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Deutsches Institut für Entwicklungspolitik

German Development Institute

Discussion Paper 5/2015

Revisiting Hydro-hegemony from a Benefit-Sharing Perspective:

The Case of the Grand Ethiopian Renaissance Dam

Rawia Tawfik

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Bonn 2015

Discussion Paper / Deutsches Institut für Entwicklungspolitik
ISSN 1860-0441

Die deutsche Nationalbibliothek verzeichnet diese Publikation in der Deutschen Nationalbibliografie; detaillierte bibliografische Daten sind im Internet über http://dnb.d-nb.de abrufbar.

The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data is available at http://dnb.d-nb.de.

ISBN 978-3-88985-669-2

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Abstract

Over the last decade, hydro-hegemony has gained currency as a theoretical framework for analysing transboundary water conflict and cooperation. This study argues that, although hydro-hegemony provides a useful analytical tool for understanding hydro-political interactions around transboundary rivers, it has not sufficiently questioned the tactics used by counter-hegemons. Rather than taking counter-hegemony for granted as a means towards a more equitable order for sharing water and benefits, the study highlights the importance of weighing up the advantages and disadvantages of counter-hegemonic tactics in general, and of large dam projects in particular, and examining their objectives, along with the nature of the emerging order that results from their enforcement. In doing so, it presents the first attempt to employ the concept of benefit-sharing to assess the impacts of counter-hegemonic tactics on the hegemon, the non-hegemon(s), the prospects of cooperation between riparian states, and the river. It uses the case of the Grand Ethiopian Renaissance Dam (GERD) constructed on the Blue Nile to examine the opportunities and challenges created by counter-hegemonic tools. The study argues that although the GERD is a 'game changer' that challenges Egypt's long-standing hegemony in the Nile Basin, Ethiopia's approach in constructing the dam has increased uncertainties about the project's impact on Ethiopia, on downstream countries, and on prospects of cooperation in the Eastern Nile on and beyond the project. Increasing the dam's size and its storage capacity compared to earlier plans opened a debate on whether the objective of the dam is actually more about controlling water flow than about the production of hydropower. The political tensions around the project have led to the formation of new regional relationships to protect or contest the construction of the dam, a tendency that continued even after the agreement between Egypt, Ethiopia and Sudan on general principles to reduce tensions over the project. Contrary to the predictions of hydro-hegemony scholars, a less stable order characterised by 'contested control', rather than an equitable order of 'shared control', may emerge if Eastern Nile countries fail to address the outstanding issues related to the project. The study finally suggests steps to build trust and translate the recent Declaration of Principles between Egypt, Ethiopia and Sudan into a benefit-sharing deal.

Key words: transboundary rivers, Nile River, dams, benefit-sharing, hydro-hegemony, GERD, hydropower, Egypt, Ethiopia.

Acknowledgements

This research paper was written during the author's research stay at the German Development Institute/Deutsches Institut für Entwicklungspolitik (DIE) from February to July 2015, supported by a German-Egyptian Research Short term Scholarship (GERSS) co-funded by the Egyptian Ministry of Higher Education and the Deutscher Akademischer Austauschdienst (DAAD). The author would like to thank Ines Dombrowsky for her constructive inputs and guidance at different stages of writing the paper, Waltina Scheumann for her support and useful comments, and Silke Weinlich for her insightful remarks on the first draft of this paper.

Bonn, July 2015 Rawia Tawfik

Contents

Abbreviations

BCM	Billion cubic metres
CAADP	Comprehensive Africa Agricultural Development Programme
CFA	Cooperative Framework Agreement for the River Nile Basin
CPA	Comprehensive Peace Agreement (in Sudan)
CRGE	Climate Resilient Green Economy
DOP	Declaration of Principles
DRC	Democratic Republic of the Congo
EEPCO	Ethiopian Electric Power Corporation
ENSAP	Eastern Nile Subsidiary Action Programme
ENTRO	Eastern Nile Technical Regional Office
EPRDF	Ethiopian People's Revolutionary Democratic Front
GDP	Gross domestic product
GERD	Grand Ethiopian Renaissance Dam
GTP	Growth and Transformation Plan
GWh/y	Gigawatt hours per year
HAD	High Aswan Dam
IMF	International Monetary Fund
IPoE	International Panel of Experts
km	Kilometres
m^3	Cubic metres
MFA	Ministry of Foreign Affairs of the Arab Republic of Egypt
MIT	Massachusetts Institute of Technology
MoFED	Ministry of Finance and Economic Development of the Federal Democratic Republic of Ethiopia
MoI	Ministry of Information of the Federal Democratic Republic of Ethiopia
MW	Megawatt
MWR	Ministry of Water Resources of the Federal Democratic Republic of Ethiopia
NBC	Nile Basin Commission
NBI	Nile Basin Initiative
PASDEP	Plan for Accelerated and Sustained Development to End Poverty
SAP	Subsidiary Action Programmes
SIS	State Information Services of the Arab Republic of Egypt
SVP	Shared Vision Programmes
TNC	Tripartite National Committee
TPLF	Tigrayan People's Liberation Front
TRC	Tripartite National Committee
USBR	United States Bureau for Reclamation

USDM	Million US dollars
USD/KWh	US dollars per kilowatt hour
WRMP	Water Resources Management Policy

1 Introduction

Over the last decade, the hydro-hegemony framework has enriched the debate on trans-boundary interactions (Cascão, 2008; Cascão, 2009; Cascão & Nicol, 2011; Mirumachi, 2015, pp. 1-15; Zeitoun & Allan, 2008; Zeitoun & Warner, 2006). The framework applied the concept of hegemony to illustrate how powerful riparian states use subtle ways to maintain their control. Rather than using coercion to ensure compliance from co-riparians, hydro-hegemons tend to depend on their capacity to 'set the rules of the game'. Based on their power resources, these hegemons may work to enforce a regime of 'consolidated control' over transboundary water resources characterised by little competition and a limited degree of cooperation. This stands in contrast with the aspired order of 'shared control' in which cooperation based on equitable utilisation of shared resources exists. It is also different from an order based on 'contested control' where competition among riparian states is fierce, with high potential of conflict (Zeitoun & Warner, 2006, pp. 437-438).

By examining the tactics used by the hegemon, the framework revealed the political process behind the control, utilisation and allocation of water resources in shared rivers. Rather than looking at water resources as a source of conflict or cooperation (Bulloch & Darwish, 1993; Wolf ,1998), hydro-hegemony scholars explained how and why conflict and cooperation co-exist, and what this means for the distribution of water resources among riparian states (Cascão, 2008; Cascão, 2009; Cascão & Nicol, 2011; Mirumachi, 2015, pp. 1-15; Zeitoun & Allan, 2008; Zeitoun & Warner, 2006). In doing so, they aimed at developing a critical theory of hydropolitics that examines power asymmetries, and illustrates how these asymmetries change as a result of contestations of hegemony by non-hegemonic riparian states. The non-hegemon may combine the 'apparent consent' towards the dominant order through its reluctance, or inability, to increase its utilisation of water resources, with a 'veiled contest' of this order using various diplomatic, discursive and legal tactics. In cases of negative hydro-hegemony, where the hegemon sets up an order that works in his favour, counter-hegemonic tactics are, according to hydro-hegemony scholars, necessary *"to change water control and allocation to a more equitable configuration"* (Zeitoun & Cascão, 2010, p. 28). A positive model of hydro-hegemonic leadership may exist if the hegemon's actions deliver benefits to all riparian states (Zeitoun & Warner, 2006, pp. 438-439).

If counter-hegemonic tactics have the potential opportunity of creating a more equitable order in a transboundary river basin, what are the challenges imposed by these tactics? Do these tactics actually contribute to a more equitable regime of water- and benefit-sharing, to a more unstable order of 'contested control' over the river, or to another hegemonic order that reproduces the inequalities of the past, only with new hegemons? These questions, which are overlooked in the hydro-hegemony literature, are the focus of this study.

In addressing these questions, the study employs the concept of benefit-sharing to assess the impacts of counter-hegemonic mechanisms. The concept proposed transcending the tensions over sharing water by focusing on generating a range of benefits from the use of water that can be shared among riparian states. These benefits may include benefits to the river and to riparian states, and benefits from cooperation beyond the river and from the reduction of costs of tensions because of the river (Sadoff & Grey, 2002).

The study uses the case of the Grand Ethiopian Renaissance Dam (GERD) on the Blue Nile to assess the opportunities and challenges created by counter-hegemonic tools. The Nile is shared by eleven countries: Burundi, Egypt, Eritrea, Ethiopia, Kenya, Rwanda, South Sudan, Sudan, Tanzania, The Democratic Republic of Congo (DRC), and Uganda (see Map 1). For decades, Egypt, the downstream riparian state, has been able to secure its water needs from the Nile, denying upstream countries the right to construct projects that affect its acquired share. Threats of using force against projects constructed without prior negotiation with Egypt, defending colonial agreements that gave Egypt a veto power against these projects, and shaping the discourse on the utilisation of water resources were used by Cairo to maintain its hegemonic position in the basin.

As the largest dam constructed on the Blue Nile, from which 59% of the water reaching Egypt originates, the GERD constitutes a real challenge to Egypt's long-standing hegemony in the Nile Basin. At the same time, although the Ethiopian government had unilaterally started constructing the dam in April 2011, it has moved to co-ordination with downstream Egypt and Sudan by signing a Declaration of Principles on the project in March 2015. The evolution of interactions about the project, from unilateralism and confrontation to the beginning of cooperation, allows for a qualitative assessment of the benefits and costs of non-cooperation and cooperation from a benefit-sharing perspective.

The study aims at answering the following questions:

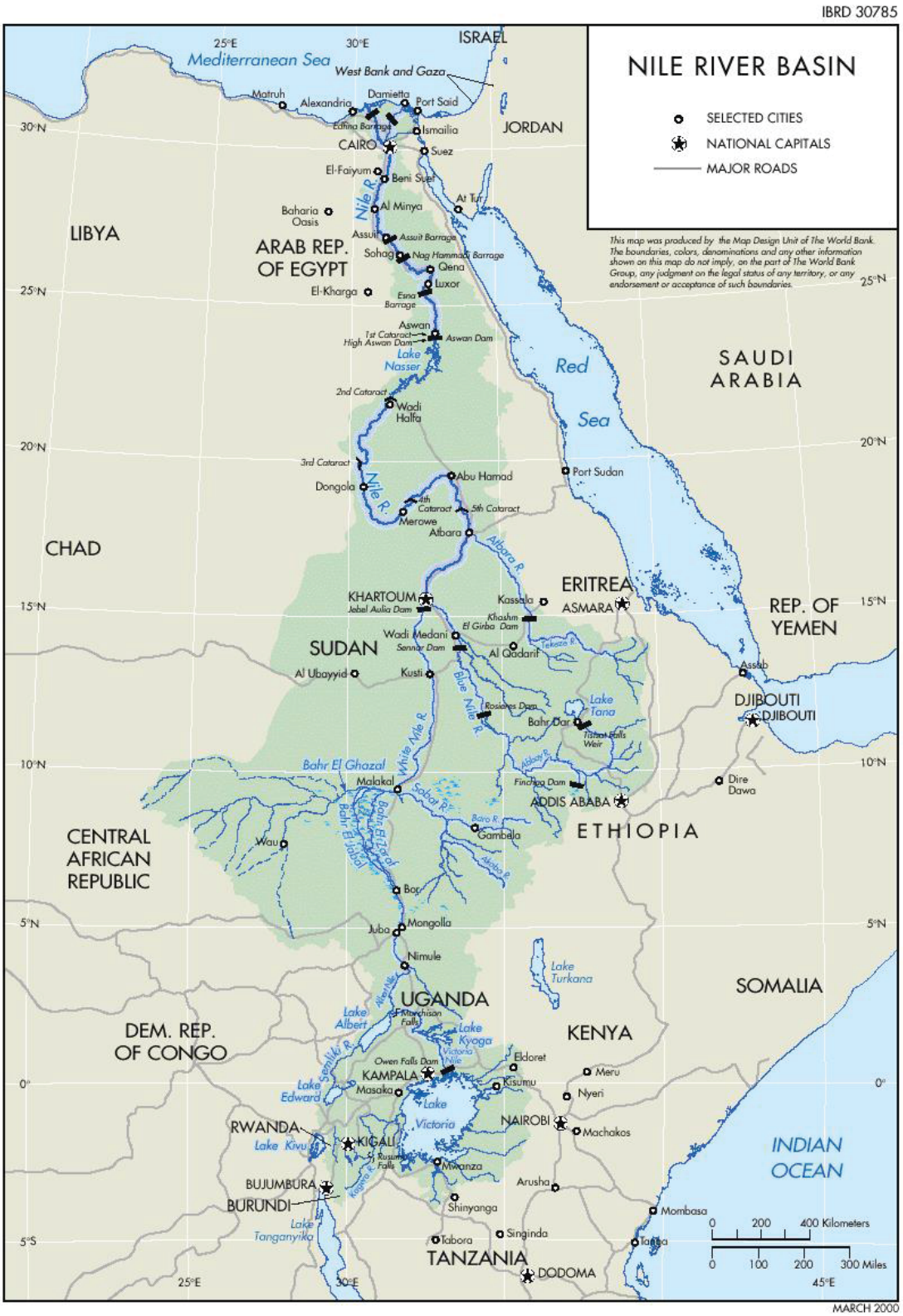
- Does the GERD represent a shift in Ethiopia's Nile policy from the 'apparent consent' to the status quo, and the 'veiled contest' of Egypt's hydro-political hegemony through gradual tactics to an 'overt contest' of this hegemony and perhaps the enforcement of a new hegemonic order?

- Why did Ethiopia depart from the multilateral approach and joint projects proposed by the Nile Basin initiative (NBI) to adopt a large, unilateral, and self-funded project? And what were the tactics followed by Ethiopia to implement and market the project?

- What are the potential impacts of the GERD on Ethiopia, on downstream countries, on the river and on cooperation between the three Eastern Nile countries (Egypt, Ethiopia, and Sudan)? What potential benefits can the project generate for the riparian states? What incentives exist for cooperation towards achieving these benefits? What are the potential negative effects? To what extent does the project reduce the cost of tensions because of the river? What benefits does the project generate to the river itself? And what opportunities does the project create for cooperation beyond the river?

- What is the nature of the emerging order in the Nile Basin with the implementation of the GERD? Will the Ethiopian tactics in planning and implementing the GERD lead to a more equitable order or to another hydro-hegemonic order that reproduces the inequalities of the past but with new hegemons?

Map 1: The Nile River Basin



Source: Map design unit of the World Bank (2000).

The study is divided into five sections. The first section introduces the theoretical arguments of the hydro-hegemony framework and proposes the critical assessment of counter-hegemony from a benefit-sharing perspective. The second section illustrates the reasons for selecting the case study and lists data sources. Putting the GERD in its wider context, the third section discusses dams in Ethiopia's Nile policy as a tool for countering Egypt's hegemony. The fourth section applies the concept of benefit-sharing on the GERD by examining its impacts on the Eastern Nile countries, on the river and on cooperation on and beyond the project. The final section provides conclusions and policy recommendations.

2 Power and large dams on shared rivers: revisiting hydro-hegemony from a benefit-sharing perspective

2.1 Problematising counter-hegemony

Conventionally, power asymmetries have been underplayed in literature on water conflict. The hydro-hegemony framework has brought power to the centre of analysing transboundary water interactions. It suggests that power, rather than international law, riparian position, or even the availability of water resources, is the primary explanation of the outcomes of these interactions. Power asymmetries explain why conflicts over transboundary water resources have not led to water wars. At the same time, in cases of unequal distribution of power, cooperative mechanisms in transboundary rivers often reflect the interests of the powerful, and are thus tools of domination and coercion, rather than benefit-sharing (Zeitoun, 2008; Zeitoun & Allan, 2008; Zeitoun & Mirumachi, 2008; Zeitoun & Warner, 2006).

But the key contribution of the hydro-hegemony literature is not the explanation of transboundary hydro-political interactions by reference to power, a variable suggested by earlier writings (Frey & Naff, 1985; Lowi, 1993). Rather, it is the illustration of how this power is exercised. In this regard, Zeitoun and Warner distinguished between four mechanisms. The most effective of these mechanisms is the ideological/hegemonic tactic through which the powerful riparian state shapes the dominant beliefs and discourses in the basin, leading the other riparian states to accept its discourse as the 'natural order'. Constructing knowledge about the basin is one example of this ideological mechanism. The definition of the type of discourse that is politically acceptable, or the 'sanctioned discourse', is a second example. This rhetoric proposed by the hegemon becomes dominant in media, academic and policy circles that form 'coalitions of discourse' to defend and promote it. This is sometimes combined with securitisation, by *"promoting water projects or issues to a national security concern"* in order to mute counter discourses (Zeitoun, 2008, pp. 23-45; Zeitoun & Warner, 2006, pp. 446-449).

This does not mean that the hegemon will exclude the use of the other three mechanisms. These mechanisms can be: a) coercive (the use or threat of using force, covert operation to undermine competitors, or diplomatic pressure), b) utilitarian (offering incentives), or c) normative/legal (signing treaties that maintain the hegemon's position). The use of these different mechanisms depends on the strategies selected by the hegemon. Focusing on *resource capture* leads the hegemon to use coercive measures, including the unilateral construction of hydraulic projects. *Integration*, the second strategy, employs more

utilitarian mechanisms to share some benefits (but not necessarily water resources) with non-hegemons. Finally, *containment* applies normative and ideological mechanisms to ensure compliance of non-hegemons. The use of these mechanisms and strategies also depends on power resources at the disposal of the hegemon, including military power, international alliances, the ability to mobilise financial support, and the riparian position on the water course (Zeitoun & Warner, 2006, pp. 444-446).

By revealing these power mechanisms, hydro-hegemony scholars sought to uncover the politics silenced by mass media, donor agencies, and political elites, and to provide a counter discourse that challenges the status quo and the narrative provided by these actors (Zeitoun, 2008, pp. 2-31; Zeitoun & Allan 2008). Proposing a counter discourse is part of challenging 'negative dominant hydro-hegemony' where the hydro-hegemon, based on its relative economic, political, and military power, enforces 'consolidated control' over the shared river, creating a situation of unequal utilisation of water resources. This situation results in a certain degree of conflict, whether manifest or hidden. Most of the cases analysed by hydro-hegemony scholars; namely the Nile, Jordan, Tigris and Euphrates river basins, fall into this category. In contrast, 'positive hydro-hegemony' is associated with delivering benefits to all or most riparian countries (Zeitoun & Warner, 2006, pp. 438-439). South Africa's role in the Orange River Basin has been suggested as one example of such a model (Turton & Funke, 2008).

Against this background, the aim of the hydro-hegemony framework was to motivate a change from a conflictual, unequal order based on 'consolidated control' and characterised by a negative form of hydro-hegemony, to a more stable and equal order based on 'shared control', a positive form of hegemony (Zeitoun & Warner, 2006), and 'principled water sharing and governance' (Zeitoun & Allan, 2008, p. 4). The policy implication of this analysis, especially in relation to the role of the donor community, is the need to support weaker states to 'level the playing field' and encourage more equitable utilisation of transboundary resources (Jägerskog, 2008, p. 2; Zeitoun & Warner, 2006, pp. 454).

Cascão extended the discussion of the hydro-hegemony literature to examine the mechanisms used by non-hegemons to contest the domination of the powerful. Using the case of the Nile, she argued that the fact that power among riparian states is asymmetrical does not mean that the domination of the hegemon is incontestable. She demonstrated how counter-hegemony works in practice by illustrating the mechanisms used by Ethiopia, the upstream country from which 86% of the Nile water originates. According to Cascão, Ethiopia has combined the 'apparent consent' for Egypt's hegemony which resulted from the non-prioritisation of the Nile water in Ethiopia's development plans, with a 'veiled contest' of this hegemony through a number of reactive and active measures. These measures include: protesting against Egypt's unilateral projects to utilise Nile water in international fora; forming alliances to counter-balance Egypt's power; participating in cooperative schemes to change the status quo; trying to mobilise international funding for hydraulic projects; developing domestic expertise in hydrological and hydraulic issues; challenging Egypt's dominant discourse on water security; and stressing the legal principle of 'equitable utilisation' of water resources (Cascão, 2008, 20-27). More generally, hydro-hegemony scholars classified mechanisms of contestation as coercive (the use or the threat to use force, non-cooperation), leverage (construction of infrastructure, forming of alliances, engaging in cooperative mechanisms) and liberating (replacing dominant discourses and agenda). These mechanisms co-exist with the tactics

used by Egypt to maintain its hegemony and ensure compliance (Cascão, 2011, pp. 34-35; Zeitoun et al., 2014, pp. 4-12).

Thus, according to the hydro-hegemony framework, unilateral construction of dams is considered as a tactic used by non-hegemons to acquire leverage in their bid to contest the power of the hegemon and establish a more equitable order. In light of this view, counter-hegemonic tools, including the launching of dams, are largely considered as unproblematic, if not desirable. For Cascão, the objective of counter-hegemonic tactics is to *"challenge unequal hydro-political configurations and, eventually contribute towards a more sustainable and equitable water and benefit-sharing regime"* (Cascão, 2008, p. 13; see also Cascão, 2011, p. 35). The expected result of the contestation of power asymmetries is, thus, a 'shared control of the water resources'. This applies to Ethiopia whose main goal, according to Cascão, is *"to put forward a new hydro-political agenda based upon more equitable principles, including a redefinition of water allocations"* (Cascão, 2008, pp. 17, 21).

This paper argues that by seeing counter-hegemonic tools as legitimate means to create social and political change, hydro-hegemony scholars have uncritically endorsed these tools, even if implicitly. Their focus was on describing and prescribing, rather than assessing, mechanisms adopted by non-hegemons. They noted that counter-hegemons may use the same tactics employed by the hegemon in the past (Zeitoun et al., 2014, p. 7), but were more interested in how the counter-hegemon could challenge 'malign hegemonies' (Farnum, 2014), and the opportunity that this challenge may provide for creating a more equitable regime. Zeitoun and Warner (2006, p. 440) made a passing reference to the fact that *"just as the mainstream discourse defined by the hegemons may go unchallenged, however, discourse that resists hegemony runs the risk of being self-referential"*. Cascão has not failed to note the tendency towards unilateral projects in upstream countries and their potential negative impact on cooperation. However, she maintained that 'unilateralist and multilateralist hydro-political trends' continued to coexist in the basin (Cascão, 2009; Cascão & Nicol, 2011).

Rather than taking counter-hegemonic mechanisms in general, and dam projects in particular for granted, this paper proposes to scrutinise these mechanisms by highlighting the importance of examining their objectives, weighing up their benefits and costs, and exploring the nature of the new order that results from their enforcement. In other words, if the aim of counter-hegemony is to challenge and change the status quo by providing alternatives (Cascão, 2008, p. 17; Cox, 1981, pp. 150-151), the present study is about the new realities (or uncertainties) produced by this change.

Questioning counter-hegemonic endeavours is important for two related reasons, one is analytical while the other is policy-relevant. The analytical reason has to do with drawing the line between contesting the hegemon and establishing a new order that may reproduce the inequalities of the past. If counter-hegemony happens when *"non-hegemonic parties partially or totally break the consent"* over the hegemon's leadership (Cascão, 2008, p. 16), the question then arises of how to ensure that this break leads to a more just order rather than producing new injustices.

The second, and more practical, reason relates to the actual outcomes and rewards of counter-hegemony. Given the degree of dissatisfaction of non-hegemons that have been

deprived of a fair utilisation of water resources for decades, contesting the hegemon may become a geo-strategic objective rather than a means of establishing a more equitable order. In this context, large hydraulic projects may be pursued to challenge the dominant order, regardless of their technical feasibility, economic viability, or social and environmental impact. Weighing the opportunities and challenges of these projects is thus necessary to reveal the objective of counter-hegemonic tools. Additionally, questioning counter-hegemonic projects means that, contrary to what hydro-hegemony scholars suggest, donor countries should look critically at projects implemented by weaker riparian states before supporting them as a means to encourage more equitable utilisation of transboundary water resources.

2.2 Evaluating counter-hegemony from a benefit-sharing perspective

Do counter-hegemonic mechanisms lead to the sharing of control, benefits, and/or water resources equitably, and subsequently to a more stable and cooperative order as the hydro-hegemony framework suggests; or to uncertain benefits, 'contested control', or new unequal distribution of the benefits of shared rivers? To answer this question, I propose that one integrates the concept of benefit-sharing into the analysis of counter-hegemony. The concept refers to benefits derived from cooperation in transboundary rivers, but is also useful for evaluating the costs of non-cooperation.

The variables of interest in the hydro-hegemony framework and the benefit-sharing concept are not unrelated. Power relations among riparians can hinder or induce cooperation to achieve shared benefits (Hensengerth, Dombrowsky, & Scheumann, 2012, pp. 29-30). At the same time, cooperation (and benefit-sharing) are among the mechanisms used by the hegemon to maintain his position and by the non-hegemon to reform the dominant order (Cascao, 2008, pp. 23-24; Zeitoun et al., 2014, p. 9; Zeitoun & Warner, 2006, p. 447). This paper argues that benefit- sharing can also be used to complement the hydro-hegemony framework by analysing the cost and benefit of counter-hegemonic hydraulic projects.

The idea behind the benefit-sharing concept is to widen the scope of benefits associated with cooperation to include areas that are not directly related to the river and that transcend the tensions over water allocation. According to Sadoff and Grey (2002), four categories of benefits can be achieved from cooperation in transboundary rivers. The first category is *benefits to the river*, which may include improving water quality and water flow, protecting watersheds, preserving soil fertility and reducing sediment soil transport, and protecting biodiversity. The second category is *benefits from the river*, which focuses on reaping economic benefits (food and energy production, navigation) from basin cooperation in the river. Constructing hydraulic projects, dams or irrigation schemes, are important – but also controversial tools – for increasing these benefits, given their potential environmental and social impacts. The third category is the *reduction of costs because of the river*, which refers to saving the costs of non-cooperation and reducing the tensions resulting from conflicts over shared water resources. Constraining regional relations and diverting resources away from economic development towards military spending are examples of these costs. The last category is the *benefits beyond the river*, which refers to cooperation in other fields, including enhanced trade relations, hydropower interconnection and joint investments. Positive progress in one category may lead to

simultaneous advances in other types, but setbacks in one area can also hinder cooperation in others (Sadoff & Grey, 2005, p. 3).

Although the benefit-sharing approach was proposed to transcend the debate and contention around sharing the water of the river to develop and share the benefits emerging from the use of the river (Hensengerth et al., 2012, p. 3; Sadoff & Grey, 2002, p. 396), in practice, sharing the benefits of cooperation may not be an 'alternative strategy' to sharing water. As Dombrowsky (2009, 2010b) argues, in cases where negative external effects are expected from a water use or project constructed in a riparian state, water allocation remains at stake. On the contrary, in cases of positive externalities (e.g., reduction of silt or floods through the construction of dam projects), the nature of rewards for all the parties involved, rather than water rights, is the most important factor determining the prospects of cooperation. This structure determines whether it is rational for a riparian state to go ahead with a certain measure or project unilaterally or to engage co-riparian states. In both cases, cooperation depends on the availability and sharing of information and on agreement on sharing the costs and benefits of cooperation. In examining benefit-sharing measures, one needs to analyse the type of impacts expected, the issues at stake, and in particular, the link between water and benefit-sharing in the arrangements negotiated between co-riparian states.

Against this background, the decision of any riparian state to engage in (or disengage from) a cooperative scheme depends on its perception of the benefits it would gain (or lose) as a result. To motivate cooperation, Sadoff and Grey (2005) suggested three practical steps: The first is to expand the perceptions of the benefits secured by cooperation to include more than one of the four types of benefits identified above. The second step is the exploration and negotiation of distribution of costs and benefits of cooperation in a way that is seen as fair to all the riparian states involved. A project that is designed to deliver optimal benefits to a riparian state in hydropower production or irrigation may be perceived as unfair by others. In such a case, redistribution of costs and benefits, and compensation, may be necessary to convince parties of the benefits of cooperation. Payments for benefits, purchasing, financing and ownership agreements, and extracting benefits from unrelated projects, are all mechanisms to bring about this sharing of benefits. Linking the delivery of some positive external effects to one riparian state and the provision of other river-related benefits to other states, or the so-called 'issue-linkage', has been suggested by other scholars (Daoudy, 2009; Dombrowsky 2010a, 2010b; Phillips, Daoudy, McCaffrey, Öjendal, & Turton, 2006, pp. 173-175). The third step is the examination of alternative modalities of cooperation to maximise benefits for all parties. Co-riparian states may move on the 'cooperation continuum' from unilateral actions to limited co-ordination (sharing of information), collaboration (adaptation of national plans for mutual benefits), and finally to joint action (investments or projects). They have to decide which mode of cooperation would generate benefits that are seen as feasible and fair.

The benefit-sharing approach was applied to dam projects on shared rivers (Dombrowsky et al., 2014; Hensengerth et al., 2012; Scheumann, Dombrowsky & Hensegerth, 2014). Depending on a few case studies[1], Hensengerth, Dombrowsky and Scheumann suggested

1 These cases are: the Diama and Manantali on River Senegal; Duncan, Keenleyside and Mica dams on Columbia River; The Lesotho Highland Water Project on the River Senqu-Orange; the Aswan High Dam on the Nile River; and the Kariba dam on the Zambezi River.

specific incentives that drive cooperation in dam projects as well as mechanisms to share their benefits. Both factors depend on the location of the dam, its purpose, and each riparian state's interest in cooperation. Addressing the financial or technical limits of unilateral action, increasing aggregate benefits from a modified dam design, achieving these benefits from a project on a border river, or reducing the costs of political tensions may all provide incentives for cooperation. To share benefits, a riparian state may agree to share costs with other riparian states in proportion to the benefits they accrue while jointly owning the new infrastructural project, compensate the riparian state concerned for altering its dam design and share the payoffs of the project, or fund the construction of a project in another country in return for sharing its benefits. In any case, to be defined as benefit-sharing agreements, arrangements agreed upon on dam projects should leave the riparian states concerned better-off after the construction of the dam.

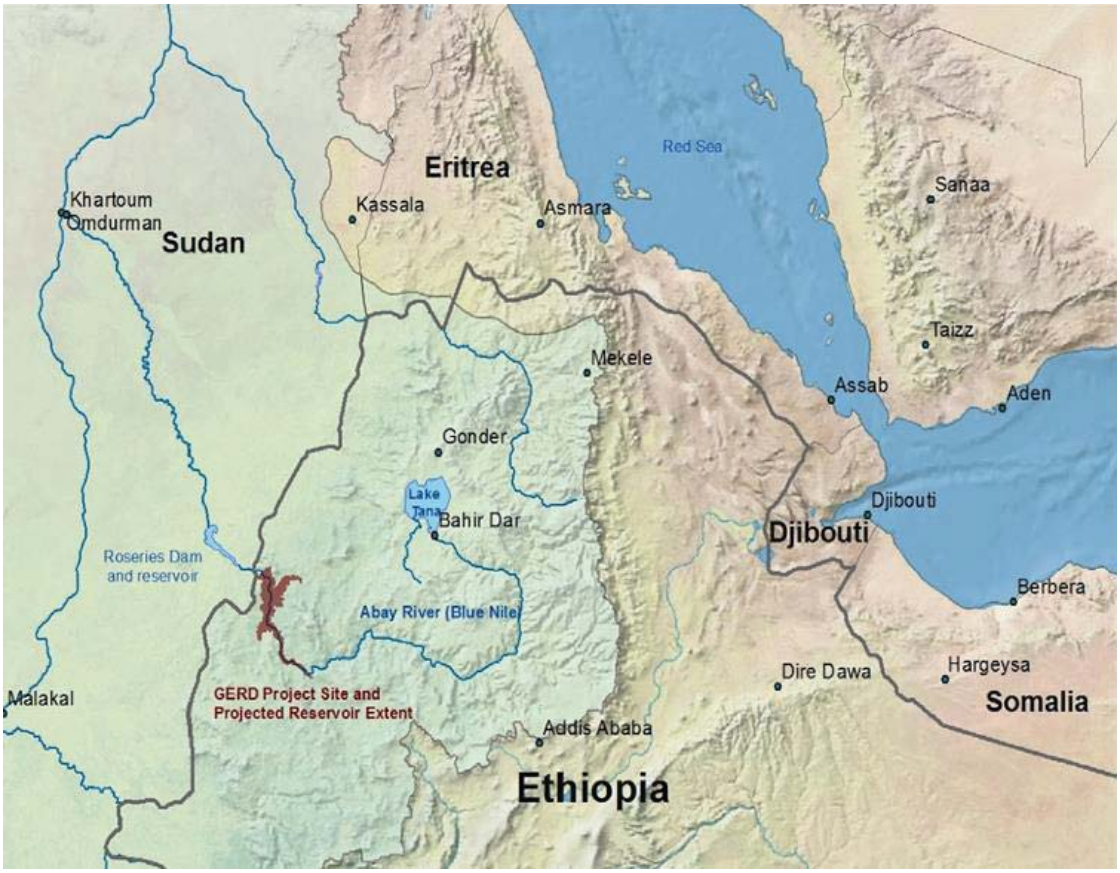
Accordingly, evaluating dam projects as counter-hegemonic tools through the lens of benefit- sharing requires the analysis of the benefits (and costs) generated by these projects to riparian states, the incentives that exist for cooperation to achieve these benefits, and the extent to which the projects reduce tensions because of the river, create opportunities for cooperation beyond the river, and deliver benefits to the river.

3 The case study and data sources

The paper examines the case of the Grand Ethiopian Renaissance Dam (GERD), a hydropower project under construction on the Blue Nile, about 20 km upstream from the border with Sudan (see Map 2). Launched in April 2011 and due for completion in 2017, the GERD is the largest infrastructural project in a Nile upstream country. The dam will be 170 metres high with a reservoir of 74 billion cubic metres (about 1.5 times the mean annual discharge of the Blue Nile), a 50 m high saddle dam, and a targeted power-generating capacity of 6,000 MW. The estimated cost is USD 4.8 billion (which accounts for about 10% of Ethiopia's gross domestic product in 2013) (Salini impregilo, s. a.; International Panel of Experts [IPoE], 2013, p. 7).

The GERD is an interesting case for evaluating counter-hegemony from a benefit-sharing perspective for two reasons. First, as noted earlier, the Nile River was studied as one of the cases of 'negative hydro-hegemony' where the long-standing hegemon, Egypt, utilised water resources at the expense of upstream riparians. Given its unprecedented scale, the GERD constitutes a real challenge to this Egyptian hegemony and signals a remarkable rise in Ethiopia's potential for exploitation of the Nile water. The launch of the project cannot be seen in isolation from other significant changes in power relations in the Nile Basin over the last decade. It is particularly significant that the GERD was initiated just one year after five Nile Basin countries, including Ethiopia, signed the Cooperative Framework Agreement for the River Nile Basin (CFA), a step that Egypt regarded as a threat to its historical rights in the Nile water. Egypt's subsequent withdrawal from the Nile Basin Initiative, the regional platform established in 1999 for basin cooperation, and the freezing of plans for joint hydropower projects, are cited by Ethiopia as reasons for proceeding with the unilateral construction of the GERD.

Map 2: The location of the GERD



Source: Jennifer C. Veuilleux (2014), reproduced with the authorisation of the author.

Hydro-hegemony scholars celebrated the two developments – the signing of the CFA and the launching of the GERD – describing them as a *"contestation of both the rules of the game and the sanctioned discourse underpinning the previous and long-standing hegemonic arrangement maintained by Egypt"* (Zeitoun et al., 2014, p. 13). Building the GERD, in particular, was regarded as a step that would not only change realities on the ground, but would also set a new discourse and agenda on hydraulic projects in the basin, ending the era of 'veiled' and 'apparent' consent (Zeitoun et al., 2014, pp. 13-14).

In line with this assessment, other scholars variously described the signing of the CFA and the construction of the GERD as the culmination of 'an African spring' that would engender *"more balanced power relations vis-à-vis the downstream riparians"* (Salman, 2013, p. 27), a 'revolution' that would help Nile riparian states transcend the 'hydro-political stalemate' and work for greater regional integration (Verhoeven, 2011), and the beginning of an *"end to Africa's oldest geopolitical rivalry"* (Gebreluel, 2014, p. 25). The unilateral construction of the GERD was viewed as a natural reaction to the failure to reach a compromise between upstream and downstream countries on a legal framework to organise the utilisation of water resources and to deliver tangible results from cooperative institutions. It was deemed an exercise of Ethiopia's right to use the water resources within its territorial jurisdiction in the interests of its nation (Arsano, 2012, p. 3; Mulat & Moges, 2014). Even scholars who examined the GERD more critically – that is, in disagreeing with the way in which it was constructed – regarded the project as a tool to

force Egypt to *"behave in a more cooperative and accommodating way"* (Chen & Swain, 2014, p. 17).

These scholars focus on the benefits that the GERD may deliver to Ethiopia, and to some extent to downstream countries, especially Sudan, but downplay its costs and the impact of these costs on future cooperation. Furthermore, they often do not substantiate the argument that the GERD would contribute to a more equitable utilisation of water resources, nor do they define what they mean by 'equitable utilisation'. The present study aims at transcending this shortcoming by weighing up the potential benefits and costs of the Ethiopian approach in initiating the project.

Interestingly, although the project was unilaterally initiated by Ethiopia, the three Eastern Nile Basin countries, Egypt, Sudan and Ethiopia, have – even if reluctantly as in the case of Egypt – gradually moved to some modalities of cooperation. This is the second reason why the GERD represents an interesting case for evaluating counter-hegemonic tactics from a benefit-sharing perspective. From the outset, Ethiopia used the language of benefit-sharing to mobilise regional and international support for the project. In his speech on launching the GERD, the late Ethiopian Prime Minister Meles Zenawi (2011b) claimed that the project's benefits will not be restricted to Ethiopia, but will extend downstream to Sudan and Egypt. He argued that the two countries were expected to share the costs, suggesting that Sudan provided 30%, while Egypt covered 20% of the project's cost, but noted that the climate for such a benefit-sharing arrangement did not exist. It was only a year after construction of the project commenced that an International Panel of Experts (IPoE), comprised of experts from the three countries in addition to four international experts, began examining the documents of the project to reduce tensions and build trust. To overcome the stalemate in technical negotiations over the implementation of the panel's recommendations, a Declaration of Principles was signed by the three Heads of State in March 2015, thus taking the project on to a new phase of cooperation.

Although a fully-fledged technical agreement on the dam is yet to be reached, this evolution of hydro-political interactions around the project, from unilateralism to cooperation, poses a number of questions about the costs and benefits of unilateral action, the reasons for moving towards more cooperative modalities, the extent to which the recent declaration of principles can be considered a benefit-sharing arrangement, the incentives provided to the three countries in the declaration, and finally, the ways in which a sustainable framework for benefit-sharing, which can be replicated in future dam projects on the Nile, can be reached.

In discussing these issues, the paper depends on four sources of data: The first source is the documentation available on the GERD, in addition to the Ethiopian water, agricultural, and energy plans that underline the role of dam projects in implementing Ethiopia's Nile policy in general. Since the environmental and social impact assessment of the GERD was not made public, the study makes use of the leaked report of the IPoE, as well as information about the GERD published by Ethiopian official sources, to underline the central controversies about the project and its impact on Eastern Nile countries. The second type of source is statements by Ethiopian, Sudanese and Egyptian officials on the project, its impacts on the utilisation of water resources in the basin, and its significance for cooperation between Nile riparians. These sources shed light on the perceptions of the three countries towards the project and the tactics they used to promote or contest it. Six

telephone interviews were conducted between April and June 2015 with Ethiopian and Egyptian officials and technical experts, and an expert in an international cooperation agency that supports the NBI, in order to determine their views on outstanding issues and future collaboration. Finally, scholarly writings analysing the project and its potential hydrological, economic, and political impacts were consulted.

4 Ethiopian dams: countering Egypt's hegemony in the Nile Basin

Ethiopian plans of constructing dams on the Blue Nile to enhance Ethiopia's utilisation of the Nile water are not new. But it was only in the last decade that these plans came to fruition. By implementing dam projects, Ethiopia has moved from 'veiled' to 'overt' contest of Egypt's hegemony and has combined various coercive, utilitarian, discursive, and legal counter-hegemonic tactics. The first part of this section deals with Ethiopian dams as a means of countering Egyptian hegemony on the Nile. It illustrates how dam projects have become central to Ethiopia's development discourse and its regional role conception, and a tool for a more 'equitable utilisation' of water resources in the Nile Basin. The second part illustrates how Ethiopia attempted to use the NBI as a leverage mechanism to implement its dam plans and propose a new legal framework that translates the principle of equitable utilisation. The last part discusses Ethiopia's shift to more coercive tools to counter Egypt's hegemony through the unilateral construction of the GERD. Table 3 summarises the various mechanisms and tactics used by Ethiopia to promote its dam projects in general, and the GERD in particular. The Egyptian attempts to maintain its hegemony in response to the Ethiopian tactics are illustrated throughout the three parts.

4.1 Dams in Ethiopia's Nile policy: from 'veiled' to 'overt' contest

For several decades now, Egypt has been able to maintain a powerful position in the Nile Basin. Cairo has effectively used legal and discursive tools to ensure the compliance of other riparian states to the dominant order. Historical agreements signed between Egypt and Great Britain on behalf of its Eastern Africa colonies, between Britain and Ethiopia, and between Britain, France and Italy all recognised Egypt's 'acquired rights' in the Nile water and prevented the construction of any project that would significantly affect these rights. Of particular importance, the 1902 treaty signed between Great Britain and Ethiopia committed the latter *"not to construct or allow to be constructed any work across the Blue Nile, Lake Tana or the Sobat, which would arrest the flow of their water into the Nile except in agreement with His Britannic Majesty's government and the government of the Sudan"* (Waterbury, 2002, p. 62). In 1959, Egypt and Sudan signed an agreement for the 'Full Utilization of the Water of the Nile' which allocated 55.5 billion cubic metres (BCM) of the Nile water at Aswan to Egypt and 18.5 BCM to Sudan.

Since the mid-1950s Ethiopia has, on several occasions, expressed its rejection of these historical agreements, arguing for its right to develop water resources within its jurisdiction. In 1958, during the negotiations between Egypt and Sudan on the Nile water agreement, Ethiopian Emperor Haile Selassie protested against his country's exclusion

from the negotiations, stressing the Ethiopian duty to utilise the Nile water in the interest of the nation and the economy (Arsano, 2007, pp. 100-101; Collins, 1994, p. 122).

It was against this background that Ethiopia, in collaboration with the United States Bureau for Reclamation (USBR), prepared studies for the utilisation of the Blue Nile. The fact that studies for Ethiopian dam projects were conducted with American assistance in response to the Soviet backing of Egypt's construction of the High Aswan Dam (HAD) increased Egyptian sensitivity towards these projects even after Egypt's rapprochement with the United States during the 1970s.

The studies of the USBR, conducted between 1958 and 1964, remained the baseline for all subsequent studies of the Blue Nile. They recommended the construction of four major dams for hydropower production on the Blue Nile, in addition to a number of irrigation schemes and multipurpose projects on the tributaries. The four dams proposed were, from upstream to downstream: Karadobi, Mabil, Mendaia, and Border. The capacities of the four dams and their power capacity are illustrated in Table 1.

Table 1: Hydropower projects on the Blue Nile recommended by the United States Bureau of Reclamation

Project	Structural height (m)	Reservoir capacity (m3)	Installed Power (MW)
Karadobi	252	32.5 billion	1,350
Mabil	171	13.6 billion	1,200
Mendaia	164	15.9 billion	1,620
Border	84.5	11.1 billion	1,400

Source: Guariso & Whittington, 1987, pp. 106-107; Block, Strzepek & Rajagopalan, 2007, p. 6

The four dams suggested could potentially store about 73 BCM (51 BCM active storage capacity) of river flow with a total installed capacity of 5,570 MW. The largest project was the Karadobi. It was proposed that the most downstream project, the Border Dam, be constructed 21 km upstream from the border with Sudan (Block, Strzepek, & Rajagopalan, 2007, p. 5) in the same location where the GERD is currently being constructed. The dam, as Waterbury (2002, p. 117) suggested, is in the hot and arid lowlands where surface evaporation is at its maximum. Also noteworthy is that the height of the proposed Border dam was around 80 metres. This was regarded as the optimal height since higher levels would require an extensive saddle dam with an extra cost to contain the reservoir (Ministry of Water Resources of the Federal Democratic Republic of Ethiopia [MWR], 2007); which is precisely the case now with the 170-metres-high GERD.

However, until the end of the 1990s, Ethiopia lacked the political, diplomatic, institutional, technical, and economic capacity to implement these projects (Allan, 1999, p. 4; Arsano, 2007, p. 90; Arsano & Tamrat, 2005, pp. 17-18; Swain, 2002, p. 298; Waterbury, 2002, p. 68). Three decades after the conclusion of the USBR studies, only a few small dams were in fact constructed on the Nile, producing less than 400 MW. These included the Fincha Dam on the Blue Nile, Tis Abbay at Lake Tana, and the Sur Dam on the Baro (Anyimadu, 2011, pp. 19-21; Salman, 2011, p. 22).

Significantly, although successive political regimes declared the importance of water resources development, no coherent water policy was adopted in Ethiopia (Cascão, 2008, p. 14). Ethiopian Nile policy, in particular, was described as *"reactive"* and *"ambivalent"* (Arsano, 2007, p. 90). The lack of actual prioritisation of the utilisation of Nile water resources provided some sort of 'apparent consent' to Egypt's hegemony. But it was combined with a 'veiled contest'. In 1993, Ethiopia and Egypt signed a framework of cooperation in which the two parties committed to 'refrain from engaging in any activity related to the Nile waters that may cause appreciable harm to the interests of the other party'. But Ethiopia continued to call for a comprehensive agreement to organise the utilisation of Nile water resources. It has repeatedly condemned Egypt's near monopolisation of the Nile water, the hydraulic projects it carried out with no consultation with upstream countries, and the diversion of the Nile water out of the natural valley for new resettlement and urbanisation schemes, including Toshka in the Southwest and Sinai in the North East (Cascão, 2008, p. 15). However, this condemnation was occasional and was followed by little or no action to change the existing pattern of water utilisation in the Nile Basin (Waterbury, 2002, p. 71).

In countering Ethiopia's call for a new legal framework, Egypt continued to defend historical agreements and its share in the Nile water allocated by these agreements. Egypt's narrative depended not only on the principle of 'acquired rights', but also on stressing the availability of alternative resources as a criterion for equitable utilisation of shared water resources. The UN convention on the law of the non-navigational uses of international watercourses suggested the availability of alternatives of comparable value, as well as the existing and potential water use as defining factors for *"equitable and reasonable utilization"* (United Nations [UN], 1997, Article 6). Egyptian technocrats and politicians have often argued that out of the 1,600 BCM falling on the basin per year, only 84 BCM translates into river flow at Aswan, two-thirds of which are then allocated to Egypt, which means that Egypt has been actually using only 3% of the water available in the basin. They maintained that most upstream countries, especially Ethiopia, have alternative sources of water and are much less dependent on the Nile. Ethiopia has about 122 BCM of surface water annually from 12 river basins, making it the water tower of the region. By contrast, Egypt depends almost entirely on the Nile waters, which makes this source vital for its water security (Abul Gheit, 2014, p. 228; Elemam, 2010, pp. 230-231; Taye, 2012, pp. 76-140).

Accordingly, an approach based on exploiting alternative water resources, and reducing losses to provide additional water supply in the Nile to meet the demands of upstream countries without affecting Egypt's share, rather than on water reallocation, was proposed by Egypt as an answer to the tensions in the basin. In this framework, Egypt offered its technical expertise to assist upstream countries in implementing projects that would not reduce water flow and programmes to exploit alternative water resources (Waterbury, 2002, pp. 75-79). The Egyptian-Ugandan cooperation in the implementation of the Owen Falls Dam and the Egyptian funding of groundwater projects in Kenya are cases in point.

It was only in the late 1990s that Ethiopia moved from its 'veiled contest' of Egypt's privileged position in the Nile basin to an 'overt contest' through the development of comprehensive national water policies (Arsano, 2007, p. 125; Cascão, 2008, pp. 17-18). Since it came to power in 1991, the Ethiopian People's Revolutionary Democratic Front (EPRDF) and its dominant Tigrayan People's Liberation Front (TPLF), has adopted

ambitious, albeit controversial, plans for economic transformation to overcome the country's economic vulnerability by using its natural resources.[2] These plans have not only provided leverage for Ethiopia's old claims to Nile water, but have also shaped a narrative that counters Egypt's focus on its acquired rights and securitisation of Nile issues. Dams featured clearly in Ethiopia's policy discourse in three respects.

First, the construction of dam projects is seen as central to Ethiopia's development endeavours, especially increasing energy production and developing irrigated agriculture, and as a means of exercising its right to use its natural resources to alleviate poverty. This was regarded as crucial to state-building after two decades of guerrilla warfare, and to the developmental legitimacy of the dominant party. Within this framework, Ethiopia's dam programme can be seen as part and parcel of the regime's hydraulic mission, a quest for modernising the economy and reducing its vulnerability to climate variability, and as a source of national pride for the ethnically divided society. It is one of the cornerstones of late Prime Minister Meles Zenawi's vision of a new Ethiopia, a vision that was described as *"unparalleled in its ambitions in Africa"* (Verhoeven, 2013, pp. 4-10; see also Zenawi, 2006, 2011a).

This vision has been reflected in a number of policy documents. In 1999, the first Ethiopian Water Resources Management Policy (WRMP) was developed, with the broad objective of developing the country's water resources for the economic and social benefit of its people on an equitable and sustainable basis. To achieve this objective, the Ethiopian Water Sector Strategy, published in 2001, set general principles and guidelines for developing water resources. The strategy prioritised the development of the Blue Nile through irrigation schemes and hydropower production. As the most populous basin in Ethiopia, contributing about 45% of the country's surface water resources and sustaining 25% of the population, the basin, which covers about 20% of Ethiopia's landmass, provides most of the hydropower and irrigation potential of the country (MWR, s.a). Importantly, in identifying joint projects that can be developed with other riparian states, the strategy gave priority to multi-purpose projects based on the rationale that:

> *Joint development of hydropower project alone is of less advantage to Ethiopia, since it regulates the flow for downstream countries, and it traps sediment giving longer life to downstream dams and reservoirs at the expense of Ethiopia's water structures* (MWR, 2001a, p. 8).

This is one factor against which the GERD is evaluated in the next section.

Based on these principles, and river master plans, the Water Sector Development Programme identified the projects that would help Ethiopia to utilise its water resources. Table 2 lists the large-scale dams suggested in the programme. In the Nile Basin, the Baro 1 and 2 and Geba 1 and 2 projects on the Baro-Akobo were proposed for feasibility studies, while the Karadobi, Mendaia and Border projects on the Blue Nile were identified for pre-feasibility studies. As illustrated in Table 2, the planned projects on the Blue Nile continue to depend on the plans suggested by the USBR with minor adjustments and updates. External funding by multilateral and bilateral donors was identified as the first source of financial assistance to cover the costs of these projects, followed by international investors.

2 For the debate on the EPRDF's economic policies, see Lefort (2013) and de Waal (2013).

The Plan for Accelerated and Sustained Development to End Poverty (PASDEP), the government's development plan for 2005 to 2010, implemented the Tekeze dam on the Tekeze tributary, which provides the Nile with 13% of its annual flow, and the Tana Beles hydropower plant. The two projects, in addition to the Gilgel Gebe II, which was constructed on the Omo River, allowed the Ethiopian government to extend electricity coverage to 41% of the population. The Growth and Transformation Plan (GTP), the government's development plan for the period 2010-2015, defined the target of hydropower projects as increasing hydropower generating capacity from 2,000 MW in 2009/10 to 10,000 MW in the period 2014/15 (Ministry of Finance and Economic Development of the Federal Democratic Republic of Ethiopia [MoFED], 2010, pp. 13-14, 72). The implementation of these projects was aided by an economic growth of around 11% per year in the period from 2003 to 2009 (Matthews, Nicol & Seide, 2013, p. 313).

Table 2: Hydropower development projects short-listed in Ethiopia's Water Development Programme

	Installed capacity	Firm energy GWh/y	Cost/ benefit ratio	Year of study	Investment cost USD M (2001 prices)	Unit cost of firm energy USD/KWh (2001 prices)
FEASIBILITY LEVEL						
Beles	220	1,540	1.46	2000	271	3.47
PRE-FEASIBILITY LEVEL						
Baro 2 + reservoir dam (BA2)	475	2,094	1.4	1999	460	3.19
Baro 1+2 + Dam	669	2,741	1.4	1999	566	3.07
Geba 1+Geba 2 + Dam	254	1,633		1999	345	3.28
RECONNAISSANCE LEVEL						
Border	1,440	6,307		1998	1,547	4.58
Karadobi	1,050	3,373		1998	1,243	6.55
Mendaia	1,255	5,497		1998	1,337	4.37
Source: MWR, 2002, pp. 75, 89						

Hydropower projects would also contribute to promoting Ethiopia's 'Climate Resilient Green Economy' (CRGE) (Environmental Protection Authority 2011). Given the seasonal and geographic variability of rainfall, dams are expected to help Ethiopia enhance its water resilience. According to a World Bank report (2006), hydrological variability costs the Ethiopian economy more than one-third of its growth potential. Agriculture accounts for more than 40% of Ethiopia's GDP, 90% of exports, and absorbs 85% of the workforce. The Growth and Transformation Plan envisaged conducting an irrigation feasibility and design to bring an extra 1,208, 448 hectares under cultivation by 2015 (MoFED, 2010, pp. 15, 77-78). The waves of famine in the early 1970s and mid-1980s contributed to the weakening, and subsequent collapse, of the emperor in 1974 and the military regime in 1991 respectively (Waterbury, 2002, pp. 95-96). Trying to avoid the same fate, the new

regime has invested in the agricultural sector with the aim of making famine history. By 2011, Ethiopia had become the only Nile basin country to achieve the Comprehensive Africa Agricultural Development Programme's (CAADP) aim of spending 10% of its GDP on agriculture. The importance of water storage and irrigation may rise in the future since rainfall variability in Ethiopia is expected to increase (Eguavoen et al., 2011, p. 20).

Second, dam projects are not only central to Ethiopia's ambitious development plans, but also to its conception of its regional role. Through the export of surplus hydropower, Ethiopia aims at presenting itself as Africa's energy hub. In particular, linking East African countries to Ethiopia through hydropower flows promotes the country's regional pre-eminence and advances economic integration. At the end of the 1990s, studies were developed for transmission lines connecting Ethiopia to Sudan and Djibouti (MWR, 2002, pp. 69-70). The World Bank provided funding for the implementation of transmission lines between Ethiopia and Sudan as well as Ethiopia and Kenya (World Bank, 2006, 2014). More broadly, by harnessing its hydropower and agricultural potential through hydraulic projects, Ethiopia seeks to change its international image as a country of famine and starvation (Verhoeven, 2015).

Finally, dams are seen by the Ethiopian government as a tool for a more equitable and efficient utilisation of water resources in the Nile Basin. According to the WRMP, the use of transboundary water resources should be based on *"those accepted international norms and conventions* endorsed by Ethiopia' (emphasis added), *governed by the principle of 'equitable and reasonable utilisation'"* (MWR, 2001b, 16). Ethiopia's Foreign Affairs and National Security Policy and Strategy (Ministry of Information of the Federal Democratic Republic of Ethiopia [MoI], 2002), among other official sources (Adhanom, 2014, pp. 50-51; Negash, 2015), defined the main dilemma in the Nile Basin as one of imbalance between the contribution to the river and benefit from it. While Ethiopia, the country from which most of the river's water originates, has not benefited from the Nile, downstream countries benefit most from its resources.

In the absence of a comprehensive legal agreement that ensures equitable utilisation, Ethiopia's position has been weakened by the *"lack of facts on the ground"* that would force Egypt to negotiate a new deal with Ethiopia and other upstream countries (Tafesse, 2001, p. 6). Hydropower projects are, thus, one way of strengthening Ethiopia's position. They would signify Ethiopia's success in reaping the fruits of political stability and *"remind Egypt that engaging Ethiopia in different disputes and ensuring that it is mired in poverty would not work"*. These projects are also suggested as a means for better management of the basin's resources. According to the National Security Policy (MoI, 2002, p. 119), *"the water that can be saved by building dams in Ethiopia, and the water that is inappropriately wasted in Egypt, could together be enough to satisfy Ethiopia's irrigation needs"*. Hydraulic projects in Ethiopia would, according to the Ethiopian government, encourage Egypt to eliminate its 'extravagant' and 'irresponsibly lavish' consumption of the Nile water. Additionally, building dams upstream, where evaporation rates are lower, reduces water evaporation in the river system as a whole. Upstream dams can also be beneficial to other riparian states as they would regulate flow, prevent floods and produce cheap electricity.

It is in light of these three aspects that Ethiopia's dam boom in the last decade must be understood. Meanwhile, more than 15 hydropower projects are either planned or under

construction, the largest of which are on the Blue Nile. Ethiopia proposed some of its planned projects on the Blue Nile to international donors within the framework of the NBI, the first comprehensive framework for cooperation in the Nile basin. The new dynamics of conflict and cooperation provided by the NBI and the Ethiopian expectations from the initiative in relation to its ambitious dam programme are crucial in understanding hydro-political relations between Egypt and Ethiopia during the last decade.

4.2 The Nile Basin Initiative: what did cooperative and legal tools deliver?

In 1999, the NBI was launched by the Ministers of Water Resources in the Nile Basin countries with the support of the World Bank. For the first time, all riparian states participated in a regional initiative (with Eritrea as an observer), to *"achieve sustainable socio-economic development through equitable utilisation of, and benefit from, the common Nile Basin water resources"* (Nile Basin Initiative [NBI], s. a.). The NBI was designed as a transitional institution that would facilitate the implementation of basin-wide and sub-basin projects in the Eastern Nile and Equatorial Lakes and provide a platform for negotiating a comprehensive framework agreement that would pave the way for the creation of a permanent institution.

Ethiopia, which had joined earlier cooperative schemes only as an observer arguing that they represented downstream interests, engaged in the NBI, showing an interest in its technical and legal tracks. The NBI provided Ethiopia with a new venue for contesting Egypt's hegemony using utilitarian and legal mechanisms. As far as hydropower projects on the Blue Nile were concerned, the Ethiopian government proposed the three dam projects, Karadobi, Mandaia and Border, to the NBI to mobilise external funding. According to the Ministry of Water Resources (2007) the Norplan, Norconsult and Lahmeyer corporations were commissioned in 2004 to undertake a pre-feasibility study of Karadobi. Additionally, the pre-feasibility studies of Border and Mandaia were finalised in 2008 (Ministry of Foreign Affairs of the Arab Republic of Egypt [MFA], 2014d). In March 2010, it was announced that the feasibility study for the Mandaia project had been awarded to the Norplan consortium that included Norplan, Norconsult, Électricité de France (EDF) and Scott Wilson, in addition to two Ethiopian sub-consultants, Shebelle Consult and Tropics. The studies were financed by the Ethiopian Ministry of Water and Energy through a grant from the Government of Norway (Norplan, 2010). Through the Eastern Nile Technical Regional Office (ENTRO) and the Eastern Nile Subsidiary Action Programme (ENSAP), studies of the Ethiopia-Sudan power connection were finalised and funds from the World Bank were secured (World Bank, 2006).

But as the negotiations over the CFA reached a stalemate, Egypt began to take a tougher stance on Ethiopia's hydropower projects on the Nile. Ethiopia's success in leading a common upstream position during the negotiations became a turning point in the history of hydro-political relations in the basin. Although upstream countries, especially Kenya, Uganda and Tanzania, had rejected historical agreements and occasionally called for equitable use of the Nile water, they had not formed a united front that could counter-balance the downstream position (Arsano, 2007, 205; Waterbury, 2002, p. 86). Given their limited dependence on the Nile and lack of interest in engaging in the Ethiopian-Egyptian contestation, their position towards Egyptian hegemony was *"complacent"* and *"indifferent"* (Tafesse, 2001, p.7). The collective decision of upstream countries, at a

Sharm el-Sheikh meeting in April 2010, to open the agreement for signature without reaching consensus with downstream countries, was thus a significant step as far as countering Egypt's hegemony was concerned.

Disagreements over the procedures of implementing upstream projects were at the heart of the upstream-downstream divisions over the CFA. The agreement urged riparian states to share information on planned measures on the river, but included no formal reference to the legal principle of prior notification. The most controversial article on water security, Article 14, urges riparian states *"not to* significantly affect *the water security of any other state".* The two downstream states, Egypt and Sudan, proposed that the article should read: "*not to* adversely affect *the water security and* current uses and rights *of any other Nile basin state".* This was meant to emphasise the legal principle of 'acquired' or 'historical' rights, an established principle that means 'first in time, first in right' (Wolf 1999). Meanwhile, upstream countries decided to add the controversial article to the agreement as an annex, suggesting that it could be resolved by the future permanent institution; the Nile Basin Commission (NBC), Egypt and Sudan refused to sign the agreement, declaring that they would never give up their current share of the Nile water (State Information Services of the Arab Republic of Egypt [SIS], 2010). Instead, Egypt proposed that upstream states should drop the idea of adopting a comprehensive legal agreement and agree instead on a Memorandum of Understanding for establishing the NBC, which would oversee the implementation of a package of joint projects for the economic development of the Nile riparian states and the development of Nile water resources. In June 2010, Egypt and Sudan decided to freeze their participation in the NBI and its joint projects (Abul Gheit, 2014, pp. 245-255).

In the wake of the Sharm el-Sheikh meeting, Cairo embarked on a diplomatic mission to block funding of Ethiopia's hydropower projects. According to senior Foreign Ministry officials, the Ministry held meetings with foreign ambassadors and representatives of international financial institutions in Cairo to clarify the Egyptian position and encourage them not to fund unilateral projects outside the framework of the NBI (Abul Gheit, 2014, pp. 249-262; interview with Ahmed Abu Zeid, 21 April 2015). At the same time, Egypt continued to reject the Ethiopian proposal to construct dams for water storage upstream for the benefit of the three Eastern Nile countries, insisting that it would only rely on water storage projects within its own territories (Abul Gheit, 2014, pp. 254).

The fact that one decade after the initiation of the NBI, no major hydraulic project was implemented in Ethiopia, raised doubts about the initiative's capacity to deliver (Cascão, 2009, p. 263; Seide, 2014; Swain, 2011, pp. 695-696; Tvedt, 2010, p. 246). The World Bank, which co-ordinated the Trust Fund established in 2003 to financially support the NBI's projects, admitted that, although the Shared Vision Programmes (SVP) which cover all the riparian states have progressed well, the Subsidiary Action Programmes (SAP) directed at sub-basins, have been slower, due to complex, sensitive multi-country dialogues on investments (World Bank, 2010). The executive director of ENTRO, Fekahmed Negash, indicated that the initiative was a step forward in terms of regional cooperation; Egypt departed from its earlier position and agreed to studies being undertaken for hydropower and irrigation schemes in Ethiopia. However, he acknowledged that *"political reasons"* have hindered the implementation of some projects, and that the projects implemented were *"not enough when compared to the expectations of member states"* (Interview, 7 May 2015).

At the same time, Ethiopia's engagement in the NBI did not mean that it had ruled out the possibility of developing unilateral projects if cooperation failed to bring about the change aspired to through the technical and legal tracks (Cascão, 2008, p. 21). The political leadership was determined to pursue these projects even if this would lead to confrontation with Egypt. In 2005, Zenawi stressed that his country was ready for what it takes to utilise its water resources noting that *"if Egypt were to plan to stop Ethiopia from utilising the Nile water, it would have to occupy Ethiopia and no country on earth has done that in the past".* In taking this position, Ethiopia argued that Egypt had also built, and continues to build, projects with no consultation with upstream states. As Zenawi put it *"while Egypt is taking the Nile water to transform the Sahara Desert into something green, we in Ethiopia – who are the source of 85% of that water – are denied the possibility of using it to feed ourselves. And we are being forced to beg for food every year"* (BBC, 3 February 2005).

Based on this vision, a large dam on the Tekeze River was completed in 2009 with Chinese financial support (Anyimadu, 2011, pp. 19-22). The involvement of China in the construction and funding of dam projects in Nile upstream countries and Sudan in the last decade provided an alternative to multilateral institutions and western bilateral donors who made their funding for infrastructural projects on shared rivers conditional on the agreement between riparian states (Cascão, 2009, pp. 261-262). In 2010, the Tana Beles hydropower project, partially funded by Italy and implemented by the Italian company, Salini, was inaugurated. The two projects infuriated Egypt, who protested against the move by the Italian government to fund the Tana Beles project (Ethiopian Forums, 18 May 2010).

To sum up, although much effort to cement joint cooperation has been made, the NBI seems to have reflected, rather than changed, the power struggle between Egypt and Ethiopia. It had been suggested that the NBI represented a shift in the Egyptian and Ethiopian tactics: Egypt agreed to negotiate a comprehensive agreement, which has always been an Ethiopian demand, while Ethiopia agreed to cooperate in individual projects before the conclusion of a legal agreement, which corresponded with the Egyptian vision (Mason, 2004, p. 205); however, a decade after the initiative's launch, it became clear that this shift had not really materialised. Egypt continued to protest the launching of large dams in Ethiopia and attempted – even if with little success in comparison to the past – to use its relations with foreign donors and multilateral institutions to block their implementation. For its part, Ethiopia remained keen to conclude a comprehensive legal agreement, even if it excluded downstream countries, and began to unilaterally construct its own hydraulic projects outside the framework of the NBI.

The stalemate created by the freezing of Egypt's membership in the NBI and the tension around the implementation of new dam projects on the Nile have shaped the environment in which GERD was unilaterally launched.

4.3 The construction of GERD: Ethiopia's objectives and expectations

On 3 February 2011, the late Ethiopian Prime Minister Meles Zenawi announced to the Ethiopian Parliament that his government had decided to construct a large dam on the Blue Nile. According to the constructing company, Salini Impregilo, the work at the project site had already started in December 2010. In April 2011, Zenawi laid the cornerstone of the project, by then called the Millennium Dam. This was changed later to its present name.

According to the IPoE report, the GERD is located around 20 km from the Sudanese border, in the same location as the Border Dam that had been proposed by the USBR more than three decades ago and recommended in subsequent Ethiopian plans (see Map 1). However, the size of the dam and capacity of its reservoir far exceeds those recommended in these plans. While the Border Dam was proposed to impound 11 BCM, the GERD's impounding capacity is 74 BCM, almost equal to the total storage capacity of the four projects proposed by the USBR and outlined in Ethiopia's Water Sector Development Programme. The installed power capacity of the dam is 6,000 MW, more than the total capacity of the four projects. Given that the height of the dam was set over the 84.5 m recommended for the Border dam, a 50m high saddle dam was integrated into the project to contain the reservoir. Thus, while unilaterally launching a project on the Blue Nile may not have been surprising, the scale of the project is unmatched in earlier Ethiopian dam plans.

Ethiopia claims that Egypt's suspension of its membership in the NBI, and the expected suspension of multilateral projects planned under the initiative, has left it with no choice but to proceed with a unilateral project (Interview with Negash, 7 May 2015). These claims may explain why Addis Ababa decided to unilaterally build the GERD – which in any event is not the first unilateral Ethiopian project on the Nile – but they can hardly account for the dam's scale and secret planning. Moreover, they do not elucidate why the Ethiopian government decided to direct the largest investment, estimated at USD 4.8 billion (excluding the cost of transmission lines), to a project for hydropower production only, thus overlooking the recommendation of its Water Strategy to prioritise multipurpose projects.

Hence, from technical and economic perspectives, the GERD does not reflect Ethiopia's earlier dam plans. Yet, it does reflect the government's Nile policy in various respects. First, it mirrors the fascination of Ethiopia's political elite for large projects (Waterbury, 2002, p. 126), and their determination to build mega projects on the Nile. During the ceremonial launch of the dam, Zenawi (2011b) proudly emphasised that *GERD "is the largest dam we could build at any point along the Nile, or indeed any other river… [Its reservoir] will be the largest man-made lake in Ethiopia".* The project's scale has significant symbolic value, feeding into efforts to change the country's international image and creating a sense of euphoria at home (Ethiopian Consulate in Los Angeles, s. a.).

Second, the project signals Ethiopia's prioritisation of hydropower projects as drivers of development and of regional integration. As the grandest of all projects, the GERD would, according to the Ethiopian government, pull Ethiopia out of poverty (Ethiopian Consulate in Los Angeles, s. a., p. 1). Power produced by the GERD is expected to meet the country's domestic needs, allow Ethiopia to export electricity to neighbouring countries,

and thus mobilise necessary resources for the realisation of Ethiopia's ambitious development endeavours. The dam would produce 65-87% of the targeted power under the GTP (Adhanom, 2014, p. 55; Zenawi, 2011b).

Third, the project reflects Ethiopia's determination to *"exercise [its] rights to use [its] own rivers"*, even if it would bear a heavy financial (and political) cost (Zenawi, 2011b; see also Ethiopian Consulate in Los Angeles, s. a., 1). The unilateral construction of the project sent a strong message that Egypt would not be able to prevent Ethiopia from building large projects on the Nile. At the same time, Ethiopian policy-makers presented the project as *"an expression of [Ethiopia's] commitment to the benefit of all the countries of the Nile Basin",* (Zenawi 2011b) especially downstream countries. The dam would arguably reduce silt and sedimentation and thus enhance the operation of dams in Sudan and Egypt, control floods in Sudan, regulate Nile flow, and provide cheap electricity to downstream countries. These benefits, according to Ethiopia, would ease tensions over equitable utilisation of the Nile water (Adhanom, 2014, p. 56; Ethiopian Consulate in Los Angeles, s. a., p. 4; Zenawi, 2011b). Based on these projected benefits, Ethiopia claimed that downstream countries should have been expected to share the financial cost of the project, but the political climate was not conducive to this engagement (Zenawi, 2011b).

By unilaterally constructing the GERD, Ethiopia has moved from challenging to changing the status quo, pursuing new tactics to enforce facts on the ground. One month after the project's launch, in the wake of a visit by an Egyptian public diplomacy delegation to Addis Ababa followed by an official visit by Egypt's interim Prime Minister Essam Sharaf, Ethiopia invited Egypt and Sudan to form an international panel of experts to review the design documents for the dam. Although Egypt requested that the construction of the dam be suspended until the IPoE had finalised its work, the Ethiopian government rejected this request. In a joint press conference at the end of Sharaf's visit, Zenawi stressed that *"the construction of the dam won't be delayed even for a single minute"* (*Horn Affairs,* 16 May 2011). This meant that the panel, which first convened during May 2012, would assess a project already under construction, a statement that was emphasised in the introduction of the final IPoE report. In May 2013, a few days before the IPoE submitted its report, the Ethiopian government diverted the Blue Nile to start the construction of the dam's main body. Although the IPoE recommended further studies to assess the impacts of the project on downstream countries, Ethiopia refused to halt construction until these studies were conducted. Ethiopia's rushed construction of the project has forced Egypt to involuntarily accept it as 'fait accompli'.

For almost three years, technical consultations between the three Eastern Nile Basin countries to implement the IPoE's recommendations on the ongoing project have been marred by heightened political tensions between Egypt and Ethiopia (a timeline of the hydro-political contention over the GERD is annexed to the end of the paper). The election of a new president in Egypt in June 2014, and, more importantly, the Egyptian realisation that engagement on the project is necessary even if on Ethiopian terms, provided a new political environment for a compromise. In March 2015, a Declaration of Principles on the project was signed by the Heads of State and Government of the three Eastern Nile countries in Khartoum, paving the way for a possible transformation of the project from being a basis of conflict to a source of cooperation.

So, through the GERD, Ethiopia's much-anticipated objective of changing the game of unbalanced utilisation of water resources in the Nile Basin seems to have materialised. But what are the challenges associated with the Ethiopian approach to constructing the project? Have these challenges been reduced by the recent Declaration of Principles? What does it take to have a benefit-sharing deal that is seen by the three Eastern Nile countries as fair and feasible? And finally, and more broadly, do the GERD and related developments in the basin indicate a transition to a more equitable order, as the hydro-hegemony framework suggests? These questions are discussed in detail in the next section.

5 GERD as a counter-hegemonic tool: opportunities and challenges

In implementing the GERD, Ethiopia has, often skilfully, used a mix of tactics with specific ones emphasised at different stages. Two distinct phases can be identified: The first phase extends from the initiation of the project in April 2011 until the Egyptian-Ethiopian agreement on general principles during the African Union Summit in Malabo in June 2014. The second phase began with the Malabo Statement until the signing of the Declaration of Principles on the GERD in Khartoum in March 2015. While the Egyptian and Ethiopian approaches during the first period were largely coercive with few compromises, especially from the Ethiopian side, there was more reliance on utilitarian tools during the second phase. The first two parts of this section discuss the opportunities and challenges created by the employment of these tools in the two phases, while the third part looks briefly at the outstanding issues that must be dealt with in future arrangements.

5.1 Initiating the GERD: the benefits and costs of unilateral action

5.1.1 A new game in the Eastern Nile? Levelling Ethiopian power

During the first period, Ethiopia invested in marketing the project to downstream countries, especially to Sudan, and beyond. The Ethiopian proposal to form an IPoE to examine the dam's design documents, and the subsequent technical consultations that started at the ministerial level in November 2013 to discuss the implementation of the IPoE's recommendations, were cited by Ethiopia as evidence of its intentions to engage downstream countries (Ethiopian National Panel of Experts, 2013). However, Addis Ababa also resorted to a number of tactics that limited the impact of these coordination mechanisms on the project's implementation. Four major tactics can particularly be identified.

First, delaying tactics were used in negotiations about the implementation of the IPoE report, while proceeding with the construction of the project. Although the IPoE submitted its report to the three governments in May 2013, it was only five months later that ministerial meetings were convened to discuss the implementation of the panel's recommendations. Egypt had furiously reacted to the delay in responding to its invitation to convene the meetings, noting that no more time should be wasted before proceeding with the required technical studies (*Ahram online*, 20 July 2013). Ethiopia's reluctance to offer concessions on secondary issues can also be seen as part of this tactic. For example,

Ethiopia rejected Egypt's proposal to include international experts on the joint tripartite committee that is to oversee the implementation of the studies recommended by the IPoE to ensure efficiency, professionalism and a neutral technical opinion in case of disagreements between the national members. The Ethiopian delegation also rebuffed an Egyptian proposal on confidence-building measures that included the suspension of construction. It was in light of this Ethiopian position that Egypt decided to withdraw from the ministerial consultations after the third meeting in January 2014 (MFA, 2014d).

A second, and more influential, tactic through which Ethiopia acquired significant leverage over Egypt was attracting Sudanese support for the project. The Sudanese endorsement of the project came at the highest political level when President Omar Al-Bashir announced while receiving the Ethiopian envoy to Sudan in March 2012 that his government understood the mutual benefits the project could offer to Ethiopia and Sudan and that he was ready to extend the necessary support for the completion of the project (*Sudan Tribune*, 8 March 2012). This position was a turning point in hydro-political relations in the basin, given Sudan's historical alliance with Egypt on Nile issues and its support of the Egyptian position in the CFA negotiations. Subsequent Sudanese announcements on the importance of the project for Ethiopian-Sudanese integration, and the neutrality of Sudan in the Egyptian-Ethiopian conflict over the GERD have indicated that the downstream unity has been seriously compromised (Ministry of Foreign Affairs of the Republic of Sudan, 2014, 2015; *Sudan Tribune*, 18 February 2014).

The Sudanese position has to be understood within the framework of the policy adopted by the Inqaz regime to develop water resources and agricultural projects since it assumed power in 1989. The Sudanese government has prioritised the increase of hydropower production, irrigated agriculture, and forecasting and preventing floods. The country witnessed six floods between 2000 and 2002, two of them on the Nile. The promotion of irrigated agriculture is a priority with the increasing variability of rainfall, its uneven distribution, and waves of drought (Taha, 2010, pp. 179-209). Sudan has the second largest irrigated area in Africa after Egypt and is increasingly dependent on agriculture after the 2011 secession of the oil-rich South, where the vast majority of reserves are located. The export of oil since 1999 and the Chinese financial support have enabled Khartoum to implement its own unilateral hydraulic projects. At the end of 2008, Sudan started the heightening of the Roseires Dam. A few months later, Khartoum inaugurated the large-scale Merowe Dam, a hydropower project that can also be used for irrigation in the future. Plans for other hydropower dams and irrigation schemes on the Nile are underway (Cascão, 2009, pp. 257-258; Taha, 2010, pp. 196, 197). Against this background, Sudan's official position assumes a largely positive impact of GERD on water resources development in Sudan (Ministry of Foreign Affairs of the Republic of Sudan, 2014). The opportunities and challenges that the GERD might offer to Sudan and the impacts of the Sudanese positions on hydro-political relations among eastern Nile countries are discussed in some detail later in this section.

Third, at the discursive level, claims that the project would cause no significant harm, would deliver benefits to the region, and that it realises Ethiopia's right to development have formed the central elements of Ethiopia's rhetoric to market the project regionally and internationally. At the launch ceremony, Zenawi (2011b) told the donor community

> *We are determined to eradicate poverty from our country... many friends stand with us; our gratitude to our development partners is limitless. Before we mobilised our efforts to eradicate poverty, centuries of impoverishment curtailed our development and restricted us from exercising our right to use the resources of* our own *rivers* (emphasis added).

At the same time, Ethiopia claimed to be using the Nile in a *"responsible and sustainable way"* that does not contravene the development interests and needs of other riparian states (Adhanom, 2014, p. 57).

This does not mean that Ethiopia had totally abandoned its past emphasis on 'absolute territorial sovereignty' on the Nile resources within its jurisdiction. This was clear in Ethiopia's response to the Egyptian proposal to participate in the financing and operation of the dam. In April 2014, the former Egyptian Foreign Minister, Nabil Fahmy, revealed that Egypt was offering to participate in the financing and management of the GERD, and even to persuade international donors to contribute to the project (MFA, 2014b). Although the Ethiopian Prime Minister Hailemariam Desalegn had suggested a few months earlier that *"Ethiopia considers the Renaissance Dam as a joint ownership"* (*Sudan News Agency*, 7 October 2013), the Ethiopian Foreign Ministry swiftly rejected Fahmy's proposal, emphasising that the operation of the dam was a matter of sovereignty and that a joint administration was *"unacceptable"* (*Horn Affairs*, 8 April 2014). Ethiopian officials claim that the statement of the Ethiopian Prime Minister was misunderstood by Egypt, and that the GERD will remain an exclusively Ethiopian project (interview with Negash, 7 May 2015 and with Atnafie, Teshome, the Director of Transboundary River Affairs at the Ethiopian Ministry of Water and Energy, 15 June 2015).

In response to Ethiopia's rhetoric, Egypt has emphasised its acknowledgement of, and support for, the right of Ethiopia and other upstream countries to develop and utilise their water resources to meet their developmental needs. However, it equally highlighted that this utilisation should not come at the expense of downstream interests. It particularly stressed the importance of commitment to principles of international law, especially the obligation not to cause significant harm, the obligation of prior notification and consultation on projects that would affect other riparian states and of sharing information. Cairo also reminded Ethiopia of its commitments under the 1902 treaty and the 1993 framework of cooperation, both obliging Ethiopia not to construct projects that would cause an appreciable harm to Egypt. Additionally, Egypt emphasised that, based on studies it performed to assess the impact of the project, it considered the GERD as a *"significant threat to its national and water security"* (MFA, 2014d; see also Fahmy 2014).

Finally, on the legal front, Ethiopia's ratification of the CFA in June 2013 may have frustrated any Egyptian hope of reopening the controversial articles for negotiation. But by May 2015, only three countries, Ethiopia, Rwanda and Tanzania had ratified the agreement. Egypt's effort to strengthen cooperation with other upstream riparians may explain this delay. During an official visit by the former Egyptian Foreign Minister Mohamed Kamel Amr to South Sudan, Kenya, Rwanda, Tanzania and the DRC in January 2012, South Sudanese President Silva Kiir declared that his country understood the importance of the Nile water to Egypt, stressing that Egypt's quota of Nile water would not be affected. The Congolese President, Joseph Kabila, declared that his country would not sign the CFA. On the same tour, Egypt sought to boost its relations with Kenya in the

fields of agriculture and energy (SIS, 2012). On a more recent visit to Nairobi, the Egyptian Foreign Minister Sameh Shokry met the speaker of the Kenyan Parliament to underline the importance of the Nile water for Egypt's needs, and to discuss the opportunities for cooperation offered by the newly established Egyptian Agency of Partnership for Development (MFA, 2015). Egypt had also recently signed a Memorandum of Understanding for boosting cooperation with Kenya in the water sector (SIS, 2015c). Thus, Cairo offered some incentives to influence upstream countries that were less dependent on the Nile water and had less interest in the Egyptian-Ethiopian conflict over the GERD. However, the extent to which this can be sustained remains uncertain.

To sum up, in planning and implementing the GERD, Ethiopia has largely succeeded in levelling its power in the game of contesting Egypt's hegemony in the Nile Basin. By creating facts on the ground, the Ethiopian government has defined the terms of negotiation over the project and forced Egypt to accept these terms. The benefits and costs of this approach will be discussed in detail in the next section.

5.1.2 GERD's potential benefits and costs

It has long been argued that building dams on the Blue Nile would generate benefits to the river and to Eastern Nile countries. Scholars have demonstrated the role of these dams in regulating the river flow, controlling floods, sedimentation and siltation, producing hydropower that can be traded with other riparian states, and reducing water losses by moving storage in areas with lower evaporation rates upstream (Allan, 1994, p. 5; Guariso & Whittington, 1987, p. 113; Swain, 2002, pp. 305-306; Tesfaye, s. a.; Tvedt, 2010, p. 239; Whittington & McClelland, 1992, pp. 149-153; Whittington, Wu, & Sadoff, 2005).

The GERD seems to have the potential to generate some of these benefits, especially to Ethiopia and Sudan. However, Ethiopia's secretive planning and rushed construction of the dam not only created severe political tensions, but also uncertainties about the benefits of the project to downstream countries, and even to Ethiopia. Other impacts on the river and beyond the project add to the cost of the Ethiopian approach in constructing the GERD. The following analysis does not aim to present an exhaustive account of the project's potential impacts, but rather to discuss some of the questions raised about it, most of which have resulted from the rushed planning and implementation of the project. The various potential impacts of the project are summarised in Table 4.

Potential benefits and costs to Ethiopia

The GERD carries some benefits for the Ethiopian economy. Immediate benefits include the creation of job opportunities; according to Ethiopian estimates, about 15,000 Ethiopians are currently working on the project, in addition to the future opportunities that will be created when business facilities are established at the site of the project (Ethiopian Electric Power Corporation, 2013). Ethiopia's increasing dependence on hydropower would also reduce the environmental and health problems related to the reliance on biomass fuel by most of the population (Hammond, 2013, p. 2; King, 2013, p. 2). Hydro-power is considered the most reliable renewable energy source since other sources have

either limited potential (total capacity for geothermal production does not exceed 1,000 MW), or are more variable (wind and solar) (King, 2013, p. 2).

Power exports from the GERD are also expected to secure hard currency for Ethiopia. According to the Ethiopian Electric Power Corporation (EEPCO), the country exported 100 MW of electricity to Sudan, 35 MW to Djibouti and 60 MW to Kenya in 2014, earning USD 40 million from exports to Sudan and Djibouti alone. This is expected to increase exponentially when GERD is completed, extending the export destinations to Somalia, Uganda, South Sudan, and Egypt (*Sudan Tribune*, 6 October 2014; Ethiopian News Agency, 27 June 2014). This would increase the volume of power trade amongst Nile basin countries which is currently insignificant compared to other sub-regions in Africa (NBI, 2012, p. 164).

Ethiopia reaps benefits from the project beyond the economic ones. The GERD in its grandeur is a source of national pride, which is further enhanced by the knowledge that it is being constructed without the financial support of donor countries (Schoeters, 2013, p. 25; Veilleux, 2013, p. 8). The symbolic value of implementing a large project on the Blue Nile after decades of Egyptian obstruction, and doing so with Ethiopian domestic resources, should not be underestimated.

But there are a number of uncertainties regarding the impact of the GERD on Ethiopia. The high project cost has raised questions about its impact on other economic sectors. While Addis Ababa was rushing to implement the project, the International Monetary Fund (IMF) advised the Ethiopian government to slow the construction of the GERD to avoid the dam absorbing most of domestic finances. In addition to selling bonds to Ethiopians at home and in the Diaspora, the Ethiopian government committed the banks to purchasing National Bank of Ethiopia securities worth 27% of each loan they distribute in order to raise funds for the project, a procedure that the IMF described as *"onerous"* (*Bloomberg*, 14 September 2012).

The cost of the project in relation to its objective is also debatable. Hammond (2013, p. 2) argued that building a dam of this size solely for power generation may not be the *"optimal investment choice"*. Other scholars questioned whether the Ethiopian government had conducted sufficient studies on regional hydropower markets and the price of power in future decades. The development of grand projects in other Nile basin countries over the next few years, especially the Grand Inga Dam in the DRC and other dams in Uganda, means that the regional market could be more competitive than was the case at the time of launching the GERD, a variable that should have been factored in in the cost-benefit analysis of the project (Beyene, 2013a; Matthews, Nicol & Seide, 2013, p. 320). It was also noted that, for the investment to be profitable, exports of hydro-power need to expand rapidly once the dam is completed (Ferrari, McDonald, & Osman, 2013; Whittington, Waterbury, & Jeuland, 2014, p. 600). A working group of independent experts on the Eastern Nile basin convened by the Massachusetts Institute of Technology (MIT) to examine the GERD, highlighted that the sale of hydropower is truly attractive, but that any delay in the export of power and the realisation of expected revenues would be extremely costly (Massachusetts Institute of Technology [MIT], 2014, p. 8).

A few scholars went even further, casting doubts on the effectiveness of the project and its design. The Ethiopian-American expert Asfaw Beyene (2013b) argued that given the

height of the dam and the Nile flow rate, the dam could not possibly produce the targeted power production throughout the year. He concluded that the project and its power target was designed for a near peak flow, a design that "*makes no economic sense*". The peak covers very few months. Allowing the average flow to pass to downstream countries during peak months fills the reservoir in 5-6 years, but the annual refill will be too small to sustain annual operation of 6,000 MW. Designing the dam for a mean flow would have sustained a more consistent power production, and a higher rate on investment. Another expert suggested that the total investment for the project could have been reduced by about 40-45% by building a smaller dam with a higher efficiency. The Border Dam proposed by the USBR more than five decades ago with a targeted power capacity of about one-quarter, and a reservoir of about one-fifth of the GERD would have made more economic sense, unless the purpose of the GERD is not only hydropower, but also irrigation (Beyene, 2011).

Commissioning of the GERD and delivering its targeted production is particularly important since the progress towards achieving hydropower production targets has slowed down in the last five years compared to the period from 2005 to 2010. In his recent report to parliament, the Ethiopian Minister of Water, Irrigation and Energy declared that his government had been able to achieve only 3.9% of the target it had set over the past five years (*Horn Affairs*, 3 June 2015).

The IPoE report (2013, pp. 38-40) made a similar reference to the effectiveness of the dam in relation to its cost. For the panel, although the project appears to be economically attractive, no economic justification has been given by the Ethiopian government with respect to the installed power capacity of 6,000 MW. Given the *"apparent low load factor and the cost of transmission to the main load centre, the economic considerations are not clear as far as the installed capacity is concerned"*. Additionally, the detailed cost-benefit analysis on which the project was considered as being economically attractive, was not made available to, and thus could not be verified by, the panel.

It remains uncertain whether Ethiopia will use the dam's stored water for irrigation in the future. Although the current Ethiopian Prime Minister, Helamariam Desalegn, confirmed that the project's main purpose is producing hydropower and not irrigation (*Sudan Vision*, 8 February 2014), other official documents revealed that the project "*falls within the far-reaching framework of exploitation and management of the resources of the Blue Nile for energy production and irrigation*" (Ethiopian Consulate General in Los Angeles, s.a., p. 2). At the launch ceremony, former Prime Minister Zenawi (2011b) noted that the dam's reservoir would "*provide for extensive opportunities for fisheries and cultivation which were previously non-existent*". Using the dam for irrigation will potentially affect water flow to downstream countries, and is thus a serious concern for Egypt (interview with Al-Quosy, 28 April 2015; Nour Eddin, 2014, p. 372).

Other factors that would affect the economic viability of the project have been identified in the IPoE report. The report (2013, p. 35) noted that, although the estimations of sediment yield and trap efficiency were realistic, the sediment accumulation in GERD's reservoir over time had not been taken into consideration, which might affect the project's lifespan. This factor has raised concerns about the future potential of the project (Chen & Swain, 2014, pp. 14-15; International Rivers, 2012, p. 39; Veilleux, 2013, 12).

In short, although the GERD promises to promote Ethiopia as a regional energy hub, there are still a number of open questions on the project's economic potential, especially in relation to its objectives, expected competitiveness in the regional power market, and its lifespan.

Costs and benefits of the GERD: potential downstream impacts

Ethiopia argues that Sudan would realise some benefits from the project. The regulation of the flow would increase the potential for irrigated agriculture, and the reduction of sedimentation would improve the operation of the Roseires Dam. It is estimated that the storage capacity of the Roseires and Khasm el Girba reservoirs have fallen by 60% and 40% respectively over the first 30 years of operation (NBI, 2012, p. 49).

However, in planning for the project, the Ethiopian government had not fully assessed its impacts on downstream countries. The IPoE's report concluded that *"no downstream flow records and hydro-meteorological information are given as would be needed to assess the downstream impacts of the GERD project"* (IPoE, 2013, p. 35). According to the panel, the design of the dam was based on technical criteria (that is, on power production and reservoir filling), but *"does not consider environmental and socio- economic impacts downstream".* The information on the downstream impacts presented by the Ethiopian government was *"too general to provide any effective basis for quantitative impact assessment"* (IPoE, 2013, p. 40). The Ethiopian government had also focused only on the positive potential of the project on Sudan but, according to the IPoE, neglected the potential negative impacts on agriculture, forests, and ground water. It is against this background that the panel recommended studying potential negative impacts of the GERD on Roseires' biodiversity and fisheries, riverbed and banks erosion, and their implications on agricultural livelihood and the brick industry in Sudan. The same concerns have been raised by a number of Sudanese experts, including the former Minister of Irrigation, Kamal Ali Mohamed (Bakheit, 2013; Mohamed, 2015). So, mitigation measures and compensation arrangements must necessarily take these negative potentials into consideration.

Equally important, as the IPoE report underlined, the regulation of the flow as a result of constructing the GERD would increase the potential for expanding irrigated agriculture in Sudan, but the impact of this on Egypt needs to be examined (IPoE, 2013, p. 42). The increase in Sudan's water withdrawals is becoming a concern for Egypt. By 2006, before the heightening of the Roseires and the construction of the Merowe dam, Sudan was using 14.6 BCM (about 78% of its share of the Nile water) (Ministry of Agriculture and Forestry of the Republic of Sudan, 2006, p. 9). The country's 25-year-strategy (2002-2027) projects the water needs for irrigation to be about 42.5 BCM by 2027 and the total demand to be 59.2 BCM (Abdalla & Mohamed, 2007, p. 4). Cairo claimed that by 2010, Khartoum was already consuming its full share of the Nile water allocated in the 1959 agreement and that any new land investments and agricultural projects would imply using more than its share. Cairo began to express reservations about Sudanese projects in its discussions with donor countries and institutions (Abul Gheit, 2014, p. 267).

For Egypt, the negative potential of the GERD would largely depend on the dam's operation and filling strategy, something that necessitates mutual coordination. The IPoE report suggests that the water flow to Egypt would not be affected if the first filling of the

GERD were done in wet or average years, although power generation at the HAD would be decreased by about 6% due to the general lower water levels in Lake Nasser. However, *"should the filling occur during dry years, the HAD will reach the minimum operating level during at least 4 consecutive years which would significantly impact on water supply to Egypt and cause the loss of power generation at the HAD for extended periods"* (IPoE 2013, p. 36). Egypt relied on these estimations to argue that the project could cause significant harm and threaten its *"acquired rights"* in the Nile water (MFA, 2014d).

On the other hand, the benefits suggested by the Ethiopian government for Egypt, which include an increase in irrigated area, reduction of sedimentation at Lake Nasser and a reduction of flooding, were *"neither quantified nor confirmed".* Ethiopia suggested that the reduction of the annual flow at the Ethiopia-Sudan border would be only around 3%, an estimation which was not verified (IPoE, 2013, pp. 41-42).

Since the operating rules of the dam were not fully provided to the IPoE (2013, p. 37), a number of scholars applied different models to anticipate the impact of GERD's filling and operation on downstream countries (Kahsay, Kuik, Brouwer & Van der Zaag, 2015; Mulat & Moges, 2014; Zhang, Block, Hammond & King, 2015). The results of these studies differ depending on the variables included in their models (climate change, Sudan's withdrawals, different filling strategies) as well as the dependent variable of interest (water supply for irrigation, power production from the HAD, economic integration in the field of energy).

However, the different projections presented by these models suggest two things: First, since the impact of the dam would vary significantly depending on the filling strategy, climate change scenarios, and seasonal and inter-annual climate variability, the three Eastern Nile countries need constant coordination and monitoring of the river system to reduce the potential negative impacts of the project. Mulat and Moges (2014, p. 591) suggested that *"proper joint planning and operation and management of the reservoir"* filling are needed. It would be necessary to extend the impounding period of the dam during a sequence of dry years in order to mitigate the potential negative impacts on the Egyptian water supply, agriculture and power production (Kahsay et al., 2015, p. 14). Noting that there is no comparable situation wherein two storage facilities (the GERD and the HAD) that are so large compared to the annual flow of the river are operating in upstream and downstream riparian states, the MIT working group recommended reaching an agreement on the coordinated operation of dams along the Nile. According to the group, the agreement should be flexible enough to adapt to climate variability, but should also define the minimum water requirement for Egypt and Sudan, and store water in the two reservoirs of the HAD and GERD accordingly (MIT, 2014, pp. 4-6).

Second, these different projections necessitate the integration of climate change data into the planning of the project (King, 2013, p. 7), a requirement that the Ethiopian government, as indicated in the IPoE report (2013, p. 35), ignored. It was noted that although large dams on the Blue Nile are likely to contribute to economic development in the short-to-medium term, the economic feasibility of these dams over the long term is likely to be significantly undermined by climate change. This would constrain further national development and possibly adversely affect many people's livelihoods in Ethiopia as well as in downstream countries (McCartney & Girma, 2012; NBI, 2012, pp. 173-174).

In short, although it claimed that the GERD carries benefits for all the countries of the region, the Ethiopian government did not adequately assess the consequences of such a large-scale project on downstream countries, and failed to account for the potential impacts of climate change on the project. Accordingly, the IPoE recommended conducting further studies to evaluate GERD's transboundary impacts and estimate the potential influence of climate change on the flow regime at the GERD and downstream. Studies conducted to examine the transboundary impacts of the project suggest that coordination in monitoring the river system, information sharing, and integration of climate change data would be necessary for future cooperation on the project.

Costs and benefits to the river

The Nile river basin is facing ever-growing challenges and pressures that invite coordinated action. The impact of climate change, the restoration of degraded water catchments, and the need for establishing a regional hydrometric and environmental monitoring system are just a few examples of these challenges (NBI, 2012, pp. 26, pp. 212-215). An NBI official and an expert from an international agency supporting the initiative maintain that basin-wide cooperation to address common challenges co-existed, and may continue to exist, with unilateral and project-centred agreements (interview with Negash, 7 May 2015; personal communication, 29 May 2015). However, unilateral planning of hydraulic projects, and project-specific arrangements, ignore the cumulative impact of the various hydropower projects on the flow regime and the ecology of the basin. This impact may lead to significant changes that need to be mitigated by cooperative endeavours. In light of these changes, the strategic choice of Nile riparian states should be, as the NBI "State of the River Report" 2012 recommended, to develop a basin-wide development plan (or even a sub-basin plan) that incorporates the various sources and uses of water and the cumulative impact of the several projects implemented in the basin (NBI, 2012, p. 175).

The specific impact of the GERD project on the river system is difficult to anticipate based on the Ethiopian documents presented to the IPoE. For example, it was suggested that moving water storage upstream would reduce evaporation losses in the river system. An estimate of evaporation losses at the GERD was, however, another missing gap in the planning of the project. The IPoE considered the estimation presented by the Ethiopian government as being insufficiently conclusive and recommended that further assessment be undertaken (IPoE, 2013, p. 35).

The political costs of the project

For more than three years after its unilateral launch, the GERD caused high political tension between Cairo and Addis Ababa. These tensions reached an apex in May-June 2013, when Ethiopia diverted the Blue Nile to commence the construction of the dam, just days before the IPoE submitted its report. In an attempt to show that forces from across the political spectrum were united against the project, ousted Egyptian President Mohamed Morsi invited political parties to participate in a consultation meeting on the project on 3 June 2013. The measures suggested at the meeting, which was mistakenly televised(!), included: supporting the Ethiopian opposition, striking new arms deals to deter Ethiopia, and sabotaging the dam. The meeting revived memories of similar tactics used by the former Mubarak regime against Ethiopia.

A week later, Morsi delivered a speech in which he called for unity against the GERD as Egypt's most pressing foreign policy challenge. Although he stressed that dialogue was the best means to resolve the crisis, he said that all options to deal with the crisis remained on the table. He declared that if Egypt's share of the Nile water *"diminished by one drop, then our blood is the alternative"* and vowed that *"Egypt would not accept infringements on its water security"* (*Ahram online*, 11 June 2013).

The Ethiopian government responded the same day, dismissing the Egyptian threats as *"psychological warfare"* that would not intimidate Ethiopia or prevent it from carrying out *"the dam's construction, even for seconds"* (*Reuters*, 11 June 2013). The war of words between the two countries fed into anticipation of a water war in the Nile basin.

Many experts and scholars in Egypt were as uncompromising as the political elite and urged the government to take a tougher stance. For them, the Ethiopian decision to increase the storage capacity of the dam compared to earlier plans indicates that the GERD is more about controlling the flow of the Nile water, than producing electricity. Based on this assessment, Egypt was to use all possible diplomatic, legal and political means to preserve its *"acquired rights"*, and arrest the launch of dam projects that negatively affect its water security (Nour Eddin, 2014; Raslan, 2013; Sharaqi, 2011).

The ouster of Morsi in July 2013 only partially reduced these tensions. Challenges encountered during technical negotiations fed into the historical mistrust between the two countries. Egypt's withdrawal from the ministerial rounds of negotiation in January 2014 indicated its frustration at the lack of progress more than seven months after the submission of the IPoE report to the three governments. With the suspension of negotiations, the Ethiopian Minister of Defense, Siraj Fegessa, declared to parliament that the army was ready to defend the project against any attack (*The Reporter*, 5 April 2014).

But more serious than the war of words between Egypt and Ethiopia was the restructuring of the two countries' regional relationships to protect and contest the project. This has added to the complexity of hydro-politics in the Nile basin and casted doubts on the optimistic accounts of the GERD's contribution to regional integration.

Benefits and costs beyond GERD: shaping new regional relationships

Given the challenge that the GERD constituted to Egypt's water security, and the Ethiopian-Sudanese convergence of interests and positions on the project, Egypt has sought to develop new relationships and maintain old alliances to counter the Ethiopian-Sudanese rapprochement. The Egyptian rapprochement with South Sudan is particularly noteworthy. It was speculated that the newly-born state would side with upstream countries for ethnic, historic, and practical reasons (Raslan, 2011, p. 82; Salman, 2013, p.23). Since the signing of the Comprehensive Peace Agreement (CPA) between Khartoum and Juba in January 2005 gave Southern Sudanese the right to vote for independence after a transitional period, the Egyptian government tried to foster cooperation with South Sudan to reduce the anticipated impacts of secession on Egypt's water security. Technical agreements for capacity-building, the construction of small dams and canals, and an update of the studies on the Jongeli canal (an Egyptian-Sudanese project in the wetlands in South Sudan that was suspended after the resurgence of the civil

war in 1984) were signed between Cairo and Juba during the transitional period (Taha, 2010, p. 202).

As tensions around the GERD mounted, Egypt sought cooperation with newly independent South Sudan in new areas to secure South Sudanese acknowledgment of its 'acquired rights', and to exert influence on both Addis Ababa and Khartoum over the GERD. In March 2014, two months after Egypt withdrew from the ministerial negotiations on the GERD, and three months after the beginning of military confrontation between the South Sudanese government and rebel forces loyal to former Vice-president Riek Mashar, Juba signed a military agreement with Cairo. The details of the agreement were not disclosed, but South Sudanese military sources declared that the agreement included training of the South Sudanese army in Egyptian military colleges, sharing of expertise, and joint exercises (*Sudan Tribune*, 24 March 2014; *Al-Monitor*, 31 March 2014). The agreement raised such alarm bells in Ethiopia that South Sudan's President Salva Kiir had to assure the Ethiopian Prime Minister that the agreement was not directed at Addis Ababa and its Renaissance Dam (*World Bulletin*, 19 April 2014).

The Egyptian support for Kiir, albeit risky, has secured South Sudanese support for the Egyptian position. Although South Sudan has announced that it will join the CFA, it has not yet taken this step. Egypt claimed that there was coordination between Cairo and Juba on the Nile water and the Renaissance Dam crisis (*allafrica*, 22 November 2014). In November 2014, Cairo signed a water agreement with Juba that established a permanent mechanism for joint cooperation, similar to the one established according to the 1959 agreement between Egypt and Sudan. It listed a number of projects that would be funded by a USD 26 million Egyptian grant to develop the quality of water resources and establish rainwater storage dams (Ministry of Water Resources and Irrigation of the Arab Republic of Egypt, s. a.). In February 2015, the Egyptian government declared that it had cooperated with the South Sudanese government to prepare a feasibility study for a USD 2 billion hydropower project on Jur River in Bahr el-Ghazal state and pledged to assist South Sudan in mobilising donor funding for the project (*Sudan Tribune*, 27 February 2015).

The Egyptian military cooperation extended to other countries in the horn of Africa in an attempt to send a message to Addis Ababa that Egypt could influence Ethiopia's interests in the region, even after the two countries had moved towards greater coordination on the project as of June 2014. In April 2015, the Egyptian Minister of Defense, Sidki Sobhi, received the Djiboutian Chief of Staff, Zakaria Cheikh Ibrahim, to discuss ways of boosting bilateral cooperation (*Ahram online*, 5 April 2015). Egypt has also sustained its relationship with Eritrea, Ethiopia's adversary. In May 2015, the Egyptian Foreign Minister, Sameh Shokri, visited Asmara, in what appeared to be an Egyptian message that recent rapprochement with Ethiopia over the Renaissance Dam would not affect strategic relations with Eritrea (*Ahram online*, 6 May 2015).

To counter the Egyptian-South Sudanese rapprochement, Ethiopia took the Addis-Khartoum axis a step further. In August 2014, Addis Ababa and Khartoum signed an agreement to establish a joint military force which would operate under the same command. The formation of the force, whose responsibility was to secure borders and *"allow the two countries to carry out joint developmental activities"*, was seen as a step to protect the GERD (*Sudan Tribune*, 14 August 2014).

At the same time, although the GERD promised to open avenues for cooperation beyond water resources, especially in areas of electricity trade between Ethiopia and Sudan, the manner in which Egypt would engage in these cooperation schemes was a matter of contestation. While both Egypt and Ethiopia have been pronouncing their support for regional integration, the GERD revealed the divergence of the two countries' vision on the bases of this integration. Ethiopia's vision is based on the specialisation of each of the three Eastern Nile countries in an area in which it enjoys comparative advantage; these are industrial development for Egypt, hydropower production and water storage projects for Ethiopia, and agriculture for Sudan (Arsano, 2007, p. 226; MoI, 2002, pp. 123-124). Since agriculture consumes more than 85% of the available water resources in Egypt (Elemam, 2010, p. 219), Egypt with less agriculture would be less dependent on the Nile. This Ethiopian vision has been criticised by Egyptian academics and technocrats. Although the contribution of agriculture to Egypt's GDP had dropped to 14% by 2010, the sector still employs about a third of the Egyptian workforce (NBI, 2012, p. 109). Given its unprecedented scale and unilateral planning, the GERD was seen as an imposition of Ethiopia's vision of regional cooperation on Egypt (Nour Eddin, 2014, pp. 341-342).

5.2 From unilateralism to cooperation: positive compromises and outstanding issues

5.2.1 The Malabo statement and public diplomacy

After the Egyptian withdrawal from the ministerial negotiations in January 2014, a new approach was required to end the stalemate. The election of a new president in Egypt and the realisation that disengagement serves Ethiopian interests, especially with the ongoing construction of the project, encouraged the moderation of the Egyptian position. Although after its withdrawal from the ministerial negotiations the Egyptian government announced that it had prepared a *"comprehensive legal file"* to protect its interests in Nile waters (MFA, 2014c), it was very unlikely that Ethiopia would agree to international arbitration on the dam. For its part, Ethiopia showed an interest in reducing tensions with Egypt over the project with the change in the Egyptian leadership.

The first progress towards cooperation was achieved during the African Union Summit in Malabo in June 2014. A meeting between the newly-elected Egyptian President Abdel Fattah el-Sisi and the Ethiopian Prime Minister Helamariam Desalegn ended with a seven point statement. According to the statement, the two countries agreed to resume the technical negotiations and respect the results of the technical studies recommended by the IPoE. Ethiopia agreed to avoid *"any potential adverse effects of the GERD on the water uses of Egypt"*, while Egypt agreed to engage in dialogue that takes into account Ethiopia's *"developmental needs"* (MFA, 2014a).

Accordingly, the fourth tripartite ministerial meeting was held in Khartoum during August 2014. The meeting agreed to establish a committee to oversee the implementation of the additional studies recommended by the IPoE, which were grouped into two major studies: a water resources/hydropower system simulation model; and a transboundary environmental and socio-economic impact assessment. The Tripartite National Committee (TNC), composed of four experts from each country, was supposed to discharge its work

according to the timetable set by an international consultancy firm which was to be hired to conduct the two studies (Ethiopian Embassy in London, 2014).

To make use of this rapprochement, Ethiopia employed active public diplomacy to attract support to the project, including from influential figures in Egypt, a novel tool in Ethiopia's Nile diplomacy. In December 2014, a public diplomacy delegation, led by the Speaker of Parliament and including members of the Ethiopian religious communities, visited Cairo. During the visit, the Ethiopian News Agency announced that Egypt's religious leaders supported the GERD, quoting the Coptic Orthodox Church Pope Tawadros II as saying that the dam did not undermine Egypt's interests and that Egypt had in the past undertaken similar development projects on the Nile, and should extend support to the dam (Ethiopian News Agency, 18 December 2014). Thus, although it continued to face criticism from international civil society organisations for the secretive and rushed construction of the GERD (International Rivers, 2014), Ethiopia was able to win over other voices to its rhetoric on the project.

5.2.2 The Declaration of Principles

Although the Malabo statement promised to usher in a new phase of cooperation between the three Eastern Nile countries over the GERD, technical deliberations continued to face challenges as a result of disagreements over the criteria of selecting the consultancy firm that would conduct the required studies. Another intervention at the political level was required to move negotiations forward. On 6 March 2015, the Foreign Ministers of the three eastern Nile countries reached a preliminary agreement, which was signed two weeks later by the heads of state and government in Khartoum.

The declaration addressed some of the Egyptian and Sudanese concerns about the project and constituted the basis for a technical agreement that would be negotiated after the required studies were finalised. Compromises were offered by both Egypt and Ethiopia to reach a mutually-agreed formula. Given its nature as a political statement that lacks technical detail and its silence on some crucial issues, the declaration has opened the door for various interpretations and expectations and left a number of outstanding issues to be resolved in future negotiations.

The most significant progress was the agreement on using the results of the studies recommended by the IPoE to jointly define the guidelines and rules of the first filling and annual operation of the dam. However, the owner of the project (i.e. Ethiopia thus far), reserved its right to adjust these rules from time to time and 'inform' downstream countries of any 'urgent circumstances' that had led to such adjustment, something which may cause disagreements in the future about when and whether Ethiopia could operate the dam according to its own priorities. Another positive aspect was the agreement to establish a permanent coordination mechanism to sustain coordination on the annual operation of the GERD, together with downstream reservoirs. This addresses the concern regarding the impact of the GERD on the HAD in Egypt and other dams in Sudan. It represents a departure from Ethiopia's earlier position that considered the operation of the dam as its sovereign exclusive right. The declaration also encouraged the three parties to exchange information to facilitate the work of the TNC.

In relation to the benefits of the project to downstream countries, the declaration gave priority to Egypt and Sudan in purchasing power generated by the dam, an article which seems of greater benefit to Sudan than to Egypt. As for the project's contribution to regional integration, the declaration reflected the Ethiopian conception of 'generation of sustainable and reliable clean energy supply' as a cornerstone of trilateral cooperation, a rhetoric that does not account for the potential environmental impact of Ethiopia's dam projects.

The declaration did not also resolve the dispute about the purpose of the project. Its statement that the GERD is *"for power generation and to contribute to economic development"* carries different interpretations. While some commentators regarded this statement as depriving Ethiopia from using the stored water for irrigation (Negash et al., 2015), other considered the reference to *"economic development"* as broad enough to allow for the use of the water for purposes other than hydropower production (Taye, 2015).

More broadly, the declaration included conciliatory principles on the utilisation of the Nile water. On the one hand, it highlights the principle of 'equitable and reasonable utilisation' adopted by Ethiopia. In defining the principle, the declaration adopted the same criteria identified in the CFA. These do not only include social and economic needs, the size of the population dependent on the river, and the existence of alternative water resources (which may favour Egypt), but also the contribution of each basin state to the waters of the river system (which favours Ethiopia), and the extent and proportion of drainage area in the territory of each basin state.

On the other hand, the declaration stresses the principle of causing no significant harm, and, importantly, the commitment to mitigate and eliminate this harm in the event that it occurs, and to discuss compensation. It is not clear whether accepting the principle of compensation means that Egypt approves, in principle, compensation for any significant harm that may affect its historical use of the Nile water. Although the declaration includes no explicit reference to Egypt's 'acquired rights' in the Nile water, Egypt considered the reference to international law principles as an implicit acknowledgement of this right (interview with Al-Quosy, 28 April 2015). The Egyptian Ministry of Foreign Affairs issued a statement two days before signing the declaration to confirm that the new agreement will not affect historical agreements and the water share allocated in these agreements (MFA, 2015).

To avoid consuming more time, the declaration stressed that agreement on the guidelines of filling and operation of the dam should be reached within fifteen months from the inception of the two studies recommended by the IPoE. More crucial was the reference – for the first time in Nile-related agreements – to mechanisms for settling disputes on the interpretation and implementation of the declaration. These mechanisms include negotiation, consultation, mediation, and reference to the Heads of State. It is, however, noteworthy, that arbitration was dismissed as a means of settling future disputes.

No less important than the declaration was the attempt of the new Egyptian President to provide a conducive political environment for the implementation of the declaration. After signing the declaration in Khartoum, Abdel Fattah el-Sisi made a visit to Ethiopia, during which he agreed with the Ethiopian Prime Minister to elevate the current bilateral ministerial commission to the presidential level to enhance cooperation (SIS, 2015a). This

means that the two leaders will meet annually to discuss the progress of cooperation and intervene to reduce the obstacles facing this progress. In his speech to the Ethiopian Parliament, el-Sisi stressed the importance of building trust between the two countries, but underlined Egyptian perceptions on the utilisation of the Nile water, which appear to have changed very little despite changes in Nile politics over the last decade. He argued that, while the Nile is important to Ethiopia for producing hydropower and achieving development, it is the source of sustaining life for Egypt given the lack of alternative water resources. He reiterated Egypt's position on the CFA calling upon the Ethiopian parliament, which had already ratified the agreement, to work with other Nile basin countries to build consensus over the outstanding issues (SIS, 2015b). These two elements, the protection of Egypt's water security and the rejection of the CFA, continue to be the bases of bilateral and collective cooperation accepted by Egypt.

Thus, the Declaration of Principles is a step towards averting conflict over the controversial dam. However, it does not address all the uncertainties identified in the last part of this section. It is only the translation of the declaration into a detailed technical agreement that would adequately determine whether the GERD would leave the three Eastern Nile countries better off, and thus whether the agreement would be a successful case of benefit-sharing. Some of the issues at stake for these negotiations are discussed in the next part of this section.

5.3 Towards a benefit-sharing deal

Tough negotiations await the three eastern Nile countries, especially Egypt and Ethiopia, after the conclusion of the required technical studies. In April 2015, the three countries selected a French and Dutch company to conduct the two studies. But different expectations, based on divergent interpretations of the Declaration of Principles, have already been voiced by Egyptian and Ethiopian officials. Although the declaration included no reference to the dam's size and storage capacity, Ahmed Bahaa Eldin, the Director of the Nile Water Department at the Egyptian Ministry of Water Resources and Irrigation, stressed that signing the declaration did not mean that Egypt acceded to the design of the dam or its storage capacity. According to him, these elements remain contested and would be negotiated, based on the recommendations of the international consultancy firms (*Middle East News Agency*, 25 March 2015). This is consistent with the view of the National Committee on the GERD formed by the Ministry, which declared that Egypt has serious concerns about the dam size, and considered it part of the negotiations, insisting that Egypt would not be a party to a hydropower agreement with Ethiopia before resolving the size issue (MIT, 2015). On the contrary, the Director of Transboundary River Affairs at the Ethiopian Ministry of Water and Energy, Teshome Atnafie, indicated that the Declaration of Principles is only about the operation of the dam and that its size and storage capacity are non-negotiable (Interview, 15 June 2015).

The Egyptian concern about the impact of the project on its historical share in the Nile water indicates that water allocation is still at stake. The way in which the agreement on the filling and operation of the dam, the distribution of benefits in future technical arrangements, and the implementation of these arrangements affect the parties' position on water allocation will remain a relevant and challenging issue.

Agreeing on the rules and operation of the dam could not be less challenging. Ethiopia will be interested in filling the reservoir more quickly to maximise power generation, while downstream countries will be interested in filling the reservoir more slowly to reduce the potential reduction of water flow. The GERD's releases during filling periods and prolonged period of droughts are the two most important factors for downstream countries, because it is at these times that the water requirements of Egypt and Sudan may contradict Ethiopian plans (MIT, 2014, pp. 4-5). The Ethiopian side pre-empted negotiations by declaring through the project's manager engineer, Simegnew Bekele, that a *"progressive filling strategy"* would be followed and that the reservoir would be filled in six years (*Sudan Tribune*, 4 April 2015).

6 Conclusions

The GERD is a 'game changer' that challenges Egypt's long-standing hegemony over the Nile basin. It heralded the transformation of Ethiopia's counter-hegemonic policy from the reactive diplomacy of occasional contestation of Egypt's Nile policy to a proactive diplomacy that creates new facts on the ground. It also reflects the shifting balance of power in upstream-downstream relations. For the first time, Ethiopia has been able to combine the geographic power derived from its location as an upstream country and the material power of sustained economic growth that allowed it to construct the GERD with no foreign funding. This has come at a time when Egypt has been struggling to restore its economic strength after four years of instability in the wake of the 25 January 2011 revolution.

Additionally, the GERD provides an exemplary case of how dam projects combine coercive, utilitarian, and discursive counter-hegemonic mechanisms. Backed by a discourse that stresses 'equitable utilisation' of shared water resources, and the right to development, and strengthened by Ethiopia's alliance with Sudan, Egypt's historical hydro-political ally, the Ethiopian approach in constructing the GERD put an end to Egypt's past obstruction of upstream hydraulic projects. Innovative tools, such as public diplomacy, were used by Ethiopia to win influential voices to its rhetoric about the project. After four years of tensions between Cairo and Addis Ababa over the project, the three Eastern Nile countries acceded to a Declaration of Principles that obliged them to agree on the guidelines of the filling and operation of the GERD. Apparently, Cairo was forced to accept the GERD as a fact on the ground and to seek cooperation with Ethiopia to reduce the project's negative potential impact on its water security. In this regard, the interpretation of hydro-hegemony scholars was right in referring to the GERD as a manifestation of counter-hegemony which, by itself, might not change the dominant hegemonic order in the Nile, but clearly indicated that the *"era of consent (apparent or veiled) [was] over"* (Zeitoun et al., 2014, p. 13).

However, this paper demonstrated that the unilateral construction of dam projects may weaken the dominant position of the hegemon, but may not necessarily lead to the establishment of a more equitable regime based on sharing benefits, as the hydro-hegemony framework suggests. To weigh up the benefits and costs of counter-hegemonic dam projects, the paper proposed using the concept of benefit-sharing. Applying the various categories of benefits, the paper examined the potential impacts of the GERD on

Ethiopia, on downstream countries, on the river, on cooperation on and beyond the project, and on the costs of tensions because of the project.

The analysis of this range of benefits (and costs) indicated that the GERD has the potential of delivering benefits to Ethiopia, to downstream countries, and to the river. It promises to increase electricity coverage in Ethiopia and power exports to neighbouring countries, to position the country as a power hub in Africa, and to change the image of Ethiopia as a country of famine. It would increase the volume of power trade among Nile Basin countries, and potentially control floods and reduce sedimentation, thus improving the operation of downstream reservoirs. It would arguably regulate the river's flow and increase the potential for irrigated agriculture in Sudan.

However, the Ethiopian tactics in constructing the GERD has increased the project's cost. This cost is arguably more related to the scale of the project, its objective, and its rushed planning and implementation, than to its unilateral construction. The rushed planning and implementation of the project created uncertainties, not only about the impacts of the project on downstream countries, but also about its economic potential. Although Ethiopia tried to market the project as one that would deliver benefits to all Eastern Nile countries, it did not actually provide any comprehensive assessment of the transboundary impacts of the project. The IPoE formed to assess the project's documents recommended the implementation of further studies to evaluate these impacts. Increasing the storage capacity of the dam compared to earlier Ethiopian plans by more than six-fold and doubling its height raised questions about the objective of the project. Given the failure to reach a legal agreement on the utilisation of the Nile water, the project's large scale appeared to be more about controlling the flow of the Nile and promoting Ethiopia's regional and international prestige.

Political tensions between Egypt and Ethiopia as a result of the unilateral construction of the project, and the Ethiopian refusal to halt construction until the required studies were concluded, have fed the historical mistrust between the two countries. Each country has sought to maintain old alliances and form new regional relations to influence the interests of the other in the Nile basin and the Horn of Africa. This approach continued even after the two countries reached a general understanding on resolving the crisis over the GERD; pointing to continuing mutual suspicion that will require time and effort to overcome. This raises doubts about the contribution of the GERD to cooperation beyond the project. More generally, the visions of Egypt and Ethiopia for the bases of regional cooperation remain at odds.

The recent Declaration of Principles has resolved some of the contested issues over the project. However, it left other questions surrounding the conditions under which Ethiopia can adjust the agreed rules of filling and operating the dam, and the impact of the dam on Egypt's historical share in the Nile water open. Contrary to the hydro-hegemony scholars' predictions, these factors suggest that the GERD as a counter-hegemonic tool may lead, at least in the short term, to an unstable order of contested control, rather than a stable one of shared control, if the three Eastern Nile countries fail to reach a consensus over the disputed issues. Whether the recent Declaration of Principles, the upcoming negotiations over the operation of the GERD, and the future Ethiopian dams will lead to a more stable and equitable order in the long term remains to be seen.

Yet, the Declaration of Principles (DOP) introduces a new model of cooperation that is not only important for averting conflict over the GERD, but can also be replicated in future Ethiopian projects. However, hard choices and trade-offs will have to be made by the three Eastern Nile countries to translate the DOP into a benefit-sharing deal. To avoid future conflicts over the transboundary impacts of the project, the potential negative externalities of the GERD, as underlined in the IPoE report, have to be discussed, with mitigation measures identified and the financial costs of these measures negotiated. Sufficient incentives must be offered to each party, especially to Ethiopia given its relatively strong negotiating position, to show flexibility over contentious issues. Power trade agreements may provide an incentive for the three countries. In December 2008, the ENTRO concluded a feasibility study for energy connection between the three countries, but little progress in implementation has been achieved since then.

Incremental steps for building trust between the three Eastern Nile basin countries are needed to provide an enabling political environment for future technical negotiations. On the part of Ethiopia, providing transparent information about the project and its progress would not only build trust, but also facilitate the negotiations over the specific benefit-sharing mechanisms that would be acceptable to the three parties.

Broadening the modalities of cooperation, as proposed by the benefit-sharing concept, to include areas beyond the project could also help build trust between the three Eastern Nile countries. It is essential that the momentum provided by the recent rapprochement over the GERD be used to establish more sustainable economic links that create interest for a stable political relationship between the two countries. Increasing trade relations, especially virtual water imports in livestock and crops from Ethiopia, and Egyptian investment in the agricultural sector in Ethiopia, have long been proposed by politicians and technical experts, but with little progress on the ground. Political support is needed to put these proposals into action.

Finally, since the GERD will not be the last dam constructed on the Nile, a discussion on how to reconcile a project-by-project arrangement with a basin-wide (or a sub-basin) plan, and the role of the NBI in developing and implementing this plan, is necessary. While the former may be easier to negotiate, it may be more costly in terms of potential conflicts, and impacts on the river and other riparian states. To provide incentives for coordinating national plans, Egypt could consider reviving its proposal to develop a package of joint projects to be implemented with the support of the international community, that contribute to economic development in upstream riparians without negatively affecting the water flow downstream, and develop water resources in the basin.

On their part, donors would better support joint hydraulic projects, programmes aimed at the long-term sustainability of the river, as well as projects that would increase regional integration beyond the river (ex: power transmission lines, transport links) than engage in unilaterally constructed dam projects that may increase tensions between riparian states.

Table 3: Dam projects and Ethiopia's counter-hegemony in the Nile Basin

	Coercive (use or threat of use of force, non-cooperation)	**Leverage** (construction of infrastructure, engagement in cooperative schemes, formation of alliances)	**Liberating** (discursive/normative)
Dam projects		- Development of more coherent water policies with updated dam plans. - Unilateral construction of dam projects (Tekeze, Tana Beles). - Proposal of dam projects (Karadobi, Mendaia, Border) to NBI to mobilise funding. - Marketing the benefits of Ethiopian hydropower projects to upstream countries and Sudan. - Mobilisation of international funding for dam projects.	- Condemnation of historical agreements and the related Egyptian veto power against dam projects. - Promotion of the principle of 'equitable utilisation of water resources' and the enhancement of water management through the construction of dams upstream. - Promotion of the principle of sharing information on planned projects instead of prior notification in the CFA. - Promotion of the exclusion of acquired rights as a defining element of water security in the CFA. - Mobilisation of a united upstream front in the CFA negotiations.
GERD	- Rejection of halting the construction until the IPoE finalises its review of the dam's documents.	- Unilateral construction. - Mobilisation of domestic funds for the project. -Rejection of an Egyptian proposal for co-financing the project. - Securing of Sudan's support for the project. - Formation of the IPoE and technical consultations to implement its recommendations as confidence-building measures. - Signing of the Declaration of Principles.	- Emphasis on the project's contribution to poverty alleviation in Ethiopia. - Confirmation that the project delivers benefits to all Eastern Nile countries, and causes no significant harm. - Use of public diplomacy to market Ethiopia's rhetoric about the project.

Source: Author

Table 4: GERD as a counter-hegemonic tool: opportunities and challenges

Benefits from the project		Benefits to the river	Reduction of tensions around the project	Benefits beyond the project
Opportunities	**Challenges**	- Unilateral projects ignore the cumulative impact of different hydropower projects on the flow regime and ecology of the river. - Lack of estimations of specific impacts (e.g. evaporation losses, climate change).	- High political tensions and threats of using military force by Egypt and Ethiopia. - Calls from sectors of the Egyptian public opinion to take a tougher stance. - Increasing mistrust.	- New regional relationships adding more complexity to hydro-political relations (Cairo-Juba vs. Addis Ababa-Khartoum, sustaining Egypt's relationship with Ethiopia's neighbours). - Regional cooperation, but on whose terms?
Ethiopia	**Ethiopia**			
- Job and business opportunities. - High electricity coverage and hard currency from power exports to neighbouring countries. - The symbolic value of countering Egypt's hegemony.	- Absorption of domestic finances which may impact other sectors of the economy. - Not the best investment choice as a hydropower project only. - Did Ethiopia factor the future competitive regional electricity market into the project's cost-benefit analysis? - Exports need to expand rapidly for the investment to be profitable. - What are the economic considerations behind the installed power capacity? - Concerns about the project's lifespan.			
Downstream countries	**Downstream countries**			
- Regulation of the flow increases the potential of irrigated agriculture in Sudan. - Reduction of sedimentation improves Sudanese and Egyptian dams operation. - Affordable electricity to Sudan and Egypt. - Less need for storage upstream, less evaporation and water losses.	- No comprehensive studies conducted to assess transboundary impacts. - Negative impacts on Sudanese recession agriculture, groundwater, fisheries, riverbed and banks erosion neglected. - The need for assessing the impact of Sudan's increasing irrigated agriculture on Egypt. - Possible impacts on water flow and hydropower production in the HAD, especially in dry years, and depending on the filling period.			

Source: Author

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Annex

Annex 1:	**Hydro-political contention over the Renaissance Dam: a timeline**
13 April 2010	At the Sharm el-Sheikh meeting, seven upstream Nile riparians decide to open the CFA for signature, a step rejected by Egypt and Sudan.
14 May 2010	Ethiopia, Tanzania, Uganda, and Rwanda sign the CFA, followed by Kenya five days later.
22 June 2010	Egypt and Sudan freeze their membership in the NBI and the Initiative's joint projects.
3 February 2011	The Ethiopian Prime Minister Meles Zenawi announces to the Ethiopian Parliament that his government had decided to construct a large dam on the Blue Nile.
22 February 2011	Burundi signs the CFA, bringing the number of signatories to six, the number required for opening the agreement for ratification.
2 April 2011	Meles Zenawi lays the cornerstone of the Millennium Dam, later renamed the Grand Ethiopian Renaissance Dam (GERD).
30 April - 3 May	An Egyptian public diplomacy delegation visits Ethiopia to discuss the crisis due to the dam and the CFA. Ethiopia agrees to delay the ratification of the CFA until Egypt elects a new government.
13 May 2011	A visit by the former Egyptian Prime Minister Essam Sharaf ends with an agreement on the formation of an International Panel of Experts (IPoE) on the GERD.
29 November 2011	Ministers of Water Resources and Irrigation in Egypt, Sudan and Ethiopia agree on the Terms of Reference for the International Panel of Experts on GERD.
15 May 2012	The IPoE holds its first meeting.
28 May 2013	The Ethiopian government diverts the Blue Nile to construct the GERD.
31 May 2013	The IPoE submits its report.
3 June 2013	Egyptian President Mohamed Morsi's meeting with political figures on the GERD mistakenly televised.
11 June 2013	Egyptian President Mohamed Morsi says all options are open to deal with the GERD.
13 June 2013	The Ethiopian Parliament ratifies the CFA.
18 June 2013	Egyptian Foreign Minister Kamel Amr visits Ethiopia to ease tensions over the GERD.
28 August 2013	Rwanda ratifies the CFA.
November 2013	First trilateral meeting at the level of Ministers of Water Resources and Irrigation convened in Khartoum to discuss the implementation of the recommendations of the IPoE report.
December 2013 - January 2014	Ministerial meetings fail to reach consensus over the formation of the Trilateral Committee responsible for overseeing the conduct of studies recommended by the IPoE and over confidence-building measures. Egypt withdraws from negotiations.
24 March 2014	Egypt signs a military agreement with South Sudan that raises concerns in Ethiopia.
April 2014	Egyptian Foreign Minister Nabil Fahmy announces that Egypt was offering participation in the financing and operation of the dam. Ethiopia turns down the offer.
28 May 2014	A new Egyptian President, the former Defense Minister Abdel Fattah el-Sisi, elected.

26-27 June 2014	The new Egyptian President and the Ethiopian Prime Minister Hailemariam Desalegn agree on a Joint Statement to resume negotiations over the GERD during their participation in the African Union Summit in Malabo.
15 August 2014	Ethiopia and Sudan agree on establishing a joint military force to secure borders and allow the establishment of joint developmental projects.
25-26 August 2014	Resumption of technical negotiations by holding the fourth Tripartite Ministerial meeting in Khartoum.
20-22 September 2014	The first meeting of the Trilateral Committee responsible for following up the implementation of the IPoE recommendations.
23 March 2015	Ethiopia, Egypt and Sudan sign a Declaration of Principles over the GERD in Khartoum.
26 March 2015	Tanzania ratifies the CFA.
9 April 2015	Ethiopia, Egypt and Sudan select two international consultancy firms to conduct the studies recommended by the IPoE.
Source: Author	

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