, violent conflicts between the Sudanese government and South Kordofan as well as Blue Nile States' rebellious groups along Ethio-Sudanese border could be another possible challenge on the Ethio-Sudan relation. Finally, the growing influence of Islamic fundamentalism in Sudan's internal political dynamics has its own possible implication on its foreign policy orientation towards Ethiopia since such the main actor of such an ideology are more affiliated to the position of the Islamic Republic of Egypt over the Nile water utilization against what they traditionally consider the 'Christian state' of Ethiopia (interviews with Mr. Zerihun and Dr. Demeke, 2 April, 2015).

4.2.3. Information Gap or Misunderstanding of Ordinary Sudanese on GERD

According to UNU, equipping citizens of basin countries with up to date and objective data or information on the management, development and utilization of their shared water resource will enable those states to realize informed decisions and public participations. In this particular context, unlike Ethiopia, the Sudan have not done enough to inform their respective citizens concerning the history, management, and utilization of the Nile water in general and that of the way how the recent GERD project will operate; its purpose, strength, operational procedures, the way how it reserve water will be filled. As a result, particularly from the Sudanese side, large numbers of ordinary citizens have not been clearly informed as to how the GERD will operate, so that they fear that Ethiopia may lock the dam. Furthermore, they also have concerns and misunderstanding on GERD that they will possibly face water scarcity while Ethiopia is filling the reserve water of the dam (interviews with Dr. Ekram, 10 April, 2015). Besides, as per the reflection of focus group discussion with Sudanese experts, there is an existential fear among ordinary Sudanese over the possible collapse of GERD questioning the quality or strength of the dam. Thus, large numbers of Sudanese citizens still have significant knowledge gap and distorted images about the purpose of GERD project, the Ethiopian state and its people, which have been additional challenges of Ethio-Sudan relation.

Beyond the above misunderstanding and information gap among ordinary Sudanese citizens, some informants have also noted that some Sudanese political elites definitely know that GERD does not have any significant impact on its utilization of the Nile water resource. The problem however is that they also know the project's huge significance on the Ethiopian economy, which will certainly increase the domestic financial capacity of the country to cover costs of other similar hydroelectric and irrigation projects over the Nile (interviews with engineer Simegnew Bekele and anonymous site engineer in GRED Projec,15 June 2015). Besides, according to the views of focus group discussion members with Ethiopian experts, some Sudanese fear that the long term implication of the realization of the GERD will validate the idea that the project will increase the bargaining power of Ethiopia which will ultimately change the traditional and existing joint hegemonic power of lower riparian states of the Sudan and Egypt over the utilization of the Nile water resource. To conclude, the misperception of some ordinary Sudanese citizens and few political elites about the GERD in this regard has still been other possible challenges to Ethio-Sudan relation.

4.2.4. Environmental Challenges

As compared with its catchment area, the Nile basin has low annual run off and the population is heavily dependent up on agriculture. Besides, much of the area of the basin is characterized by erratic rain fall that fluctuate temporally, seasonally, spatially and annually. The Nile basin is also affected by increasing gab between available fresh water and the demand and unregulated and unsustainable

utilization of the scarce resource (Yacob 2007: 177). Recurrent drought and floods, recurrent food insecurity and famine forced the basin, particularly Ethiopia to resort to irrigated agriculture so as to improve the living standards of the growing population and to generate hydropower to answer for its energy crisis. Climate change is also affecting water and food security in the basin. Unpredictable rainfall, drought and failure of crops aggravate the situation. Given that the water is a source of sustenance for the basin, adaptation to and mitigation of the various environmental problems cannot be effective if done unilaterally (interviews with Mr. Zerihun and Dr. Demeke, 2 April, 2015). If proper and integrated water utilization, management and utilization strategies are not formulated and implemented among Nile riparian countries to use such a scarce common water resource, it will therefore have damaging impact on Ethio-Sudan bilateral diplomatic relation.

4.3. Prospect of Ethio-Sudan Relation over the Nile or GERD

Considering the underlined opportunities as well as challenges to Ethio-Sudan bilateral relation concerning the Nile question and that of GERD Project, the prospect of their relationship is more appealing to Wolf's (2002) arguments for cooperation against the conflict models formulated by Jon Martin Trondalen (2002). Accordingly, enabling prospect of Ethio-Sudan relation has been analyzed in light of the following theoretical scenarios.

4.3.1. Prospect of Ethio-Sudan Relation over the Nile and Wolf's Four Stage Model

According to Aaron Wolf's four-stage model, there is a little possibility of conflict between riparian states that share common trans-boundary water resource (Wolf 2002). By applying Wolf's parameters (historic argument, strategic interest argument, a shared interests argument and institutional resiliency) to the Nile question or GERD project, our data predict the high prospect of cooperation over conflict between Ethiopia and the Sudan over the issue under discussion.

First of all, based on historical evidence, Sudan and Ethiopia did not have any history of open violent hostilities merely because of the Nile water resource, but religious motives and reciprocal interferences in their respective internal political affairs. However, up until the recent past, the Sudan had been dictated by Egypt's hegemonic doctrine of absolute territorial integrity over the Nile water resource which propounds the idea that lower riparian states have entitled to expect the same volume of water, uninterrupted in quantity and unimpaired in quality, flows into their territory. In the past, as a direct opposite of the position of Egypt and the Sudan, Ethiopia had been claiming for the doctrine of absolute territorial sovereignty, stipulating that it is entitled to complete control over all waters lying within its territorial jurisdiction (interviews with Dr. Demeke, 2 April, 2015). As a result, as it has also been reflected in the focus group discussions with both Sudanese and Ethiopian experts, there had been a diplomatic rift between Ethiopia and Sudan over the Nile question; however such a contradictory position between the two in the past over the utilization of the Nile water resource did not result in violent armed conflict between the parties. Besides, recently, Ethiopia has fortunately been propounding for the principles of fair, equitable, and reasonable utilization of the Nile water resource, which are currently appealing maxims of international water law as well as hydro-diplomacy. Based on the above historical empirical evidence, conflict between Ethiopia and the Sudan over the Nile water resource will be logically less likely prospect of the two states.

Our empirical evidence concerning Ethio-Sudan relation also partially reflects Wolf's second parameter, strategic interest argument, which questions the plausibility of future conflict between the two states over the Nile, particularly concerning the GERD project. First of all, though it is a downstream state, the

Sudan is not a hegemonic power over the Nile, so that it does not qualify one of the premises of Wolf's strategic interest argument. If Sudan will consider military option against Ethiopia and its dam with the possible support of the historically hegemonic power (Egypt), the outcome of the attack will be more likely to be devastative for the attacking state (the Sudan). In other words, an attack on the Ethiopian dams by Sudan could cost the latter huge blow on its basic infrastructures (dams, cities, agricultural facilities and other projects) because of imminent over flooding. Besides, the international community could not allow the Sudan to launch a military offence against Ethiopia considering the extremely volatile nature of the region as well as Ethiopia's growing partnerships or influence with the international community on regional, continual and international peace and security quests, particularly in its fight against international terrorism (interviews with Mr. Zerihun and Dr. Demeke, 2 April, 2015). Based on the above empirical evidence s supporting Wolf's strategic interest argument, future conflict between Ethiopia and the Sudan over the Nile water resource and that of GERD will therefore be unlikely as it will be against the strategic interest of the latter if it launches an attack against the former.

According to Wolf's third argument, mutual interest argument, water should be seen as a source of cooperation instead of conflict. States tend to realize the benefits of cooperation on water, and a dam can be of benefit for both the upstream state as well as the downstream state (Wolf 2002: 193f.). Presently, there are many indications that the situation of GERD could serve the mutual interest of Sudan and Ethiopia in Hydropower trade, sustainable water flow throughout the year to increase Sudan's agricultural productivity as well hydro-power generation capacity of its dam, and GERD's future contribution in protecting Sudan's dams as well as villages from sedimentation and over flooding during the rainy summer season of Ethiopia (interviews With Mr. Zerihun and Dr. Demeke, 2 April, 2015; Dr. Ekram, et al, 10 April, 2015). Based on the above empirical evidence for Wolf's mutual interest argument, future conflict between Ethiopia and the Sudan over the Nile water resource and that of GERD will have low possibility as it could not serve the mutual interest of the two neighboring states.

Finally, Wolf's fourth argument, the institutional resiliency argument, propounds the idea that treaties tend to be very resilient over longer time periods once states have finally been established (Wolf 2002: 194f.). However, the construction of the GERD today has not been part of any treaty or agreement among Sudan, Ethiopia or Egypt. Besides, the recent Cooperative Framework Agreement (CFA) could not govern Sudan and Egypt since they are not contracting parties to it (interviews with Mr. Zerihun and Dr. Demeke, 2 April, 2015; Dr Ekram, et al, 10 April, 2015). As a result, Wolf's fourth argument may not fully reflect the prospect of Ethio-Sudan relation. However, to address misconceptions and to develop mutual trust among Sudan, Egypt and Ethiopia, a panel of experts (the Nile Tripartite Committee, NTC) has been appointed to further investigate the positive and negative outcomes of the GERD project. Besides, there has also been the recent declaration of principles among Sudan, Ethiopia and Egypt regarding the GERD stipulating the principles of not causing significant harm, equitable and reasonable utilization of the Nile water resource, cooperation, and regional integration among themselves (Declaration of Principles 2015). If all the three states ratify the recent Declaration of Principles, as it has also been reflected in series of focus group discussions with both Ethiopian and Sudanese experts, it could open a new chapter on the hydro-political history of the Nile as it could maintain the mutual trust among themselves by recognizing the emerging principles governing transboundary water resources; not causing significant harm, equitable and reasonable utilization of such resources. Thus, it is important to keep in mind that the parties have attached great hopes to the recent declaration of the principles. Wolf's fourth argument could therefore be fully brought to bear on this case in defining the future cooperative prospect of Ethio-Sudan relation over the Nile.

4.3.2. Prospect of Ethio-Sudan Relation over the Nile and ABC-model

As discussed earlier, Trondalen formulated three parameters propounding the likelihood of future conflicts against cooperation between riparian states over their shared water resource. Accordingly, the parameters were: incompatible goals of states to control over and unsustainable use of international river systems, externalities created by utilizing the resource and conflicts arising as a result of externalities from other activities affecting the river systems (Trondalen 2002: 125-127). Trondalen's three variables explain the possibility of water related conflicts. However, the theories fail to reflect or represent the prospect of future Ethio-Sudan relation over the Nile.

First of all, unlike Trondalen's first scenario, there are compatible goals between Sudan and Ethiopia regarding various dams already constructed in Ethiopia as well as the ongoing GERD project. In this regard, the Tekeze dam, which had been built by Ethiopia on the Tekeze River to generate hydro power, has resulted in constant flow of water to Sudan throughout the year which has ultimately resulted in: the dramatic increase of generating additional hydropower of Sudanese dams resided in the basin, increase of agricultural productivity in Sudan by increasing the irrigable land throughout the year, and the decreasing threat of overfeeding of different Sudanese villages by Tekeze river during the rainy summer season of Ethiopia. From this practical experience, Sudan supports similar huge non-consumptive hydropower dams like GERD, which could reserve significant amount of water for its constant flow of water. In this context, the place where GERD has been constructed and the purpose of the dam which is naturally and predominantly hydroelectric power generation avoided Sudanese's suspicion that Ethiopia may exploit the dam for extensive irrigation purpose (interviews with Mr. Zerihun and Dr. Demeke, 2 April, 2015; Dr. Ekram, et al, 10 April, 2015). Moreover, as it has been reflected in a series of focus group discussions with both Ethiopian and Sudanese experts, Sudan's plain topography will not allow dam, which could reserve much amount of water so that it needs to exploit the topographic potential in Ethiopia which is conducive to such projects. Moreover, Sudan's growing interest to import hydropower from Ethiopia has contributed for the growing support of Sudan to GERD. From the above finding, Trondalen's first scenario to justify the possibility of conflict resulting from incompatible goals of riparian states related to the control over and unsustainable use of international river systems could not be among those logically feasible models defining the future prospect of Ethio-Sudan relation over the Nile.

It is always a risk that externalities such as salinity, erosion and flooding may occur as the result of grand water projects (Trondalen 2002: 125-127). Besides, pesticides and other social implications are externalities that may be the result of careless water utilization. And, the most critical situation in the construction of the GERD is undoubtedly the filling of the dam (interview with Marwan, et al, and FGD with Sudanese experts, 10 April, 2015). Depending on how much it rains, the rate might vary a lot. If the following years have heavy rain, it might take no more than two years. If it is a year with long dry periods and almost no rain at all, this might take even longer. Until the dam gets filled, this might mean that the normal flow of the Nile could vary greatly, meaning less water for Sudan as well as Egypt. The cumulative effect of the above challenges related to the GERD could create future diplomatic conflict between Ethiopia and the Sudan.

Contrary to the above arguments, a lot of researches on the dam and its possible implications have already been undertaken by the Ethiopians themselves. The construction of the dam might in the end also cause positive externalities, such as a better regulation of the flow of the Nile for the downstream countries. More importantly, from the Ethiopian side, there is an awareness of the problem that might

occur when the dam is being filled. Accordingly, Ethiopia will not be expected to block the flow of the Nile water to fill the GERD since such an act could be contrary to fundamental principles of transponder water governance and other emerging discourses of hydro-diplomacy (interviews with Mr. Zerihun and Dr. Demeke, 2 April, 2015; engineer Simegew, et al, 10 April, 2015). Moreover, as it has been reflected in the focus group discussion with both Ethiopian and Sudanese experts, to address misconceptions and to develop mutual trust among the Sudan, Egypt and Ethiopia, a panel of experts (the Nile Tripartite Committee, NTC) has been appointed to further investigate the positive and negative outcomes of the GERD project. Besides, there is also the recent declaration of principles among Sudan, Ethiopia and Egypt regarding the GERD stipulating the principles of not causing significant harm, equitable and reasonable utilization of the Nile water resource, cooperation, and regional integration among themselves (Agreement on the Declaration of Principles, 5 March, 2015). To sum up, contrary to Trondalen's argument, our data sources clearly affirm the idea that the future prospect of Ethio-Sudan relation over the Nile and that of the GRED project will more likely be peaceful and in the interest of hydro-diplomacy rather than violent conflict.

5. Conclusion

Historically, with the geographical and socio-cultural proximity and their crucial roles in the hydro-political dynamics of the Nile, Ethiopia, and the Sudan have been strategically significant to each other. Based on critical analysis of our data sources concerning the existential challenges and opportunities of Ethio-Sudan relations over the Nile, the future prospect of their relationships could be more appealing to Wolf's justifications for the likelihood of cooperation than Trondalen's scenarios explaining for the possibility of water related conflicts; ABC-model.

In light of the above finding, it is highly advisable that both Ethiopia and Sudan design and implement foreign policy strategies to capitalize on existing opportunities and minimize the challenges for the positive prospect in their bilateral relations concerning the Nile question. Both Ethiopia and Sudan need also facilitate their economic integration particularly in hydro-power trade, foreign direct investment and boarder trade. They need to strive to formulate and implement proper and integrated water management and utilization strategies among Nile riparian countries. Both countries need to invite Egypt and exploit its expertise to maintain mutual trust and better accomplish different projects over the Nile.

Ethiopia is expected to take the concerns of the Sudan over the operation and filling of the reserve water of the GERD. Besides, using its diplomatic channels, Ethiopia toned to communicate the comparative advantages that the GERD could potentially have for Sudan. Sudan is also expected to mitigate Egypt's sphere of influence over its internal political affairs. It also needs to detach itself from Egypt's traditional political rhetoric claiming for absolute territorial integrity concerning the Nile water utilization and advocate the principle of equitable, fair and reasonable utilization of the resource. Accordingly, it should further commit itself for cooperation and hydro-diplomacy against conflict to govern the utilization, management and development of their shared water resources of the Nile. Finally, through regional economic integration and hydro-diplomacy of different sorts risks could also be avoided, and existential opportunities could sustainably override the challenges of bilateral relations of the two countries concerning the Nile issue, particularly of GERD project.

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