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Ethiopia and the Nile

Dilemmas of National and Regional Hydropolitics



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————— ETHIOPIA AND THE NILE —————
DILEMMAS OF
NATIONAL AND REGIONAL HYDROPOLITICS

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LIST OF ACRONYMS AND TERMS

AAU	Addis Ababa University
AAWSA	Addis Ababa Water and Sewerage Authority.
Abbay	The Ethiopian name for the Blue Nile
Abuna	Bishop in the Ethiopian Orthodox Churches
ADLI	Agricultural Development Led Industrialization

Adwa	The name of the battle field in northern Ethiopia where the invading Italian army was defeated in 1896
Aksum	The ancient Empire state of Ethiopia
Anyuae	The “Anuak” people of western Ethiopia
AVA	Awash Valley Authority
AVDA	Awash Valley Development Agency
bcm	billion cubic meters = 1000,000,000 cubic meters = km ³
Birka	Hand dug and cement plastered under the surface water silo
Birr	The Ethiopian currency, approximately 8.67 to 1.00 US\$ (2003)
Condominium	Anglo-Egyptian joint colonial rule in Sudan (1899–1956)
CIDA	Canadian International Development Agency
DPPC	Disaster Prevention and Preparedness Commission
DPSIR	Department of Political Science and International Relations
DRC	Democratic Republic of Congo
D-3 Project	Section (D-3) of the framework program
Econile	Environment and Cooperation in the Nile basin
EEPCCO	Ethiopian Electric Power Corporation
EN-SAP	Eastern Nile Subsidiary Action Program
EPA	Environmental Protection Authority
ERHA	Ethiopian Rainwater Harvesting Association
EVDSA	Ethiopian Valleys Development Study Authority
EWRA	Ethiopian Water Resources Association
EWVCA	Ethiopian Water Works Construction Authority
FAO	Food and Agricultural Organization of the UN
FDRE	Federal Democratic Republic of Ethiopia
Fetha Negast	Literally, “the justice of the kings”; an ancient Ethiopian law code for justice administration in the contexts of both the state and church
HEP	Hydroelectric power
Hydromet	Hydrometeorological survey of Lakes Victoria, Kiyoga and Albert
HR	Helsinki Rules
ICOWE	International Conference on Water and Environment

ICCON	International Consortium on Cooperation on the Nile
IAP-WASAD	International Action Program for Water and Sustainable Agricultural Development
ICOWE	International Conference on Water and Environment
LNUIWC	Law of the Non-navigational Use of International Watercourse
ILA	International Law Association
Meroe	An ancient kingdom in Sudan
MFA	Ministry of Foreign Affairs
MNRDEP	Ministry of Natural Resources Development & Environmental Protection
MWR	Ministry of Water Resources
MW	Mega Watt
MSA	Meteorological Services Authority
NBI	Nile Basin Initiative
NEL-SAP	Nile Equatorial Lakes - Subsidiary Action Program
NIHR	Norwegian Institute for Human Rights
Nile COM	Nile Council of Ministers
Nile TAC	Nile Technical Advisory Commission
Nile SEC	Nile Secretariat
NBID	Nile Basin Integrated Development
NWRC	National Water Resources Commission
Nubia	Ancient name for Sudanese state
Pastoralism	Extensive livestock herding in arid and semiarid ranges
PMACE	Provisional Military Administrative Council of Ethiopia
POE	Panel of Experts
SAP	Subsidiary Action Program / Strategic Action Program
SDC	Swiss Agency for Development and Cooperation
SPF	Swiss Peace Foundation
Tecconile	Technical cooperation for the promotion of development and environmental protection
Tekeze	The Ethiopian name for the Atbara
UNCED	United Nations Conference on Environment and Development
UNEP	United Nations Environmental Program

UNDP	United Nations Development Program
UNDESA	United Nations Development for Economic and Social Affairs
Undugo	Brotherhood in the Swahili language; a partial grouping of states in the Nile basin
VADA	Valleys Agricultural Development Authority
WMO	World Meteorological Organization
WRD	Water Resources Development
WWDSE	Water Works Design and Supervision Enterprise
WRDA	Water Resources Development Authority
WSDP	Water Sector Development Program
WSSA	Water Supply and Sewerage Authority
WWCE	Water Works Construction Enterprise
WWDSE	Water Works Design & Supervision Enterprise

SUMMARY

This study focuses on Ethiopia and the Nile waters in the context of Eastern Nile Basin states (Ethiopia, Sudan, Egypt and Eritrea). It aims to understand the prevailing national and regional dilemmas of hydro-politics in the Eastern Nile Basin. At the national level, it highlights the dilemma between the great need to develop the available water resources to overcome the debilitating poverty on the one hand, and the risk of limited institutional and financial capacity to develop these water resources on the other. At the regional level, the paradox between the unifying and divisive factors is outlined. The shared waters and common cultural heritage unify the peoples of the Eastern Nile basin, while the colonial legacy, vestige of cold war era, and unilateral and nationalistic strategies over water resource development, have led to regional tensions and incompatible legal doctrines. The study argues that the national and regional levels are closely intertwined. Increased political, institutional, security and economic capacity at the national level, and the development of a cooperative framework and mutual security architecture at the regional level are needed for sustainable water resources development, both at national and regional levels. The study traces the historical development that explains the present day situation, in view to understanding the dilemmas and highlighting ways to overcome them.

The study has used qualitative interviews, in-depth document analyses, and reflections from a series of problem solving interactive workshops with participants from Ethiopia, Egypt and Sudan. Security, socio-economic, environmental and legal/institutional concepts of shared water resource usage are developed, embedding these in the historical context of the Eastern Nile Basin.

Concerning security, a slow shift from unilateral to collective security approach can be traced. The colonial legacy meant a skewed water control situation in favor of the downstream countries, in keeping with the colonial interests. The end of Cold War was central in easing tensions in the Nile Basin. The shared vision of the Nile Basin Initiative (NBI) since 1999 is moving in the right direction towards collective security, but at a slow

and intermittent pace, especially with respect to legal and institutional aspects. The study finds that the existing status quo in the Eastern Nile basin still hangs in a delicate balance, unless a legal and institutional set-up is established by all riparian states. Nationally confined and fragmentary approaches to shared water resources are and will remain an intractable problem. Mutually beneficial (win-win) projects on the ground are desirable but not enough. A regional institutional set-up to regulate a longer-term cooperation is a *sine qua non* for sustainable development.

Concerning socio-economic aspects, the cultural ascription transmitted through poetry, myths and common practices of the peoples of the Nile point to a strong common heritage. But there is a danger of relegating water issues to the realm of high politics only. Economically, the great potential for irrigation and hydropower generation stand in stark contrast to the limited implementation of development plans – especially in Ethiopia. Utilizing shared water resources in one country without considering the supply and demand patterns in other co-riparian countries leads to un-economic utilization.

Concerning the environment, the waters of the Nile are a strong unifying factor, shared by ten riparian states. The Ethiopian headwaters provide 86 per cent of the annual flow volume of the Nile, while the remaining 14 per cent comes from the Equatorial Lakes region. Egypt and Sudan are the most downstream recipients of the Nile waters. While the need for and dependence on the shared water resources are on the increase the pattern of unsustainable utilization and management of the water resources has not yet been changed. Soil erosion and land cover loss in Ethiopia, silt accumulation and decreasing water quality in Sudan, and land salinity and excessive evaporation in Egypt can be understood as resulting from national water development approaches as opposed to the environmental unity and the need for basin wide water development strategy.

Concerning legal/institutional aspects, the study presents an in-depth historical analysis to explain the hydro-political perception that led to the incompatible doctrines of “absolute territorial sovereignty” by upstream states and “absolute territorial integrity” by downstream states. The study argues that a community of interest in the Eastern Nile Basin will have to be established through negotiated agreements and on the basis of mutually accepted legal and institutional frameworks. On the national level,

the study points out that Ethiopia needs to consolidate its traditional and modern water rules, customs and laws to codify them to provide a regulatory foundation for the nation's water utilization and development. The Ethiopian customary law supports what would be called on the international level "equitable use" but neither the "absolute territorial sovereignty" nor the "absolute territorial integrity" doctrine. The frequent change of water resources institutions and employees is one of the challenges hindering water resource development in this country.

After presenting an overview of dilemmas and the underlying historical developments, the study points to the urgent need for substantive upstream-downstream negotiations. At present the Eastern Nile Basin states are using a multi-layered negotiation strategy, consisting of both cooperative and competitive approaches. Egypt argues for increasing the supply of shared water resources (e.g. by drying up swamps) and sharing out any additional amount of water, and that rainwater should factor into any water allocation arrangement. As a fallback position, Egypt clings to the "absolute territorial integrity" doctrine and the "historical rights /no significant harm" principles, and has also gone ahead with unilateral water development projects. Ethiopia seeks to use its water resources in order to mitigate the prevailing poverty in the country. It uses rainwater, but rainfall is often erratic. Therefore, there is the need to dam the river flows in Ethiopia, including that of the Nile, and use this for more predictable reservoirs in small, medium and large-scale irrigation. The study unravels ample sources that indicate that Ethiopia is ready to share its water resources amicably with the other riparian states. However, the country demands an equitable share in the water flow of the Nile. As a fallback position, Ethiopia clings to the "absolute territorial sovereignty" doctrine and the predominance of the "equitable use" principle. It is also prepared to go ahead unilaterally, using bilateral funding, should a cooperative approach fail. Sudan is in the middle between Ethiopia and Egypt, and focuses on the comparative advantage approach, where Sudan focuses on irrigation, Ethiopia on hydropower generation and Egypt on tourism and industry.

Cooperation on shared water resources stands out as the only viable option for shared economic benefit, inter-state environmental protection, and common security. The study concludes by outlining steps to enhance

such cooperation: creating a community of interest, enhanced shared vision, development of mutually acceptable institutional mechanisms, win-win projects on the ground, interactions between politicians, technicians, academics and grass-root groups, as well as more generally increased awareness and exchange not only in the economic, academic and political field, but also in the cultural and spiritual ones.

I INTRODUCTION

The Nile valley is one of the oldest places in the world where its ancient inhabitants husbanded the water resources that engendered the valley a cradle of civilization, thereby creating ancient polities and empires. The famous Pharaonic civilization of Egypt is inseparable from the great Nile waters. The ancient Sudanese state of Merowe and the Aksumite Empire of ancient Ethiopia were firmly rooted in the Eastern Nile basin. Still today the economic lifeline, and both the national and foreign policies of Egypt are influenced by what the Nile waters provide. Sudan has carried out a limited amount of development of the Nile waters. Ethiopia views the Nile waters as a key resource for her future economic development.

In terms of its geography, the Nile is the longest river in the world, flowing 6,825 km over 35 degrees latitude from south to north. It is one of the greatest wonders of nature, with unfading romance through the civilizations of antiquity. Its basin embraces some three million km² encompassing the Equatorial Lakes region and northeastern Africa. Included within the Nile basin are: one third of Ethiopia, a substantial portion of Sudan, almost the entire cultivated and settled lands of Egypt, the whole of Uganda, parts of Kenya, Tanzania, Burundi, Rwanda, Congo Democratic Republic and Eritrea. The 3,352,710 km² basin is the third largest in the world, following those of the Congo and Amazon.

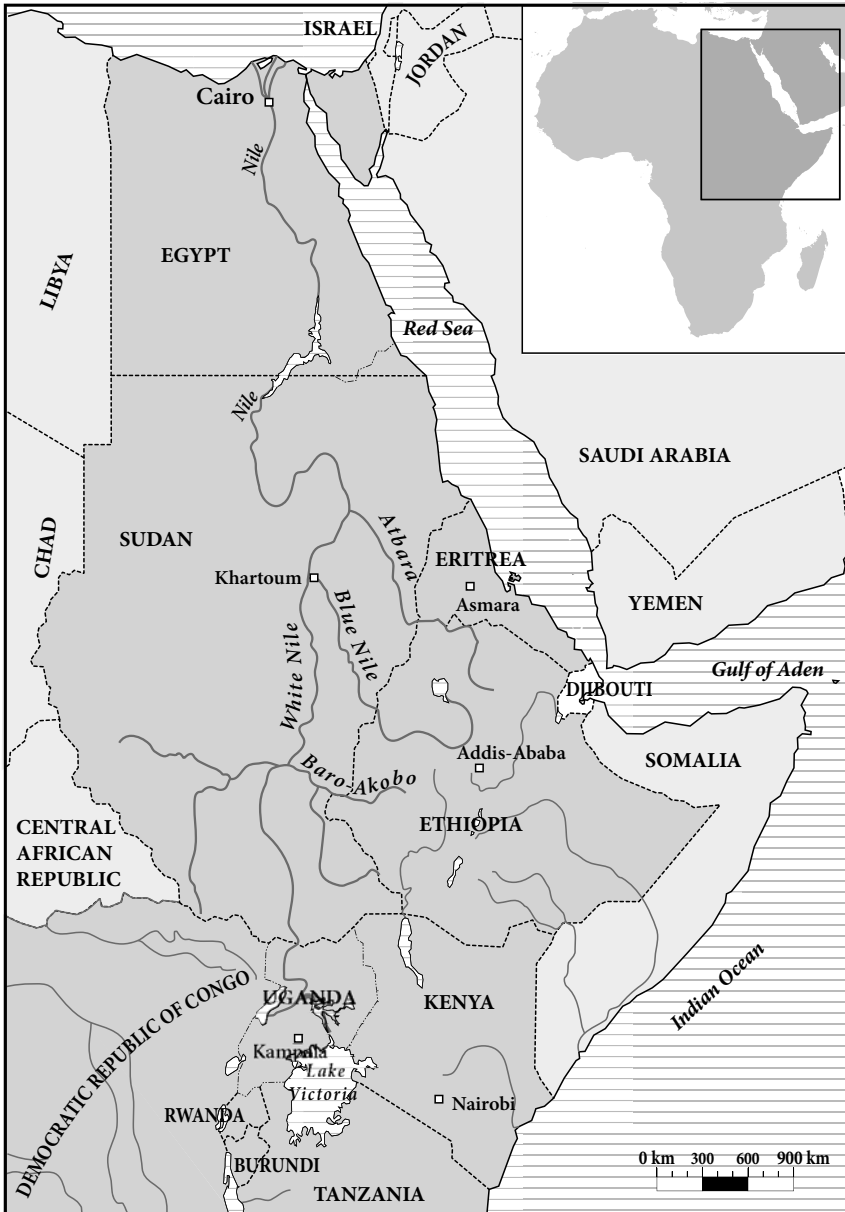
The Nile waters system consists of numerous tributaries and headwater lakes. Lake Victoria in the equatorial region and Lake Tana in north-western Ethiopia are the most significant natural reservoirs in the Nile upstream. Of the four major tributaries, the Abbay (Blue Nile), Tekeze (Atbara) and Baro-Akobo (Sobat) originate in the Ethiopian highlands, while the White Nile originates from the Equatorial Lakes region. The Ethiopian headwaters provide 86 per cent of the total Nile river water, while the remaining 14 per cent come through the White Nile system of the Equatorial Lakes area (Map 1).

Egypt and Sudan are net recipients of the Nile waters that come down from both head-water sub-systems. In view of the on-going Nile Basin Initiative (NBI) the basin is divided into two sub-basins, namely the Eastern Nile and the Equatorial Nile. The two sub-basins provide two

contextual realms for strategic action programs and diplomatic initiatives on the basis of strategically conceived subsidiary scales. The Equatorial Nile sub-basin comprises Burundi, DRC (Democratic Republic of Congo), Kenya, Rwanda, Tanzania and Uganda, while the Eastern Nile basin comprises Ethiopia and Eritrea. Egypt and Sudan, as downstream countries relative to both the Eastern and Equatorial sub-basin systems, are mapped together with two sub-basins. Egypt and Sudan are therefore recipients of water from upstream areas of the two sub-basin states.

The particular focus of the present study is on the dilemma of water policy and management in Ethiopia, the upstream country of the Eastern Nile basin. It also attempts to find out how the national level dilemmas are linked to the regional hydro-political dilemma in the Eastern Nile basin.

Map 1: The Nile Basin



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Source: Amer, Yacob Arsano, Battahani, Hamad, Hefny and Imeru Tamrat (2005); copyright EAWAG, Duebendorf, 2005; reproduced with permission of Eawag. The borders of the countries do not necessarily represent the official state boundaries.

1.1 CONTEXT OF THE STUDY

Historically, water utilization in the Eastern Nile basin has been unilateral, and there are no comprehensive inter-riparian legal or institutional modalities that can facilitate cooperative development and joint planning activities between upstream and downstream riparian areas. Possible and mutually beneficial options to the unilateral and conflicting water utilization approaches are not yet being seriously addressed. A comprehensive approach to the Nile waters question can best be dealt with from both national and regional contexts. This is needed because the environmental unity of the Nile basin cuts across the national territorial entities.

1.1.1 NATIONAL CONTEXT

Ethiopia is an agricultural country dominated by subsistence farming. Eighty five per cent of the population depends on agriculture for its livelihood. Agriculture accounts for 45 per cent of the country's GDP (Ethiopia, MWR, 1997:20–21). Ethiopia has 123 billion cubic meters (bcm) surface water on an annual basis (Ethiopia, MWR, 2002: 6). Of this amount a mere 3 per cent remains in the country, while the remaining flows to the neighboring countries in all directions from the frontier. By far the bulkiest proportion flows into the Nile system. Ethiopia's western rivers, comprising the Abbay (Blue Nile), Baro/Akobo (Sobat) and Tekeze (Atbara), together contribute 86% of the Nile waters as measured at Aswan (Elhance, 1999: 67). Master plan studies of the three Ethiopian Nile head-waters have been completed, and the final reports have been published for Abbay, Tekeze, Baro/Akobo, as well as for some other major rivers, like Ghibe/Omo and Awash basins. Similar studies are about to begin for the Wabeshibelle and Ganale/Dawa basins in the eastern part of the country. It has been estimated that 2.58 million hectares are available for potential irrigation in all of Ethiopia's basins. So far, however, only 4.3 per cent of this has been developed (Ethiopia, MWR, 2002: 5). Of this developed acreage, 0.6 per cent is in the Abbay basin in the valley of the Fincha tributary (Field note with the management of the Fincha agro-industrial enterprise, June 2001). There are longstanding traditional small-scale irrigation activities in the

headwater zones of the Ethiopian Nile valley. This was witnessed during field visits in the Guder valley during April and June 2001. Historically, however, many large-scale water projects on the tributaries of the Ethiopian Nile were aborted for various reasons.

The Ethiopian Government formally enacted a national water resources management policy for the first time in 1999, and issued a water management proclamation in 2000. The new policy and legislative measures are evidence of a contemporary approach to promote national efforts towards the aspired goals of 'efficient', 'equitable' and 'optimal' utilization of the available water resources in the country. The Ethiopian national water policy document specifically acknowledges that the water resources management of Ethiopia failed to bridge the spatial and temporal variability of the total annually available water in the country. It further admits that poor performance in the nation's water development sector is the cause for its slow agricultural development and low crop productivity. It unequivocally admits that the lingering poverty stems from inadequate development of the country's water sector. Further evidence of poor performance in Ethiopia's water sector is that only 72 per cent of urban and 23 per cent of rural populations in Ethiopia have access to clean water (Aberra Mekonnen and Deksios Tarekegn (2001b); and only 13 per cent of the population has access to electric power (Mehret Debebe, 2002: 7).

Since the 1930s the Abbay river has also been perceived by Ethiopia as a potential source of livelihood and for the country's future economic development. Hence, master plans and development projects have been drawn ever since the aborted Lake Tana Project in the early 1930s. In addition to the ongoing water resources development schemes on the tributaries of Abbay, such as Fincha, Tana Balas, Birr or Koga, and the Abbobo dam on the Alwero tributary of the Baro/Akobo, Ethiopia places much hope and commitment to harness the water resources of the Nile valley within the country's territorial jurisdiction.

What is the national situation in the other countries, namely Egypt and Sudan? Egyptian agriculture is dependent on the Nile waters since time immemorial. Modern agriculture started with the modernization drive of Mohammed Ali (1805–49). With the construction of the Aswan High Dam the Egyptian authorities believed to have established a secure supply of the Nile waters for year-round multipurpose utilization. Modern

Sudanese agriculture started in early 1920s under the auspices of British colonial interests. The splendid Gezira irrigation scheme in the Blue Nile basin was the first and major water development undertaking in Sudan. The El-Ghirba, the Managil Extension, etc. are further expansions of Nile waters development in Sudan. Further expansion is promised in view of the huge irrigation potential in the country.

In short, Ethiopia has prioritized water resources development as a cornerstone of its overall economic development, but has so far only achieved limited success in implementing these plans. Egypt and Sudan have developed irrigation much earlier on, in part due to their lack of rainfall, in part due to the support of the colonial administration.

1.1.2 REGIONAL CONTEXT

The riparian states of the Eastern Nile basin have pursued unilateral and conflicting approaches to the utilization of the otherwise shared water resources, avowedly driven by their respective national interests. The political expressions of these national interests have resulted in controversies and tense relationships between Ethiopia and her two downstream neighbors: Sudan and Egypt. All throughout the twentieth century the two downstream countries were the sole beneficiaries from the Nile waters, basing their respective claims on 'historical' and 'natural' rights doctrine. Upstream Ethiopia, on the other hand, not only repudiates the claim and the status quo established by colonial and post colonial accords to which it is not a party, but also, and in reaction to this, holds to the doctrine of 'absolute territorial sovereignty'. Ethiopia's position is shared by the Equatorial Lakes states, particularly Tanzania, Uganda and Kenya. Hence, the bottom line of the precipitating hydro-politics in the Eastern Nile basin is a dilemma between holding to the status quo or finding an alternative ground for long-term mutual interests and cooperation.

At present, there are no legal or institutional arrangements to harmonize upstream-downstream water utilization interests at sub-basin or basin levels. Nor are there any mutually acceptable customary modalities, which might be acceptable for inter-riparian water utilization and management. The lack of active engagement to mitigate the numerous water related problems

has given rise to environmental and security concerns in the riparian states. The one agreement signed between Egypt and Sudan in 1959 was only a bilateral one, and was reached solely between these two most downstream nations. Furthermore, this agreement effectively excluded the upstream states from taking part in the negotiation process as well as in the actual agreement, while the two most downstream countries agreed between themselves on the 'full utilization' of the Nile waters (Waterbury, 2002).

Due to the lack of adequate upstream-downstream water utilization and management, all three riparian countries of the Eastern Nile have been challenged by various complex problems: excessive erosion and soil loss in upstream Ethiopia; flood and silt accumulation in the midstream Sudan; and excessive water loss through evaporation in downstream Egypt. Watershed management and environmental protection can best be handled at a regional level. This includes flood and drought management; mitigation of erosion and sedimentation; irrigation and drainage development; hydroelectric power development and pooling.

The relevance of the ongoing Nile Basin Initiative (NBI) will have to be viewed in this context. The rather ambitious initiative intends to establish regional cooperation and build mutually beneficial relationships among the ten co-riparian nations, namely Burundi, Democratic Republic of Congo, Egypt, Eritrea, Ethiopia, Kenya, Rwanda, Sudan, Tanzania, and Uganda. The Nile basin countries, as well as the international community, seem to have realized the intimate linkage between environmental factors and regional security in the Nile basin. Hence, the national states of the Nile basin and international agencies, like the World Bank, UNDP and CIDA have recognized the importance of developing regional relationships through the NBI.

With the objective of making the NBI strategically more meaningful, the basin is divided into two sub-basins, namely the Eastern Nile basin and the Equatorial Nile. The two sub-regions are to subscribe to respective sub-regional strategic action programs known as ENSAP (Eastern Nile Strategic Action Program) and NELSAP (Nile Equatorial Lakes Strategic Action Program). The NBI has charted out two ambitious goals. On the one hand it aims to enhance the socio-economic development of riparian countries through sub-basin cooperation in a variety of fields. On the other hand it works towards establishing a legal and institutional

framework which will have the effect of regulating the inter-state utilization and management of the shared water resources. While the first goal has achieved slow but smoother steps in its progress towards win-win arrangements, the second goal has been locked up in slow-moving and mutually unacceptable national positions (Panel of Experts, NBI, 1999, Unpublished Report).

The NBI was conceived in 1998 as a strategic program for the Nile basin, with the initiation and support of the World Bank and with close collaboration of UNDP and CIDA. The four goals of the NBI are: 1) building confidence among the basin states; 2) changing perception on the issues of the Nile waters; 3) realizing that cooperation is more beneficial than confrontation; and 4) knowing the extent of the water resource potential for inter-state collaboration (Nile Council of Ministers, 1999: "The Agreed Minutes").

The NBI was formally set up in February 1999 in Dar-Es-Salaam, Tanzania, with all water ministers of the riparian countries agreeing to come up with a Subsidiary Action Program (SAP) and Institutional and Legal Framework referred as "D-3 Project". The explicit motto of the NBI is "Sustainable development of the River Nile for the benefit of all". A provisional structure, comprising Council of Water Ministers (Nile COM), Technical Advisory Commission (Nile TAC) and the Nile Secretariat (Nile Sec) was set up, and terms of reference for a smooth functioning of NBI were drawn up.

1.2 PURPOSE OF THE STUDY

The national context summarized above demonstrates that all three Eastern Nile basin states have drawn ambitious national water development plans. The problem is that these are often carried out on a unilateral and non-consultative basis, which imminently creates further competition for fresh water because of the obvious absence of legal and institutional mechanisms on the regional level. A continued unilateralist approach with regard to water development is expected, at least in the short run. But it is beyond dispute that such a unilateralist approach is conflict laden and incompatible with a more cooperative approach, and may therefore adversely affect the general welfare of the riparian communities in the sub-basin.

With the above historical backdrop the author believes that it is important and timely to probe into the dilemma and risks attached to the unilateralist Nile water development. More specifically, he intends to describe the existing situation in the Eastern Nile basin, with a particular focus on upstream Ethiopia. The present study aims to look into the ongoing anomaly between the much-needed cooperative endeavor with mutual socio-economic, regulatory, environmental and security interests and the tendency to persist in unilateralist development strategies in the Eastern Nile basin. The results of the study will hopefully be useful for both 'track one' (official diplomatic) and 'track two' (non-government, scientific exchange fora) processes of water use conflict transformation in the Eastern Nile basin. The idea is that they also be of particular use to policy makers, water conflict researchers and students, and to those who may be engaged in 'interactive problem solving workshops' (IPSW), or other such dialogue endeavors, between upstream and downstream riparian states in the Eastern Nile basin.

1.3 FOCUS OF THE STUDY

The main focus of the study is to look into the conditions, elements and driving forces of the dilemmas of hydropolitics in both the national and regional arenas of the Eastern Nile basin. The study further focuses on how these can be transformed to a cooperative and sustainable water development approach. On both the national and regional level, the study focuses on 1) security, 2) legal-institutional, 3) socio-economic and 4) environmental, factors.

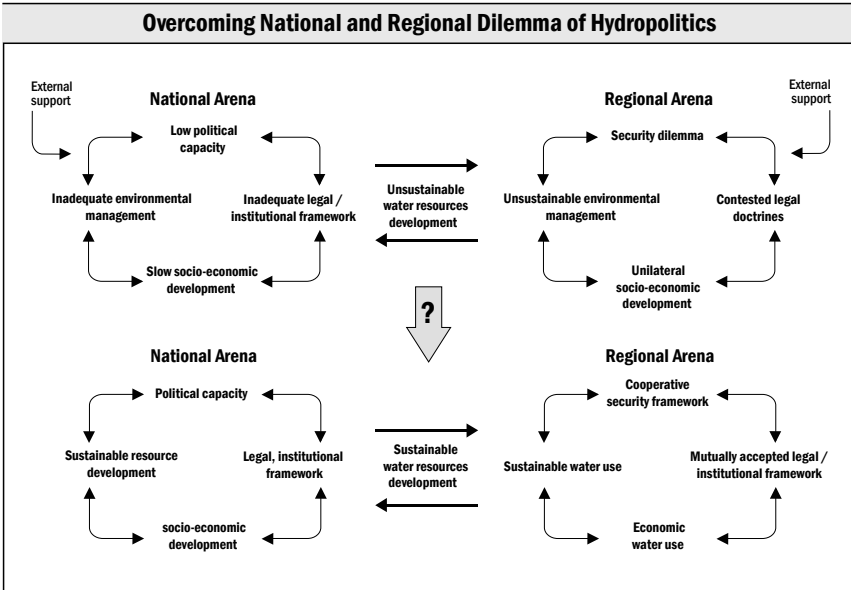
First, the national water policy of Ethiopia vis-à-vis the downstream nations of Egypt and Sudan is given particular emphasis. An attempt is made to explain the many predicaments that have existed and that still exist as impediments to water resource development at the national level in the Eastern Nile basin. Second, the study focuses on the regional hydro-political dilemma of the eastern Nile region comprising Egypt, Sudan and Ethiopia. An attempt is made to explain the perceptions and fears that the upstream-downstream co-riparians have about one another. Opportunities for cooperation and how to move from the prevailing situation of slow

development and little capacity to one of sustainable development is explored.

As can be observed in diagram 1, there are four loops. The left-hand column represents the national arena and the right-hand column represents the regional arena. The upper row shows the state of unsustainable water resource development at both the national and regional arenas. The lower row shows a transformed water resource development at both the national and regional levels. The broken arrows in the directions of the national and regional arenas in the upper row show the possible external support that may catalyze transformation from an unsustainable state to a sustainable state of water development.

1. The loop on the upper left-hand side represents the national arena of hydropolitics in the Eastern Nile basin. It shows the prevailing situation of unsustainable water resource development at the national level. The chain of factors characterizing this include: 1) low political capacity and internal tension, 2) inadequate policy and institutional frameworks, 3) slow socio-economic development, and 4) inadequate environmental management.
2. The loop on the upper right-hand side represents the regional arena of hydropolitics of the Eastern Nile basin. It shows the prevailing situation of unsustainable water resource development at the sub-basin level. The chain of factors here comprise: 1) regional security dilemma, 2) absence of regional policy framework, and contested legal doctrines, 3) uneconomic water use, and 4) unsustainable regional basin management.
3. The loop on the lower left-hand side represents a possible prospect of sustainable water resource development in the national arena. Such a scenario can be obtained if and when 1) the political capacity is improved, internal tension abolished and the political system stabilized, 2) the inadequacy of the legal and institutional systems improved, and the 3) financial, technological and human means of development are made available, and 4) the national water resources are developed.

Table 1: Conflict Transformation Model



Source: Sketch developed by Jacob Arsano.

- The loop on the lower right-hand side represents a possible prospect of sustainable water resource development at the regional arena. This can be realized if and when there is 1) a cooperative policy framework to which the sub-basin states adhere; a cooperative and mutual security system is established; 2) a mutually acceptable legal/institutional framework is established; 3) adequate financial, technical and human resources are made available; and 4) environmentally sound and economically rational water resource development is pursued by the riparian states of the Eastern Nile basin.

As the two-way arrows between the two upper loops show, the present state of affairs is one wherein unsustainable water resources development in the national arena has a negative impact on water resource development in the regional arena, as well as the other way round.

Similarly, the two way arrows between the two lower loops show that a sustainable water resource development in the national arena will positively

influence water resource development at the regional level, as well as the other way round.

The broad downward arrow, with a question mark inside it, represents a hypothetical assumption that the prevailing unsustainable water resource development, both at national and regional levels, can be transformed to a sustainable water resource development if mutually supportive changes take place at both levels. Greater political capacity, regional security and internal political stability, a lucid legal/institutional framework and greater resources for economic development are the desired changes at the national level. Similarly, a cooperative interstate policy framework, mutually pursued interstate security architecture, mutually acceptable legal/institutional framework, and an environmentally sound and economically sustainable water utilization regime will have to be established at the regional level. The strands of positive development in the two arenas do positively influence each other and further catalyze the establishment of mutual trust and interstate cooperation as a *modus operandi*.

1.4 RESEARCH QUESTION

Based on the environmental, historical and hydro-political context of the Eastern Nile basin, the present study aims to examine if there are policy options that the riparian states of the sub-basin could choose as their common strategy for overcoming the existing national and regional dilemmas of hydro-politics. Of particular interest will be why Ethiopia, while contributing 86% of the Nile waters, has not yet been able to utilize these resources for the country's urgently needed development. Or why the country, with its prominent geographical position in the sub-basin, has not been able to demonstrate some kind of clout to influence the *modus operandi* in the Eastern Nile basin. Put conversely, why Egypt, while almost entirely dependent on the waters that originate in Ethiopia, has persisted on a unilateral approach to the utilization of the common water resources, insisting on her position with the doctrine of 'absolute territorial integrity'. In seeking further qualitative explanation, the questions with regard to the roles and impacts of top-level actors, political regimes, ideologies and salient externalities will be examined.

What are the elements and the driving forces for the dilemma of hydropolitics in the Eastern Nile basin, and how can these be transformed towards sustainable water development?

What are unifying and dividing factors in the Eastern Nile basin?

What are the characteristic features of the national dilemma between capacity and development needs in Ethiopia? How can the environmental, economic, legal, and institutional predicaments be transformed into national development capacity?

What are the factors and driving forces of the regional dilemma in the hydropolitics of the Eastern Nile basin?

What possibilities and mechanisms exist to overcome the insecurity, legal-institutional, socio-economic and environmental predicaments in order to attain sustainable and cooperative development in the Eastern Nile basin?

1.5 LITERATURE REVIEW: THEORETICAL APPROACHES AND HYPOTHESES

Since the turn of the 20th century, the utilization of transboundary waters for economic purposes has posed a big challenge. In as much as the water resources are shared, the upstream and downstream riparian states will have to agree on principles and mechanisms of water allocation. Riparian states tend to become sensitive with increasing scarcity of fresh water resources. They become keen to know what their upstream or downstream counter parts do. No single riparian country may solely exploit without regard for other co-riparian states. Traditionally every state had the exclusive sovereignty over natural resources, water resources included. With the world becoming increasingly interdependent in terms of economic, environmental, security and legal/political relations, the concept of exclusive national sovereignty over shared water resources does not any longer create impetus for cooperative enterprise.

The following section attempts to present salient theoretical issues as regards sustainable utilization and management of shared water resources. Security, environmental, socio-economic and legal approaches have been selected in order to explain the theoretical issues of cross border water use and management. A theoretical discussion of the four realms is believed to provide a helpful explanation and analysis for understanding the national and regional hydro-political dilemma of the Eastern Nile basin. For each section a guiding hypothesis is developed, in order to structure the discussion in the final chapter of the thesis.

1.5.1 SECURITY APPROACH

Security is understood here as mutually trustful relationships between states, and also a state's capacity to satisfy the basic needs of its population and further enhance its socio-economic development. Thus conflict is only one dimension of insecurity, even if an important one.

Many scholars conclude that there is a positive relationship between resource scarcity and conflict. Fresh water is taken as the most important natural resource, and nations have increasingly vied for greater control. This is mainly attributed to the growth of population, structural dependence on agriculture, and the expansion of agricultural activities as a leading sector, especially in economically less developed countries, such as those in the Eastern Nile basin. There are two schools of thought with regard to the increasing conflict over the shared water resources, the first stresses the competitive aspect of shared water resources, the second stresses the cooperative dimension in dealing with shared water resources.

The first school perceives that the increased competition over fresh water resources inevitably entails conflict between riparian states. One of the exponents of this school, Buthros Buthros Ghali, the former Secretary General of the United Nations, predicted in early 1980s that "water would be a source of international conflict", as cited by Waterbury (2002: 9). Joyce Starr (1991) wrote about the possibilities of water wars. Thomas Homer-Dixon (1994) underlined his expectation that conflict over the

earth's natural assets will grow, owing to the increasing population growth and economic development. Arthur Westing (1986: v) argued that human history is an account of resource wars. Along the same line, and some years later, Falkenmark and Widstrand (1992) argued that world history is replete with conflicts over access to fresh water resources. Falkenmark takes the scenario even further and sees water as a factor of international dispute and conflict formation in the future. Gleick (1993: 79) contended that fresh water resources are objects of military campaign and conquests as long as they provide economic and political strength to nation states. A decade or so earlier some military analysts, such as Thompson (1978: 62–71), claimed that fresh water resources were becoming increasingly scarce, and that they would increasingly become a source of future conflict.

In reference to her own findings in the Horn of Africa, Ludi (2002: 23) concludes that “regional issues have an imminent potential for conflict and are linked in one way or another to land and/or water scarcity”. With regard to a positive relationship between conflict and lack of capacity, she writes: “In principle conflicts might escalate due to the incapacity of local and traditional authorities to regulate growing tensions; [or] due to lack of policies to deal with such issues on a national level; or due to a low level of regional cooperation” (Ludi, 2002: 23).

It is quite understandable that bilateral and multilateral agreements have not yet been achieved in many shared river basins. Examples of shared river basins that currently have no or limited riparian accords in place are: the Amazon River in South America, shared by Peru, Ecuador, Colombia and Brazil; The Congo River in Africa, shared by DRC, Central African Republic, Angola, Zambia, Tanzania, Cameroon, Burundi and Rwanda; and the Syr Darya and the Amu Darya rivers in Central Asia, shared by Kyrgyzstan, Kazakhstan, Turkmenistan, Tajikistan and Uzbekistan. In other major river basins the existing accords do not encompass all riparian states. The 1959 ‘full utilization’ accord in the Nile basin, for example, only refers to the two most downstream nations, Sudan and Egypt. The other seven nations at the signing time, and now also Eritrea, another riparian country emerging in the basin, are not party to the accord. The long negotiated Mekong River Agreement of 1997 did not include China, the upstream and most powerful state in that particular sub-region. Such partially or

selectively inclusive riparian agreements may not or do not achieve collective security across the basin. The exclusion of some countries may even create a future security threat.

The second school of thought views water resources as an arena for future cooperation and the formation of common security. Boulding (1993, 202), for instance, explains, at a rather simplified level, that water flows like everything in nature. No state boundary, no barbed wire, no wall can stop water from flowing along its natural course, from source to its final destiny. The significance of this simple explanation by Boulding underscores the common fact that actors, such as political decision makers, tend to forget about it or choose to ignore it as not so important. The author wants us not to forget that water does not know state boundaries, it only knows its natural course.

Because water knows no boundaries numerous states are bound to share the same watercourse at the upper or lower or middle course. And this is also why numerous river basins become the shared property of two or several sovereign states. In the world there are some 240 river basins that are shared by two or more countries. About 40 per cent of the world's population and 50 per cent of its land resources are found in these shared river basins (Dolatyar and Gary, 2000: 7). Other authors vary on these figures. Barrett (1994: 2), for instance, claims that there are 200 river basins shared worldwide. Elhance (1999: 4–5) on the other hand asserts that there are 215 shared river basins around the world and these are distributed as follows: 57 in Africa, 35 each in North and South America, 40 in Asia and 48 in Europe. Elhance further explains that: 65 per cent of continental Asia, 60 per cent of Africa and 60 per cent of South America are covered by shared water basins. Some countries like Uganda and Paraguay lie entirely within shared water basins. According to the same author, three hundred treaties have been signed with regard to shared waters across the world between riparian countries, and more than three thousand treaties bear provisions relating to water questions (Elhance, 1999: 5). The table below shows a sample overview of such an effort. Waterbury (2002) has provided a distribution pattern of international water agreements across the continents. Obviously the table, while indicating the pattern of accords, does not include all of them. The high number of treaties indicates that shared rivers can be a source of cooperation.

Table 2: International Agreements on River Basins

River basin	Location	Countries sharing	Status of cooperation
The Indus	Asia	India, Pakistan	Bilateral accord
The Ganges-Brahmaputra	Asia	India, Bangladesh, Nepal	India-Bangladesh bilateral accord
The Tigris-Euphrates	Asia	Turkey, Syria, Iraq	Turkey-Syria & Syria-Iraq bilateral accords
The Jordan	Asia	Israel, Jordan, Syria, Palestine	Israel-Jordan bilateral accord
The Nile	Africa	Egypt, Sudan, Ethiopia, Eritrea, Kenya, Tanzania, Burundi, Rwanda, Uganda, DRC	Egypt-Sudan bilateral accord
The Niger	Africa	Mali, Nigeria, Niger, Algeria, Guinea, Cameroun, Borkina Fasso, Benin, Cote d'voire, Chad	Multilateral accord
The Senegal	Africa	Senegal, Mali, Mauritania	Trilateral accord
The Zambezi	Africa	Zambia, Angola, Zimbabwe, Malawi, Mozambique, Botswana, Tanzania, Namibia	Zambia-Zimbabwe bilateral accord
The Colorado and The Rio Grande	North America	USA, Mexico	Two bilateral accords
The Mekong	Asia	China, Cambodia, Laos, Viet Nam, Thailand	Multilateral accord (without China)
La Plata	South America	Brazil, Argentina, Paraguay, Uruguay, Bolivia	Multilateral accord
The Danube	Europe	Romania, Yugoslavia, Hungary, Austria, Czech Rep. Germany, Slovakia, Bulgaria, Russia, Switzerland, Italy, Poland, Albania	Several bilateral and multilateral accords
The Rhine	Europe	Switzerland, Germany, France, The Netherlands, Austria, Luxem-bourg, Belgium, Lichtenstein	Several bilateral and multilateral accords
The Columbia	North America	USA, Canada	Bilateral accord
The Great Lakes	North America	USA, Canada	Bilateral accord

Source: adapted from Waterbury (2002).

Both schools of thought in their extreme form are untenable. The management of shared rivers generally involves cooperative and competitive aspects. In contrast to the cooperative school of thought, for example, integrated management of water resources in shared water basins has not been an easy matter, owing to the fact that in numerous cases explicit implementation procedures and institutional mechanisms are not in place. It is for this reason that Dolatyar and Gary (2000: 7) argue that “water security is already one of the most crucial elements in the foreign policy considerations of many countries”. In response to this concern, and realizing the importance of cooperation on shared water resources, riparian states and multilateral agencies have elevated the issue of shared water resource management to a new level of diplomatic engagement. In contrast to the competitive school of thought, however, there is ample evidence of riparian states that have already made successful efforts in reaching agreements of some form and on some level, as can be observed in the table provided above. Inter-riparian disputes about ‘who gets what’ will, however, keep riparian nations wrangling.

If we accept that international rivers entail cooperative and competitive aspects, as shown above, the question is then how to strengthen the cooperative and transform the competitive dynamics. Basing his thoughts on the environmental context, Baechler (2002: 539) reminds us of the existence of many intricacies, including: multiplicity of parties, asymmetry of power between the contending parties, and the existence of other factors external to environmental issues. He prefers to consider environmental conflict resolution at a different, but higher level of management. First of all, he believes that ‘conflict resolution’ or ‘conflict management’ is not enough. Rather he suggests that a step further or higher is necessary. By doing so he introduces the concept of ‘conflict transformation’. Although he agrees that an organizational approach to conflict management is useful, he believes that proper institutionalization will be necessary for its fruition. According to him, “conflict resolution has to deal adequately with so called process and structures”, the notion of which “stems from a modern scientific concept used to describe phenomena in nature that are, at the same time, process and structure” (Baechler, 2002: 540). In conflict transformation, Baechler argues that, “we embrace the challenge to change that which has torn us apart and build something we desire” (Baechler,

2002: 540). Baechler's view is that in 'process' and 'structure' phenomena, challenges are embraced in order to change the undesirable status quo to a desirable one. There is a strong support for this view in what Delli Priscoli (1990: 10) suggests, when he says: "help parties to own both the problem and the solution". In the same vein Oran R. Young, a prominent theorist on international organizations, notes, "Institutional design emerges as a process of steering complex bargaining toward coherent and socially desirable outcomes." (Cited in Delli Priscoli, 1996: 30).

The increasing need for cooperation on transboundary waters is viewed as inducing a shift from the 'traditional national security' perception to a 'common security' perception. Boulding (1993: 202) argued that "traditional definitions of security are bound up with concepts of the state as defender of boundaries within which its citizenry is safe from threats to survival, whether those threats are military, economic or involve environmental resource deprivation". Security is collaborative, if it is to be effective. Boulding further suggests that common security is concerned with linking peace and environment, developing global regulatory systems through treaties and making a shift from military preparedness to diplomatic preparedness.

Wenger and Möckli explain that, "security and development find common ground" (Wenger and Möckli, 2003: 25). Inter-state security has a relaxing effect on riparian states and encourages them to opt for mutual cooperation on shared water resources. Future conflict prevention can be sought through more active engagement in adopting alternative and mutually beneficial ways and means of water utilization and management, both at the national and the inter-state level. In this regard, Wenger and Möckli explain that conflict prevention will have to be approached as a long-term process, involving the goals of providing systemic interaction, establishing the structure and addressing the immediate issues at stake (Wenger and Möckli, 2003: 41).

Learning from the two schools of thought and the concept of collective security, the following hypothesis can be suggested. Successful negotiation and establishment of a treaty regime in the Eastern Nile basin, in the first place, will likely rid the protagonist riparian states from mutual insecurity. Second, a legal agreement becomes the basis for the long-term creation of a common security zone in the direction of mutually satisfying national interests through cooperative mechanisms. On the basis of historical

observation, and also from a practical point of view, the national capacity of the riparian states will be likely to determine how soon and with what terms, cooperative mechanisms will be achieved.

1.5.2. LEGAL/INSTITUTIONAL APPROACH

The ownership question and the issue of right of use of the water resources that border or flow through a country's territory are the basis of the legal discourse. The basic assumption is that riparian nations have juridical rights to a share of the water resources. Dolatyar and Gary (2000: 39) for instance, explain that law is a major determinant in finding and maintaining legitimate and sustainable solutions should conflicting claims of equity or other issues on shared water resources arise. They further contend that "...without appropriate legal channels and adequate rules, the potential for conflict over water increases both at local and international levels" (Dolatyar and Gary, 2000: 39).

The search for establishing legal rules for managing water utilization is not new. Upstream and downstream users must agree on mechanisms to allot the water resources from the shared water basin. Especially in Third World countries, riparian agreements are often inherited from the colonial past or induced by external institutions, like the World Bank. The World Bank's Operational Directive 7.50, for example, requires that riparian nations must agree amongst themselves as a prerequisite for providing investment support for their cross-border water resource development (World Bank, 2001).

Establishing legal mechanisms in the first place, and integrating cross border cooperation between riparian nations greatly depends on the ingenuity and wisdom of the political actors and diplomatic negotiators. In other words, establishing and maintaining legitimate and sustainable solutions for shared water resources requires short-term sacrifices for long-term benefits. The reason behind this assumption is that without clearly laid down rules, the utilization and management of shared water resources and their proper development will be severely restricted.

In many areas of the world, international agreements have created amenable conditions for upstream-downstream cooperation. International

treaties on shared water resources date back centuries ago, although the pace of their development is rather slow. At present well over 2000 international agreements exist as regulating instruments in over 240 shared river basins (Blake et al., 1995: xiv). Over 286 agreements deal with fresh water issues (Vlachose, 1990: 186; Frey, 1993: 58; Naff, 1994: 272). Such treaties attest the possibility of peace on water use. If conditions for a global water law are ripe, the answer as to whether peace prevails or not will still be a matter of opinion. Bailey (1996), for instance, advocates a global water authority. The idea can be said to be promising. One must, however, take into careful consideration that there are many technical, legal, political and even geopolitical complexities to be reckoned with. Delicate factors to take into account include: whether a country is an upstream or downstream country, or whether it shares a river as border; and the relative economic power and relative military strength of a riparian country.

As a result of this several water law doctrines have emerged in search of plausible criteria for defining the water rights of riparian nations. These comprise: 1) The doctrine of absolute territorial sovereignty; 2) The doctrine of absolute territorial integrity; 3) The doctrine of community of property for the waters; 4) The doctrine of limited territorial sovereignty; 5) The doctrine of optimal development of the river basin. Trolldalen (1992: 79) presents a detailed description of the doctrines.

The doctrine of absolute territorial sovereignty refers to the principle that a state's sovereign rights are reserved to make full utilization of all water resources flowing within its territory, irrespective of the effects beyond its territorial jurisdiction. This doctrine is associated with the so-called Harmon Doctrine, named after US Attorney General Harmon, who developed the doctrine with regard to the 1895 dispute between the United States of America and Mexico over the use of the Rio Grande River (Thomas and Howlett, 1993: 16).

The doctrine of absolute territorial integrity, in contrast, advocates that no riparian state can change the natural flow of a river. One of the proponents of the doctrine, Oppenheim (1948: 430), wrote as follows:

It is the rule of International Law that no state is allowed to alter the natural condition of its own territory to the disadvantage of the natural conditions of the territory of a neighboring state. For this reason, a state is not only forbidden to stop or to divert the flow of a river which runs from

its own to a neighboring state, but likewise to make such use of the water of the river as either causes damage to the neighboring state or prevents it from making proper use of the flow of the river.

The doctrine of community of property in the waters argues for a reasonable share or equitable use by all riparian states, not causing unreasonable harm to any other riparian state. Henry Farnham was the chief exponent of this doctrine. He argued that international watercourses are the common property of all the states through which the waters flow. He further argued that no state shall intervene to diminish the resource for others sharing it (cited in Thomas and Howlett, 1993: 16).

The doctrine of limited territorial sovereignty restricts state sovereignty and binds riparian states to share water resources according to such criteria as prior appropriation, arable land and population (Frey, 1993: 58). This doctrine further holds that each riparian state, regardless of whether an international watercourse originates in or traverses its territory, has a vote in deciding what measures are adapted within the watercourse as a whole. The state, however, which has been using the water the longest, has some priority (Wolf and Dinar, 1994: 81; Thomas and Howlett, 1993: 17).

The doctrine of optimal development of the river basin advocates the development of a river basin without regard to national boundaries (Falkenmark, 1986a: 108; Frey, 1993: 58; Wolf and Dinar, 1994: 70). This theory incarnates the contestable notions such as: “optimal”, “reasonable”, and “equitable” allocation criteria. Moreover, the doctrine presupposes the existence of basin-wide institutions. This doctrine comes closest to an economic theory that aims at the most efficient use of water in a basin.

The real situation of a watercourse dispute may not refer to one or another water use doctrine. In the first place, the watercourse related doctrines exist as theoretical schema, only potentially usable in a body of a future water law, and only when this is supported by bilateral and multilateral accords. In the meantime, therefore, in case of contestation between riparian states over the question of shared water resources, the riparian states would rarely opt to go to the International Court of Justice, preferring to hold on to the particular legal theory which best justifies their demands, and using it as a bargaining chip. Hence, it can be construed that downstream riparians reject the doctrine of absolute sovereignty, while upstream states reject the doctrine of absolute territorial integrity.

This situation emanates from the basic problem of the absence of binding treaties to govern the general and specific terms of shared waters, and the lack of essential inter-riparian institutions to assure compliance among the users of a given watercourse (Naff, 1994: 272).

Specific basin-focused treaties are, traditionally, a practical arrangement by which the riparian countries can bring together a set of effective legal instruments for mitigating and solving disputes that might arise over shared water resources. Such agreements often provide for the establishment of joint river commissions. In some cases, the commissions merely have advisory functions. But in other cases they may have decision-making authority. The achievements of joint river commissions may vary greatly in different river basins. The well-functioning river commission of the Rhine with decision-making control is elaborated by Schulte-Leidig (1992), the river commission of the Senegal by Haddad and Mizyad, (1996), and the river commission of Indus by Alam (1998), and Mehita (1986).

Supra-national institutions have been evolving, but as can be expected, quite slowly. They may generally be envisaged as efficacious in addressing the interests of communities in member countries. The first of these attempts is the Helsinki Rules (HL) of 1966, on the uses of the waters of international rivers. The International Law Association (ILA) produced the Helsinki Rules. Some provisions by the ILA, however, caused controversy as to their meaning and interpretation. The provisions, for example, that embody the notions: “reasonable” and “equitable” sharing of the water resources and “international drainage basins” have been contested. Hence, undivided support for the Helsinki Rules could not be obtained. Some states support the concept of ‘international watercourse’, others the concept of ‘international drainage basin’ (Thomas and Howlett, 1993: 7), obviously in view of their perceived national strategy for dealing with other co-riparians.

The second attempt on the codification of international water resources law is the Convention on the Law of the Non-navigational Use of International Water Course (LNUIWC). It was adopted by the UN General Assembly Resolution of 21 May 1997, with a vote of 103 in favor, three against and 27 abstentions (UN Press release 1997, Convention 1997). The great significance of the Convention is that it aims to shift international water disputes from contests of power to fair rights and mutual

obligations. The responsibility of each state is inherent in the provisions: to use water resources efficiently and to avoid depriving or damaging the interests of co-riparian states. The International Law Commission is an autonomous body, which was entrusted by the UN General Assembly resolution to promote international water law. Actually the commission had been working on this task since 1970. It is noteworthy that the two principles in the convention, the one of 'equitable use' and the other of not causing 'appreciable harm' are in a way similar to the other two doctrines, namely, the doctrine of 'absolute territorial sovereignty' and the doctrine of 'absolute territorial integrity'. The upstream countries maintain the doctrine of 'absolute territorial sovereignty' and the principle of 'equitable use', while the doctrine of 'absolute territorial integrity' and the principle of 'no appreciable harm' are upheld by the downstream countries.

Doctrines are extensions of traditional national security interests and manifest sovereign rights. Conventions are an attempt to create supra-national legal frameworks within which riparian countries relate to each other as regards the utilization of shared water resources. Even if conventions exist, their efficacy depends on the willingness of riparian states to accept them and be bound by them. Doctrines and conventions exist, but riparian states have yet to negotiate with one another on the best terms that enable them to have a mutually acceptable legal and institutional framework.

It can be hypothesized that legal and institutional frameworks are *sine quo non* for guiding and regulating inter-riparian cooperation over the utilization of shared water resources. Furthermore, that existing doctrines and conventions do not yield cooperative behavior among co-riparian states without negotiated and mediated agreements. A negotiated legal/institutional framework can be suggested as a reference and as guiding principles when riparian states relate to one another in their activities of water resource development within individual countries and between one another.

1.5.3. SOCIO-ECONOMIC APPROACH

The socio-economic approach used here involves a cultural dimension, and an economic one.

The cultural dimension follows the Advocacy Coalition Framework of Sabatier (1999) which argues that coalitions are formed between peoples of common beliefs (core values), and not necessarily between people of common interests. Values involve judgements of what is right and wrong, examples of values include affirmation of equity, development, empathy, justice and peace. Interests are the reasons why people want what they want (Fisher, Ury, Patton 1991). Interests are articulated needs, such as the need for food, employment, security and social welfare. Values are more rooted in the traditions, whereas interests are more politically based and economically driven. Culture depicts the sentiments, stories of communities and their values irrespective of the recent political dimensions of interstate relationships.

Culture also refers to patterns of behavior reinforced by symbols and myth, often linked to the past. These patterns of behavior in the traditional, informal and locally adapted setting, had the role of regulating intercommunity life irrespective of state boundaries. The drawback is that their influence on modern structures is limited, because they are local in application and authority. Their advantage is that they are closer to the people, they are internalized, whereas modern legal and political structures are often distant to the needs and values of local people. States could draw on customary rules and institutions to deal with key societal issues, by integrating the customary rules into the modern legal and institutional systems. In this way, we hypothesize that states can more adequately and sustainably perceive and deal with the local and cross-border environmental challenges.

In subsistence societies that are closely dependent on nature, culture also involves reverence to natural phenomena such as rivers, lakes and other environment endowments. In such societies, the socio-cultural approach is spiritually oriented and respectful to nature. It stands in contrast to a purely economic-capitalist and utilitarian approach. Taking the traditional and locally rooted approach into consideration, therefore, can give guidance to a sustainable approach to water management.

The essence of an economic approach to fresh water management is the efficient use of the available water resources at a given time and under given environmental circumstances. The economic management of transboundary water resources can best take place at a basin-wide, sub-basin or regional level. This, however, presupposes peaceful interaction between the riparian countries. Some three decades ago, Hirshleifer, et al. (1969: 2), underscored that water is a commodity and, just like other goods, societies want it in order to satisfy the needs of their members. The basis for the economic argument is to treat water in the same way as any other commodity. As the slogan goes, “Water! Water! Everywhere! But, at a price”. The proponents of water economics explain that water scarcity could easily be solved with economic instruments because it is a renewable and reusable resource. In aggregate, so they explain, there is more than enough water worldwide. According to them, the challenge is a question of spatial and temporal distribution. Overcoming this challenge depends largely on the willingness of the people (especially the political actors) to use water resources economically.

Another study on the economics of water by Winpenny (1994: 9) contends that water has been mishandled for too long as if it were limitless and freely available. The above author wonders that both consumers and suppliers do not recognize its economic value. According to Winpenny, water scarcity can be explained with three factors: 1) Water is under-priced compared to its real cost of delivery. 2) Water is under-priced compared to its environmental costs. 3) Water is often a public good; and for this reason it becomes difficult to extract an economic price from users.

The economic management of water is possible both at national and cross-national levels. Two ways of cross-national water management can be suggested: 1) recycling, using markets for water quantity allocation or quality renewal, and 2) ‘virtual’ water transfer. With regard to the first one, the quality of water, for example, lost during its use upstream is restored. An example of this would be the desalination of the Colorado River by the United States of America in Mexico. Due to the extensive irrigation use of the waters of the Colorado within the United States, the river loses its natural quality by the time it reaches Mexico. The second type of transfer relates to virtual water as a form of quantity transfer. In keeping with the economic value of water, countries may opt to buy food grains

at economically advantageous prices if water resource development is too costly, or if it is politically or otherwise impossible to develop in one's own national territory (Allan, 1997). This scheme in fact can be planned at a cross-national level through collaborative planning by using the comparative advantages of different countries. In summary, economists point out that water resources are best put to efficient and sustainable use where the economic application is most advantageous, irrespective of national boundaries.

Up until now water utilization and management in the Eastern Nile basin has been far from a basin-wide approach. Water development strategies that are confined to a national level seem to be elitist driven and very technically oriented. The obvious flaw of this prevailing approach, although politically maintained, is a contributing factor to slow national water development, and this is not something the respective governments can claim as an achievement.

Using water resources in one country without considering the supply and demand patterns in other co-basin countries will likely lead to uneconomic utilization. We can, therefore, hypothesize that a basin-wide approach to water resource development of the Eastern Nile will result in a more efficient use and increased economic benefits for all three riparian countries: Ethiopia, Sudan and Egypt.

1.5.4. ENVIRONMENTAL APPROACH

The dictum 'water is life' is commonplace nowadays. Water is an immediate and essential part of our environment. The following section outlines first the global availability of water. It then assesses the increasing importance of water both on the national-regional level as well as on the international development agenda.

Global availability of water: The following table by Baumgartner and Reichel (1975) indicates that the proportion of fresh water resources is but a small fraction (a mere 2.6 per cent) of the total available water resources worldwide. This small proportion, however, demonstrates the availability and abundance (36,020,000 bcm) of fresh water resources, although the way to obtain them may be at a cost.

Table 3: Water Resources as Globally Available

Source of water	Volume, 1000 bcm	Per cent of total available
Oceans	1 348 000	97.39
Polar icecaps, icebergs, glaciers	27 820	2.01
Ground water / soil moisture	8 062	0.58
Lakes / rivers	225	0.02
Atmosphere	13	0.001
Total	1 384 120	100
Fresh water	36 020	2.6

Source: Baumgartner and Reichel (1975: 14).

As can be observed in table 4 below, the available fresh water resources are found in different forms and places. By far the biggest proportion is outside the easy reach of human society. The bulk (77.23 per cent) exists in the form of polar icebergs, icebergs and glaciers. The next biggest amount (22.81 per cent) exists in the form of ground water resources at various depths in the earth. The proportion of fresh water resources contained in rivers and lakes, transboundary or otherwise, is relatively small (0.353 per cent). It is interesting to note that the total amount of fresh water carried in rivers is a mere 0.003 per cent of the total fresh water resources available worldwide. Most state or non-state actors in semi-arid and arid areas vie over the use of river water resources, mainly because the access to it is much less costly compared to other fresh water resources. In short, the tables indicate that on the global level there is sufficient fresh water. The problem lies in the geographic distribution, as some countries have a lot, others very little.

Table 4: Type and Amount of Fresh Water Globally Available

Type and form of fresh water	Per cent of total
Polar icecaps, icebergs, glaciers	77.23
Ground water to 800 m. depth	9.86
Ground water from 800 m. to 4000 m. depth	12.35
Soil moisture	0.17
Fresh water lakes	0.35
Rivers	0.003
Hydrated earth minerals	0.001
Plants, animals, humans	0.003
Atmosphere	0.04
Total	100

Source: Baumgartner and Reichel (1975: 14).

National-regional level: Environmentalists rightly argue that grave consequences of environmental degradation and resource scarcity are not restricted to national borders and will inevitably affect all parties in one way or another. In almost all cases of cross border water resources, planning is done nationally with no or little regard to the overall water resource balance along the watercourse. The need for water resources and water use patterns, in upstream or downstream countries of the same river course are seldom (if at all) taken into account by national planners. In national planning the integrity of a water cycle is often disturbed to such an extent that the law of supply and demand for water is then disrupted. National planners are generally guided by the water requirements of their own country and do not necessarily take into account the total supply of water in the watercourse or the water needs and requirements of other co-riparian countries. This problem is attributable to the technocratic and elitist handling of the planning of water resource development that takes place exclusively at the national level. Soil erosion and land cover loss in an upstream country (e.g. Ethiopia), silt accumulation, decreasing water quality, salinity and excessive evaporation in a downstream country (e.g. Sudan and Egypt), can be understood as a consequence of national water development strategies that ignore a basin-wide approach. It is for this

reason that Dolatayar and Gray (2000: 6) advise that “When water resource management is properly handled, it can provide the basis for economic growth, improvement in living standards and socio-political stability”.

A nationally confined and fragmentary approach to shared water resources is and will therefore remain an intractable problem. The solution to this rests on a holistic environmental approach at a basin-wide scale. There is also an increasing need for environmental security awareness. Environmental security can only be safeguarded through collaborative efforts of states in developing shared regimes pertaining to fresh water basins. There is a growing realization that environmental security will not be achieved through military action. One important reason for this is that national territorial boundaries and natural resources boundaries may not be the same. Historically, national boundaries evolved in political processes that might have included military means. But natural resources such as, for instance, rivers or fresh water lakes cross the state territorial boundaries. Thus any one state cannot and should not claim authority over such an international resource. Understandably, fresh water is a fundamental source for life and requires more special attention. Lest the environmental security of all parties be in jeopardy, states in an eco-geographical region will have to create a sustainable form of environmental security. The key issue here is to understand the limits to the (relative) carrying capacity of a particular environmental asset and to know how to manage and use it sustainably now and for the future on a basin wide level.

International organizations level: The need to reckon with environmental aspects is becoming a criterion in development planning of water development activities. The concept of “sustainable development” was first mentioned by the World Commission for Development and Environment (WCED, 1987) in its report “Our Common Future”. The report of the WCED viewed environment and development in a unified manner, and suggested the establishment of a new approach to economic growth, one in which the criteria would be ‘meeting the needs of the present generation without compromising the needs of future generations’. This concept was widely accepted. Hence, according to the World Bank report (1992: 8), meeting the needs of the present generation implies an essential aspect of sustainably meeting the needs of subsequent generations. This is a new approach to economic development. Equitably sharing limited resources,

using the available resources efficiently and applying environmentally sound technology to them is the essence of this new concept. This suggests that our economic goals must be adjusted in view of ecological possibilities, and goals and priorities modified accordingly.

Specifically regarding water, the international community has been alarmed by the ever-increasing scarcity of fresh water resources, which calls for a serious mitigation task sooner rather than later (FAO, 1995: 4). It is no surprise, therefore, that the concern and debate has focused on water issues during the past decade or so. The UN system sponsored the International Conference on Water and Environment (ICOWE) in Dublin, from 26 to 31 January 1992. The ICOWE appealed for an innovative approach for the assessment, development and management of fresh water resources. The Dublin Conference further provided policy guidelines for the Rio Conference on Environment and Development, which was to be held in June 1992. The Rio Conference, in turn, recommended a reform of fresh water policy throughout the world. Key aspects of the Rio conference were incorporated in chapter 18 of Agenda 21 (UNCED, 1992). Thomas and Howlett (1993: 19) view the Rio perception about the place of water in our environment optimistically and suggest that international consensus has been reached on the urgent need for integrating management of water resources as a prerequisite for socio-economic development and conflict mitigation in the future. Another example of international efforts to deal with water is the World Bank's comprehensive water policy of 1993, which defined new objectives. FAO recently established an International Action Program on Water and Sustainable Agricultural Development (IAP-WASAD). In the same way UN specialized agencies, international and local non-governmental organizations and bilateral assistance agencies have all been busy actively taking part in programs related to water resources.

In summary, the basic tenets of sustainable water use rest on social equity, economic efficiency and ecological integrity. All this prepares the ground for the establishment of a cooperative international system, which will serve as a mechanism for national and inter-state security. Efficient utilization of water resources should be a guiding criterion that decreases the rate of evaporation, prevents erosion, and minimizes flood occurrences, silt accumulation and soil salinization.

Given the ecological characteristics of the Eastern Nile basin one hypothesis plausibly suggests that construction of dams in upstream Ethiopia, where the climate is temperate, can provide a more sustainable alternative to constructing a dam in the desert climate of a downstream area. Further benefits derived from having a water reservoir and water management in the upstream area include possibilities such as: irrigation, generation of hydroelectric power and prevention of soil erosion in Ethiopia; eliminating the hazards of seasonal floods and silt accumulation in Sudan; and avoiding excessive evaporation for net increase of fresh water in downstream Egypt as well as in midstream Sudan. Construction of dams in Ethiopia would offer opportunities for irrigation and hydroelectric power generation in Ethiopia, and would increase the total availability of fresh water in all the riparian countries, including the most downstream one, Egypt.

From the four theoretical approaches outlined above, one can deduce that a cooperative approach to international river management is best from a collective security, environmental and economic point of view. In reality, however, unilateral strategies often dominate, why is this? One reason is that the short-term benefits of competitive behaviour often seem to outweigh the “rational” long-term benefits of cooperative behavior. Another reason is the misperception that unilateral approaches are the best way to achieve national interests – the incompatible legal doctrines¹ are an example of this. Another reason is that collective action and coordination is difficult, even if the benefits are clear – one of the reasons for the “dialogue” action research approach adopted in this project, described below.

1.6 ACTION RESEARCH APPROACH

The present study is part of the action research project designed in the framework of Environment and Cooperation in the Nile Basin (ECONILE). The framework provides for a comparative approach to conflict analysis on transboundary water resource use and management. ECONILE takes a departure from two previous studies: (1) Environment and Conflicts Project (ENCOP) (1992–96); and (2) Environmental Consensus and Conflict Management in the Horn of Africa (ECOMAN) (1996–99).

1. “absolute territorial sovereignty” = “riparian doctrine” upstream versus “absolute territorial integrity” = “natural flow doctrine” downstream.

The specific aim of the present study is to develop a multi-track conflict management approach to the water resources of the Eastern Nile basin. Involved in this approach is an in-depth analysis of the upstream (this publication) and downstream (Mason, 2004) water use and management perspectives through tandem upstream and downstream case studies, culminating in two doctoral dissertations. By doing so, separate positions and interests of upstream and downstream riparian states can be compared and developed by applying various conflict management and impact assessment methods. The findings of the two separate studies should be shared with independent academics and experts, coming together from both upstream and downstream countries, at a neutral venue, and under the auspices of a politically nonpartisan professional moderation. This particular format is aimed to employ a track-two approach to conflict management and transformation in the Eastern Nile basin. The track-two conflict management approach is deliberately chosen to include unofficial stakeholders and to serve as a complementary effort to the official diplomatic negotiations. Especially in situations where governments are stuck in stalemate, this method is found to be valuable.

Three Nile workshops have been conducted, all in Switzerland: the NILE WORKSHOP I on “Sustainable Development and International Cooperation in the Eastern Nile Basin” (28–31 August 2002, Switzerland) and the NILE WORKSHOP II on “Instruments and Methods to Support Dialogue in International River Basins” (26–30, 2003, Switzerland). The NILE WORKSHOP III on “Enlarging the Pie: Options for International Cooperation in the Nile Basin” (24–28 August 2004). The present researcher coordinated the Ethiopian participation for the workshops and co-authored a research paper for discussion during the first workshop. The edited version of that paper, together with other contributions from Sudan and Egypt, is published in *Aquatic Sciences* (2005). The workshops were based on the objectives and partial results of the ECONILE project. The research for the ECONILE Project was carried out by Simon Mason and Yacob Arsano, focusing on downstream and upstream perspectives of the Eastern Nile, respectively. The two PhD candidates shared their views and interim findings throughout, and benefited from each other’s work while the two research projects progressed independently.

The three workshops are the first of their kind, in that they brought together researchers and experts from all three countries of the Eastern Nile basin for the first time at a neutral venue and facilitated by highly qualified and experienced persons in the field of environmental conflict transformation. The participants for the first workshop were experts and renowned personalities, bringing with them significant expertise and experience with issues pertaining to the Nile waters. They all participated in their own personal capacities. Participants for the second and third workshop had a mixed delegation, those coming purely in their own personal capacities, and those coming in their personal capacity, yet with an official background. The three workshops turned out to be very interactive, much more than was initially expected. The proceedings and the analysis of the workshop series are expected to advise the Eastern Nile basin governments. The results will also serve as groundwork or as a mind-map for multichannel interactions and developing methods, mechanisms and instruments for sub-basin cooperation.

The Interactive Problem Solving Workshop (IPSW-method) is closely related to the track-two approach to conflict transformation. IPSW method aims to bring together unofficial, but highly influential stakeholders from each country in an academic setting, an environment free from political pressures, and facilitated by a third party. The conflict is examined from an analytical viewpoint as opposed to the normal polemic approach. No participant is quoted by name about anything said during the workshop. This leads to an openness that allows for exploration of new ideas and the viewing of the 'opponent' beyond the stereotypically preconceived impressions usually formed (Fisher, 1997). IPSW for instance, played an important role in the Oslo process on the Israel/Palestine conflict (Kelman, 1999). In terms of research and publication this method seems not yet to have been used in international river conflicts. The need to develop, operationalize and evaluate such methods is likely to increase in the future, as conflicts over shared resources intensify. A final synthesis of the two case studies and the results of the Interactive Problem Solving Workshops will enable the formulation of conflict management options for the Eastern Nile basin.

1.7 METHOD

The data used for this work was gathered from various sources. The main sources include: literature review, field site visits and an interview program. Further details are provided below:

1) Literature review

Written sources; published sources; unpublished research reports and grey material; legal codes, constitutions, proclamations, legal digests and customary rules have been consulted. With regard to documentary study a vast amount of documentation in the holdings of various national water-related institutions has been reviewed. This includes the relevant and accessible documentation in the holdings of: The Ministry of Water Resources (head office as well as branch offices), The Ministry of Agriculture, Disaster Prevention and Preparedness Commission, Environmental Protection Authority, The Ministry of Foreign Affairs, Ethiopian Electric Power Corporation, Documentation units of FAO, World Bank, and World Food Organization in Addis Ababa. Most of the collections are unpublished reports, proceedings or master plans. A limitation, however, is that many of the unpublished documents cannot be checked out of the libraries, and it therefore consumes a lot of time to find and make use of relevant data. There are also some classified sources for which formal permission from top authorities of the respective institutions is required. Such permission is usually difficult to obtain. Under such circumstances, gathering of data from documentary sources was a challenging procedure. The benefit of the literature review, however, was that it provided a factual basis for the research.

2) Fieldwork

Fieldwork was carried out during May and June 2001 in the Ethiopian upstream valleys of the Fincha River, the Guder River and the Baro-Akobo River. In the Fincha valley, the researcher interviewed the general manager, sectional heads and various experts of the Fincha Agro-industrial

Enterprise. He observed the Fincha Dam and sugar cane farm sites, irrigation schemes, the sugar processing factory, wastewater treatment plant, and the Agro-industry's environmental protection project. The main focus of the field visit was to find out, on site, about the requirements and conduct of a modern large-scale agro-industrial enterprise on a tributary of the Nile River, and to learn about the possible impacts of the operation on the downstream water quality within Ethiopia, as well as on the other side of the border.

In the Guder valley, the main focus was to understand the socio-economic role of small-scale irrigation in upstream catchments of the Nile River. People interviewed there include: individual farmers, community leaders / elders, members and officers of irrigation associations, rural development agents and local government officials.

Fieldwork was carried out during June 2001 in the Baro/Akobo valley to observe the Abobo dam and the traditional water use practices along the Gilo River. Both rivers are major tributaries of the Baro/Akobo, which in turn, is the main tributary of the White Nile. Traditional chiefs, community elders, and locally stationed elders were interviewed. In the Baro/Akobo valley, the extent to which the livelihood of the community is dependent on traditional use of the water resources was especially observed, in other words, to what extent the community is dependent on fishing, river bank cultivation or irrigation. Fieldwork also focused on finding out if there is any competition between traditional use and modern irrigation schemes, large dam construction and resettlement schemes of the highland populations. Other questions, such as why the Abbobo Dam, having been constructed in the 1980s, did not function were also pursued.

3) Interview program

The interview program was intended to gather the perceptions, views and direct experiences of past and present actors in the water sector. In Addis Ababa, those interviewed include: the honorable Minister of Water Resources; current and previous Chief Engineers; Heads of Transboundary Waters; Irrigation Department; and the Basin Studies Department of the Ministry of Water Resources. In the Ministry of Foreign Affairs the interviewed persons include: head of Legal Directorate and experts on Sudanese

and Egyptian Affairs of the Ministry of Foreign Affairs; experts and unit heads of Disaster Prevention and Preparedness Commission (DPPC); and officers and experts in the Ethiopian Environmental Protection Agency. A selected list of people interviewed or consulted for their input is given in Annex XIII.

I.8 EXPECTED RESEARCH RESULTS

Taking the geographical and historical setting of the Eastern Nile basin into account, the results of the study aims to explain the dilemma of hydropolitics in the Eastern Nile basin. The study further explains how the long-running and unifying myth and hydropolitical unity of the Eastern Nile basin have been over-shadowed by the geopolitical interests that emerged in the 19th century and have, in a way, continued to be so until today. More particularly:

1. The result of this research attempts to point out the elements of dilemma on both the national and regional level, as well as possible ways out of this situation by overcoming the disabling factors at both levels.
2. The findings and the conflict transformation model developed in the course of the present study can be utilized as a useful contribution in helping mitigate the “global syndrome” of conflict in the context of upstream-downstream and/or cross border water resource utilization and management.
3. In view of the objectives of “Environmental Change and Conflict Transformation” the study strives to help understand the options for possible change from a situation of upstream/downstream tension to a mutually beneficial cooperative framework.
4. In the particular context of Northeastern Africa, the present study can be replicated for the cross border river basins, for instance, of Ganale/Dawa, Ghibe-Omo or Wabeshibelle. All these rivers are

transboundary and thus require interstate mechanisms to cooperatively utilize and manage them.

5. The present study, combined with additional studies in other basins in the sub-region, will contribute as a conceptual framework towards establishing interstate security architecture through encouraging mutually beneficial development mechanisms in the subregion.
6. The final outcome of the study in the form of a dissertation and a possible subsequent publication of full or thematic sections will serve as an additional resource for teaching and/or research purposes.

1.9 SIGNIFICANCE OF THE STUDY

The study aims to make a useful contribution towards preventing, mitigating and transforming upstream-downstream conflict in the Eastern Nile basin. The study shows where options for mutual agreement and collaboration exist and can be enhanced in the future for a peaceful and sustainable utilization of the shared Nile waters to the advantage of all inalienable stakeholders. The final outcome is envisaged to inform about the concepts, instruments and methods of enhancing cooperation over the shared water resources.

Findings help national and regional policy makers to understand the essential weaknesses at the national and interstate levels, and help conceptualize the causes and circumstances of the lingering tension between the upstream and downstream nations in the Eastern Nile basin. Riparian actors will discover that the only plausible way for sustainable water development on transboundary rivers is through interstate collaboration. This shift will be based on understanding and actualizing: the advantages of mutual security, the best use of environmental resources, the economic use of the increasingly scarce water resources, and conflict prevention through legal/institutional mechanisms.

Upstream and downstream countries will consider cooperating for joint and cross border programs, for instance, in the areas of joint watershed management, joint power production, joint water conservation activities

and collaborative strategies for irrigation development. The study will help the riparian nations move away from adversity and hostile postures, and instead to opt for building mutually trusting alternatives on the basis of shared vision and cooperative investment. It goes without saying that a cooperative relationship at the interstate level will have a direct and trickle down effect on any intercommunity action in the economic, cultural and scientific fields. This study can also contribute to a shift in thinking that understands that expanding and maturing cooperation will provide an incremental and sustainable ground for conflict transformation in the Eastern Nile basin.

1.10 THE STRUCTURE OF THE THESIS

The present work is presented in three parts and eleven chapters. The introduction describes the geographical and historical setting of the research area and deals with national and regional contexts, purpose and focus, the research question, theoretical issues and the hypotheses of this study.

The main focus of Part One is to show the dilemma of hydropolitics in the Eastern Nile basin. The two chapters of this part set out to explain how the long-standing and unifying myth and hydropolitical unity of the Eastern Nile basin have been taken over by geopolitical interests that emerged in the 19th century. Besides examining the dilemma between the unifying forces of myth, the environmental reality, and the need for economic development on the one hand and the divisive force of the colonial legacy and national insecurity perception on the other hand, part one points out that the dilemmas in the Eastern Nile basin can only be understood by examining the situation on both the national level (Part Two) and regional level (Part Three).

Part Two deals with the Ethiopian national dilemma of water policy and management. The five chapters in this section present the legal predicaments, institutional issues, the role of non-state actors, past & present water development situations, and the strategies of water development in Ethiopia.

Part Three focuses on the dilemma of regional hydropolitics in the Eastern Nile basin. Chapter nine of this section discusses the inter-state and

regional relations in the arena of water resources. Chapter ten concentrates on opportunities to overcome the regional dilemma and foster sustainable water development among the three Eastern Nile basin countries, namely Ethiopia, Sudan and Egypt.

Finally, the conclusion provides a summary and synthesis of the overall presentation of the work. The bibliography of the consulted source material is provided at the end of thesis. The bibliography is arranged according to publication status of the works and alphabetically.

PART ONE

**DILEMMA OF HYDROPOLITICS IN THE
EASTERN NILE BASIN:**

MYTH & GEOPOLITICS

INTRODUCTION

The first chapter looks into the popular perception and longstanding myth about the great Nile River – taking up the cultural dimension discussed above. An attempt is made to explain how Ethiopians and Egyptians alike identify themselves with the Nile waters in a spiritual, cultural and material sense. The purpose of this chapter is to bring forth the commonality in the thoughts and beliefs of the upstream and downstream societies with regard to a unifying essence of the shared Nile River. Highlighting beliefs, core values and myths in the Nile Basin can therefore indicate the cooperative potential in the Basin. These factors are taken up again in chapter 10, exploring specific options on how to overcome the regional dilemma in the Eastern Nile Basin. Pertinent themes have been drawn to explain that the Nile waters are greatly revered both in Egypt and Ethiopia inasmuch as they serve as a bridge between the peoples at the source of the river in Ethiopia and those at the mouth in Egypt. Thus this chapter deals specifically with the myths and perceptions found in these societies that seem to have lost their power to influence interstate relations with respect to the contemporary political, economic and legal encounters.

After exploring the unifying factor of myth and common beliefs in the first chapter, the second chapter on geopolitics examines two dimensions: the unifying aspect of hydrology, and the divergent historical-political developments in the Basin during the more recent centuries. The Nile Basin as a hydropolitical unit interconnects the Eastern Nile Riparian countries, irrespective of their national territories, histories, and political or cultural systems. Water is an eternal force that has always brought together the societies along its course. However, in the backdrop of the emergence of modern states on the one hand and the coming of colonial expansion on the other, countries developed not only competitive but also contradictory interests over the control and management of the traditionally unifying water resources. These divergent developments are discussed in the last chapter of Part One.

2. MYTH AND REALITY

INTRODUCTION

Myths are stories that convey imagined thoughts about some distant past. The function of such fabulous stories is to convey an imagined past to the present generation. Myths are generally filled with symbols and rituals that intend to furnish explanations to societal beliefs, practices or a certain order for imagined or actual events (Bayleyegn, 1998: 362). The myths and perceptions surrounding the Nile waters have been much broader and deeper than what can be observed in the realm of contemporary activities of water development around this great river. The Abbay River in Ethiopia, for instance, is believed to be “the father” of all rivers and the symbol of the Nation. Ethiopia’s historic attachment to the Abbay River has been deeply spiritual, and holds great reverence, sense of identity and prestige (Bairu Tafla, 2000: 154–6). Songs, poems, folk stories, ritual/religious performances, etc., are attributed to the great Abbay, “the great father of rivers” (Daniel, 2001). This great river has not been harnessed or put into any meaningful economic use, and the inhabitants of its 200,000 km² basin have experienced and still do experience nature’s might and power in and through it more than they derive any economic benefit from it.

The section on mythology and poems points to many ways in which the Nile may affect the peoples’ life: 1) as source of identity, 2) as a healing power and source of life, 3) as unifier of societies along its course, and 4) as a source of physical destruction on the one hand and 5) as an enormous untapped potential for economic development along its course, on the other hand.

2.1 IDENTITY OF THE NILE

Stories about the Nile are replete with mythical narrations and anecdotes. Many stories and anecdotes are shared both by Ethiopians and Egyptians alike. They idolize the great Nile or its tributaries from their vantage geographic positions. There is a daunting similarity in the perceptions

and stories told by the people living in downstream Egypt and upstream Ethiopia. Both cultures identify themselves with the greatness, powers and bountifulness of the great Nile River. The ancient Egyptians did not have a clue about whence the Nile came from to their land. Nor did the ancient Ethiopians know where the Nile went. Thus the Nile was not perceived in an upstream/downstream dichotomy. The ancient Egyptians chose to believe that the great river came out of the god Ptah (also known as Hapi). For this reason Ptah was known as the Nile god in Egypt, and personified as quoted in the caption herein below (Machenzie, nd: xii):

*...His head supported the sky, his feet rested upon the earth....
The sun and the moon were the eyes of Ptah, the air issued from his nostrils, and the waters of the Nile from his mouth.... His court of worship is at Memphis.... Egypt's first temple was created to Ptah by King Menes.*

The ancient Ethiopians knew very well that the Abbay came out of the amba (plateaus) of their country. They knew that the little river (the “kid” Abbay) and other streams converged into the Lake Tana. They knew very well that the great Abbay gently came out of this calm lake, the Tana, and that it suddenly tumbled into the Tiss-Issat (literally meaning smoke–fire falls). They knew that from that rather tumultuous nature panorama onwards, the Abbay then proceeded in the deep crescent-like bend canyon, which was cut out of the mountains in the direction first due south and then due northwest. The ancient Ethiopians, not knowing the destiny of the Abbay, expressed their wariness in a popular dictum that says: “The Abbay has no resting place, but where does it take all those logs it carries?”.

Excerpts from the verses of an Ethiopian poet laureate Tsegaye Gebre Medhin, about the River Abbay, explain the relationship of the river to “Cush”, the ancient stock of people believed to inhabit Ethiopia, Sudan and Egypt. According to him, the Abbay/Nile is the cradle of the black race (Cush) and “the blood of Ethiopia, mother of Cush”. The poet’s verses run at length to explain how the great river was the lifeline and source of power and wisdom not only to the people along its course, but also to the gods in ancient Egypt. In view of what he observes, the poet laments over the poverty and misery that prevails in the basin. For him,

the greatness of the past is left behind, and ignorance has led to violence. “If this persists unresolved”, the poet warns, then the dream about the Nile goes “far far away” (Tsegaye, 1974: 53). See the full piece of poet laureate Tsegaye Gebre Medhin in Annex I.

As can be observed in the foregoing discussion, the Nile waters belong to all living along its watercourse. It is a geographical reality; it is nature’s bounty; it is a historical linkage of the peoples of the source and at the mouth of the great river; it is a spiritual heritage. To all peoples, the Great River remains a source of hope that mitigates the stark poverty, the lingering misery and the creeping discord in the basin.

2.2 HEALING POWERS OF THE NILE

With regard to the Blue Nile, Greek mythology attributes the following:

“...a restoring power into normal order and as a cure for illness including those caused by the vindictive acts of gods or goddesses” (Hamilton, 1942: 75). In a Greek mythology, Prometheus sent to the distant Ethiopian Nile (Abbay) Io, a princess who had fallen sick, to restore her into a beautiful human creature. He sent her with the following piece of advice.

Please know this, you should go to Ethiopia where the Nile water flows. The Nile water works wonders to end your misery. Go and wash your body there. It will be extremely good and have miraculous effect. There a race will spring from you. You will bear a son who will become the most glorious with bow, he will be bold-hearted, and he shall set me free from the chains I am enduring.

And so the princess Io traveled to Ethiopia and became healthy. Redeemed by the water of the Blue Nile she became happy and honored. Her descendent was Hercules, the greatest of all heroes, who at last set Prometheus free from his chains (Hamilton, 1942: 78).

The restoration of Io's health and sanity expresses a poetic truth, symbolizing the redeeming power of the Ethiopian Nile, eastern source of the Nile. The above story explains that the most beautiful creature, princess Io, had become very miserable and sick. But at last she was healed from her ordeals through the redeeming power of the Blue Nile. Bayleyegn attributes this myth of redeeming power of the Blue Nile as "a typification of the Ethiopian people who suffer from droughts and famine that occur every two or three years" (Bayleyegn, 1998: 364).

Even today the river is given spiritual reverence, and belief in its healing powers is as strong. For instance, Virginia Morell more recently witnessed that "sacrifices and gifts are given to the springs of the Ghishe Abbay" (the source of Abbay discharging itself into the Lake Tana) (Morell, 2001: 26). For the local community, offering sacrifices to the spirits of the Abbay, known as Ghion (great spirits), is a tradition handed down from ancient times. The advent of the Ethiopian Orthodox Christianity to the area has not changed the attitude of the local inhabitants and their belief system and practice of reverence to the spirit of the source of the great river. The priests of Saint Mikael Church at Ghishe Abbay, for example, use the water as "tabal" (healing water). The clergy of the Church ritually pour the water on the faithful, having seated them nude (Morell, 2001: 88).

The essence of the healing power and reverence to the river have transcended from old pre-Christian to the Christian belief system. Thus myth and poetry are reflected in the everyday experience of joy and suffering on the banks of the Nile.

2.3 THE NILE AS UNIFIER: ENVIRONMENTAL LINKAGE

The Nile emanates in the mountains of Ethiopia and links the mountains of Ethiopia with the Sahara desert. Hence, the Nile was and still is the single most important unifying factor in the Nile basin. Indeed it unites the highland mountains of Ethiopia and the lowland deserts of Egypt. And of course Nubia lies in between, but not only as a buffer between Egypt and Ethiopia, but also as the physical arena where the Brown and the White Niles make their unfailing rendezvous, where the cultures and peoples of the mountains and the desert blend.

More recently, and following his sojourn to the Ethiopian highlands, the editor in chief of the AL-WAFD Newspaper, Abbas El-Tarabily, published (10 February 2002) as follows:

I am just back from Ethiopia, the source of [84%] of Nile water, which created Egypt. In fact, Egypt was born in Ethiopia and from the red mountains of Ethiopia came the water, which is the stuff of our life and the silt that created the fertility of Egyptian soil. ...I was telling myself that it is from this place that the journey of the great river starts and carves the red rocks of Ethiopia leaving thousands of canyons and rifts that seemed to be the blood veins of the Egyptian body.

The statement shows how contemporary Egyptians also view the Nile as a unifying element in the basin. It is no wonder that the ancient Egyptians lavishly praised the Nile. The following is excerpted from H. A. Davis' Outline History of the World, (Davis, 1946: 16):

... Thou waterest the fields which Ra (the sun god) hath created, ... thou givest life unto all animals, and as thou descendest on thy way from heaven thou makest the land to drink without ceasing. Thou art the friend of bread and drink, thou givest strength to the grain and makest it to increase and thou fillest every place of work with work...Thou art the lord of fish, ...thou art the creator of barley, and thou makest the temples to endure for millions of years.... every man of might receiveth food, and every tooth is provided with the meat. Thou have regard to the condition of the poor and the needy, thou makest herbs and grain to grow that the design of all may be satisfied, and thy art not impoverished thereby.

An Ethiopian writer, Damaka Mattaferia, who headed the Ethiopian Engineers during the Abbay Basin Study Program (1958–64) wrote of the unifying element of the river after having witnessed on site the twists and turns, the direction and the destiny of the Nile. He describes the river capturing the imagination of Prophet Isaiah based on chapter 18 of the Prophet's book (Damaka, 1994: 36), thus:

*Ah land of whirring wings,
Which is beyond the rivers of Ethiopia,
Which sends ambassadors by the Nile,
In vessels of papyrus upon the waters!
Go you swift messengers,
To a nation tall and smooth,
To a people feared near and far,
A nation mighty and conquering,
Whose land the rivers divided.*

These examples show that in ancient times the unifying power of the Nile was strongly perceived as an environmental force, not limited to time or wish of the actors, whether upstream or downstream.

2.4 THE NILE: ITS PHYSICAL POWER

The splendid waters of the Nile that tumbled from the roof of the Ethiopian plateau for uncountable years, possessed the power to wash away the surface and destroy the land and its topography, especially in the upstream course. Damaka Mattaferia describes northern Ethiopia as destroyed by the “rivers” of Abbay and also of Tekeze. He writes: “Nowhere else can one see the destructive acts of water and the complexity of man in that act” (Damaka, 1994: 56). The writer, based on his observations from the 1960s, writes that the land whence originally the Abbay, the Tekeze and the Awash emanated are denuded and without fountain or spring. To his disappointment, “...The nation which Isaiah referred to as ‘mighty and conquering’ no longer exists. The land he [Isaiah] euphemistically described as ‘divided by rivers’ is indeed still there, but is now ‘devastated and utterly destroyed by the rivers’” (Damaka, 1994: 57). The author, rather passionately, explains how the ridges that emitted fountains from the headsprings have dried up and how the entire terrain is now scourged to mere bareness. He further witnessed the aftermath of nature’s power as follows (Damaka, 1994: 57):

I noticed the absence of human beings and other animals, even monkeys, in that region of desolate hills. After having exposed their land to the ravage of water, they must have migrated to other parts of the country hundreds of years before the Prophet Isaiah was even born, to be called later Sidama, Wolaiyta, Kambata or [sic. Kafficho].

The places of the resettlement that Mattaferia mentions above are located in the south-central highlands of Ethiopia, as full-fledged administrative zones. Sidama, Wolaiyta, Kambata and Kafficho are designations for the geographical areas, as well as the corresponding nomenclature for the populations who inhabit these territories. The Guragae community of Ethiopia's south-central highlands can be included in the list of resettlers. Most of the clans of the communities ascribe their origins to northern Ethiopia. The present settlement areas of the ecological refugees caused by the destruction of the Nile head waters find themselves in the headwater areas of other river valleys. For instance, the Sidama are located in the headwater area of the River Ganale, while the Wolaiyta, Kambata, Kafficho and Guragae clans are located at the headwater areas of River Omo. The former river flows to the Indian Ocean via Somalia, while the latter drains to Lake Turkana along the Ethiopia-Kenya frontier. An interesting contemporary similarity can be observed in the hundreds of thousands of ecological refugees and resettlers who have moved from much of the remaining head water areas of the Abbay and Tekeze, taking their exodus to more downstream areas along the same river course or elsewhere in other lowland areas of the country. The past three regimes of Ethiopia commissioned large-scale resettlements of the ecological refugees.

Thus, the comparison of ancient documents, such as Isaiah, and present reality shows the physical power of the Nile over time. Due to the soil removing power of the Nile in the upper basin, the erosion of topsoil deprived the peasants of the area from traditional life supporting systems. They were forced to leave their longstanding homesteads for a new place in the same basin.

2.5. THE PARADOX OF THE NILE

Ethiopian poets have used their imagination to blame their nation's misery on the cruelty of the rivers, especially that of the Great Abbay (the Blue Nile) for heedlessly destroying the terrain and "deserting" the country, while millions perish from thirst and famine. Through their satirical verses Ethiopian poets curse, accuse and even insult the rivers that have deserted the country as "traitors", who work in favor of other nations and this at the expense of their own country and people. Ethiopia's transboundary waters have been criticized by poets for their destructive acts against the land, and for not responding to the plight of the impoverished multitude. The most recent song by Ethiopian singer Ejigayehu Shebaba eulogizes the Abbay in the following verses (translation by the present author):

*The bounty that never ends, the beauty that never fades;
The waters that never dry, as they run throughout the ages;
From that very time when Adam was created;
The fountains came from the paradise in the mountains;
The fathomless grace, the grand cloak of the green valleys;
All that, all that "shamma" is the patrimony of Ethiopia.*

However, the singer's perception of Abbay's paradox is expressed in the following verses:

*Abbay, the bounteous;
Have I known that you replenish the desert;
Have I known that you are their flesh and blood?
That they drink from you and eat water;
Abbay, the generous to those of the desert;
Abbay of great bounty, and of great tension.*

The Ethiopian poets further reflect on the might of the Abbay, the power, which the ancient Egyptians and Greeks associated with deity. But the poets are outraged by the powerlessness of the powers of the mighty river, the Abbay. Their poetically wrapped wish is to see that the Abbay be generous and heeding on behalf of those who place high hopes in it.

They look forward to the day when the mighty and bountiful river will generate good faith, friendship and the spirit of cooperation among the nations and communities who are bound to survive on it. They hope for worldly redemption through increased welfare from the waters of the Nile, nature's bounty and the wealth of the nations bound forever by it.

Poet Hailu Gebre Yohannes (1989) writes about the Nile/Abbay in his Amharic book *Innatkin Bellulign*. His views can be taken as an example of what the river symbolizes in the minds of Ethiopian writers. His work in the Amharic language (the lingua franca in Ethiopia) provides a sense of originality by directly portraying the poet's inner imagination in creative and piercing verses. In a personified conversation with the Abbay River, Hailu Gebre Yohannes conveys his inner thoughts in an appealing manner. He tells about a man "burnt with thirst and exhausted". In an allegoric way he points to the land, whose "throat dried up" and which is "begging for a drop of water". He talks about the land that "screamed in pain" and "yelled for favor". The poet rebukes the actors on the Nile for continuing to talk about their worthlessness. He advises that they find the knowledge, the method and the system in order to seek solutions in unity and cooperation. The poet expresses intriguing thoughts and ideas that inspire action if understood correctly. See an extended caption of the poem in Annex II. The excerpt given in the Annex is taken from the translation by Bayleyegn Tasew (1998: 365–68).

2.6. A SUMMARY OF POPULAR PERCEPTION: UPSTREAM ETHIOPIA

Besides the myth, popular perception, rituals and various performances show that the Nile is very closely linked to the daily spiritual and material life of the people, and is not only an issue of high politics. This is an argument not to relegate the Nile question only to the high politics and hydropolitical squabbles.

Perception in this context is understood as attachment and expression of a felt and experienced affinity with the waters in general and with the Nile in particular. The following section deals with examples of such

perceptions and how they are still very active today. Perception is not just a rational process. It includes the subjective interpretation of facts.

Ritualistic importance of the Nile

For over a millennium the commemoration of the baptism of Jesus Christ takes place among the Christian communities of Ethiopia every year, during the season of the Ethiopian Epiphany. The tabernacles of the numerous churches and monasteries on Lake Tana islands, as well as from the surrounding areas of the lake are brought in mammoth processions of the faithful for overnight chants, blessings and purification performances. Thus religion is linked to the unity of the Nile.

The Nile as a source of life

The traditional Ethiopian perception of the Abbay, the main tributary of the Nile, is unique and encompasses much more than just the physical body of water. It is spiritual, holds reverence, and a sense of prestige and identity. Songs, poems, folk stories, ritual performances and religious shrines are attributed to the river. It is indeed personified as the great father of rivers. There were times when the Abbay was perceived as an instrument of diplomacy or political leverage to check on certain behavior of the downstream states. The Abbay River's meditative or instrumental utility was, however, rare and incidental.

Since time immemorial the Anyuae community of the Baro River valley have maintained their livelihood through riverside flood plain cultivation, as well as by fresh water fishing. The Anyuae community living elsewhere along the Gilo, the biggest tributary of the Baro-Akobo and a distant tributary of the Nile River, believe that the ultimate source and destiny of the community is the river itself. In their oral 'philosophy' the source of justice and law is attributed to the Gilo River. The whole range of folk stories and mythical recantations describe the Gilo River as the center of their world. The oral tradition is maintained and passed on to succeeding generations with great reverence up until today.

A Traditional dictum showing the importance of the Nile

'Water is thicker than blood' is a dictum expressed by the upstream peasant farmers of the Guder valley (author's field notes, May 2001). The

Guder River is a southern tributary of the Abbay. This one is also a distant tributary of the Nile. The dictum expresses allegorically the relationship between man and water. The dictum, 'water is thicker than blood' is not the same as the usual expression: 'blood is thicker than water'. The farmers of Guder valley do not hold this belief by mistake either. The dictum 'water is thicker than blood' can be taken as an ultimate expression of the deep attachment between the people and the water they so closely depend on. Small-scale headwater irrigation of the upstream Guder valley began more than 70 years ago. This gave rise to the local upstream-downstream stakeholder organizations and water use mechanisms, which have in fact proven resilient to political upheavals and regime changes. The headwater areas in Ethiopia have increasingly become the main attraction points for rural settlements and the emergence of new urban centers. The towns Bahr-Dar, Gambella, Guder, Fincha and Pawe are cases in point in the Ethiopian Nile basin. This is also true for other river basins elsewhere in the country. Awassa, Arba-minch, Godie, Ziway, Wonjie and Metahara show a similar pattern of population concentration.

Ecological unity with the Nile

There are longstanding traditional water utilization practices in a variety of ecological settings in Ethiopia. For instance, the famous social organization of the Gada polity of Borana is associated with the deep wells, locally known as eela. The deep wells of Borana have existed for over 600 years and they still today serve as a crucial resource of the Borana pastoralist production system (Yacob, 1997: 11–17). The cistern (locally known as birkha) of the Somali pastoralist communities in eastern Ethiopia has been in use for over a century now. Rainwater harvesting has been practiced along the Rift Valley escarpment and other ecological transition zones for over several decades. The hillside irrigation system of the Korie community of Amaro in southern Ethiopia is as old as the cultivation practices there, which date back to several centuries (author's interview with Hon. Dayamo Dellie: in Addis Ababa 15 September 1999).

CONCLUSION

In conclusion, it is clear from the above, that myths and popular perceptions support a common understanding and cooperative use of the shared natural resource. The people along the watercourse can benefit the most in a situation of unity and by following the ideal of collective welfare. In this way cooperation can be enhanced, and mutual security can become more permanent. It seems that the present-day states of the Eastern Nile basin are not sufficiently appreciating and making use of the invaluable heritage that is embedded in the shared waters of the Nile. First, the common heritage can be a guiding source of motivation for international cooperation as it answers at a very deep level, the question 'why cooperate?' The indestructible Nile waters, whether they are located upstream or downstream, inextricably link the communities. This strongly suggests that the political actors of the riparian states have no better choice than to cooperatively develop the shared Nile resources in and for the long term. Second, the examples also show where development is required in order to tap the enormous potential of the Nile.

3. GEOPOLITICS OF THE EASTERN NILE BASIN

INTRODUCTION

Geopolitics refers to the political strategy of countries, and how such strategy is induced by geographical factors. The first section starts with a description of the hydrological background, a unifying element in the Nile. The second section deals with the political strategy developed from a historical perspective, showing how colonial and cold war legacies aggravated conflicting interests between the present day Nile countries. This includes a summary of various water agreements, both in the colonial and post-colonial contexts concerning the water resources in the Eastern Nile basin.

Due to the geopolitical hurdles, the numerous water issues of the Nile basin in general and those of the Eastern Nile in particular have yet to be addressed and properly resolved. Notwithstanding the upstream-downstream consensus on items of “Shared Vision” and “Strategic Action Program” prescribed within the framework of the Nile Basin Initiative (NBI), the riparian nations have yet to resolve the divisive issues with regard to legal and institutional questions. It can be surmised that without resolving the core matter, and the matter which has always been held as crucially important in terms of respective national interests, the consensus obtained on other, perhaps secondary, issues will face the risk of reverting back to square one. Hence, it is not difficult to discern that holding on to the mutually exclusive positions by upstream and downstream states can only be maintained as a “zero sum game”, a situation which would have far-reaching implications for regional security and possibly lead to escalating tensions. In this light, the following chapter contrasts the unifying hydrology of the Nile with the divisive political manifestations of national interests.

3.1 THE NILE BASIN AS A HYDROLOGICAL UNIT

The Nile basin includes one third of Ethiopia, a substantial part of Sudan, almost the entire cultivated and settled area of Egypt, the whole of Uganda, and parts of Kenya, Tanzania, Burundi, Rwanda, DRC and Eritrea. Our present focus will be the Eastern Nile basin, which comprises upstream Ethiopia with the Abbay/Blue Nile, Tekeze/Atbara and the Baro/Akobo/Sobat subsystems on one hand, and downstream Egypt and Sudan on the other hand (see more details on map 1).

3.1.1 THE ABBAY / BLUE NILE SUB-SYSTEM

The Abbay River originates in Ethiopia's northwestern plateau. Its numerous headwaters include Lake Tana and the rivers Dabus, Didessa, Fincha, Guder, Muger, Jamma, Wolaka, Bashilo, Birr, Beles, Dinder and Rahad. Its catchments area of 324,500 km² is more than twice smaller than that of the White Nile, while its water contribution to the main Nile is more than four times as big as that of the White Nile. The Abbay River contributes 52.62 bcm (Ethiopia, FDRE, 1999) to the total annual volume of the main Nile measured at Aswan High Dam. As there is a high degree of seasonal variability of rainfall on the Ethiopian plateau, the seasonal flow of the Abbay varies dramatically. The main rainy season on the Ethiopian plateau is from June to September. The maximum runoff is in August and is 60 times greater than the minimum runoff in the month of February. The physical nature of the basin and the seasonal concentration of the water runoff have resulted in a high degree of soil erosion every year. This results in land degradation in upstream Ethiopia and siltation in downstream Sudan and Egypt. According to one recent report, Ethiopia's annual loss of topsoil is 405 million cubic meters from the Abbay basin (EVDSA, 1991). As a result the Khasim El Girba Dam on the Atbara lost more than 60% of its storage capacity between the years 1964 and 1997. During the same period the Roseries Dam on the Blue Nile lost all its dead storage volume to sedimentation, and the live storage was getting depleted (El Monshid et al, 1997).

3.1.2 THE TEKEZE/ATBARA SUB-SYSTEM

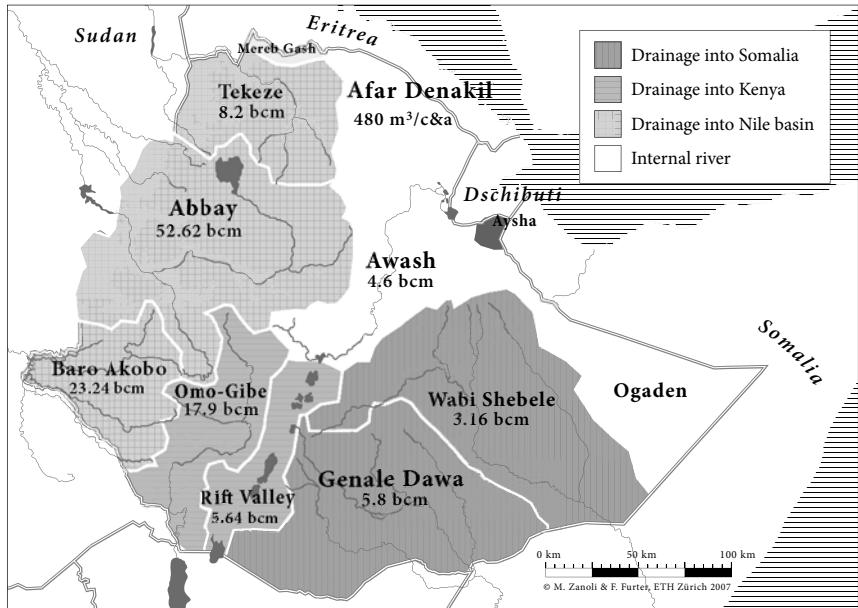
The Tekeze sub-system, whose upper streams rise in northern Ethiopia, replenishes the main Nile north of Khartoum perennially. The rivers Angarab and Guang are the main Ethiopian tributaries of the Tekeze. At one section the river marks the Ethio-Eritrean border. The Tekeze sub-system contributes 8.2 bcm to the total annual flow of the Nile waters (Ethiopia, FDRE, 1999). The climatic pattern and the physical environment of the Tekeze sub-system are very similar to those of the Abbay. Hence, the river's headwater area is also prone to a high degree of soil erosion and land degradation, thus incurring a loss of 120 million cubic meter topsoil to Ethiopia (EVDSA, 1991).

3.1.3 THE BARO-AKOB/ SOBAT SUB-SYSTEM

The Baro-Akobo sub-system emanates in western Ethiopia. Its main tributaries within Ethiopia comprise the Alwero, Gilo and Pivor rivers that drain the western Ethiopian plains before they join the main Baro-Akobo River. The Baro, Pivor and Alwero rivers make up a 380 km frontier line between Ethiopia and Sudan (Gebeyehu, 1965). On the Sudanese side of the border the Baro-Akobo River is known as Sobat. It is estimated that the amount of water carried by this sub-system to the Nile is 23.24 bcm/year (Ethiopia, FDRE, 1999).

Compared to other river systems that flow due west, the Baro-Akobo has wider banks and a less irregular flow course. It is the only navigable river across the Sudan-Ethiopia frontier. At one point there was river transport by steamboat between Gambella in Ethiopia and Khartoum via Southern Sudan; this service has been discontinued for quite a while now. It is also in this basin that Ethiopia and Sudan have ethnic populations with common languages, shared cultures and similar production systems. These include the Anyuae, the Nuwer, and the Bumme. They straddle across the otherwise international frontier in pursuit of their livelihood that is dependent on riverine resources.

Map 2: The Eastern Nile Flow Direction



Map 2: International drainage of Ethiopia's river basins. The borders of the countries do not necessarily represent the official state boundaries.

3.2 THE EASTERN NILE BASIN AS GEOPOLITICAL ARENA

INTRODUCTION

The Nile basin is the most dominant geographical feature of northeastern Africa. It links the riparian nations that have different national histories, political systems, economic development experiences and also different patterns of external relations. Not surprisingly these riparian nations have competing and conflicting external relations and strategic orientations. They have pursued unilateral and conflicting approaches to the utilization of the shared water resources, avowedly driven by respective national interests. The Nile, however, continues to flow with the uninterrupted force of nature to Egypt cutting across state boundaries. On the other hand, there is no binding and all encompassing rule or agreed upon commitment to regulate

the upstream / downstream Nile water utilization and management. The riparian nations have used and still use the waters of the Nile to the extent that their financial and technical capacity allows them to.

3.2.1 THE EASTERN NILE BASIN AS HYDROPOLITICAL CONFLICT ARENA

The following section is divided chronologically into pre-colonial, colonial, post-colonial and the recent period of the Nile Basin Initiative since the 1990s. The historical overview shows the upstream downstream relationship was tense in all periods except the very latest period starting in the late 1990s. This recent engagement in negotiation was made possible by the demise of the Cold War.

3.2.1.1 PRE-COLONIAL SITUATION

The Nile valley is one of the most ancient places where from early times on man has depended on irrigation. Proportionate to the needs of those days the communities in the downstream or upstream areas used the Nile to carry out their economic activities or cultural and spiritual practices without inhibition. The downstream countries enjoyed receiving the water resources from time immemorial. In the downstream areas of the Nile River agriculture flourished for millennia due to the seasonal floods and alluvial soils that were washed down from the upstream basin, most significantly from the Ethiopian highlands. Agricultural success, in turn, gave rise to the more organized communities and their polities, which characterized some of the most ancient civilizations of Egypt, Nubia, Meroe and Aksum. Although irrigation was the main means of agricultural activity in Egypt for thousands of years, perennial irrigation began there with the emergence of modern agriculture at the beginning of the 19th century, and in Sudan since the 1920s. There is no record known to this author that the Nile waters have ever been obstructed from reaching a community or country further downstream. Nor was there ever any need or technological capability to divert the water resources to other places outside of the natural basin until the recent attempts, for instance, by Egypt to divert water to the Sinai

Peninsula across the Suez Canal and to the Narga-Dhakla Oasis in South Western Egypt (Al-Akhbar News Paper, 2 January 2001).

Egypt's absolute dependence on the Nile has inspired generations of the country's leaders to physically control the Nile waters as a primary objective for their national security. Nawrath depicted the Egyptian political intent of controlling the Nile as follows: "From the dawn of history, Egypt has been dependent on the waters of this river, just as each individual depends on the blood in his arteries. It is therefore not surprising to find that efforts have always been made to control the waters of the Nile to ensure their maximum exploitation." (Nowrath, 1920: 32). More than any other ruler of Egypt, Khedive Ismail Pasha (1864–1879) made several direct attempts to control the sources of the Nile. In that process Egypt and Ethiopia had their days of several battles on Ethiopian territory in attempts to control the most important source of the Nile waters. Jesman (1959: 77) explained this as follows: "The obvious direction of his (Khedive Ismail Pasha's) plans led towards the heart of the 'dark continent' and along the Red Sea. Just like the Egyptian extremists of today he was influenced with the idea of the Unity of the Nile Valley from the Great Lakes to the Delta under the green flag of Egypt. Sooner or later this would have meant the conquest of Ethiopia, a menace from the south to every modern ruler of Egypt."

Ethiopia controlled and still controls the most important sources of the Nile waters. The Abbay/Blue River and the Tekeze River rise and collect water for their tributaries in Ethiopia. The Baro-Akobo River, which joins the White Nile near Juba and embellishes the volume of the latter, arises in western Ethiopian territory and picks all its tributaries from that same region of Ethiopia. As a matter of geographical fact Ethiopia virtually controls the most essential sources of both the Blue and White Niles. Naturally Egypt has never felt secure as long as the sources of the Nile are controlled by another state. A major objective of Egypt's foreign policy thus became the incorporation of the territories of the sources of the Nile. The scheme focused on the conquest and incorporation of Ethiopia. Khedive Ismail Pasha already admitted this intention when he said: "In these enlightened days the world is acquiescing in the extension of progressive powers" (Jesman, 1959: 75). Egypt's upstream Nile campaign engaged the services of numerous soldiers of fortune originating from the

United States and Europe. The numerically dominant group of servicemen was made up of disbanded confederate soldiers and discharged veterans of the American Civil War (1860–1864). The rank-and-file of the soldiers of fortune comprised servicemen from general officers to noncommissioned guys (Hezselteine & Wolf, 1961: 253–60).

Historically, the desire to control the Nile basin increased with the emerging modernization of the Egyptian economy, bringing with it perennial irrigation under the potent ruler Mohammed Ali Pasha (1805–1849). It was not just incidental that Mohammed Ali, who started modern irrigation and new methods of water conservation in Egypt, also launched the first conquests of the Sudanic kingdoms of the mid-Nile valley as early as the 1820s. His ultimate objective, however, was to incorporate the entire region between the Red Sea and the Nile valley under Egyptian control (Abir, 1968: 96.). Similarly, between 1832 and 1876 Egypt invaded Ethiopia 17 times, and all the battles were fought on Ethiopian territory (Petrides, 1983: 8, and the map 1).

Besides military expenses the ambitious and modernizing Egyptian economy was also heavily indebted to foreign creditors, especially to British ones. As a result, Egypt became hostage to the British financiers. Subsequently, the country became a British protectorate in 1882. It was also not accidental that the British colonizers were interested in controlling the Nile basin.

3.2.1.2 THE COMING OF EUROPEAN COLONIALISM TO THE EASTERN NILE REGION

Egypt became a British protectorate in 1882, and Sudan fell into the Anglo-Egyptian Condominium in 1899. The Nile waters continued to be the lifeline of British colonial economic interest just as they had always been for Egypt. The latter remained under British colonial domination until the 1922 partial independence. The Suez Canal and the country's economic and foreign affairs were still controlled by the British. But the Egyptian nationalist forces were vehemently opposed to Britain's continued domination of Egypt. By way of appeasing the growing anti-British uprisings in Egypt, Britain agreed to Egypt's "historical and natural rights" over the Nile waters in an exchange of Notes with the Egyptian Government

in 1929. This agreement accorded to Egypt 48 bcm of the Nile waters annually, while Sudan was given 4 bcm annually. The rights and interests of all upstream countries, including those of Ethiopia, were totally ignored. Hence, the Nile waters were manipulated in order to soften the anti-colonial uprising in Egypt.

In the years following the end of the 2nd World War, Egypt did everything possible to incorporate Sudan under the banner of the “unity of the Nile valley” upon the latter’s independence (Kilerruu, 1962: 9). The future of Eritrea was discussed at the UN, following the defeat of the Italians in Ethiopia and their being ousted from their colonial possession of Eritrea. Egypt argued for an annexation of Eritrea to Sudan (Spencer, 1977: 66.) with the self-serving anticipation that an expanded Sudan would unite with Egypt. Contrary to what the Egyptian leaders would have desired, the UN decided to federate Eritrea with Ethiopia in 1952. Sudan also unequivocally decided not to unite with her northern neighbor, but declared independence in 1956.

3.2.1.3 THE POST-COLONIAL DYNAMICS

Immediately after Sudan’s independence, the new Sudanese Government demanded a greater share in the Nile waters. The fresh stance of Sudan threatened the Egyptian Government’s new plan of constructing a High Dam in southern Egypt. Egypt therefore mobilized troops to the Sudanese border as a show of force. Sudan, nevertheless, persisted in its demand for a greater share in the Nile waters. The Sudanese declared non-adherence to the 1929 agreement and demanded a renegotiation of water sharing (Swain, 1997: 679.). When it became clear that the ‘unity of the Nile’ project was not materializing, Egypt embarked upon a strategy to control the Nile waters within her own territory by building the mammoth Aswan High Dam, which is also known as Lake Nasser. The High Dam was constructed without the consent or collaboration of the upstream nations. The idea behind this undertaking was to ensure water security within Egypt’s national territory.

Egypt, however, did renegotiate the apportionment of the Nile waters with Sudan, but not with Ethiopia or other upstream countries. Hence, the two most downstream nations signed an agreement on the “full utilization

of the Nile waters” (Annex X). According to the new agreement, Egypt would take 55.5 bcm, while Sudan would have 18.5 bcm of the waters annually. The remaining 10 bcm per year was left for possible evaporation and seepage. According to this new agreement, Sudan’s share of the waters increased from the mere 4 bcm/year of the 1929 agreement to 18.5 bcm/year. Ever since then Egypt and Sudan have maintained collaboration and alliance on the question of the Nile waters, especially in relation to other riparian nations in the upstream basin. The Joint Permanent Technical Commission was entrusted to handle all matters with regard to the Nile waters on behalf of the two signatory states.

Both the colonial and post-colonial agreements on the Nile at best ignored the interests and rights of the upstream countries. The political expression of the economic significance of the transboundary waters has characterized the tense and strenuous relations between the upstream and downstream states in the Eastern Nile basin. The most entangled nations in the Nile basin are Ethiopia and Egypt, for the obvious reason that Ethiopia is the provider of almost the entirety of the fresh water resources on which Egypt depends, and that there has not been an agreed upon mechanism to regulate the use and management of the Nile waters. In this regard what S.H. Beaver observed a long time ago still holds. He wrote: “If the River Nile were dependent upon the water derived from the Lakes Plateau and southern Sudan, the ancient and modern civilization of Egypt would never have existed, for the river would have no flooding capacity and its volume in lower Egypt would be small indeed for it receives no permanent tributary below Atbara. Fortunately, however, it’s two greatest tributaries – the Blue Nile/Abbay and the Atbara/Tekeze take their rise in the mountains of Ethiopia.” (Beaver, 1953: 194.)

The downstream nations are often worried that their upstream counterparts might interfere and obstruct the flow of the waters. The upstream nations, on the other hand, have received threats not to tamper with the unobstructed flow of the waters. Hence the upstream-downstream entanglement has increased as the demand for water resources continues to increase in each riparian country. In response to this, the downstream states have chosen to maintain a defensive stance, insisting that they have “natural” and “historical” rights, and conveniently explaining that the rights arise from the past agreements, as well as the here-to-fore appropriation

on the ground. This argument has been especially accentuated from the Egyptian side.

The proponents of this viewpoint cite the protocol agreements, the exchange of notes or provisions entered into between Imperial Britain and other former colonial powers in the region, as well as agreements reached between Britain and post-independence Egypt as evidence of the existence of established rights. They further expound the argument that the agreements fully established an obligation for the upstream nations in the Nile basin (Arab Republic of Egypt, 1984: 20–22). Such a claim, however, has provoked the upstream countries to hold to a counter stance, holding to the doctrine of “absolute territorial sovereignty” over the waters that flow within their sovereign territorial jurisdiction. Ethiopia, for example, unequivocally stated at the UN Water Conference held in Argentina in 1977 that it is “...the sovereign right of any riparian state, in the absence of an international agreement, to proceed unilaterally with the development of water resources within its territory” (Clarke, 1991: 104). Ethiopia did not and still does not have any agreement with downstream countries over water utilization and management of the Nile waters.

It can be noted that the downstream states are lucky that upstream Ethiopia has so far not had the economic, political or diplomatic capacity to be considered as a formidable power that would pose any real threat to the water interests of downstream nations. Ethiopia’s financial and other capacities have been further dissipated in the long drawn out civil and secessionist wars and interstate conflicts that have engaged the country since the early 1960s. Furthermore, Ethiopia has lacked vibrant water utilization and management policies and institutional capacity, particularly owing to the violent, radical and frequently changing regimes and the subsequent instability of the political and economic systems employed by revolutionary regimes.

Under such circumstances the nation’s ability to engage in active water utilization has stayed at a slow pace or even remained stagnant. Ethiopia’s political stance towards downstream countries has been at best reactive or ambivalent. Clearly Ethiopia has placed a very low priority on water development. At the same time the last three successive regimes of the country have invariably (and each in their own style) made statements emphasizing the strategic significance and long-term implications of

water development to the overall national security and the question of territorial integrity. In the meantime, however, Ethiopia has maintained as its vantage position vis-vis the downstream nations the doctrine of 'absolute territorial sovereignty' over the water resources so long as these lie within her territorial jurisdiction. The downstream nations on their part insist on the doctrine of 'absolute territorial integrity'. Hence, the downstream stance has been overprotective of water appropriation. Their stance towards upstream nations has been pre-emptive, hostile and at times aggressive, as the statement by Egypt's president, the late Anwar El Sadat, reveals. He said: "Any action that would endanger the flow of the waters of the Blue Nile... will be faced with a firm action on the part of Egypt, even if that action should lead to war... Egypt would join the Sudan should this sisterly state be exposed to any aggression" (cited in PMACE, 17 Feb. 1978).

In July 1976 President Anwar Sadat of Egypt and President Jaffar el Nimeiri of Sudan signed a military pact which was underlined by the following joint statement: "The two presidents believed that there are links between the security of the two countries in view of geographical and historical factors and the vital role played by the Nile valley in protecting the entire Arab region and the African continent" (Kissing, 1976: 27883A). The joint statement not only expressed the alliance of the two downstream nations, but also explains that the Nile question involves the interest of the larger Arabic world.

Egypt went even further, expressing that it would protect Sudan from a "possible aggression", as was evident in President Anwar El Sadat's statement at a press conference in the United States in 1977: "I do not want to wake up one morning to see what has happened from Angola against Zaire happens from Ethiopia to Sudan" (Africa Research Bulletin, vol.14, no. 4, 1977: 4394-5). At the opening of the Egyptian-Sudanese joint assembly in Cairo, on 24 October 1977, President Sadat said "the occasion was a historic one and a real turning point for the two countries, who have always lived together as one people". He then proposed that the session be named the "Unified Congress of the Nile Valley" (Arab Report and Record, October 1-31, 1977).

By June 1979 the Egyptian troops stationed in Sudan were estimated at 50,000 strong, avowedly 'to secure the flow of the waters of the Abbay/Blue

Nile', the largest headwater body of the Nile River (The Economist News paper: 20 June 1979). No water was removed in Ethiopia, however, and the much feared conflict between Egypt and Ethiopia did not take place. In this instance no negotiation or peaceful dialogue of any kind was given a chance as an alternative mode of diplomacy in the upstream-downstream contention on the question of the Nile.

International cooperation between the upstream and downstream states of the Eastern Nile was difficult if not unthinkable prior to the end of the Cold War. In the colonial era the use and management of the Nile waters were geared to British colonial interests. In those days there was no space for the basin states to act bilaterally or multilaterally as regards their shared waters or any other inter-state concerns. During the Cold War era the political regimes in the sub-basin were willy-nilly engulfed in the ideological and/or politico-strategic proxy matrix of either the "Western" or the "Eastern" camp, often finding themselves on opposing sides of one or the other power bloc.

In addition, a country would sometimes switch sides, often prompted by a change of political regime, or as a result of change in the political system under the same regime. For instance, Ethiopia under Emperor Haile Selassie I (1930–1974) was a close ally of the United States in particular and the Western countries in general. While under President Mengistu Haile Mariam (1974–1991) the country became a close ally of the USSR and the Eastern Bloc. By the same token, Egypt under President Abdul Gamal Nasser (1952–1970) was a close ally of the USSR and the Eastern Bloc, but then became an ally of the United States and the Western bloc while under President Anwar El Sadat (1970–1982). Similarly, Sudan under President Jaffar El Nimeiri (1969–1985) was an ally of the USSR and the countries of the socialist camp during his early tenure in power. His government, however, switched to the United States and western countries during the latter period of his rule.

With the Cold War ending at the turn of the 1990s, Egypt and Ethiopia both subscribed allegiance to the United States, and to the "unified" world hegemony. The new international rule of the game then became to listen to the single center of world order, to affirmatively respond to the economic and political prescriptions of the international financial institutions, and to subscribe to the conventional "standards" of "good governance", "human

rights”, “democratization”, etc. It can be observed, therefore, that the end of the Cold War has resulted in a partial shift in the behavior of the states in the Eastern Nile basin. They now at least to some degree accept one another’s political concerns and national interests. The emergence of the Nile Basin Initiative (NBI) as a new deal can therefore be attributed to this shift, although it is a more or less externally induced initiative.

Notwithstanding the ups and downs in other areas of Egyptian-Sudanese relations, the two nations have joined forces in all matters concerning the status quo with regard to the Nile waters. This is also evident in the ongoing Nile Basin Initiative process. Throughout this process Egypt and Sudan strongly uphold the “existing agreements”. The seven upstream nations, however, insist that a new agreement be reached to supersede the already existing agreements, which do not take into consideration the rights and interests of all the riparian nations (Panel of Experts, NBI, 1999, Art. 15).

Internally, there is also an increasing realization that any sustainable agricultural undertaking will depend on the availability and rational utilization of the water resources within each riparian nation and/or between the Eastern Nile basin countries. More than anything, the growing scarcity of fresh water, compounded with the fast increasing population, has made it clear that the sustainable use of the water resources must urgently be attended to. It has also become clear to the riparian states that the only “civilized” way to maximize one’s national interest with respect to the utilization and management of the transboundary waters is by establishing mutual benefit or “win-win” mechanisms in a new and cooperative framework of diplomacy and with a possible legal/institutional arrangement.

In summary, the political expression of economic interests in regards to the transboundary waters of the Nile, especially those of the Eastern Nile basin, has resulted in tense and strenuous relations between upstream and downstream nations. The downstream-upstream entanglement has increased as the demand for water increases in each riparian country. In the absence of negotiations for an amicable utilization of the water the downstream nations have chosen a defensive stance, insisting that they have “natural” and “historical” rights to the Nile waters. The historical root of this claim refers to the British-Egyptian exchange of notes of 1929 (Exchange of Notes: Lord Lloyd to Mahmoud Pacha, 7 May 1929.

The details are in Annex VIII). The Note partially reads “... Her majesty’s Government in the United Kingdom has already recognized the natural and historical right of Egypt to the waters of the Nile” (Arab Republic of Egypt, 1984: 65–70). Such a claim, however, has provoked the upstream countries to uphold a counter stance of “absolute territorial sovereignty”, basing their assertion on riparian doctrine. Riparian doctrine holds absolute sovereignty of the state over the resources that lie within a nation’s territorial jurisdiction.

3.2.1.4 THE ADVENT OF A NEW DEAL IN THE NILE BASIN?

More recently, however, the above-described stances of the Eastern Nile basin states have experienced a slight shift. With financial support from the UNDP, World Bank and other multilateral organizations, they are at present engaged in negotiations for a possible future water agreement. In the mean time Ethiopia has launched preparations for water sector development strategies, which in turn aim to make use of the water resources as a crucial component (Ethiopia, MWR, 1997) of the country’s Agricultural Development Led Industrialization (ADLI). More than anything, the upstream and downstream countries needed some kind of face saving diplomatic engagement as regards their water issues if they were to hope for some kind of clearance from the World Bank in order to access funding sources from western donors or potential investors.

Historically, negotiations to ameliorate relations and to find solutions to the existing imbalance in the various viewpoints as well as in the actual utilization of the Nile waters have been rather slow. Even with the present ongoing rapprochement it is to be expected that the process will be quite lengthy. It is, however, crucial that a negotiated arrangement be achieved sooner rather than later. This is the only way to ease tension, foster cooperation and mitigate possibilities of future conflicts over unregulated competition for the shared water resources. As is an increasingly accepted practice elsewhere in other basins, the countries of the Eastern Nile are expected to be willing to accept transnational legislation, which limits unilateral and exclusively national approaches to shared natural resources in general and water resources in particular. In this particular regard the United Nations Environmental Program (UNEP) advises that, “Any

international river needs an international river authority... If the countries continue to develop and use the river basins only on national priorities, it is bound to come to hard conflict in the not too distant future” (UNEP, undated, Environmental Brief No. 6).

It is of interest to note that the Nile Basin Initiative (NBI) has been embraced by all ten riparian states of the Nile since 1999. The aim of this initiative has been to embark on an integrated development of the basin. In order to take this operation a bit further the Nile basin states have agreed: 1) to adopt a framework agreement for the entire Nile basin on legal and institutional arrangements, and 2) to go ahead with Strategic Action Programs (SAP) based on the two sub-basins of the Eastern Nile, on one hand comprising Ethiopia, Sudan and Egypt, and on the other hand the Equatorial Nile countries, namely Tanzania, Kenya, Uganda, Burundi, Rwanda and The DRC. The sub-basin states have been able to come up with joint and/or complementary development programs. The agreement on the legal and institutional framework is, however, still under heavy discussion. Marked differences still exist on the whether or not to inherit the past agreements and on the modalities of prior notification (Panel of Experts, NBI, 1999: 5). The Nile Basin Initiative and its implications are discussed in greater detail in section 9.5.5.

3.2.2 CHRONOLOGY OF AGREEMENTS ON THE NILE

In the following section the chronology of water agreements in the Nile basin is provided, followed by discussions on the political context of the agreements. The presentation is made in three historical sequences: 1) agreements between colonial powers, 2) agreements between colonial powers and regional states, and 3) agreements between independent states of the basin.

3.2.2.1 AGREEMENTS BETWEEN COLONIAL POWERS

There are five agreements in this category. The colonial powers involved in these agreements were Britain, Italy, Belgium and France. All four powers had acquired colonial possession in the Nile basin or were aspiring to gain

some. Britain had colonized Egypt, Sudan, Kenya, Uganda and Tanzania. Italy had colonized Eritrea in the upper Nile and Somalia bordering on the Indian Ocean. Belgium had controlled The Congo (now Democratic Republic of Congo) and was given the former German colonies of Rwanda and Burundi under the Mandate of The League of Nations. France was the colonial power in the tiny but strategically important territory of Djibouti in the immediate sea outlet of Ethiopia, the key country on the source of the Eastern Nile.

The Anglo-Italian protocol of 1891 safeguarded the continued flow of the Tekeze/Atbara Waters to the British imperial domain of Egypt through Sudan. The full text of the agreement is provided in Annex III.

The 1906 Tripartite Treaty between Britain, France and Italy recognized the Ethiopian territory of the Nile basin as a British sphere of influence. This concession was obtained in exchange of British recognition of the hinterlands of Eritrea and Somaliland as well as west of Addis Ababa as an Italian sphere of influence. In return the agreement designated the corridor of the Franco-Ethiopian railway as the French area of influence (text in Annex V).

The 1906 agreement between the Belgian colonial authorities and Britain provided that the Belgian king, Leopold II, would not put any dams up or divert the Semlike and Isango head-waters from joining the White Nile system (text in Annex VI).

The 1925 Anglo-Italian agreement allowed the Italians to continue with their colonial aspirations over Ethiopia and to construct roads and railways in the Ethiopian territory adjacent to the then Italian colonies of Eritrea and Somalia. In return the Italians recognized Britain's interests in the Ethiopian Nile basin with respect to a continuous flow of the waters to Sudan (text in Annex VII).

In 1934 Britain and Belgium agreed that any amount of water from the Kagera in Rwanda that had been diverted for hydroelectric power production be returned to its banks (Arab Republic of Egypt, 1984: 21).

The country deriving the greatest benefits from the foregoing agreements was Britain, having thus secured a continued flow from the Nile head-waters initially to Egypt and later on to Sudan and Egypt. Other

colonial powers also gained assurance from Britain and other imperial powers for their colonial possession in the region. The agreements established smoother relationships as they influenced colonial possessions.

3.2.2.2. AGREEMENTS BETWEEN COLONIAL POWERS AND BASIN STATES

Anglo-Ethiopian Agreement of 1902

Ethiopia was the only country in the Nile basin that had never experienced colonial occupation. Britain signed a frontier delimitation agreement with Ethiopia on 15 May 1902. Upon the insistence of the British negotiator, Colonel Harrington, a water provision was included as the third article in the otherwise border agreement aimed at delineating the boundary between Ethiopia and Anglo-Egyptian Sudan. The provision in article three reads as follows:

His Majesty the Emperor Menelik II, King of Ethiopia, engages himself towards the Government of His Britannic Majesty 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 waters into the Nile except in agreement with His Britannic Majesty's Government of the Sudan (Text in Annex IV).

Within the terms of the herein-above quoted provision, Ethiopia's obligation was "not to arrest" the said waters. The Amharic version of the provision is even clearer. A literal translation of it can be captured as follows: Ethiopia "...shall not block the waters from bank to bank". The agreed upon obligation under the terms of the provision was about not stopping the entirety of the waters of the Abbay, Lake Tana and Baro-Akobo. The bottom line of the British strategy with this agreement was to tie the hands of upstream Ethiopia from using the water resources that flow down to the former's colonies in the downstream Nile valley. Ethiopia – having just come out of the anti-colonial war of 1896 with the Italians, having survived the scramble for Africa, and being a country still encircled by the most potent imperialist powers of Britain, France and Italy – had

little room, if any, to reject the water provision inserted in the boundary delimitation agreement.

Ethiopia has never been constrained, however, by that agreement in her small attempts to develop the water resources within the nation's frontiers. And this has always been a daunting concern for the colonial and post-colonial states in the downstream regions of the Nile. The obligation has been an onerous burden on Ethiopia, as Ethiopia did not get any reciprocal benefit out of the agreement. Dante Caponera observed (cited in Okidi, 1990: 197–98) what he thought Ethiopia's legal arguments with regard to the 1902 Anglo-Ethiopian water provision would be:

1. "The agreements...between Ethiopia and the UK have never been ratified. Customary rights which might appear from the behavior between lower riparians and Ethiopia would not be binding on the latter country if a purely positivistic approach toward interpretation of the sources of international law would be upheld.
2. Ethiopia's 'natural rights' in a certain share of the waters in its own territory are undeniable and unquestioned. However, no treaty has ever mentioned them. This fact would be sufficient for invalidating the binding force of those agreements, which have no counterpart in favor of Ethiopia.... In Roman law such a pact would be null and void; it is likewise in international law. This is explainable by the international political conditions of Ethiopia in 1902.
3. The agreements were signed between Ethiopia and UK (for Egypt and the Sudan). Since the latter question the validity of their own water agreements.... Ethiopia, which had not one single benefit from them, had even greater reason for the claiming of their unfairness and invalidity. The research for new agreements by Egypt and Sudan demonstrates the non-validity of those agreements.
4. The UK in 1935 recognized the annexation of Ethiopian Empire by Italy.... UK's recognition of annexation is an act, which invalidated all previous agreements between the two governments. Ethiopia has

never asked for renewal of the Nile agreement after such recognition.”
(text of the 1902 agreement is in Annex IV)

Agreements between Colonial Powers and Independent Egypt

In 1929 Britain and Egypt (the latter, newly independent, and partner in the Anglo-Egyptian Condominium over the Sudan) agreed, inter-alia, as follows: (1) Egypt would take all the waters of the Nile except the 4 bcm to be retained in Sudan. (2) Egypt would supervise all water-related activities in the entire basin from source to mouth. (3) Britain recognized the “historical” and “natural” rights of Egypt with respect to the waters of the Nile (text in Annex VIII).

The Anglo-Egyptian Agreement of 1952

The agreement stipulated that the Owen Falls dam in Uganda be heightened with the object of conserving more water to be reserved for, and eventually flow to Egypt (text in Annex IX).

The three agreements reached between imperial Britain, independent Ethiopia and post-independent Egypt aimed to increase the water supply for downstream countries without including any reciprocal benefit for the upstream countries Ethiopia, Uganda or Sudan (in the specific case of the 1929 agreement). Furthermore, Sudan and Uganda were not parties to the agreements that Britain negotiated and enacted “on their behalf”.

3.2.2.3 AGREEMENTS BETWEEN INDEPENDENT STATES IN THE NILE BASIN

In this category there are two Nile related agreements. The first one is the Agreement on Full Utilization of the Nile Waters, which was signed between the United Arab Republic of Egypt and Sudan in 1959. The second one is the Framework Agreement on the Nile Waters between Ethiopia and The Arab Republic of Egypt. This one was signed between the provisional government of Ethiopia and the Arab Republic of Egypt in 1993.

The Egyptian-Sudanese Agreement for the Full Utilization of the Nile Waters

The agreement was reached between two sovereign downstream states. Egypt and Sudan neither informed nor invited the upstream riparian states while they negotiated and signed this agreement on the “full utilization” of the Nile waters (Annex X). The binding force of the agreement does not create any binding obligation for the upstream nations. This position has been expressed by the upstream nations quite clearly.

On 6 February 1956 Ethiopia had already declared that the country reserved its sovereign rights to use the water resources of the Nile within the country’s territorial bounds (The Ethiopian Herald, 6 February 1956). This was followed by a circular aide-memoire of 23 September 1957, which was served to the diplomatic community in Cairo. The aide-memoire in part reads as follows:

...Just as in the case of other natural resources on its territories, Ethiopia has the right and obligations to exploit the water resources of the Empire... for the benefit of the present and future generations of its citizens... in anticipation of the growth in population and its expanding needs. The Imperial Ethiopian Government... reasserts and reserves now and for the future, the right to take all such measures in respect of its water resources ... namely those waters providing so nearly the entirety of the volume of the Nile (Quoted in Whiteman, 1964: 1011–13).

Ethiopia protested against her exclusion from the negotiation process of a Nile water agreement. After criticizing the unilateral downstream negotiations, the Ethiopian Government outlined its reaction and its own national strategy for water development and conditions in future cooperation with downstream nations in a strongly worded statement by Emperor Haile Selassie himself. The statement is quoted at length herein below:

We have already explained that the plans are under construction to utilize our rivers as an essential step in the development of agriculture and industry, it is of paramount importance to Ethiopia, a problem of first order that the waters of the Nile be made to serve

the life and the needs of our beloved people now living and those who will follow us in centuries to come. However, generally, Ethiopia may be prepared to share this tremendous God given wealth of hers with friendly nations neighboring upon her, for the life and welfare of their people, it is Ethiopia's sacred duty to develop the great watershed which she possesses in the interests of her own rapidly expanding population and economy. To fulfill this task, we have arranged for the problem to be studied in all its aspects by experts in the field. Ethiopia has time and again set this forth as her position regarding the utilization of the Nile waters. (Ethiopia Observer, Vol. II, No. 2, 1958: 93)

The second challenge to the 1959 agreement actually came from Sudan, the only other party to the agreement. Sudan expressed indignation and dissatisfaction over several issues involved in the agreement. In the first place, Sudan was not satisfied with the one-third allotment of the waters to its nation. According to the agreement, Egypt's share was 55.5 bcm/year, while Sudan's allotted share was 18.5 bcm/year. The remaining 10 bcm/year of water was left for evaporation. Second, the Sudanese negotiators of the treaty felt that what they got was like an "Egyptian grant" rather than their rightful share as an equal partner in the agreement. The expectation of the Sudan Government was that "Egypt to act in accordance with the principles that the Nile valley is a hydrological unity" (Sudan, Ministry of Irrigation & Hydro-electric Power, 1955: 37). Political elements within the new Sudanese Government, however, especially those who were unhappy with Egypt's hegemonic stance made the process difficult. The agreement ended up being signed rather quickly when the pro-Egyptian military coup d'état was staged in a bloodless overthrow of the civilian regime. Major General Ibrahim Aboud took over political power in Khartoum.

The third challenge came from the British colonial authorities, apparently on behalf of the east African colonies of Kenya, Uganda and Tanganyika. The former sent notes to Ethiopia, the Belgian Congo, Sudan and Egypt itself, whereby they reserved the rights of the three East African countries with respect to any agreement between Egypt and Sudan. Furthermore, Britain called for an international conference to establish the rights of the basin countries and to set up a Nile waters authority (Godana, 1985: 185, Collins, 1990:164).

The fourth challenge came from the newly independent East African states. Upon their independence in the early 1960s, Tanzania, Uganda and Kenya explicitly declared that they would not inherit any Nile waters agreement which Britain might have entered into while being the colonial administrator of their respective countries (Okidi, 1990: 202–203).

Egypt and Sudan alone established their exclusive “full utilization”. The upstream offer for collaboration was shunned, as was evident when Ethiopia’s offer was turned down by Egypt in late the 1950s. A “Nile Basin Commission” proposal by Great Britain, the colonial ruler of the three East African countries of Kenya, Tanzania and Uganda, went equally unheeded (Collins, 1990:164) (text of the 1959 agreement in Annex X).

The Framework Agreement on the Nile Waters between Ethiopia and The Arab Republic of Egypt, 1993

The Framework Agreement was signed between Meles Zenawi, President of the Transitional Government of Ethiopia, and Hosni Mubarak, President of the Arab Republic of Egypt, in Cairo on 1 July 1993. The agreement acknowledges the ‘close relations’ of the two countries ‘linked by the Nile River with its basin as a center of mutual interest’. The following two points were underlined as the main objectives of the agreement: to consolidate the ties of friendship enhancing cooperation between the countries, and to establish a broad base of common interest. Articles 5, 6, 7 and 8 specifically identified the areas and ways of cooperation that the two leaders had in mind. Article 5 stipulates that: “Each party refrain from engaging in any activity related to the Nile waters that may cause appreciable harm to the interests of the other party”. Article 8 talked about conservation and protection of the Nile waters, and further stipulated that: “...they [the two signatories] undertake to consult and cooperate in projects that are mutually advantageous, such as projects that would enhance the volume of flow and reduce the loss of Nile waters through comprehensive and integrated development schemes”. In article 7 the parties pledged that they hold “periodic consultations on matters of mutual concern, including the Nile waters, in a manner that would enable them to work together for peace and stability in the region”.

In closely looking at the provisions it is clear that article 5 refers to the doctrine of ‘no appreciable harm’. This can be interpreted as upstream

Ethiopia agreeing to “not cause appreciable harm” to downstream Egypt. Similarly, article 7 seems to be related to the doctrine of ‘prior consultation’. In view of the fact that Egypt has never consulted Ethiopia on any of her mammoth projects, including the construction of Aswan High Dam, the Nile waters diversion to West and East Sinai and the construction of the Mega project which involves a huge diversion of the Nile waters to the newly reclaimed western desert area of Egypt, the present stipulation of ‘periodic consultation’ seems to refer to upstream Ethiopia again being required to hold consultation with downstream Egypt in cases where the former intends to utilize the water resources within her own territories.

Another interesting provision is article 6. It talks about ‘enhancing the volume of flow and reducing the loss of Nile waters’ (text of the Framework Agreement in Annex XI). The irony involved here is that while Egypt seems to have Ethiopia accept the idea of working towards developing projects that conserve or streamline more volume of water destined for Egypt, the Aswan High Dam is losing more than 10 bcm water annually, and the agricultural system in Egypt is excessively wasteful of the scarce water resources. The potential to increase irrigation efficiency is examined in Mason (2004:146–7).

The agreement is more a framework for future negotiation, rather than a binding document. For Egypt, the agreement may provide support for the country’s long-term position, e.g. regarding prior notification. But for Ethiopia, some articles are inconsistent with Ethiopia’s negotiaton strategy prior to the agreement as well as in the present Nile Basin Initiative (NBI) process.

In conclusion, the agreements authored by the colonial powers, as well as the 1959 Sudanese-Egyptian treaty favored Egypt. Successive regimes in Egypt have wanted the agreements to continue to be recognized and accepted by the upstream countries. The upstream countries, on the other hand, are not willing to recognize or accept either the letter or the spirit of those agreements to which they are not a party and which do not benefit them in any way. The crux of the Nile problem can thus be explained, from an upstream perspective, first and foremost, by Egypt’s intractability to accept the principle and procedures of equitable benefits to all riparian countries. Hence, unilateral and exclusionist approaches have prevailed on the question of the utilization of the Nile waters.

The numerous agreements concluded with regard to the Nile waters have excluded most of the riparian countries; they have lavishly favored Egypt, the most downstream country. It is evident from the foregoing that the colonial and post-colonial agreements have all ignored the interests and rights of the upstream countries. After the defeat of colonialism in the Nile basin, the downstream states have been unwilling to accept a rectification of the situation wherein a regime of cooperation and mutual benefit could be established. This has resulted in tense and strenuous relations between the upstream and downstream nations.

The Egyptian-Sudanese bilateral agreement is still held sacrosanct by the two downstream nations (Arab Republic of Egypt, 1984). The upstream riparian states have already made it clear that those agreements to which they are not party and that are contrary to their respective national interests do not and will not bind them. This contention continues to linger even in the context of the new Nile Basin Initiative. This longstanding historical situation of lack of cooperation has obviously resulted in the unmitigated hydro political tension in the Nile basin.

CONCLUSION

This first section showed that myth and hydrology are unifying factors, while the history of relationships reveals the divergence of interests. This is also reflected in most of the Nile water agreements reached between various actors. One of the main reasons for the conflicting development of history can be seen in the emergence of national states with distinct national interests. This was aggravated by colonial administration and the Cold War polarity, which also divided regional states into two opposing camps. The paradox between unifying and divisive factors has to be addressed both on a national (Part Two) and regional level (Part Three). The national and regional levels are linked. Increased state capacity at the national level is needed to negotiate and work on cooperative modalities and shared benefits at the regional level. While at the regional level, cooperation can lead to access of international development funding and thus support development on the ground.

PART TWO

NATIONAL DILEMMA:

PREDICAMENT OF ETHIOPIA'S
WATER POLICY AND MANAGEMENT

INTRODUCTION

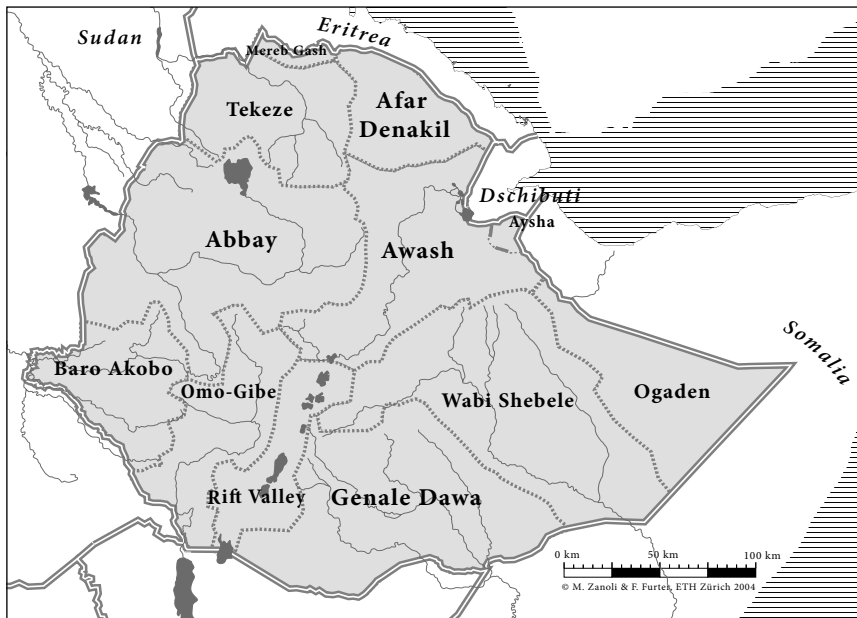
Part One described many examples of the Nile inalienably binding together the peoples of the upstream and downstream regions throughout the ages as well as now. The unity of the inhabitants of the Nile valley can be explained by their vivid cultural similarities, which are expressed in the mythologies and popular perceptions of both the upstream and downstream societies. As a matter of fact, however, an unfortunate geopolitical development has been witnessed, especially during the colonial era and afterwards. Although the states of the Eastern Nile basin have been neither the initiators, nor the primary actors nor the beneficiaries, the externally unfolding situation has placed the states and the peoples in the sub-region in a hostile juxtaposition.

Part Two explores Ethiopia's national dilemma: the need to develop the available water resources for resolving the rather debilitating and unmitigated poverty on the one hand, and the lack of financial and institutional capacity to develop the water resources on the other hand. Specific topics of discussion include: Ethiopia's legal framework (chapter 4) and state institutions (chapter 5); the role of the non-state sector in water resources development (chapter 6); the economics of water resource development (chapter 7); and the national strategies for water development in Ethiopia (chapter 8). An attempt has been made to explain the limitations of Ethiopia's capacity to make use of the country's water resources in general and the Nile waters in particular. The country has 123 bcm/year of fresh water run-offs in its rivers and lakes, the highest amount in the entire Eastern Nile basin. It is believed that water is the key sector in developing strategy for mitigating the agonizing poverty and the cyclical droughts. The current Ethiopian water sector strategy sees the country's water resources as the key element for meaningful development efforts during the coming fifteen years or so (Ministry of Water Resources, 2001).

In this section, Ethiopia's water policy and management are mainly examined in the form of enacted and customary/traditional laws and regulations. The water development policies are just beginning to take shape. In 1999 Ethiopia enacted a national water management policy for the first time ever, and there was no comprehensive national water management

proclamation until 2000. In the following sections we shall explore the enacted as well as traditional laws, as these will be the basis for developing a comprehensive water management policy in Ethiopia.

Historically in Ethiopia, the virtual actors and ultimate authority as regards water related affairs, were the heads of state or government. In spite of the rather high profile of water issues in both national and regional politics, the nation's water sector has not been accorded sufficient attention in order that the socio-economic development of the country could be supported. Evidence of this is that only 17% of Ethiopia's population of 70 million has access to clean water; only 3% of the nation's available irrigable land has been developed; only 2% of the country's hydroelectric power potential has been harnessed; and only 13% of the population has access to electric power. Furthermore, amidst plentiful rivers and freshwater lakes, more than 15 million or one fifth of the nation's population has been exposed to famine conditions. In short the national dilemma consists of the inability to utilize the abundant water resources and the pressing need of the country to mitigate the gnawing poverty, cyclical droughts and recurrent calamities of food shortage and famine.



Map 3: The Water Basins of Ethiopia. The borders of the countries do not necessarily represent the official state boundaries.

4. PREDICAMENTS OF ETHIOPIA'S WATER RULES

INTRODUCTION

The legal framework relevant to the utilization and management of water resources in Ethiopia can be drawn from both the formally legislated instruments as well as the customary practices in use in the numerous cultural milieu of the society. The formally legislated instruments are implemented through the legal executive echelons of the government, whereas the customary rules are managed by community elders, religious leaders and wise men, under close scrutiny of the community institutions. The problem, however, is that the customary water use principles and management practices are not adequately recognized. In addition there is not enough effort being put towards incorporating these into a body of national law on water. The few large-scale water development programs, for instance in the Awash, Fincha, Wabeshibelle and Woiyto valleys, did not take the customary principles and practices of the incumbent communities into consideration. In part this may be a reason why the large-scale development schemes in the Awash, Woiyto and Wabeshibelle generated a lot of conflict, resulting in material as well as human casualties.

In the following sections traditional, indigenous law and the modern state legal framework with regard to water are examined, in view of consolidating national water law. The chapter first presents the state law, both past (Fetha Negast) and present (constitutions, civil code, proclamations and legal notices). Following this, the customary rules and laws are presented, in contrast to the state law, these are generally not written down. The customary rules are again separated into past (Old Judgements) and present (contemporary practices). The chapter shows that there are consistent and inconsistent elements between the state and customary laws. State laws hold to the state ownership and control of natural resources in general, and water resources in particular, while customary laws hold to community user rights. Similarities between state and customary law exist in that neither refer to private property in relation to water resources.

4.1 WATER RULES UNDER THE FETHA NEGAST ("JUSTICE OF THE KINGS")

The Fetha Negast is an old codified law of Ethiopia. It is a mixture of rules, having both spiritual and secular tenets, and is applied in the administration of both secular and spiritual rulings in the realms of the state and the church of Ethiopia. The origin of the Fetha Negast is obscure. What is known about this venerated code of the land is that it was first translated from the Arabic language into the old Ethiopian language (known as Ge'ez) during the reign of Emperor Zar'a Yacob (1444–1468). The Fetha Negast was the main source for administering justice in the realm of the state until the enactment of the Ethiopian Civil Code in 1960. The Fetha Negast is still the main source of rules for the administration under the Ethiopian Orthodox Church (Fetha Negast, 1998: Preface).

The Fetha Negast lays down the following principles with regard to the use and management of water resources:

- a **With regard to the flow of water:** The downstream inhabitants have the right to receive the flow of water that comes down from the source in the upstream region. The upstream inhabitants have the right of compensation for the increased fertility of the soils received by the downstream inhabitants due to the flow of the water. The compensation may be in kind, for instance, in the form of cereals (sec. 1179).
- b **With regard to drawing water ("aqua haustus"):** The right to use water outside of its natural banks stops automatically when the period fixed for the utilization expires. Similarly, the right to bring water or to use the waterway ceases following the expiry date of the type of use indicated. The principles presume permission for the utilization of the water resources (sec. 1180–1181).
- c **With regard to access to a watering point:** A person whose land is not bordering on the water has the right to have a corridor of access in order to water his animals (sec. 1182).

- d **With regard to deposited soil due to erosion:** “Where a river flowing between my land and yours erodes your land and adds to mine, without your knowledge or without you having seen the quantity taken away and on what day it happened, this added part remains yours” (sec. 1184).

As a matter of fundamental principle, the Fetha Negast categorizes water among those things that are not for selling or buying, unless removed from its place by some consciously applied labor force. Hence, according to the Fetha Negast, water belongs to the things, which are freely available and jointly owned; (Straus, 1968: 188; the English translation of the Fetha Negast is provided by Abba Paulos Tzadua).

4.2 WATER RULINGS IN THE THREE ETHIOPIAN CONSTITUTIONS

During the last 50 years, Ethiopia has experienced three constitutions. All three constitutions contain provisions relating to ownership, use or management of water resources. The following sections will look at specific contribution of the provisions to the governance of water resources in Ethiopia.

1. **The 1955 Revised Constitution of Imperial Ethiopian Government, in art. 130 provided that:** (b) The natural resources in the waters, forests, land, air, lakes, rivers and ports of the Empire are sacred trust for the benefit of present and succeeding generations of the Ethiopian people. The conservation of the said resources is essential for the preservation of the Empire. (c) None of the said resources shall be exploited by any person- natural or juridical. (d) ...Watercourse, lakes and territorial waters are state domain.
2. **The 1987 Constitution of Peoples Democratic Republic of Ethiopia, in art. 13 (2) stipulates, thus:** “...Natural resources, especially land, mineral resources, waters and forests are the property of the state.

The use and management of natural resources to be determined by law Art. 10 (1): The government ensures the maintenance of the ecology, and that the government ensures the conservation and development of natural resources, more specifically land, water, forests and wildlife are looked after and maintained well for the benefit of the working people.

3. **The 1995 Constitution of Federal Democratic Republic of Ethiopia, in art. 40 (3) provides:** The right to ownership of rural and urban land, as well as of all other natural resources, is exclusively vested in the state and in the peoples of Ethiopia.

In spite of the fact that the three Constitutions of Ethiopia represent three political regimes with three different political systems (“feudalism”, “socialism” and “capitalism”), they are consistent in codifying the sustainability principle in the form of public ownership of water and regulation by the state.

4.3 WATER RULES UNDER THE ETHIOPIAN CIVIL CODE

The Civil Code of the Empire of Ethiopia of 1960, in Book III, deals with ownership and the use of water resources in Ethiopia. The Civil Code has survived three different political regimes that changed hands by replacing one another by means of force. Rights and obligations with regard to water use are articulated in Chapter 2, Section 3, articles: 1228–1256 of the Civil Code. It provides rights and obligations with regard to the ownership, access and utilization of water resources.

With Regard to Priority of Use

Art. 1228 (1): The community shall have priority in the use of all running and still water.

Art. 1228 (2): Such water shall be controlled and protected by the competent authority.

With Regard to Irrigation

Art. 1236 (1): An owner whose land is crossed or bordered by running water may use such water for irrigating his land. (2): Such rights may not be exercised to the detriment of those who on the land or downstream, use such water for domestic purposes or to water their cattle.

Priority for Domestic Use

Art. 1237 (1): Where the use of water for purposes of irrigation is or may be detrimental to persons downstream who use such water for purposes other than domestic, the said persons may, where they show the existence of vested rights to their benefit, object to the water being used for irrigation. (2): There shall be deemed to be vested rights on the use of water for purposes other than domestic where apparent or notorious works or installations have been done on the ground with a view to using the water for such purposes.

On Compensation

Art. 1239: The owner of the land upstream shall be entitled to compensation where the exploitation of his land is impaired or rendered impossible by the prohibition from using water crossing or bordering his land. Art. 1240 (3): Compensation shall in all cases include the value of the works or installations the use of which are prohibited by the court and which have been done in good faith without the persons downstream raising an objection.

On Industrial Use

Art. 1242 (1): The owner of land, which is crossed or bordered by water, may use such water for industrial or commercial undertakings such as water mills, wash-houses or bathing establishments. (2) He shall ensure that the water flowing from his land is unsoiled and fit for the use to which it may normally be put.

On Hydroelectric Power

Art. 1244: Only those undertakings, which have been granted concession by the competent authority may do work on rivers with a view to distributing, carrying or selling hydroelectric power.

On Drainage

Art. 1247 (1): Where the owner of the land above constructs drainage works on his land, the landowners below shall accept without compensation the water flowing from there. (2): The owner of the land above shall construct such works as are required to reduce to a minimum the damage to be occasioned to landowners below. (3): The landowners below may require that the water may be evacuated by means of underground pipes, where without such pipes, the water would run on land on which buildings are erected or on gardens or on yards pertaining to such buildings.

On Underground Water

Art. 1255 (1): Underground accumulation of water and rivers shall form part of the public domain. (2): No person without permission may construct a well on his lands by drilling one hundred meters or more depth.

Water as Public Domain

Title IX, Art. 1447 (1): Waterways, lakes and underground accumulations of water shall be deemed to form part of the public domain. (2): The provisions of articles 1228–1256 shall govern the ownership and use of water. Art. 1449(1): The competent authorities shall fix the natural limits of waterways and seashores.

The provisions of the Civil Code work as a consolidation effort of the provisions of the ancient code known as the Fetha Negast (justice of kings) and other customary water rules. The scope of the provisions seems to aim at regulating the handling of upstream-downstream water use rights and obligations at a small-scale level. The provisions of the Code do not seem to assume large-scale water management problems; to manage problems on a large scale would require an extended interpretation by the courts or implementing bodies. The significant contribution of the provisions is that they have established the concept of rights and obligations of the upstream and downstream users with regard to both quantity and quality of the water resources in question. The legal and institutional significance for large-scale water development schemes, however, seems to lie beyond the scope of the provisions, as such water development schemes were non-existent at the time when the Code came into existence. Another concept established by the Code is that water is a public property and that ac-

cess to it and management thereof is to be governed by state authorities. The same principle is upheld by the Fetha Negast and the Ethiopian constitutions.

4.4 PROCLAMATIONS AND LEGAL NOTICES

The proclamations and legal notices expound on the priority of state authority over the use of water resources, including the community level.

- a. **Order No.1 of 1945:** Given by the Minister of Interior, under the authority vested in Him by the Municipality Proclamation No.74 of 1945. It contains the following:
Article 22 (b): The Ministry of Public Works is responsible with the cooperation of other ministries and public authorities concerned to prepare and implement the plans for the development and exploration of the water resources of the nation (Consolidated Laws of Ethiopia, 1972: vol. I, p. 59).
Article 25 (i)...the Ministry of Defense, in collaboration with other Ministries and public authorities concerned is responsible for the control and protection of the territorial waters of the nation (Consolidated Laws of Ethiopia, 1972: vol. I, p. 62).
- b. **Legal Notice No. 112 of 1948** provided for the Addis Ababa municipal water rates, licenses and fees. A partial cost to be covered by urban users was introduced for the water delivered by public investment.
- c. **Proclamation No. 7/1992:** Empowerment of regional governments to administer, develop and protect the natural resources of their regions.
- d. **Proclamation No. 41/1993:** Natural Resources and Environmental Protection Bureaus of regional governments have been empowered "to manage and develop their natural resources including water resources". The proclamation further empowers the Ministry of

Natural Resources and Environmental Protection to dictate over transboundary water resources and on water resources in general to all regions.

- e. **Proclamation No. 94/1994:** A proclamation to provide for the utilization of water resources.
- f. **Ethiopian Water Resources Management Policy (1999) Proclamation No. 4/1995, art. 17 & Proclamation No. 256/2001, art. 20:** Establishment and functions of the Ministry of Water Resources.
- g. **Ethiopian Water Resources Management Proclamation No. 197/2000** sets out to put the water resources of Ethiopia “to the highest social and economic benefit of its people” through appropriate mechanisms of protection and management. This is the most recent enactment that reaffirms the state ownership and control over all categories of water resources in the country. The proclamation underscored (Art. 32. 2) thus: “Any laws, regulations, directives, guidelines or practices relating to matters covered by this Proclamation shall have no force or effect to the extent that they conflict with the provisions of this Proclamation”.

There is no one unified water code, similar to other legal codes such as the civil code, in Ethiopia. There are as yet only provisions, proclamations and legal notices. The enacted water rules of Ethiopia, therefore, cannot be perceived as consolidated water law and they are not inclusive of the water rules that exist historically as well as in the traditions of various communities in the country.

4.5 CUSTOMARY WATER RULES IN ETHIOPIA

There are two known sources of the customary water rules in Ethiopia. One is the compilation of old rules in the form of a digest to be used as a source of the enacted rules of the country. The Ethiopian customary rulings, running up until 1935, were partially collected in 7,296 cases and are contained in several volumes entitled “Digest of old Ethiopian Judgements”. The other sources of customary water rules are the unwritten traditional principles and practices of the Ethiopian communities in the geographic and political peripheries of Ethiopia. These two sources are discussed in the following two sections.

4.5.1 WATER RULES IN THE “OLD JUDGEMENTS”

Some twenty of the 7296 cases of the Old Judgements deal with rulings related to water rights. Five of these cases have been selected for their explicit and more comprehensive formulation; they are summarized:

Ruling No. 1523: If a person who digs a ditch through another person's land to take water through and irrigate his land proves that he has been digging ditches and taking water through for a very long time, the owner of the land shall not deny this person the right to take water through the owner's land (Digest of Old Ethiopian Judgements, Vol. 3, nd: 303).

Ruling No. 1530: A big river passes through the land of a person. The people in the area have been using the water from the river for a long time. The person shall not dam the water of the river and shall not cause the course of the river to change (Digest of Old Ethiopian Judgements, Vol. 3, nd: 305).

Ruling No. 1532: The inhabitants of a certain locality are not able to use the water in the vicinity due the fact that the water is under a cliff and difficult to reach. For this reason they customarily obtain their water supply from the neighboring locality. The inhabitants near the water shall not prevent the guests from drawing the water (Digest of Old Ethiopian Judgements, Vol. 3, nd: 305).

Ruling No. 6102: If a person has his land near a running stream, and if the inhabitants from time immemorial have driven their cattle across his land to water their cattle, he shall not prohibit the free use of the passage to the stream (Digest of Old Ethiopian Judgements, Vol. 10, nd: 1226).

Ruling No. 6109: If a person who has spring water on his land prohibits his neighbor, saying that since they are enemies the neighbor shall not draw his water, and if the prohibited person proves to the effect that he has been drinking water in the past from the same spring, the person may not, when they quarrel, prohibit him from using the water (Digest of Old Ethiopian Judgements, Vol. 10, nd: 1228).

From the five rulings we can learn that those who are geographically closest to a running river or stream, or those who may physically control a watering point cannot deny access to those who may be situated at a further distance, but who may depend on the same water resource. Here again, longstanding traditions underscore that water is a public property, unless a particular type and amount of it results from the labor of an individual or group.

4.5.2 EXAMPLES OF OTHER TRADITIONAL RULES FOR WATER USE AND MANAGEMENT IN ETHIOPIA

Eighty five per cent of the Ethiopian population is agrarian and lives in rural settings. Customary rules are the ones that determine much of the relations among Ethiopia's rural societies. Their significance in determining the behavior of the traditional management of natural resources, including water, has not been sufficiently recognized and incorporated into state laws. And this although these old laws have been in practice from time immemorial, and are to date much more effective in both mitigating and transforming conflicts that arise from the competition for natural resources, water resources included. By contrast the formal approach to conflict management through litigation in courts of law can be long-drawn out, expensive, and inconsistent with local traditions. They are therefore not preferred as a matter of choice by the people directly affected.

The following are four examples of customary rules and water management traditions in Ethiopia's peripheries. The four communities consider water to be the single most important aspect of both their economic lives and their rituals. The first three are pastoralist communities of arid lands. The last one is a community from a humid and wet lowland area. In terms of livelihood system, the first three are pastoralist in transhumant livestock herding and the fourth depends on slash and burn cultivation and riverine fishing activities. As the four communities were incorporated into the Ethiopian state administration in the late 19th century, their elaborate water use principles and management practices were neither incorporated in the Fetha Negast nor in the old Ethiopian customary rules.

Example from Borana

The information herein below is based on the present author's fieldwork carried out during 1994/95 and the subsequent research report submitted in May 1997 (Yacob Arsano, 1997: 13–25). Borana is a semi-arid pastoralist area in southern Ethiopia, bordering on the Kenyan frontier. With less than 700 mm annual rainfall, water is a very scarce resource. At the same time it is the most crucial element of the Borana pastoralist lifestyle. The pattern of water availability determines village formations, transhumance between the villages and grazing areas, territorial organization of the herding families, the seasonal (lunar) ritual performances, etc. Hand-dug deep wells, river waters, hillside springs, natural ponds, wetlands, man-made ponds and mineral leaks are regulated as delineated below. In principle access to all watering points is free, and all types of water resources in Borana are the property of the community (*res communis*). As a matter of general rule access to watering points would not be denied to any one in need, but flexibly granted.

- a. The management of the water resources is based on various customary rules. Naturally available waters from river streams, hillside springs, natural ponds and wetlands are freely accessible to all Borana pastoralists as well as to passers-by or guest users. The community leaders see to it that the water users are directed to those water resources that are located close to their geographic areas.

- b. Mineral licks are available to the livestock of all herders, provided that they contribute to the community bill payable to government for the use of the lick, which is usually classified by state authorities as a mineral resource.
- c. Hand-dug ponds are accessible to all herdsmen who have contributed labor force or lent coordinating efforts during the digging of a pond.
- d. Deep well waters are accessible to all community members. Guests and passers-by can have access if they submit request to the custodian of a watering point. Deep wells are the most respected, protected and well-maintained watering points in Borana. Some deep wells are as old as six hundred years or more. Some are as deep as a hundred meters below ground level. Deep wells provide more permanent and last resort watering points. They are believed to be the centers of the pastoralist production system, which is based on extensive grazing activity. The territorial delineation of the traditional administration is arranged around a single or a constellation of deep wells. Deep wells often symbolize the Borana identity and the longstanding solidarity of the pastoralist community. The deep wells of Borana have a unique system of rules of “ownership”, custodianship, access and management.

A clan nominally owns deep wells or a cluster of them, after a legendary ancestor who is believed to have excavated the well several generations ago. The “father of water” of the clan is responsible for organizing the yearly maintenance of the watering point. His main task is to coordinate and engage the able-bodied members of the community and to organize a feast for the work band. The well must be overhauled and renovated every year. The deep wells are administered by elected officers, who are different from the “father of water”. The officers are nominated from persons other than the water well owning clan. The elected officer ensures orderly access to the watering point on an every-other-day basis. Humans and lactating animals are allowed to go to the watering point on any day at any time. Access for other animals is arranged according to the natural

needs of the animals for water. The queue has the following line-up: The spiritual and secular leaders come first, then the water officer, then the community members according to their contribution for the maintenance of the deep well or constellation of wells in question. Passers-by and guests are provided with water for their animals without queuing. They are, however, directed to different watering points so that the pressure is eased on any one watering point.

Example from Afar

The Afar land is situated in the arid climatic zone of northeastern Ethiopia. The major sources of water in Afar include: rivers, lakes, natural ponds, hand-dug deep wells and man-made ponds. Access to river and lake water is free and uninhibited for watering animals as well as for domestic purposes. The users of a particular area regulate the use of river water for irrigation. An elected official known as *duri-aba* fulfils the function of overseeing and regulating the irrigation water.

Access to man-made ponds and hand-dug deep wells is limited to the villagers or families who customarily owned them. Ownership rights of those who have sunk the deep wells or created the ponds are guaranteed by customary rules. In the cases of conflict over the use of water of any type, a party or parties take the case to *feima-aba* who is vested with a traditional authority to enforce customary rules and apply sanctions (Yacob, Bayleyegn and Yegremew, 2000: 15).

Example from Anyuae

The Anyuae belong to the Nilotic group of people who inhabit the banks of the Baro and Gilo rivers in the most western part of Ethiopia. Unlike other Nilotic peoples the Anyuae's livelihood is based on riverbank cultivation, hunting, fishing and gathering. Their spiritual life is also closely related to water. They believe, for instance, that the souls of the dead dwell in or under water. Water is conceived as the source of justice, order and the source of power to deliver peace among people (Yacob, Bayleyegn and Yegremew, 2000: 27).

Among the Anyuae there is no scarcity of water. Water is venerated for what it is believed to provide. According to the customary rules of the community nobody is prohibited access to the waters of the rivers or

lakes within their territorial jurisdiction. Their waters are perceived as the places of justice and peace. Keeping the peace of the waters is everybody's duty. The Nyieya (king) and the Kwaro (chief) are responsible to maintain free access, peace and tranquility of waters among the Anyuae community (Yacob, Bayleyegn and Yegremew, 2000: 29).

Example from the Somali

The three sources of water among the Somali are: stream water, pond water and man-made reservoirs. Stream water is usually perennial and occurs naturally. All pond waters are seasonal and are usually present after the rainy season. Some pond water is captured in natural cavities, while other pond water is captured in man-made cavities. According to the traditional practices, stream water and naturally captured pond water are accessible to all persons who have the right of access to the general territory of the incumbent community. The waters in the man-made ponds are accessible only to the community members who have contributed towards the digging of the pond. There are two other types of reservoirs. Birka are subterranean silos where rainwater is harvested and stored for dry season use, usually for the use of a family or extended family. Shallow man-made pools are filled with water from the foregrounds of the silo. Access to these two types of water resources is reserved for the family or extended family members. Outsiders have to negotiate or purchase the water.

The merits of traditional rules are that they hold the accumulated experience and wisdom of the past and aim to resolve conflicts at hand as well as prevent future conflicts. They also provide ample space for negotiations, trade-offs and mediation. Their limitations, however, are that they are locally effective but may not be applicable for large-scale water development projects at the national level. In addition they are culture bound and tradition-based and may therefore not be applicable outside the specific communities. The examples above aim to show the richness and applicability of customary regulations and show that these customary rules can therefore be creatively incorporated into a national water code.

CONCLUSION

In the foregoing section, the enacted, traditional/customary, constitutional as well as policy frameworks have been described. We find that: 1) the traditional framework is community specific and culture bound. 2) The specific provisions of the successive constitutions and other rules have accorded unlimited ownership to the state, including the power to exercise control over the nation's water resources. 3) The policy framework is a recent undertaking that only goes back as far as 1999, and it only provides generalized directives that require further elaboration. This 'young' water policy is yet to be tested as to whether or not it contains sufficient guidance for enhancing development of the water sector. It is further expected that a national water policy will provide new legal and institutional ideas for further developing a legislative framework that will help integrate the traditional and the modern systems of water use and management. A lot more has yet to be done towards achieving a comprehensive water resource policy for Ethiopia. A more realistic point of departure would be to codify all the water related rules that are scattered in various sources and institutions.

What can we learn from the customary water rules? The customary water rules uphold equal access to both upstream and downstream users, there is no monopoly or exclusive ownership, but there is protection of user rights. The understanding and practice of customary law is not biased to upstream or downstream users. Compensation is one form of conflict mitigation in upstream-downstream user disputes. In other words, Ethiopian customary law supports what would be called on the international level "equitable use", and not either an "absolute territorial sovereignty" or an "absolute territorial integrity" doctrine.

The formally enacted water laws, together with customary laws and practices need to be consolidated into a single comprehensive national water code, on the basis of which water rights and management can be exercised. Consolidating these different traditional and modern water laws would mean that traditional water laws are integrated. Traditional laws have the advantage of being based in experience and tested over centuries, and applied in specific environmental and economic situations (e.g. pastoralism of arid zones, highland agriculture). A consolidated national water code

would mean avoiding contradiction between traditional and modern law, but would also acknowledge and give space to traditional law, which is appropriate to the local situations.

5. INSTITUTIONAL PREDICAMENTS OF ETHIOPIA'S WATER SECTOR

INTRODUCTION

In the foregoing chapter we have been introduced to the formal and customary rules concerning the use and management of water resources in Ethiopia. Formal institutions with respect to the water sector development in Ethiopia are only five decades old. They actually started with an attempt to carry out a comprehensive study of the Abbay valley during the late 1950s and early 1960s. For the first time, a Water Resources Department was established within the Ministry of Public Works and Communications in the late 1950s. Under the auspices of this department the first Abbay [Blue Nile] Valley study was conducted during 1958–64.

As can be observed in the forthcoming section, several water-related institutions were established from time to time by government proclamations, with some specific purposes of study or development. But the Ministry of Water Resources was only created in 1995 (Ethiopia, FDRE, 1995: 49). It is the first fully-fledged executive unit with a full mandate vested in it with regard to protection, management and utilization of the waters within the country as well as the transboundary waters.

5.1 INSTITUTIONAL DEVELOPMENT IN THE WATER SECTOR

In spite of the fact that the Ethiopian Civil Code (Ethiopia, IEG, 1960) envisaged the need to establish a competent institution responsible for water resource development in Ethiopia, the institutional development of the water sector has only been modest, often geared to facilitate specific irrigation projects. A discussion of the institutional development is the focus of the following section.

Historically, Ethiopia's water sector has been dominated by the highest state apparati. During the Monarchical regime, the water sector was managed by a National Board that was chaired by the Prime Minister. All other ministers were members, and the Director of the National Planning Board was appointed as a standing secretary. The president of the national water sector was the Emperor himself, while the Crown Prince, the Prime Minister and the members of the Crown Council were members of the Advisory Council. Similarly, during the military socialist regime, the affairs of the national water resources were strictly regulated under direct auspices of the Council of Ministers, which was chaired by the Head of State. The nation's water institutions were created by fiat, but not by legislative processes.

The Water Resources Department was the first outfit. It was established in 1959 with one engineer and about 50 technicians working in the Ethiopia-USA Abbay [Blue Nile] Basin Study Program that went on from 1958 to 1964 (Zewde Gebre Selassie, 2000: 10). The department, which was established within the Ministry of Works and Urban Development, had two purposes. First, it was to support the Ethiopian engineers and technicians working in Ethiopia-USA Abbay study program. Second, it was to enable the group to undertake similar functions in other river basins of the country. It took some 46 years for the Ethiopian water sector institution to become a fully-fledged Ministry of Water Resources. The bumpy political climate and the rather weak economic development of the country are the main reasons for this slow and irregular institutional development of Ethiopia's water sector.

In the interim period of almost half a century, several institutional arrangements succeeded one another, often with specific purposes of facilitating state-sponsored investment projects in water-related development activities. The lasting spin-offs of the Water Resources Department were the creation of the Ethiopian Mapping and Geographic Institute and the establishment of the Hydrological and Meteorological Survey Services. The geodetic survey team was also set up to do activities relating to photogrammetric processing and interpretation of the aerial maps of the Abbay basin study area. It eventually developed into the Mapping Institute, which produced maps for schools and other utilities. Today the Ethiopian Mapping Authority is one of the country's most capable institutions and it has been engaged in producing all kinds of maps at different scales for various uses.

Similarly, a single water discharge station was installed near the Abby Bridge on Shoa-Gojjam road. The station started as part of the Abbay study program. Combined with the weather observation stations initially installed for the Ethiopian Airlines flights, which now provides comprehensive meteorological and hydrological services at national level². It gathers data and makes analysis of rainfall types, weather systems, mean annual and mean seasonal rainfall, mean annual coefficient of variation, and monthly dependable rainfall. It provides weather data on drought prone areas. The field data is collected from 137 stations established for these purposes (NMSA, 1996: iii).

The following sections deal with the types, functions and tenure of water sector institutions of Ethiopia that do or did operate at national and local levels. As shown above, the institutional development in the water sector must always be viewed on the backdrop of Ethiopia's regime phases: 1) the monarchy, 2) the Dergue (1975–1991) and 3) the present regime (1991 up to the present).

5.2 WATER RESOURCES DEPARTMENT – WRD (1959–1964)

The WRD was established as a support outfit for the Abbay Basin Study Program, which was carried out jointly by the Ethiopian Government and the US Bureau of Reclamation of the Department of Interior. The main tasks accomplished by the WRD included: 1) providing aerial maps for the entire basin of the Abbay river within Ethiopia; 2) providing hydro-meteorological services to the study program; 3) establishing the basis for the future development and expansion of hydro-metrological services throughout Ethiopia. Under the auspices of WRD, the river basin survey, including a water resources inventory and community water supply study, was carried out. It gathered soil data and did analysis for the development and expansion of agriculture in the Abbay basin. The strategic function of the WRD was to prepare and analyze data with regard to the entire

² It gathers data and makes analysis with regard to rainfall types, weather systems, mean annual and mean seasonal rainfall, mean annual coefficient of variation, and monthly dependable rainfall. It provides weather data on drought prone areas. The field data is collected from 137 stations established for these purposes (NMSA, 1996: iii).

Abbay basin in order to enable the Ethiopian Government to negotiate with the downstream states with regard to the utilization and management of the Nile waters.

By that time, however, Egypt and Sudan had already started bilateral negotiations on the “full utilization of the Nile waters”. Ethiopia was left out of the Nile waters negotiations which culminated in the Egyptian-Sudanese “Full Utilization of the Nile Waters” agreement of November 1959 (Annex X). The main mission of WRD terminated with the termination of the Abbay Basin Study Program in 1964. The modest but pioneering achievement of the WRD gave impetus to the subsequent institutional development of Ethiopia's water sector.

5.3 AWASH VALLEY AUTHORITY – AVA (1962 – 1977) AND AWASH VALLEY DEVELOPMENT AGENCY – AVDA (1977 – 1981)

The Awash river is located outside the Nile basin. The river emanates from west of Addis Ababa and flows due northeast in the semi-arid Rift Valley. It is the major river in Ethiopia that does not cross an international frontier to another country. A Government General Notice No. 299 of 1962 established the AVA. The 1960s and 1970s were the heydays for the emergence of large-scale mechanized farming enterprises in Ethiopia. The Ethiopian Government was keen to support both private and state farms. Hence, the AVA was the first water management institution in Ethiopia and included the following tasks: 1) Administer water use and water rights in the Awash valley. 2) Coordinate the activities of all government organs in the valley. 3) Construct and administer dams and canals in the valley. 4) Allocate water for irrigation and other purposes. 5) Fix and collect fees for the use of water and other facilities. The AVA was the first water institution in Ethiopia that had a charter and a ministerial board of governors that included the ministers of Agriculture, Commerce & Industry, Interior and Public Works.

Following the 1974 revolution and change of political regime in Ethiopia, private enterprises in agriculture, industry and banking & insurance

were nationalized. All land property in the country was turned into state property. Land holdings in excess of ten hectares were nationalized and redistributed to former tenants, landless farmers or resettlers (PMACE, 1975). The original mission of the AVA to institutionally support capitalist enterprises in agriculture and agro-industry was turned around by the revolutionary decrees. AVA was replaced by AVDA (Awash Valley Development Agency) – established by the powers of the Legal Notice No. 53 of 1977. The AVDA was given the authority over the waters of the Awash valley. The new institution was meant to facilitate the transformation of agricultural and agro-industrial activities in the Awash valley into state enterprises. Most importantly, however, AVDA was responsible for reorganizing and administering large agri-businesses of the valley in line with the development and expansion of state farms throughout the country. It was tacitly repealed by Legal Notice No. 118 of 1981, which established the Water Resources Development Authority (1981–1995).

5.4 NATIONAL WATER RESOURCES COMMISSION NWRC (1971–1993)

Order No. 75 of 1971 of the Imperial Ethiopian Government established the NWRC. As stated in the order of the establishment, the main purposes of the NWRC was to provide full attention to the protection, and efficient utilization and management of all activities relating to the water resources of the country. As specified in Article 4 of the establishment order, the Commission was further entrusted with the coordination of water-related activities including, water quantity, water quality, application of appropriate technology and maintenance of the prescribed level of standards in the utilization and management of the nation's water resources. The Commission was further entrusted to provide institutional and managerial facilitation for a clean and adequate water supply for domestic use and livestock watering purposes, for irrigation, for municipal and industrial use and for hydroelectric power development. The institutional set-up and the functions of the Commission were not affected in any major way by the emergence of the military government in 1974.

Ten years after its original establishment and seven years after the coming to power of the new regime, Proclamation No. 217 of 1981 reestablished the NWRC. In the re-establishment constitution it was underscored that the NWRC was the sole authority on the development of the nation's inland and transboundary water resources, and responsible for the coordination and management of the meteorological services.

5.5 FURTHER INSTITUTIONS ON NATIONAL WATER RESOURCES

During the 1970s and early 1980s several other water-related institutions were set up in Ethiopia, besides the National Water Resources Commission. These institutions, either overlapped with activities of the Commission, streamlined some of its specialized functions, or duplicated the authorities of the Commission. These institutions are summarized below.

5.5.1 THE VALLEYS AGRICULTURAL DEVELOPMENT AUTHORITY VADA (1977–1981)

Proclamation No. 118 of 1977 established the VADA. VADA was given jurisdiction over the agricultural development in the water basins within the entire country. Proclamation No. 218 of 1981 abolished the Authority in 1981.

5.5.2 THE ETHIOPIAN WATER WORKS CONSTRUCTION AUTHORITY EWWCA (1980–1992)

Proclamation No. 190 of 1980 established the EWWCA. This Authority enjoyed regulatory powers over the water-related works in the entire country. Construction of dams, irrigation and water supply works, issuing permits and enforcing standards for water works activities were the major tasks of the authority. By 1992, however, the Authority was converted to a state enterprise by the force of Legal Notice No. 156 of the same year.

5.5.3 WATER RESOURCES DEVELOPMENT AUTHORITY WRDA (1981–1995)

Proclamation No. 218 of 1981 established the WRDA. Its functions included: administering, regulating, protecting, and allocating water resources. The Authority was accorded with expert tasks such as conducting the pre-feasibility and feasibility studies of projects related to water development. The Authority faded away when the Ministry of Natural resources and Environmental Protection (1993–1995) and the Ministry of Water Resources (1995–present day) superseded it.

5.5.4 WATER SUPPLY AND SEWERAGE AUTHORITY WSSA (1981–1995)

The WSSA was established on the basis of Proclamation No. 219 of 1981. The Authority was responsible for providing water supply and sewerage services in the urban and rural areas of Ethiopia. With the Establishment of the Ministry of Water Resources, WSSA was reduced to a modest department level within the Ministry's functional structure.

5.5.5 THE ETHIOPIAN VALLEYS DEVELOPMENT STUDIES AUTHORITY – EVDSA (1987–1995)

The EVDSA, having been established by Proclamation No. 318 of 1987, was responsible for preparing policies and directives with regard to water development, especially in the country's transboundary rivers. The Authority was answerable to the Prime Minister's Office and accomplished some very important master plan studies, contracting independent consultants. It was first incorporated to the Ministry of Natural Resources and Environmental Protection in 1993 by Proclamation No. 4 of 1993, and to the Ministry of Water Resources, by Proclamation No 4 of 1995.

5.5.6 THE MINISTRY OF NATURAL RESOURCES DEVELOPMENT & ENVIRONMENTAL PROTECTION – MONRDEP (1993–1995)

MONRDEP was created by the provisions of the Proclamation No. 41 of 1993. It was one of the few new ministries set up by the Transitional Government of Ethiopia. The newly established ministry combined jurisdictions over water, land and environmental matters of the country. The former Ministry of Agriculture was abolished, and its functions incorporated by the new ministry. MONRDEP was perhaps the largest ministry ever created in the country. The ministry was, however, terminated in a matter of three years, i.e., in 1995, and was replaced by a much smaller unit, known as The Ethiopian Environmental Protection Authority. The Ministry of Agriculture was reinstated and a new ministry, known as the Ministry of Water Resources was established.

5.6 THE MINISTRY OF WATER RESOURCES – MWR (1995–)

For the first time ever, the Ethiopian water sector was raised to the level of a fully-fledged ministry. Proclamation No. 4 of 1995 formally established the MWR. All water development functions of the country were entrusted to the new ministry. The functions of the ministry are carried out through seven specialized departments of the MWR. These are: Departments of Hydrology, Basin Development Study, Transboundary rivers study, Design works, Contract administration, Water rights administration & Water resources management and Water supply and sewerage department.

The Ethiopian Ministry of Water Resources currently carries out two focal activities. The first of these is the preparation and coordination of the Water Sector Development Program. It is a 15-year program covering the period between 2002 and 2016 (Ethiopia, MWR, 2001). The implementation of the program is envisaged to be accomplished by coordinating the relevant federal and regional institutions, non-governmental organizations, the private sector operating both at national and regional levels, and donor communities (WWDSE, 2002: 64). The second focal activity is the establishment of the national Water Fund. This aims at continuously raising

funds that would be solely geared towards the country's water resource development. A Water Fund office has been established within the Ministry of Water Resources. It is envisaged that in the long run the Water Fund will be the main source of finance for water development in Ethiopia on the basis of a cost recovery principle (Ethiopia, MWR, 2001: 16).

The Water Works Construction Enterprise (WWCE) and Water Well Drilling Enterprise (WWDE) are organized as business enterprises under state ownership. The activities of the latter first started in the 1950s with the drilling of bore holes in the arid and semi-arid areas of Ethiopia, mainly to provide water wells closer to the pastoralist communities and to their livestock. These enterprises sign up contracts with other government agencies, which are engaged in the construction of dams or water bore holes in various areas of the country. Juridically, the two enterprises fall within the mandate of the Ministry of Water Resources.

In addition to the Ministry of Water Resources, quite a few other ministries and state-owned enterprises carry out activities in the water sector development as part of their functional mandate. An elaboration of this is given in table 5 below:

Table 5: Inter-sectoral Institutions of Water Development in Ethiopia

Institution	Function Relating to Water
Ministry of Agriculture (MOA)	Wildlife and forestry, small holder agricultural production, livestock and fisheries, soil conservation
Ministry of Health (MOH)	Rural sanitation, water quality (some aspects of water quality)
Environmental Protection Authority (EPA)	Regulating and coordinating body providing advice to the government on policies and legislations with regard to environmentally related activities
Disaster Prevention and Preparedness Commission (DPPC)	Rural water supply, other rural water development activities carried out by NGOs
Ethiopian Electric Power Corporation (EPPCO)	Hydroelectric power production, transmission and marketing
Addis Ababa Water Supply Agency (AAWSA)	Water supply and sanitation for the city of Addis Ababa
Regional Water Bureau	Regional governments functioning as regional level agencies for water development activities
Water Wells Drilling Enterprise (WWDE)	Drilling bore holes, especially in the arid and semi-arid areas of the country
Water Works Construction Enterprise (WWCE)	Construction of dams, canals, reservoirs, pipelines, distribution networks, etc.

Source. Ethiopia, MWR, Ministry of Water Resources (1997), Water and Development, Quarterly bulletin of the Ministry of Water Resources, September 1997, p. 24.

CONCLUSION

The Ethiopian water sector institutions are numerous and their functions overlapping, transient and often short-lived. Or, as Shibru and Kifle (1998: 32) aptly wrote: "Institutional arrangements are always in flux in Ethiopia". The revolutionary changes of the political regimes (in 1974 & 1991) and the concomitantly changing political systems, resulted in the consequent and frequent restructuring of institutions and organizational set-ups. That, in turn, resulted in the instability of the country's institutions in general and that of the water sector in particular. The short life span of water institutions meant that valuable institutional memory and experience could not be maintained and transferred from one generation to the next. In addition personal skills were lost. The Ministry of Water Resources is a relatively young institution, but it has exhibited a substantial departure from the institutional tradition of the Ethiopian water sector. With the establishment of the Ministry of Water Resources, the overall activities of development in the water sector are better streamlined, with a clearer mandate and organizational set-up. This is a step forward towards enhancing development in the water sector. In addition to governmental organizations numerous private enterprises and NGOs are actively engaged in water sector development. It goes without saying that the Ministry of Water Resources must play a more active role not only in providing guidance but also in coordinating and monitoring.

6. THE ROLE OF NON-STATE SECTORS

INTRODUCTION

As shown above, a state-coordinated water policy is just evolving. This development will have to take other actors in Ethiopia's water sector into account, such as private and NGO actors. The longstanding role of the traditional sector of water utilization and management will have to find a place in a comprehensive water policy when this becomes further articulated. Civil society organizations are increasingly playing an active role in the areas of small-scale irrigation, water supply and sanitation endeavors. Water resource associations and networks are increasing in number. Private business line organizations in the development of the water sector have grown in numbers and have been engaged in a variety of undertakings. The next section gives an overview of the role of private, NGOs and traditional actors in the water sector.

6.1 PRIVATE SECTOR AND WATER RESOURCE DEVELOPMENT

After the 1974 revolution, the dominantly feudal type land holding system was changed into state ownership. All private agricultural businesses were nationalized, including those that operated with irrigation technology. Under the reformed land ownership regime, the cultivators were given only the usufruct right on a piece of land up to ten hectares. In the peasant agricultural areas of the country land was in short supply, and the average land holding was not more than a hectare and a half. The vast arid and semi-arid territories of the eastern and southern regions are in short supply of rainfall, and the land is not of much use for cultivation without irrigation. Between the years 1975 and 1989 all large farms were incorporated under the single state farm regime. Water user rights were often not declared separately from land user rights, thus control over land meant control over water resources over a particular land.

In 1989, however, the then socialist government allowed private farming businesses under a policy of 'mixed economy'. Some agribusiness companies were set up. With the emergence of the new political regime and its official 'free-market' policy, more agri-business companies emerged. Due to the bureaucratic inefficiency of land leasing, however, the number of large-scale private irrigation activities remained a tiny fraction in the agricultural sector. In the Woyto valley of southern Ethiopia (not part of the Nile basin), for instance, three companies received investment permission in the early 1990s. One company started a farm of 4000 ha located midstream of the river. With a total labor force of about 2000 the company started a booming cotton farm. It soon succumbed to the upstream-downstream conflict over water and land right issues, however, with incumbent pastoralist and cultivator communities. The two other companies, which had initially signed up for upstream investment never commenced operation. In the Awash valley several former state farm schemes have been deregulated and given to local Afar pastoralist clan groups. Here again, mainly due to unclear land and water rights issues, irrigation agriculture is far from being a success story.

Many of the small irrigation schemes, however, are privately operated. Some of the irrigation activities are supported by the local and/or regional governments, by availing technological inputs and credit facilities. Most of these privately operated small-scale irrigation farms are an extension of the subsistence farming structure rather than of an economically viable scale. Their aim is to achieve food security for the owners or members in the cases of farming associations. Some small irrigation farmers I observed during the fieldwork in the Guder River valley in 2001 reported that their economy has improved, and their annual household income has grown considerably. For them the real limit is the land, not the water.

From the state water development policy point of view, it seems that the private sector is not being accentuated to any significant degree. The envisaged Water Sector Development Program, for instance, does not provide any visible or promising role for the private sector. The untapped potential of the private sector is a question for future research. Key issues are the property rights and regulations. Principles and operative mechanisms for protecting the interests and rights of the existing water users will have to be clearly articulated, while at the same time promoting a more meaningful

investment program geared towards greater development prospects in the country's water sector. Without clear and enforceable property right or user right regime, the private sector will have little confidence for engagement, especially in long-term investment.

The private sector will have to be encouraged and offered attractive deals in order to fill the financial gap. In that way the government can overcome the nation's financial deficiency to a degree. The water sector development goal set for 2016 can best be attained by properly combining governmental and private investment possibilities. This requires not only clearly defined property rights, but also a well-defined scope of private entrepreneurship in the sub-sector. The recently agreed-upon Chemoga dam project can be taken as an indicative example of the positive role of private sector participation in the development of the water sector. A 600 million dollar dam is to be constructed by a private venture on the Chemoga stream, one of the tributaries of the Abbay River on the northern side. A memorandum of understanding was signed between the Ethiopian Electric Power Corporation (EEPSCO) and CAL Tech. International Company based in Atlanta, USA. The main purpose of the construction of the dam is to produce 350–400 mega watt of electric power for commercial purposes. It is envisaged that the company will produce and sell the electric power to EEPSCO, and that the latter will install the power line and distribute the electricity. The construction is expected to be completed within five years, and the agreement will remain active for 25 to 30 years. (Fortune, weekly news paper in English, vol. 2, No. 99, March 24, 2000.)

6.2 THE ROLE OF NON-GOVERNMENTAL ORGANIZATIONS IN THE WATER SECTOR

NGO involvement in the development of the Ethiopia's water sector has become increasingly significant. In the context of the present discussion NGOs differ from traditional community organizations. Traditional organizations are community-based and locally evolved involuntary associations. They are of self-help nature, both in good and bad times. In contrast, NGOs are externally organized and run by a full-time personnel on the basis of a formal work license. The history of NGOs in Ethiopia

is inseparable from the history of cyclical drought and the consequent calamities of famine and relief work.

The majority of NGOs started and received prominence because of their role in the famine relief operations since 1974. At present there are 516 NGOs, of which 385 are local and the remaining 131 are international (DPPC, Public Relations Office, 9 December 2002). Over the past three decades or so most NGOs have functioned as development agencies. Although a complete list of activities of all the registered NGOs is not available at the moment, of the 194 members of the Christian Relief and Development Association (CRDA), 117 NGOs are engaged (CRDA, Wednesday, Dec. 4, 2002) in water development activities, which include: drilling bore-holes, rainwater harvesting, small pond construction and small-scale irrigation development. More details are shown in table 6.

Table 6: NGOs Working in Water Development Activities

Type of water development activity	No. of NGOs in the activity
Drilling bore holes	32
Rainwater harvesting	25
Small pond construction	32
Hand-dug wells	3
Irrigation	25

Source: CRDA, 2002, Wednesday, 4 December, Members and Activity Data. NGOs include both local and international NGOs (international NGOs have their headquarters outside Ethiopia).

In addition to the above activities, many NGOs are engaged in integrated water development activities, especially in the areas of sanitation and health; improving ground water supply; and providing research and funding support to other organizations dealing within the field of water-related community-based development (CRDA, Wednesday, 4 December 2002).

NGOs act on an ad hoc basis, they attempt to fill gaps, rather than functioning on the basis of a division of labor or specific long term plans. In terms of repeated droughts and lack of capacity on the part of the state and other sectors the intervention of NGOs has been life saving as well as significant in the area of drinking water supply and sanitation. In order

to increase their positive impact, NGOs and donors of NGOs should focus on a longer-term perspective. Furthermore, they can contribute to preventing water conflicts by strengthening factors connecting different water users in their area of intervention (Bonzi, 2006).

6.3 TRADITIONAL INSTITUTIONS & WATER RESOURCE MANAGEMENT

The traditional use and management of water resources is the oldest sector in the country. The traditional sector has been in use for centuries and is very well “regulated” to suit the varied bioregions. The traditional sector is the most prominent system in the dry land regions of Ethiopia. According to study reports some 61 per cent of Ethiopia’s territory is characterized as arid zone, with an annual precipitation of 200–700 mm. This amount is insufficient for successful crop cultivation. The inhabitants of such arid zones have, for ages, resorted to the livelihood strategy of livestock husbandry on a transhumant and mobile basis (UNDP/RRC, 1984: in Four Parts). The hand-dug deep wells are maintained in the more permanent settlement areas. The deep wells of the Boran and Afar pastoralist areas are the most important sources of household water supplies for drinking as well as for watering delicate livestock (lactating cows, calves and horses).

The pastoralist herders usually take the bulk of their livestock to the valleys of permanent streams during the dry season, where the animals can have access to the abundant water as well as the more extensive grazing possibilities of the valleys. Elsewhere in the Somali region the cistern (birkha system) is based on floodwater harvesting and then storing it for dry season utilization. The practice of harvesting rainwater in the arid areas of the Ethiopian Rift Valley is well known. The hillside irrigation system of the Amaro is as old as the cultivation practices there (interview with Honorable Dayemo Delle, 2000). The traditional water tenure systems are varied depending on specific cultural situations. The utilization and management system of the traditional sector has, however, been the most stable and meticulously organized under the auspices of the respective traditional institutions.

6.4 EMERGENCE OF CIVIL SOCIETIES IN THE WATER SECTOR

Recurrent droughts, inadequate clean water supply and the poor state of water resource management in the country have prompted professionals and practitioners to get organized into civil societies and help water development efforts. The Ethiopian Rainwater Harvesting Association was formed in 2000. This Association has been engaged in grassroots level research and dissemination of relevant knowledge to water users both in the rural and urban areas. The Association's research activities focus on collecting and adapting the valuable traditional knowledge of water harvesting and utilization. Agricultural and civil engineers, hydrologists, conservationists and socio-economic experts are among those who have been associated in the civil society. The Ethiopian Water Resources Association was set up in 2003. It has a wider professional membership, including engineers engaged in all kinds of water resource development activities, environmental lawyers, political scientists, geographers, sociologists, water consultants and practitioners of traditional backgrounds. The formation of civil societies in the water sector is a new phenomenon, which is hoped to fill the gap left due to the institutional instability in the water sector. These societies are already gathering large pools of membership with diverse expertise and experience. Increased public participation in the water sector will greatly help expand the knowledge about the water sector and will serve as a public watchdog on governmental and business handling of the country's water resources.

CONCLUSION

In Ethiopia, the traditional sector has sustained water supply and management, especially in situations of water scarcity and in circumstances of ecological aridity. It will not be surprising to realize that the traditional knowledge has not received adequate attention from state as well as non-state sectors. There has also been limited endeavor to develop water resources in Ethiopia's arid lowland territories. In the highland areas the

practice of small-scale irrigation is on the rise with harvested or diverted water. In view of the increasing importance of the water sector as a key component of future development, the accumulated knowledge and the diverse systems of traditional water utilization and management must be recognized and fully incorporated into the comprehensive national policies and programs.

7. THE ECONOMICS OF WATER RESOURCE DEVELOPMENT IN ETHIOPIA

INTRODUCTION

As can be observed on map 3 herein above, Ethiopia possesses abundant water resources, having 12 major river basins, 11 freshwater lakes, 9 saline lakes, 4 crater lakes and over 12 major swamps or wetland regimes (Ethiopia, FDRE, 2002: 1) About 70 per cent of Ethiopia's 123 bcm of annually available water resources are found within the Ethiopian Nile basin. Of the annually available water resources, only 3 per cent is retained in the country, while the bulk of it finds its way to neighboring countries (Ethiopia, FDRE, 2002: 2) The past chapters showed that institutions are still fragmented, and laws are not yet consolidated, in part this explains the limited development of the water sector in Ethiopia. The following chapter deals with an assessment of the attempted development programs of the water resources and compares them with the present state of utilization. The chapter ends with a presentation of the potentials and prospects for the development of the water sector in Ethiopia.

7.1 WATER BASINS OF ETHIOPIA

There are 11 major water basins in Ethiopia. Of these, four basins are internal systems, while 7 are major transboundary rivers. Three of the rivers open up towards Sudan and eventually to Egypt. Details are shown in table 7 below.

Table 7: Water Basins of Ethiopia

Name of basin	Area in km ²	Average annual flow In bcm	Drainage towards
Wabeshibelle	202 697	3.16	Somalia
Abbay	201 340	52.62	Sudan-Egypt
Ganale/ Dawa	171 042	5.8	Somalia
Awash	112 695	4.6	Internal
Tekeze	82 350	8.2	Sudan-Egypt
Omo/Gibe	78 213	17.9	L. Turkana/Kenya
Ogaden	77 121	----	Internal
Baro/Akobo	74 102	23.24	Sudan-Egypt
Dankel	74 002	0.86	Internal
Rift Valley	52 730	5.64	Internal
Mereb	23 932	0.65	Eritrea-Sudan

Source: Ethiopia, Federal Democratic Republic of, 1990, Country Paper, the Nile 2002 Conference, March 15-19, 1999, Cairo, p 2. (Basins in the Nile Basin are marked bold).

The Abbay, Tekeze and Baro-Akobo sub-basins, with a combined total area of 32.5% of the country's surface and 66.1% of the total run-off, are in the Nile basin, showing the high proportion of water resources and land area falling in the same basin (table 8 below).

Table 8: Basin Area as Percentage of the Country's Total Area

Water Basin	Basin area as % of the whole	Water Resources as % of the whole
Abbay	17.9	48.3
Awash	10.0	4.2
Baro-Akobo	6.6	10.8
Ganale-Dawa	15.2	5.4
Tekeze	8.0	7.0
Wabeshibelle	18.0	2.9
Omo-Ghibe	7.0	15.2
Mereb	0.5	0.1
Rift Valley	4.7	5.2

Denakil	5.6	0.8
Ogaden	6.3	0.0
Aysha	0.2	0.0

Source: *Aberra Mekonnen & Deksios Tarekegn (2001b), "Ethiopia's Water Resources" in Water & Development, Quarterly magazine of the Ethiopian Ministry of Water Resources, in Ambaric, p.17.*

According to a study report by Aberra Mekonnen and Deksios Tarekegn (2001a), the total potential irrigable land in Ethiopia amounts to 2,583,000 ha, while the actual total irrigated land is 161,125 ha (6.2% of the total potential) (Aberra Mekonnen and Deksios Tarekegn (2001a). In the Ethiopian Nile basin the potential irrigable land is 1,496,000 ha, while the small- and large-scale irrigated land is 38,205 ha (2.5%). In the Ethiopian Nile Basin only 0.6% of the potential has been developed for large-scale irrigation. The one implemented large-scale irrigation scheme is in the Abbay basin, on the Fincha tributary. Another 10,000 ha large-scale irrigation program that is planned in the Baro-Akobo basin, on the Alwero tributary, has not been implemented for the past fifteen or so years (Gulilat Berhane and Teferra Beyene, 2001). The following section traces the number of projects planned, but not implemented.



Photo 1: Guder River, one of the tributaries of Abbay (Yacob Arsano)

7.2 WATER DEVELOPMENT IN THE CONTEXT OF THE EASTERN NILE: A HISTORICAL PERSPECTIVE

Historically, the water development programs in the Eastern Nile basin were pursued because of British interests in the cotton plantations in Sudan and Egypt, during the period when Britain was the colonial ruler in both countries. In the political reality of that time imperial Britain was more interested in marshalling political dominance than in promoting inter-state cooperation on the common water resources in the Eastern Nile basin. Ethiopia, on the other hand, as the only independent nation in the region, was more concerned with maintaining its independence than in developing the nation's water resources. The power asymmetry between the colonial power in the downstream region and the relatively weak position of Ethiopia in the upstream was one of the obstacles to reaching any upstream-downstream cooperation during that time. Hence, the colonial powers did everything possible to secure an unobstructed flow of the waters, while upstream Ethiopia did its best to survive as a sovereign entity in the region. While part one dealt with the history of agreements and political relations, the following chapter deals with the history of specific water development plans.

7.2.1 A QUEST FOR WATER RESERVOIR IN ETHIOPIA

By occupying Egypt since 1882, and colonizing Sudan in 1898, and Uganda and Kenya in the 1890s Great Britain became the most dominant imperial power over a large portion of the Nile valley. Lord Cromer, who served as Her Majesty's agent in Cairo during 1883–1907, became the virtual ruler of the Nile basin. British engineers previously working in India were transferred and employed in the Nile development. The engineers included William Willock, William Gartsin and Colin Scott Moncrieff. They believed that the waters of the White Nile would be geared for Egypt, while the waters of the Blue Nile/Abbay would be used mainly in Sudan. The engineers were given political power and economic support by the imperial government. Work on concrete projects commenced in 1901. Plans on the White Nile were published. The report proposed a reservoir

on Lake Victoria or Lake Albert and a canal from Bor to Sobat. The main aim was to make a desired year-round quantity of water available to Egypt. The British engineers believed that the scheme would provide a sustainable water supply for downstream utilization, and they conceived the scheme as the “century water storage project” (Collins, 1990: 199–201).

The British interest for developing the Abbay River and its head-waters Tana was closely related with plans for large-scale cotton production in northern Sudan. C.E. Dupuis’ report was published in 1911. The report indicated the potential of the Gezira plain in the Blue Nile plain within Sudan. An agreement was reached between the colonial government in Sudan and the Sudan Plantation Syndicate to carry out experimentation in the field to find out if the long staple Egyptian cotton could be produced in the Gezira plain in Sudan. In 1912 the Sudan Plantation Syndicate report indicated that there were 2,099,958 ha of land in the Gezira plain, and that 1.3–1.7,000,000 ha of these were irrigable. The report revealed that only 419,992 ha could be irrigated during the dry season beginning January and lasting up to four months. The report also indicated the need for year-round storage if the entire potentially irrigable land were to be put under effective cotton cultivation (Tvedt, 1993:183). The most feasible location for a sustainable water reservoir would be within the Ethiopian basin. Ethiopia, however, was a sovereign state controlling one hundred percent of the sources of the Abbay (Blue Nile), Tekeze (Atbara) and Baro-Akobo (Sobat) rivers.

Imperial Britain therefore made deals with both the Ethiopian Government and other colonial powers surrounding Ethiopia in order to control the sources of the water resources coming out of Ethiopia. The British signed agreements with the Italians on 24 March 1891, 15 April 1891 and 5 May 1894. In these agreements they accepted the Italian wish that Ethiopia fall within Italy’s area of influence. In return, the British secured assurance from the Italians that the latter would not engage in water works that might modify the flow of the head-waters of the Nile within Ethiopia. When Italy was defeated in 1896 at the Battle of Adwa in Ethiopia, however, the British began to directly negotiate with the Ethiopian authorities to obtain assurance with respect to their interests on the flow of the Nile waters. Over the ensuing forty years the Italians continued to hang on to their colonial ambitions over Ethiopia, while the British hung on to the Nile waters.

In January 1904 Lord Cromer sent Colonel Harrington to Emperor Menelik's court as part of his Nile policy, with the specific task of negotiating a concession of Lake Tana as a reservoir. Cromer's interest in the Nile was twofold: (1) The Nile is an essential lever for the control of the Suez Canal; (2) the Nile waters are the essential resource for economic development in Egypt, both with regard to the fellah farmers and for recovering the British capital investment. Colonel Harrington brought with him a proposed agreement from the colonial government in Sudan. It was proposed that the Sudanese Government would pay the Emperor or his successor 10,000 British pounds annually, for as long as the friendship continued.

To the disappointment of the colonial government in Sudan, the Ethiopian authorities did not accept the proposal. Lord Cromer's successor, Eldon Gorst Herbert Kitchener, came up with a similar proposal during 1913–14. He commissioned Colonel Doughty Wylie, the British representative in Addis Ababa, to negotiate the Tana project. Emperor Menelik was terminally ill by 1910 and passed away in 1913. A young monarch, Lidj Eyasu (1910–1916), was designated as the heir to the Ethiopian throne and to become future emperor. In the new proposal the annual pay was raised to 20,000 British pounds. The new monarch would have preferred cooperating with the Germans than the British, French or Italians. Hence he did not have any interest in considering a concession to the British. Wylie's mission having failed, he wrote, after leaving his post in Addis Ababa: "I regret very much that I was unable to secure signature of the Tsana Treaty". The European war (1914–18) then made the situation more complicated, and hence the Lake Tana project came to a temporary halt.

Inasmuch as the British needed the Lake Tana reservoir for colonial agricultural developments in both Sudan and Egypt before the World War I (WWI), they also needed the same project to use as a lever against emerging anti-British nationalist uprisings in Egypt after WWI. They therefore renewed negotiations for the Lake Tana Project with the Ethiopian authorities. Once again they had to deal with a new regime in place, with Empress Zewditu as head of state and Ras Tefferi as chief executive. This time the British needed the Lake Tana project for two immediate reasons: 1) to strengthen colonial agricultural development in Sudan with perennial irrigation from the water that would be stored at

Lake Tana and regulated over the year; 2) to use the water as stick and carrot against the heightening Egyptian nationalism.

In spite of the fact that the new chief executive of the Ethiopian Government was more friendly towards the British and other members of the allied group in the European war he would not trust the Imperial Britain as a credible friend worthy of awarding a concession in the heart of Ethiopia. The British attempt to cut a financial deal and make a new offer with a higher annual rent (Tvedt, 1993: 184) would still not work. The powerful regional chiefs of Gojjam and Gondar, the two provinces surrounding the Lake Tana and controlling much of the headwater territories of the Abbay and Tekeze rivers, would not accept any deal by the government in Addis Ababa with regard to the waters that they consider fall under their traditional fiefdom. The clerics of the churches and monasteries on the islands of Lake Tana would not accept any attempt that might threaten the existence of the island churches due to possible inundation. Raising the level of the water in the lake would likely result in submerging the longstanding religious centers on the lake. These were some of the reasons why the Ethiopian authorities did not accept the British plan for Century Storage on Lake Tana.

7.2.2 THE LAKE TANA PROJECT (1929–1934)

The Ethiopian authorities prompted to embark on a Lake Tana project, having been provoked by the Anglo-Italian bilateral agreements of December 1925 (Annex VII). The two powers had exchanged notes of agreement on 14 and 20 of December 1925. The main points of the agreement were that Italy would allow Britain to construct a dam on Lake Tana; and in return, Britain would allow Italy to construct a railway through Ethiopia to connect the two colonial territories of Somalia and Eritrea. Ethiopia was neither a party to nor informed of, the agreement at the time (details in Annex VII).

Following the exclusive bilateral agreement to divide Ethiopia up into Anglo-Italian spheres of influence and potential economic control, the Ethiopian authorities conceived a Lake Tana project. The main objective

of the project was to construct a barrage on Lake Tana's outlet to the main Abbay River and to sell the water to the British Government in Sudan or to their cotton corporations there. The Ethiopian authorities believed that the Tana project would be successful by involving the Americans who were unhappy because their own cotton market in England had been replaced by the production of long staple cotton in Egypt and Sudan. Both the Ethiopians and the Americans were aware that the water that flows downstream to Sudan and Egypt has its source in Lake Tana. The Ethiopians calculated that the Americans would be interested in collaborating with them to sell water to the British in Sudan, thereby making economic gains and offsetting what they had lost due to the cut back in the cotton market (Waterbury, 2002: 64). High-ranking Ethiopian diplomats were sent to Washington DC in 1927 to deliver the proposal to President Coolidge's administration. As was calculated the Ethiopian delegation was received kindly, and the Lake Tana project proposal was directed to G.J. White Engineering Corporation of New York.

The Ethio-American negotiation went very well; their interests were compatible and timely. A concession was signed that the corporation would construct a barrage on the outlet of Lake Tana and sell water to the British colonial government in Sudan for profit, and that the corporation would pay royalties to the Ethiopian Government from the sales of the water (Wondimeneh, 1979: 99). The concession was reached at the time when the Sudan Plantation Syndicate embarked upon the huge Gezira cotton plantation in Sudan, using the water flowing from Lake Tana, the source of the Abbay (the Blue Nile). Through the Sudan Plantations Syndicate Ltd. the British capitalists were working hard to relieve their textile industries from American cotton imports (Ford and Gannes, 1935: 6). To the Americans it was clear that what they had lost from the decreased cotton market in Britain would be gained by selling water to the British interests in Sudan. As for Ethiopia, the country would avert any overspill of British imperialism in the Nile basin and would get royalties from the sale of the water.

The White Engineering Corporation carried out a complete survey of the project area in 1930 and 1934. In terms of related infra-structural development a motor road was to be constructed by the corporation from Addis Ababa to Lake Tana. The costs of the project were estimated at

US\$ 10 million. The Lake Tana Project did, however, not take off for two reasons: (1) The British Labor government put diplomatic pressure on the US government so that the G.J. White Engineering Corporation would not continue with its planned project on the head-waters of the Nile. (2) The Italian invasion of Ethiopia was already looming, and Ethiopia was preoccupied with how to avert the impending invasion.

7.2.3 ABBAY (BLUE NILE) MASTER PLAN STUDY (1958–64)

In 1958 Ethiopia embarked on the Abbay/Blue Nile basin master plan study program. The three aims of the Abbay/Blue Nile Study were: 1) to compile a complete inventory of the water and other natural resources in the basin; 2) to establish a model for other basin studies in the country; and 3) to create and develop human resource capacity for development of the water sector (Engineer Teshome Worke, in an informal discussion with the author in 2004). Three major benefits were envisaged in the program: 1) to provide a regulated water supply for a hydroelectric power station to be installed downstream on the Abbay River; 2) to obtain a regulated supply of water for the planned irrigation schemes further downstream in the valley; and 3) to use the results of the basin study as a modality of water sharing in an event of negotiation with downstream nations (Zewde, 2000: 9). The US State Department was approached by a high ranking Ethiopian official to see if the US Government would be interested in cooperating with the Ethiopian Government to do a comprehensive study of the Abbay valley. The US Government accepted the Ethiopian request, and a formal agreement was signed between the two governments in August 1957 (Zewde, 1997: 6–7).

The Bureau of Reclamation of the US Department of Interior was commissioned by the US Government to participate in the joint project, entitled: USA-Ethiopia Cooperative Program for the Study of the [Blue Nile] Basin. It was also agreed that the two parties would split the cost of the study program and pay their respective personnel to be employed during the study time. The Ethiopian Government alone spent 42 million Ethiopian Birr (exchange rate at the time was 1 US\$ to 2 Eth. Birr) for the duration of the Master Plan project study (Zewde, 1997: 16).

The intensive study of the Abbay basin project proceeded for five years (1959–1964), the result of which was a comprehensive report on the hydrology, water quality, hypsography, geology, sedimentation, mineral resources, land resources, ground water and the local socio-economic situation (Collins, 1990: 279). In spite of the brief length of time it took to complete the study compared to the basin study done in Sudan and Egypt by the British experts attached to the colonial administration and to the Ministry of Public Works in Egypt, the Ethiopian study outweighed the British one both in volume and in the substantive outcome of the study (Collins, 1990: 2796). The Abbay basin study proposed four dams downstream with a total holding capacity of 51 bcm as the annual rate.

The envisaged irrigable land below the dams would not exceed 17 per cent of land under irrigated cultivation in Egypt, and its water consumption would not exceed six bcm/year. It was estimated that the projected hydroelectric capacity of the Abbay basin would be three times greater than the hydroelectric power produced at Aswan High Dam (Collins, 1990:279). In spite of its high quality and the relatively high cost of the study, the Abbay basin projects were never implemented, with the exception of the Fincha agro industry which only took off in the 1980s in an entirely different context. The projects were never implemented mainly due to financial constraints in the country, and the difficulty of getting financial loans from international financial sources.

The results of the study could not be used for negotiations with the downstream riparian countries, because Ethiopia was not able to implement it and was not part of the negotiations. Egypt and Sudan went ahead with their bilateral negotiations. Ethiopia was effectively kept out of the new negotiation for the reallocation of the Nile waters. Ethiopia had expressed its position in unequivocal terms as can be observed in a statement made by the Ethiopian Emperor Haile Selassie I, on 2 November 1957:

...Ethiopia may be prepared to share this tremendous God given wealth of hers with friendly nations neighboring upon her, for the life and welfare of their people. It is Ethiopia's sacred duty to develop the great watershed, which she possesses in the interest of her own rapidly expanding population and economy. To fulfill this task, we have arranged for the problem to be studied in all its aspects by experts in the field. (full statement in section 3.2.2.3).

Even though a huge amount of data was collected and the final study results were analyzed and compiled in several volumes, the US-Ethiopia study program of the Abbay basin resulted neither in an immediate water development project nor in any diplomatic leverage against the downstream co-riparian states. In view of geopolitics, the Egyptian-Sudanese agreement of 1959 (resulting in the construction of Aswan High Dam with the assistance of the USSR on the one hand, and the Ethiopia-USA cooperation over the Abbay basin study project on the other hand) must be viewed in the context of the Cold War.

7.2.4 GILGAL ABBAY PROJECT (1960S)

Gilgal Abbay meaning “baby Abbay” is the source of the Abbay River. It rises in the southwest of Lake Tana and perennially feeds the lake with fresh water. In 1962 a German engineering team carried out an extensive study of the Gilgal Abbay basin to determine the development potential of the basin. The study identified a great potential for producing oil seeds, pulses and fodder at a commercial scale, and indicated that the export of the crops would earn foreign exchange for the country (Lahmeyer Consulting Engineers, 1962). The findings of the study, however, could not be translated into actual investment ventures because the Gilgal Abbay development prospect was subsumed in the larger Abbay basin study being carried out during 1958–64. Hence, nothing of particular importance came from the German study of the Gilgal Abbay valley development study.

7.2.5 TANA-BELES DEVELOPMENT PROJECT (MID 1980S)

The Beles River emanates from the hills on the northwestern side of Lake Tana and flows due west in the opposite direction from the Lake. It then flows on in a westerly direction and enters into the Abbay just before the latter crosses the Ethiopia-Sudan frontier. The potential of the Beles River was first identified by C.E. Dupuis as early as 1906 and further confirmed by R.P. Black in 1921, when the latter discovered its phenomenal potential for the generation of hydroelectric power if water would be transferred

from the Tana to the Beles gorge only a dozen kilometers away from the lake due west (Collins, 1990: 277). In the Abbay basin master plan study project (1958–64) it was suggested that water be transferred from Lake Tana to the Beles River by a tunnel and then made available for large-scale irrigation in the valley downstream. Five hydroelectric power stations were envisaged in the upper stream, and the study indicated possibilities for irrigated agriculture and a resettlement of farmers from the denuded and overcrowded highlands of northern Ethiopia (Dieci and Viezzoli 1992: 61). Resettlers from the northern highlands of Wollo, Tigray, Gondar and Gojam were the largest group, comprising 479,544 persons or 81.6 per cent (Clarke, nd: 161).

The most recent development project in the Beles River valley was launched in 1985 in the context of the 1984/5 droughts and famine. The immediate activity was to resettle populations from drought-affected regions of northern Ethiopia and from the overpopulated areas of the south central provinces of Ethiopia. The resettlement program was carried out under the auspices of the Ethiopian Relief and Rehabilitation Commission and with the assistance of the Italian Government. A projected investment budget of US\$ 300 million (Tesfaye, 2001: 49) was aimed at for irrigated agriculture and resettlement schemes downstream and for hydroelectric power production in the upper course of the Beles River. By and large, the new Beles development project drew on the studies and suggestions made in 1906, 1921 and during 1958–64. As part of the infrastructure for the recent Beles project, an all-weather road from Dangla to Pawe was constructed; an airport was constructed at Pawe; 42 resettlement villages (each village consisting of 1,875 persons) in 6 districts were constructed (Dieci and Viezzoli, 1992: 343–45); and the Pawe town, some 55 km from the provincial capital of Chagni, grew and attracted a lot of activities and services which were not necessarily part of the project.

The total area designated for the Tana-Beles project was 220,000 ha. This was organized into 6 districts and 42 villages for the resettlement that would inundate the indigenous population of 15 to 20,000, whose livelihood is based on hunting, gathering and shifting cultivation. The indigenous populations are known as Begga (highlanders pejoratively call them “Shankilla”). Following the commencement of the Tana Beles Project most of the incumbent local community of the Begga people left

their longstanding habitat. Only a few remained behind to be engulfed by the resettled outsiders.

The resettlers were complete strangers to the indigenous Begga. They comprised the Amhara and Tigray from northern Ethiopia and the Kambata, Hadiyya, Wolaiyyta, and Guragae from southern central Ethiopia (Dieci and Viezzoli, 1992: 343–45). Although documentation on the evaluation of the Tana Beles Project has been kept classified and inaccessible to public reading, there are indicators that the project was a failure already by the late 1980s. Among the major problems that the project faced were anti-government forces operating in the area and ill management of the resettlement. From the outset, the project was conceived to develop the Beles valley with an opportunistic view to resolve the national crisis caused by the droughts and famine. The local population was not the focal point of the development of the Tana-Beles Project. The Tana Beles Project was not successfully implemented mainly due to political instability and alleged bad management.

In conclusion, most of the planned water projects of the Ethiopian Nile basin were not implemented. Four constraints can be identified: 1) Lack of economic capacity. Ethiopia neither had its own financial resources, nor did it have any readily available external investments to carry out water resource development. 2) Absence of institutions capable of studying, planning and, above all, implementing the plan. 3) Ethiopia's vulnerability to the upstream-downstream hydropolitical confrontation of the Eastern Nile, especially in the context of the Cold War. 4) Recurrent political crises within and surrounding Ethiopia.

7.3 PRESENT UTILIZATION

All of Ethiopia's major rivers radiate outwards in all directions from the country as can be observed on map 2. Of the 12 water basins shown on the map, seven rivers and their tributaries provide the critical headwaters for the neighboring countries in eastern and northeastern Africa. This makes Ethiopia a water tower of the sub-region. During the past 40 or so years the most "developed" water basin of Ethiopia has been the Awash River basin. As it is an internal basin it has aroused no political problems with

neighboring states. This is one reason why the Awash was developed first. The task of developing Ethiopia's other river basins will require considerable political and diplomatic work in order to avoid upstream-downstream misunderstanding.

7.3.1 TRADITIONAL AND MODERN IRRIGATION SYSTEMS IN ETHIOPIA: A COMPARATIVE PRESENTATION

Small-scale irrigation is practiced in all regional administrative units of Ethiopia, including the Addis Ababa and Dire Dawa city administrations. As can be observed in the table 9 below, traditional small-scale irrigation is practiced in all of the country's regions. The area and number of farmers under the traditional irrigation system is close to three times larger than that covered by modern small-scale irrigation. Traditional irrigation is based on local capacity; modern irrigation is based on external technological and organizational input. The city of Addis Ababa, for example, has 352 ha of land under traditional small-scale irrigation, with 8,608 persons mostly engaged in vegetable farming along the Kebenna and Little Akaki streams.

Table 9: Traditional and Modern Small-scale Irrigation Development in Ethiopia

Region	Number of traditional Irrigation schemes	No. of farmers	No. of Modern irrigation schemes	No. of farmers
Oromiya	56 807	11 3614	17 690	61 706
Amara	64 035	38 4 210	5 752	17 168
Southern Region (SNNPR)	2000	2 700	11 577	45 000
Tigray	2 607	25 692	10 000	40 000
Afar	2440	16 640	---	----
Somali	8200	16 400	1 800	7 000
Gambela	46	373	70	280

Benishangul	400	2 000	200	170
Harari	812	558	125	71
Dire Dawa	640	1 536	860	2 696
A. Ababa	352	8 608	----	----
Total	138 339	572 331	48 074	174 089

Source: Ethiopia, MWR (2001), *Water and Development*, Dec. 2001, p.17.

7.3.2 SMALL-SCALE IRRIGATION

Small-scale irrigation (less than 200 ha) and water and soil conservation activities took a new departure as part of mitigating the devastating effects of the 1974/75 droughts and famine. Following the initial emergency assistance, government and local officials, in collaboration with external donors, launched a nationwide food for work program. The program, which started with 9 catchment areas in 1980 expanded to 117 catchment areas in 1991. Two million hectares of land were covered under the program (Nedasa, 2001: 89). The program continued after 1991 under the auspices of the newly established regional governments. The total area covered between 1991 and 1999 was 3 million hectares. The specific activities included 1.3 million ha of hillside terraces, 2.1 million ha of farmland terraces, 1 million ha for a reforestation scheme and the closing off of 0.4 million ha of degraded land to human and livestock use. According to the 2001 inventory, there are 138,339 ha traditional and 48,074 ha modern small-scale irrigation schemes with 572,331 and 174,089 users, respectively, across the country (Betru, 2001).

Many of the areas of the transboundary river valleys are covered by small-scale irrigation schemes rather than by large-scale ones. In the Abbay valley, 24,960 ha; in Baro- Akobo, 275 ha; in Ganale Dawa, 3,600 ha; in Mereb, 500 ha; in Omo-Ghibe, 10,500 ha; in Tekeze, 6,770 ha; and in Wabeshibelle valley, 13,470 ha (60,075 ha in total) are covered by small-scale irrigation schemes. In contrast there are no large-scale irrigation schemes in the Baro-Akobo, Ganale-Dawa, Tekeze, or Mereb valleys. There are 6,700 ha, 1,400 ha, and 2,000 ha (10,100 ha in total) of large-scale irrigation schemes in the Abbay, Omo-Gibe and Wabeshibelle valleys, respectively.

There are six times more small-scale irrigation schemes than large-scale schemes on the transboundary rivers of Ethiopia. Considering the high cost of large-scale schemes, their manageability and relative appropriateness for food production, the trend is towards encouraging small-scale irrigation schemes (Aberra & Daksios 2001).



Photo 2: Digging an irrigation ditch in Ethiopia (Eva Ludi).

7.3.3 LARGE-SCALE IRRIGATION

Large-scale irrigation (more than 3000 ha) undertakings began in the Awash and Wabeshibelle basins in the 1950s and 1970s, respectively. The Awash Valley Authority was established in order to develop the river valley as it believed appropriate. In 1962 a German engineering team known as Lahmeyer came up with a report that suggested large-scale irrigation for commercial farming in the Gilgel Abbay basin. But this idea never materialized.

Of all the projects identified by the Abbay basin study only the Fincha sub-basin project has so far been implemented. The Fincha valley development comprises a dam with a capacity of 2 million cubic meters of water, 100 MW hydroelectric power, and 6,700 ha of sugar cane plantation downstream. The Fincha agro industry has so far utilized one-ninth of the river water by sprinkler irrigation. The wasted water coming from the agro industrial system is treated and safe-checked before returning it back to the river system. The officials of the Fincha agro industry explain that their project does not significantly affect the quality or quantity of the tributary or the main river below their project area. As a matter of requirement from the Africa Development Bank, the creditor, the enterprise maintains the forest landscape within and around the project area. Annually they plant and/or distribute a hundred thousand tree seedlings to the surrounding communities as part of the environmental rehabilitation of the project area. Seen from the top of the gorge, as observed on site by present writer in April 2001 and June 2005, it looks like a well-kept ecological conservatory.

7.3.4 LARGE-SCALE AND SMALL-SCALE IRRIGATION: A COMPARATIVE DEVELOPMENT

When one looks at the aggregate size of irrigation development in the country, the area under small-scale irrigation systems is 161,125 hectares, while the area under large-scale irrigation is 97,275 ha. In the Ethiopian Nile basin, land under small-scale irrigation is 31,905 ha, while the land under large-scale irrigation is a mere 6,200 ha. More details are in table 10 below.

Table 10: Small-scale & Large-scale Irrigation Schemes in Ethiopia

Water basin	Large-scale irrigation, ha	Small-scale irrigation, ha	Total, ha
Abbay	6 200	24 960	31 160
Awash	46 280	23 900	70 180
Baro-Akobo	----	275	275
Ganale-Dawa	----	3 600	3 600
Mereb	----	500	500
Omo-Ghibe	1 400	10 500	11 900
Rift Valley	7 970	13 300	21 270
Tekeze	----	6 770	6 770
Wabeshibelle	2 000	13 470	15 470
Total		97 275	161 125

Source: *Aberra & Deksios (2001b)*, "Ethiopia's Water Resources" in *Water & Development, Quarterly magazine of the Ethiopian Ministry of Water Resources, in Amharic, p. 18.*

7.3.5 POTENTIALLY IRRIGABLE LAND IN THE ETHIOPIAN WATER BASINS

Of the nine major water basins in Ethiopia, the three water basins in the Ethiopian Nile basin have the lion's share of potential irrigable land. The total irrigable land for the nine basins is 2,583,000 ha, while the area for the three Nile headwater basins of Ethiopia is 1,496,000 ha, which is about 58 per cent of the total potential. Of the estimated potential only 6,200 ha have been developed for large-scale agriculture in the Abbay basin. So far there are no large-scale irrigation undertakings in the Baro-Akobo and Tekeze river basins. Details and comparison with other basins are given in the table 11 below (Aberra and Deksios 2001a).

Table 11: Potentially Irrigable Land in the Ethiopian Water Basins

Name of basin	Potentially irrigable land, ha
Abbay	711 000
Awash	206 400
Baro-Akobo	483 000
Ganale-Dawa	326 000
Mereb	38 000
Omo-ghibe	348 100
Rift Valley	46 500
Tekeze	302 000
Wabeshibelle	122 000
Total	2 583 000

Source: Aberra & Deksis (2001b), "Ethiopia's Water Resources" in Water & Development, Quarterly magazine of the Ethiopian Ministry of Water Resources, in Ambaric, p.18.

7.3.6 CLEAN WATER SUPPLY

Pipe water service started in Ethiopia in 1901 (AAWSA, 2001: 10–17). The nascent city of Addis Ababa was the first to receive clean water service in the country. In the country's long history (101 years) of clean water service the water supply coverage is only 72% for urban centers and 23% for rural areas. Details are shown in table 12.

Table 12: Clean Water Supply at Regional Basis in Ethiopia

Region	Population		% of population having access to clean water	
	Urban	Rural	Urban	Rural
Tigray	622 000	3 072 000	59	29
Afar	99 000	1 117 000	44	14
Amhara	1 680 000	14 615 000	96	23
Oromiyya	2 648 000	19 706 000	76	24
Dire-Dawa	229 000	89 000	68	37
Harari	97 000	63 000	25	17
Somali	560 000	3 138 000	14	--
Southern	958 000	11 557 000	83	24
Gambella	36 000	175 000	35	14
Benishangul	47 000	490 000	27	--
Addis Ababa	2 495 000	0	70	0
Total	9 471 000	54 022 000	72	23

Source: Aberra & Deksios (2001b), "Ethiopia's Water Resources" in *Water & Development*, Quarterly magazine of the Ethiopian Ministry of Water Resources, in Amharic, p.18.

7.3.7 HYDROELECTRIC POWER DEVELOPMENT

Electric power was first introduced in 1898 for the imperial palace. Initially it was limited to provide light for the imperial palace. By 1931 a 6.6 MW small hydroelectric power plant was installed on the Akaki River, south of Addis Ababa. The power supply from there was extended to a few residential areas and to light up selected streets of the city of Addis Ababa. In 1955 the Ethiopian Electric Light Power Authority was established with a mandate to produce and market electric power in Ethiopia. In 1960 another 43.2 MW hydroelectric power plant was installed at Koka on the Awash River. To date, Ethiopia has been able to install 453 MW, which is only 2% of the estimated total potential. Only 13% of the population has access to electricity (EEPSCO, 2000: 2). In the framework of the Eastern Nile Subsidiary Action Program, Ethiopia's priority (based on comparative advantage) has been to produce hydroelectric power both to increase its

domestic supply and to export power to neighboring countries. In March 2001 the Electric Power Corporation signed agreements with Djibouti and Sudan to export electric power to the two countries (The Ethiopian Herald, 20 April. 2001).

Table 13: Hydroelectric Power Stations & Amount of Power Produced

Basin	Name of station	Average power supply GW/hr/yr
Abbay	Tiss-Abbay 1	68
	Tiss-Abbay 2	359
	Fincha	617
Awash	Koka	110
	Awash 2	165
	Awash 3	165
Wabeshibelle	Malkawakenna	560
Baro-Akobo	Sor	60
Total		2104

Source: Aberra and Deksios, (2001b), "Ethiopia's Water Resources" in Water & Development, Quarterly magazine of the Ethiopian Ministry of Water Resources, in Amharic, p.19

To date, Ethiopia has been able to install a generation capacity of 528 MW (92% of this is hydroelectric power). The total estimated potential is 30,000 MW. Only 2% of the estimated total potential has been harnessed so far (Debebe, 2002: 7). The hydroelectric power sector has been the monopoly of state undertaking. The sector has not been growing fast in Ethiopia due to a number of factors, including: low energy price, low return rate from energy investment, lack of budgetary resources at the disposal of the government, and lack of national or international partnership in the electricity production industry. A power sector reform has been taking place since 1997. The former Ethiopian Electric Light Power Authority (EELPA), which was established in 1956, has been transformed into a new corporation: Ethiopian Electric Power Corporation (EPCO). As a matter of reform, the new corporation has been given the mandate to engage in the business of producing, transmitting, distributing and selling electric

energy throughout the country (Debebe, 2002: 12). The corporation has been enabled by the law (Proclamation No. 86/1997) to encourage national and foreign private partnership in the business.

With regard to the country's hydroelectric power potential, the master plan studies of the Ethiopian water basins have revealed that the country has 144,710 GW hour/yr potential, of which the combined potential of the Abbay, Tekeze and Baro-Akobo is 102,710 GW hour/yr (Solomon Getachew, 2001: 5). Only a small fraction of this potential has been harnessed so far. The total output from the Abbay is 1,094 GW hour/yr. Practically no hydroelectric power plants have been installed on Tekeze or Baro-Akobo rivers (Abera and Deksis, 2001a: 19). Due to the availability of several naturally existing heads along the headwater streams of the Eastern Nile basin, Ethiopia has a comparative advantage for producing and selling hydroelectric power to neighboring countries, including to Sudan and Egypt. The Ethiopian Government would, however, need the cooperation of the downstream states in the enterprise of producing and transmitting hydroelectric power. Some work has started in this direction.

In the framework of the Eastern Nile Subsidiary Action Program, Ethiopia's consideration (based on comparative advantage) has been to produce hydroelectric power both to increase its domestic supply and to export power to neighboring countries. Among other things, the agreements included projects concerning the installation of transmission lines and power distribution centers. The corporation's plan is to install 691 km of transmission line at a cost of 75 million US\$ over a period of five years starting in 2002 (The Ethiopian Herald, 20 April, 2001). The national strategic plan for producing and transmitting hydroelectric power has already been prepared for the coming 20 years. Investment for the development of hydroelectric power is expected to come from local and international enterprises, in joint venture with government agencies responsible for the development of the sub-sector.

7.3.8 DEVELOPMENT OF TRANSBOUNDARY WATERS

Ethiopia's Nile waters, comprising the Abbay (Blue Nile), Baro-Akobo (Sobat) and Tekeze (Atbara) contribute 86% of the Nile waters as measured

at Aswan (Elhance, 1999: 56). Master plan studies have been completed, and the final reports are published for the Abbay, Tekeze, Baro-Akobo, and Omo and Mereb basins. Similar studies are about to begin for the Wabeshibelle and Ganale-Dawa basins. So far only 4.3% of the irrigation potential has been developed, of which 0.6% is in the Abbay valley (the Fincha agro-industrial enterprise).

Proper water utilization requires, among other things, control of the runoff resulting from the heavy rainfalls during the three months of heavy rainy season every year, stretching from mid June to mid September. Controlling the runoff has three main benefits: first, it breaks the destructive power of the floods and the ephemeral runoffs of the rivers in the upstream catchments within Ethiopia. Second, it enables Ethiopia to have a reliable source of water. Third, it will withhold silt and pebbles that fill up the dams in the downstream countries, especially in Sudan. The Water Resources Management Policy of Ethiopia has explicitly articulated the country's long-term economic interest and willingness to "foster meaningful and mutually fair regional cooperation..." on the transboundary waters of the country (Ethiopia, MWR, 1999: 13). Ethiopia's wish to control the ephemeral, but destructive runoff could best be handled by cooperative efforts of the Eastern Nile riparian states. As this has never happened, northern Ethiopia now stands destroyed by the Nile waters, as Damaka (1994: 56) remarked. Seasonal floods and silt accumulation in the downstream countries remain an unresolved headache for water development planners in the downstream countries. The price of non-cooperation could not have been less rewarding.

7.3.9 PREDICAMENTS OF GOVERNANCE

The successive governments of Ethiopia regarded the nation's water resources as a key component of the country's economic development ever since the late 1920s. In addition the nation's water resources have increasingly been perceived as an essential means of mitigating the ever-worsening poverty situation and meeting the nation's food security. The last three successive political regimes in Ethiopia have, irrespective of their ideological differences, articulated the urgent need for water resource development.

This can be observed from reviewing the economic development plans published under the auspices of the successive regimes.

The first and second Five-year Development Plans, published in 1956 and 1962, respectively, emphasized hydroelectric power development. During the same time, however, steps were taken to build basic capacity for development of the water sector, and the effort continued in the subsequent five-year development planning periods. Hydrological service was established in 1956/57, and meteorological service was extended beyond its initial purpose, which was specifically meant for aviation. It was during this time that a specialized department for water development was established within the then Ministry of Works. Most importantly, a major survey was carried out in the Abbay basin from 1958 to 1964. The survey covered the entire 200,000 km² area, encompassing all the tributaries touching 7 of the 14 provinces at the time, or 5 of the 9 regional states of today (Damaka, 1994: 47).

The third Five-year Plan (1968–1973) placed priority on developing the seasonal and smaller headwater streams for smaller and cheaper irrigation schemes. The development plan called for further research into techniques and methods of optimal utilization of the water resources of the country. The government realized that large-scale water projects, like those suggested by the US Bureau of Reclamation in the Abbay basin, could not be materialized without financial capability. It was clear that Ethiopia was not in a position to fund big projects from its own financial sources. External funding was not forthcoming for investment in water development ventures. Such ventures are often not only expensive, but also slow in terms of expected pay back for the investment.

The Military Revolutionary regime (1974–91) further accentuated interest in the development of the water sector of Ethiopia. Hence, hydrological and meteorological services were expanded; the Ethiopian Valleys Development Study Authority was established; and the Arba Minch Water Technology Institute was set up for the specific purpose of building capacity for the water sector through more focused training. The functions and mandates of specialized institutions under the Ethiopian Water Resources Commission expanded. The Ten-Year Perspective Plan, covering 1984–1993, outlined the objectives and strategies of the country's water resource development for the Ten-Year Plan period and beyond. The

Perspective Plan earmarked ETB 3,579.9 million (1 US\$ was equivalent to 2.07 ETB at a fixed rate of exchange at the time) for development of the water sector. Of this budget 42.5 per cent was for developing large- and medium-scale irrigation schemes (PMSCE, 1984: 95).

The current regime of the Ethiopian Peoples Democratic Revolutionary Front (EPDRF) completed the master plans for the Abbay, Tekeze and Baro-Akobo basins in the 1990s. The Ethiopian water resource management policy and a proclamation for the management of the nation's water resources have been enacted. A 15-year water sector strategic program has been drawn up for 2002 to 2016. A water fund unit has been set up under the auspices of the Ministry of Water Resources to support its own capacity for financing water development projects and programs of the country. In fact the master plan studies for the three basins mentioned above and other basins whose master plan studies are underway have been financed with money allocated from state coffers. In view of water basin development strategy the Ministry of Water Resources has structured each water basin as a separate unit of water resource development. In terms of policy articulation, legislation, institutional streamlining and strategic planning, the present state of Ethiopia's water sector looks promising.

Nevertheless, government plans to embark on major water resource development have remained largely undelivered. The limiting factors that have made water sector development challenging include the following:

- 1) The protracted civil wars, inter-state wars and political instability have derailed the nation's meager resources and taken attention away from development in general and water resource development in particular.
- 2) Ethiopia has lacked its own financial resources to pay the costly investment for development of the water sector. It is very difficult to envisage local funding resources making the necessary investment in the sector. The incumbent government policy is to disengage from committing public funding in the water development enterprises.
- 3) Inter-riparian cooperation was unthinkable, as the downstream and upstream countries viewed one another with suspicion and hostility.

They have been much more engaged in subversive activities through proxy elements in relating to each other.

- 4) Foreign investment could not be attracted due to the prevailing politically uncondusive situation and the country's poor economic environment. Irrigation ventures are very expensive and the return from the business cannot be expected in a short span of time.
- 5) From a local or international investment point of view it is difficult to ascertain the existence of a local or regional market for hydroelectric power as well as for agricultural products.

Hence, there is a lingering paradox between the need to utilize the huge potential of the water resources for much needed development and the lack of economic and institutional capacity at the national level compounded by absence of cooperation at the sub-basin level.

CONCLUSION

By all considerations, water remains as the potential key factor for the economic development of Ethiopia. Of the 123 bcm/year fresh water runoff only 3 per cent is retained in the country, while the remaining bulk finds its way out via the nation's transboundary rivers. Over the past several decades water resource development plans have been drawn, various programs and projects undertaken. But little has actually been achieved. Of the potentially irrigable land of 2.6 million ha only 4.3 per cent has actually been developed in all the water basins of the country. For the Ethiopian Nile basin the comparable figure is a mere 0.6 per cent achievement. Of the potential capacity of 30,000 MW hydroelectric power only 2 per cent has been harnessed. Access to clean water is 72 per cent for the urban population and 23 per cent in rural areas. To set the development of the water sector on proper footing critical challenges will have to be dealt with. Most importantly the policy, legislative and institutional support must be strengthened in a stable manner and irrespective of changes of governments or political elites in power.

8. STRATEGIES AND IMPERATIVES FOR WATER RESOURCE DEVELOPMENT IN ETHIOPIA

INTRODUCTION

Ethiopia's water development strategy will in the future take into account the fact that the country's relatively abundant water resources have played a minimal role in the development of the nation's economy, and the government intends to place priority on water resource development as an essential strategy for the economic and social development of the country.

Generations of Ethiopian leadership have dreamed of developing the nation's water resources, first and foremost to salvage millions of citizens from cyclical food shortage and famine. They have, however, only been able to come any nearer to fulfilling this need slowly. Now the Ethiopian Government has a complete inventory of the water and water-related resources in the sub-basins of the Nile head-waters within Ethiopia and is heading towards implementing a 15-year (2002 – 2016) strategic plan for the water sector. According to the planned irrigation targets of this period, 121,848 ha of large-scale and 121,848 ha of small-scale irrigation schemes will be developed (WRDP, 2001: 20).

The main principles of Ethiopia's water sector development strategy draws on the need for national economic development and the relevance of water resources for the country's socio-economic development. The promotion of sustainable development and management of water resources has to be linked with ongoing and planned development projects. In view of the national development needs the priority areas of water development strategies are articulated as follows: 1) Make drinking water and water for sewerage available to larger segments of the society. 2) Make water available for pastoralist herders in the dry land regions of the country. 3) Expand irrigated agriculture to the maximum possible extent. 4) Produce hydroelectric power commensurate to the needs for electricity in the

economic and social sectors of the country. 5) Provide water for industrial development. Notwithstanding the above, top priority is being given to those projects already identified in the water basin master plans and the projects identified within the framework of the Nile-basin Initiative and the Eastern Nile Subsidiary action program.

8.1 PREVIOUS STRATEGIES FOR WATER RESOURCE DEVELOPMENT

Unlike the historical section in chapter three focusing on the legal aspects and the historical section in chapter seven focusing on specific water development plans, the following section deals with the history of water development from a strategic point of view, i.e. what goals were set and how these changed over time.

On 6 February 1956, i.e., only one month following Sudanese independence, the Ethiopian Herald announced that Ethiopia reserves her sovereign rights to put the Nile waters into use within the bounds of the nation's territory. Several months after the announcement, the Imperial Ethiopian Foreign Ministry dispatched a further announcement expressing this intention of the Ethiopian Government to the diplomatic missions in Cairo. A circular memorandum to the diplomatic missions in Cairo, passed on 23 September 1957 unequivocally asserted that: 1) Ethiopia alone supplies 86 per cent of those waters as well as the immense volume of alluvium fertilizing the lower reaches of the Nile. 2) As in the case of all other natural resources on its territory, Ethiopia has the responsibility to provide the fullest and most scientific measures for the development and utilization of the water resources. 3) The Government of Ethiopia is committed to develop its water resources for the benefit of the present and future generations of its citizens, in pace with and in anticipation of the growth in population and its expanding needs. 4) The Government has the right, and in fact is duty bound, to take all measures in respect of its water resources, in particular the Nile waters, which are of utmost importance to the welfare of the population, whatever the measure of utilization along the course of that river may be. 5) The quantities of the waters available to others must always depend on the ever-increasing needs of Ethiopia's

expanding population and economy. 6) The utilization of the country's rivers is to be an essential step in the development of agriculture and industry. It was of paramount importance to Ethiopia, a problem of first order, that the waters of the Nile be made to serve the lives and needs of the people now living and of those who will follow in centuries to come (Ethiopia Observer, 1958: 93).

Ethiopia's articulation of a water development strategy was put forward in a clear and tough manner. The statement seems to have intended to achieve two goals. First, the tough position was meant to be used indirectly as a negotiating chip to be put forward to the Egyptians and the Sudanese, who had started bilateral negotiations for a revision of the 1929 Nile Waters Agreement (Annex VII) and to reapportion the Nile waters just between the two downstream countries. Second, in case the downstream nations would not show interest in including Ethiopia in the process of the negotiation, the latter had reserved her rights to choose appropriate options to develop the Nile waters within the nation's territorial bounds.

The bottom line of the Ethiopian strategy can be interpreted as: 1) The Ethiopian authorities asserted that the country's sovereign authority over the Nile water resources was inalienable so long as these are within the nation's territory. 2) The Ethiopian authorities expressed commitment that the Nile water resources would be harnessed to develop agriculture and industry in view of development interests for the current as well as future generations. 3) The Ethiopian authorities unequivocally accepted the incumbent duty of the government to develop the natural resources of the country, the Nile waters included, in order to mitigate poverty and raise the level of welfare of the citizens. 4) Ethiopia was willing and ready to cooperate with downstream nations to collaboratively develop the water resources for mutual benefit.

Ethiopia's desire to take part in the negotiation process with the two downstream nations having failed, the government embarked on a major study of the Abbay basin, in collaboration with the Bureau of Reclamation of the United States Department of Interior (Zewde G/Selassie, 2005: 23). In spite of the commendable achievement to generate useful data on the water and water-related resources in the Abbay basin, the Ethiopian authorities failed: 1) to induce the downstream nations to take Ethiopia seriously as a partner in the ongoing negotiation; 2) to attract foreign

investment to the Ethiopian basin of the Nile waters; 3) to generate its own capital and launch projects by local firms. Not surprisingly, therefore, no major water development project could emerge from the basin study.

On the other hand, Ethiopia was not bound by any agreement with the downstream nations not to plan and execute its own projects as would suit the national development interest. At the 1977 United Nations Water Conference in Mar Del Plata, Argentina, Ethiopia made it clear that “it is the sovereign right of any riparian state, in the absence of any international agreement, to proceed unilaterally with the development of water resources within its territory” (quoted in Clarke, 1991: 104).

By 1978 the Government of the Provisional Military Administrative Council of Ethiopia came up with ambitious plans of national economic development in general and water resource development in particular. “Electrification of the country” and “expansion of irrigation in the valleys” were the slogans of the day. The plan included putting up a dam at the mouth of Lake Tana where it was planned to increase the power output at the Tiss-Issat hydroelectric power station. With the additional power produced it was envisaged to expand transmission lines to twelve cities and towns and the surrounding rural centers in the northern two provinces of Gojam and Gondar, both within the Ethiopian Nile basin. Another dam was planned on the Fincha River, from which power extension was planned to 25 cities and towns and surrounding rural centers in the central and western provinces of Shewa, Wollega, Illubabor and Kefa (PMACE, 1978: summary of wall charts of EXPO-78). Sizable portions of the provinces are also within the Ethiopian Nile basin. As regards the irrigation of the Ethiopian Nile basin, the plan indicated 115,000 ha of land in the Tekeze, Guang and Angereb valleys; 1,000,000 ha in the Baro-Akobo valley; and 400,000 ha in the Abbay valley.

The previous plans failed to materialize due to a lack of financial and human capacity to support them. No doubt the water development plan drawn during the Derg Regime was too ambitious to be executed, at least in the envisaged 10-year framework. The 1,515,000 ha water development plan for the Nile basin of Ethiopia was eight times greater than the currently envisaged 200,000 ha irrigation program for the country in all the basins for the span of 15 years: 2002–2016 (Ethiopia, MWR, 2001). Achievement of the relatively modest strategic water development will

depend on the ability of the government to muster the necessary capacity from both public and private investment sectors.

8.2 PRESENT STRATEGIES AND IMPERATIVES FOR WATER RESOURCE DEVELOPMENT

The present water development strategy aims to take on the task of overcoming the problems of unsustainability and inefficiency of past strategies (Ethiopia, MWR, 1999: IX). The spelt out objectives of the present strategy include: improving the living standard of the population and raising the socio-economic level of the society (Ethiopia, MWR, 2001: 7). Irrigation, clean water supply and sanitation, hydroelectric power production and strengthening the knowledge about the hydrological and meteorological situation of the country are the major targets of the present strategy. The more urgent problems to be addressed in view of the new strategy include: the widespread poverty, population increase, and growing water scarcity due to recurrent droughts, aridity and dissection.

8.2.1 POPULATION IMPERATIVE

The Ethiopian population is one of the fastest growing ones in the Nile basin. According to the World Bank estimates, the figures for 1980, 1997 and 2015 are 37.7 million, 59.8 million and 88.6 million, respectively (The World Bank, 1999b: 91–92). The following table 14 shows the size of the population of the country by region and by rural/urban categories.

Table 14: Population of Ethiopia by Region 2001–2005

No	Region	2001	2003	2005
1	Tigray	3 797 000	4 006 000	4 229 000
2	Afar	1 243 000	1 301 000	1 329 000
3	Amhara	16 748 000	17 669 000	18 626 000
4	Oromiyya	23 023 000	24 395 000	25 827 000
5	Somali	3 797 000	4 002 000	4 218 000
6	Benishangul-Gumuz	551 000	580 000	610 000
7	SNNPR	12 903 000	13 686 000	14 490 000
8	Gambella	216 000	228 000	1 104 000
9	Harari	166 000	178 000	190 000
10	Addis Ababa	2 570 000	2 725 000	2 887 000
11	Dire Dawa	342 000	357 000	384 000
	Total	65 344 000	69 127 000	73 908 000

Source: *Ethiopia, Federal Dem. Rep. of (2006), Statistical Abstract - 2005, Central Statistical Agency, Addis Ababa.*

8.2.2 WATER SCARCITY IMPERATIVE

There are environmental factors that make fresh water even more precarious, invariably in all the countries of the Nile basin. The most outstanding environmental factors include the following:

Aridity: Aridity is a phenomenon of permanent shortage of water caused by a dry climate. Much of Kenya, Sudan, 61 per cent of Ethiopia and all of Egypt, for instance, are arid. The arid zones of each of the basin countries require that water be obtained through technological means from the waters of the Nile. Irrigated agriculture has been the only way to produce crops in arid areas. No alternatives have been found to do so otherwise.

Desiccation: This is a drying up of the landscape, in particular soil desiccation can result from activities such as deforestation, overgrazing, over cultivation, soil erosion, etc. At present much of the 39 per cent Ethiopian highland has been affected by desiccation. In the Nile basin all countries find themselves threatened by an ever-increasing water scarcity, meaning

limited availability of naturally renewable water resources in relation to an increasing demand. Because of the scarcity and the unregulated grabbing of the water resources by riparian states or other actors, there are direct or indirect security threats. At the national level the security threat is seen in poor health, poor nutrition and poor sanitation, ecological degradation, lowered economic potential, aggravation of tensions between water users, overburdening of institutions, population displacement, exacerbation of inequality, degradation of natural resources base, etc.

The water resources are one of the great gifts that nature can provide to humankind and to all living things around us. They are, however, not limitless bounties, as they are limited in time and space. Anybody can imagine how cursed the earth would be without fresh water. But fresh water is already scarce. Unless managed prudently and with unselfish care fresh water will become even scarcer.

8.2.3 DROUGHT AND FAMINE SYNDROME AS IMPERATIVE

Drought can be characterized by cyclical occurrences of dry years. Experts tend to believe that the major drought cycle in Ethiopia is every 10 years, with a minor cycle every 3–5 years (Mesfin Wolde Mariam, 1984: 147–150). All Nile basin countries have been and are affected by drought to varying degrees. In the summer of 2000 Kenya was hard hit by drought to the extent that the pastoralists drove their herds to Nairobi so that the animals could scavenge on roadside sewerage and on front yard patches of grass and green leaves. Homes, hotels and factories all experienced a catastrophic shortage of water supply. The effects of drought can only be mitigated by use of the available water resources in the river systems.

For centuries Ethiopia has been plagued with droughts and famine. For instance, a study shows that between 1250 and 1772 there were 28 years of famine. The worst known famine in Ethiopia occurred during 1888–92. It is known as Kifu-qen, literally meaning “bad time”, and it caused death to humans and livestock throughout the country (Pankhurst, 1985: 57). In the 1970s and 1980s, two major famines befell Ethiopia triggered by the elongated drought seasons of 1973/74 and 1984/5. The famine that followed the 1984/5 droughts caused the death of up to a million persons (Gray, 1994: 64). A study conducted on famine, under the auspices of the Institute

for Development Research of Addis Ababa University, found that during the 20 years covering 1958–1977 there were four famines at a national level, 12 regional level famines and four local level famines in Ethiopia (Mesfin Wolde Mariam, 1984: 150–154). Another study conducted by the Drought Prevention and Preparedness Commission, covering a 25-year period (1974–1999) shows a consistent food shortage in Ethiopia. Millions of people in the rural population survived on external food handouts, as is shown in table 15 below.

Table 15: Number of Persons Facing Food Shortage in Ethiopia, (1974–1999)

Year	Persons surviving on external food handouts
1974	3 000 000
1975	2 664 000
1976	NA
1977	NA
1978	2 652 000
1979	1 049 500
1980	3 658 000
1981	3 304 700
1982	4 204 100
1983	3 959 300
1984	5 048 440
1985	7 935 140
1986	6 865 070
1987	2 500 000
1988	2 124 689
1989	NA
1990	3 383 760
1991	7 222 612
1992	7,850 200

1993	4 974 520
1994	6 700 000
1995	4 000,000
1996	2 783 600
1997	3 362 390
1998	4 096 529
1999	5 3785 583

Source: DPPC (1999), Climate Change, Drought and Drought Mitigation in Ethiopia.

The trend of drought has been recurrent, and the numbers of drought victims have been on the increase during the past thirty or so years. We have a record of the major droughts since 1974 as can be observed in the table herein above. During the 1973–74 drought, 3 million people were affected, during 1984–85, 7.9 million and during 1991/2, 7.5 million people.

The toll of the 2002 famine was nationwide and most alarming, with 15 million people affected. The interim figures for the two major Ethiopian Nile basin regions of Amara and Tigray for the month of October 2002 were 1,724,800 and 2 million victims, respectively (The Reporter, 2002). Sizable populations from the two other Nile basin regions of Oromiya and the South have also been affected, in the order of 1,051,400 and 303,300 persons, respectively (Nation, Nov. 23, 2002). The countrywide picture of famine was worse, and the figures for drought-affected persons for mid December 2002 can be observed in table 16 below.

Table 16: Number of Persons Needing Food Handouts as of December 2002 (by region)

Region	Persons under emergency food need	Persons needing close attention	Total number of persons affected by drought	Amount of food assistance
Afar	786 200	307 200	1 093 400	13 726
Amhara	3 296 200	662 300	3 958 000	374 192
Benishangul	--	--	--	0
Dire Dawa	73 500	25 000	98 500	12 222
Gambella	58 400	11 200	69 600	8 017
Harari	20 000	18 000	38 000	2 220
Oromiya	3 110 900	1 039 200	4 150 100	407 353
Debub	1 114 700	471 800	1 586 500	116 748
somali	1 028 900	118 200	1 147 100	124 515
Tigray	1 831 600	300	2 131 900	265 149
Total	11 320 400	2 953 200	14 273 600	1 441 142

Source: Dawit Kalemawork (2002), "How Catastrophic is the Drought?" *The Reporter, Weekly Private*, in Amharic, Dec. 14, 2002, <http://www.ethiopianreporter.com>

Following the previous famines of 1975 and 1984, the government attempted to resettle the survivors in the furthest downstream valleys of the Abbay and the Baro-Akobo rivers, the two main Ethiopian head-waters of the Nile. The Nile waters resources, and all water resources of Ethiopia for that matter, have not been harnessed for mitigating the longstanding and cyclical calamities of drought and the consequent occurrences of famine.

Ethiopia's perennial poverty remains to be the nation's paradox. With an annual per capita income of US\$ 110 it stands as the 2nd poorest country (from the bottom up) of nations. The periodic droughts and the consequent famines have taken a heavy toll on the population, keeping the country under a gnawing condition of poverty. In the ongoing development strategy of Ethiopia, water is seen as a key resource for development, especially in the agricultural and hydroelectric power sectors, for the coming 15 years, phased in short-, medium- and long-term planning periods (Ethiopia, MWR, 2001). The strategy, however, is dependent on the availability of financial resources and managerial capacity. Equally important is to be

cognizant of the cross border water resources as an element of foreign policy of the Nile basin states that may in turn impact the local and regional political stability.

8.2.4 TARGETS OF THE PRESENT WATER RESOURCE DEVELOPMENT STRATEGY

The livelihood of 85 per cent of Ethiopia's 70 million people is dependent on agriculture, and agriculture accounts for 45 per cent of the GDP of the country (Ethiopia, MWR, 1997: 20–21). The country has a relatively huge amount of water resources. Only very little of this has been harnessed for irrigation or hydroelectric power production. Pursuant to the responsibility vested on it (Proclamation Nos: 92/1994; 4/1995; 256/2001), the Ministry of Water Resources has launched over the past ten or so years master plan studies for the river basins of the country in general and the Ethiopian Nile basin in particular. Accordingly, master plan studies have been completed for the Abbay, Baro-Akobo, Tekeze and Mereb basins. Similar study programs have been commissioned for the Ganale-Dawa and Wabeshibelle basins. The completed master plan studies for the Ethiopian Nile sub-basins of the Abbay, Baro-Akobo and Tekeze basins have already been published and are ready for use in developing investment projects by public or private ventures. On the basis of the master plan studies the Ministry of Water Resources has been preparing a water sector strategic development program for the coming 15 years (2002–2016), to be undertaken in 5-year development phases.

Ethiopia's active participation in the Nile Basin Initiative can be explained as a proactive measure to enhance the country's water development strategy. In view of this the former Water Minister of Ethiopia, Shiferaw Jarso, welcomed the Nile Basin Initiative, and he positively acknowledged the agreed minutes of the Ministers of Water Resources of the Nile basin countries, signed in Dar-es-Salaam, Tanzania, in February 1999. The minutes stipulated the need for a shared vision among the Nile countries towards collaborative development in the Nile basin. It was further agreed that while legal and institutional mechanisms are negotiated, joint development projects will have to be prepared on a basis of win-win criteria. The

Ethiopian minister further declared that: "Ethiopia has a clear commitment that her Nile water resources will be harnessed to provide the necessary development to pull the country out of its debilitating backwardness" (Ethiopia, MWR, 1999: 8).

Ethiopia's development of the water sector enjoys active support from the country's foreign policy makers. The Ethiopian Foreign Minister strongly expressed the imperative need for Ethiopia to put the nation's water resources into use for the urgent economic development, especially for the effort towards food self-sufficiency. He urged the Egyptians to come to proper agreements on how to collaboratively utilize the Nile waters among the riparian countries. The Foreign Minister's statement clearly indicated that his country's options will be to implement unilateral development actions on the headwaters of the Nile, if the Egyptians do not yield to the needs and the rights of Ethiopia on the shared waters (Ifoyita, January, 1998).

Ethiopia's water sector development strategic study has been completed in four volumes and was presented for a stakeholder workshop, comprising federal and regional institutions, non-governmental organizations, the private sector and donor agencies, in February 2002. The actual preparation of the Water Sector Development Program had been done by Water Works Design and Supervision Enterprise (WWDSE) of the Ministry of Water Resources, employing national expertise in the field of water works. The United Nations Development for Economic and Social Affairs (UNDESA) was given the contract as consultant of the preparation process. The water sector development program document comprises: 1) irrigation development, 2) water supply and sewerage, 3) hydroelectric power development, 4) water resources and 5) institutional aspects (Ethiopia, MWR, 2001). More details are given in the following sections.

8.2.4.1 IRRIGATION AND WATER SUPPLY TARGETS FOR 2002 – 2016

The Ethiopian irrigation plan for the next 15 year period aims at 122,000 ha large scale and 122,000 ha small scale irrigation (table 17):

Table 17: Irrigation Targets Planned for 2002–2016

No	Description	Large & Medium/ha	Small-scale/ha	Total/ha
1	Presently developed	98 625	98 625	197 250
2	Short term plan/1 st 5 yrs.	8 700	40 300	49 000
3	Medium term plan/2 nd 5 yrs.	41 057	34 532	75 589
4	Long term plan/3 rd 5 yrs.	72 091	47 016	119 107
5	Grand total	220 473	220 473	440 946
6	Total area to be developed during the program period	121 848	121 848	243 696

Source: WRDP/ETH/98/001, *Water Works Design & Supervision, Executive Summary, Draft Final, Dec. 2001, Addis Ababa, p. 20.*

In the above table one can observe the average projected growth rates of 4.5%, 5.5% and 6.5% during the 1st, 2nd and 3rd phases of the development periods. With regard to water supply, all nine regional administrations and the Addis Ababa and Dire Dawa City Administrations have drawn up their respective water supply plans for the 15-year development plan. The strategic plan aims to provide most urban centers in all regions with a clean water supply, and the coverage for rural areas of the country will be substantially increased.

8.2.4.2 HYDROELECTRIC POWER DEVELOPMENT TARGETS FOR 2002 – 2016

Although Ethiopia has a huge potential for the production of hydroelectric power, the country's energy development and consumption is deplorably low. Ninety-five per cent of the total energy is obtained from traditional sources, like fuel wood, cow dung, crop residue, and human and animal power. The remaining nine per cent of energy supply comes from modern sources of hydroelectric power and oil products. Only 13 per cent of the population has access to electricity. It is estimated that 25% of the huge potential of hydroelectric power could be harnessed at an economic cost (MOWR, 2002: 7).

The following table has been drawn on the basis of a forecast made by the Ethiopian Electric Power Corporation in June 2000. The rate of population growth and the estimated annual average GDP growth of 6.6% for the period 2002–2016 has also been taken into account.

Table 18: Electricity Demand Target (GWh) for 2001, 2006, 2011, 2016

Target/consumer categories	Situation (2001)	End of short term (2006)	End of medium term (2011)	End of long term (2016)
Domestic	441	636	857	1152
Services	311	507	750	1124
Industries	562	836	1163	1619
Rural	--	24	70	145
Total	1314	2003	2840	4040

Source: WRDP/ETH/98/001, Water Works Design & Supervision, Executive Summary, Draft Final, Dec. 2001, Addis Ababa, p. 25.

The new strategic water resource development has given serious attention to encouraging stakeholder participation. A body of water management policy of Ethiopia has been in place since 1999 (Ethiopia, MWR, 1999). The policy can be further developed to elaborate specific development purposes in the water sector. It is expected, however, that the government must still work more intensively to overcome such crucial constraints as financing and infra-structural development (see also chapter 6). The private sector will have to be offered attractive investment conditions in order to encourage them. In that way the government can overcome the financial deficiency to some extent. The water sector development goal set for 2016 can best be attained by properly combining governmental and private investment possibilities. This requires not only clearly defined property rights, but also a well-defined scope for private entrepreneurship in the sub-sector.

The regional governments can be encouraged and supported to raise their capacities in order to develop the water resources in view of their particular needs and potentials. Other water sector activities have been planned in three phases. These include: 1) complete individual basin master

plan studies of the Ganale-Dawa, Wabeshibelle and other smaller river basins in Ethiopia; 2) conduct and complete geological survey of the locations and the available amount of ground water in the country; and 3) improve the existing hydrological and metrological stations and install new stations. The first and third of the activities indicated above have intimate linkage to hydropower sector development. One must, however, note that there are numerous constraints to be faced during the implementation of developing the water resources in general and hydroelectric power in particular. The major constraints include: inadequate or not well-developed policy frameworks, low institutional capacity, lack or shortage of financial sources, poor coordination, lack and/or inadequate utilization of technology, poor infrastructural development, and poor stakeholder participation.

8.2.4.3 STRENGTHENING HYDROLOGICAL AND METEOROLOGICAL INFORMATION

A long-term water resource development will have to be supported by adequate hydrological and hydro-meteorological data. The present water resources development strategic program aims to strengthen and expand such services as an essential component. Up-to-date data is indispensable for the planning and implementation of the strategies discussed above. The following meteorological and hydrological stations have been planned for short-, medium- and long-term time frames as can be observed in the tables 19 and 20 below.

Table 19: Existing and Planned Meteorological Stations

Type of station	Existing station	Short-term phase (2002–2006)	Medium-term phase (2007–2011)	Long-term phase (2012–2016)	Total
Class 1	161	45	50	75	331
Class 2	250	69	75	100	494
Class 3	328	110	110	125	673
Total	739	224	235	300	1498

Source: Adapted from WRDP/ETH/98/001, Water Works Design & Supervision, Executive Summary, Draft Final, Dec. 2001, Addis Ababa, p. 26.

Table 20: Existing and Planned Hydrological Stations

Type of stations	Existing stations	Short-term phase (2002–2006)	Medium-term phase (2007–2010)	Long-term phase (2012–2016)	Total
Automatic recorders	95	50	50	75	270
Staff gauges	310	50	75	100	535
Telemetric stations	6	25	110	125	266
Total	411	125	235	300	1071

Source: Adapted from WRDP/ETH/98/001, *Water Works Design & Supervision, Executive Summary, Draft Final, Dec. 2001, Addis Ababa, p. 26.*

As can be observed in the two tables above, the number of stations for both hydrological and meteorological recordings will be more than doubled by 2016. Furthermore, increased efforts at improving and expanding hydrological and meteorological activities during the planned 15 or so years will enable standardized data and procedures to be obtained for the development of the country's water resources.

8.2.5 RAINWATER HARVESTING

Rainwater harvesting has been a longstanding practice in the Ethiopian arid land areas of Somali, Borana and the Rift Valley regions. As a traditional practice, water harvesting is determined by the circumstance of a shortage of annual precipitation of 700 mm or less. The idea of rainwater harvesting has been increasingly popularized in the areas affected by desiccation and cyclical drought occurrences. Since the past two years state supported rainwater-harvesting schemes have emerged throughout the country. The runoff resulting from rainfall is directed from local water catchments into a pond or underground structure designed in a special way and constructed to hold the captured rainwater for subsequent utilization at the household and small community level.

The government encourages and supports rainwater harvesting as an immediate solution for mitigating water shortage of household water

supply, both for humans and livestock, as well as for household and miniature irrigation to augment individual and community level food security. The rainwater harvesting strategy has, however, been under fierce debate among experts in the sector of water development. Likely health hazards and the unsustainability of the ponds and water storages are critical issues argued by many. It has been argued that the ponds and water stores will promote infestation of mosquitoes and schistosomiasis. With regard to technical problems it has been argued that the water storages may not adequately avoid seepage and/or evaporation. Notwithstanding the cries of devil's advocates, hundreds of thousands of these structures have been planned, and quite a number of them have been constructed, as the table 21 below shows.

Table 21: Rainwater Harvesting in Selected Regions

Region	Planned	Ongoing	Completed
Amara	85 000	18 600	25 900
Tigray	41 800	10 000	22 000
Oromiya	83 400	19 542	24 803
SNNR	115 000	115 000	-
Total	325 200	163 142	95 803

Source: "Irrigation and Water Harvesting Programs as A Mechanism to Fight Against Drought", Paper presented by Adugna Jabessa (2003); "Irrigation and Water Harvesting Program as Mechanism to fight Against Drought", Paper presented at the Conference organized by the Ethiopian Development Research, July 2003.

Tesfaye W.G. noted that in the Amara region, more than 100,000 rainwater harvesting structures would be constructed during 2003–04. Similarly, 500,000 structures would be constructed in Tigray, and 808,000 in Oromiya by August 2005. Reports have, however, already revealed that the sustainability of these water storages is a considerable challenge. For instance, of the 27,450 ponds³ and hand dug-water storages built during 2002/03, 4,468 had become non-functional due to seepage (Addis Zemen, January 27, 2004).

3 small and temporary reservoir, which may capture 5–100 cubic meter of rainwater

CONCLUSION

Ethiopia has lacked the necessary capacity to overcome the predicaments in the policy, managerial, economic and technical arenas to develop its water resources. As has been explained in chapter 7, the water resources of Ethiopia have only been developed to a small extent. The main reasons for this include: 1) lack or inadequate policy framework; 2) inadequate and uncoordinated role of non-state actors in the development of water resources; 3) the state sponsored water resource development during the past seventy or so years has lacked consistency and institutional stability. The inadequate efforts in the water development sector have been subject to financial and technical assistance often sought from foreign sources. The new water sector program is supported with a policy framework and a step-by-step strategy, which also aims to involve non-state actors and raise investment finances from local sources. But it is not free of uncertainty with regard to institutional stability and sources of finance. Developing the transboundary waters continues to be challenged by downstream riparians, due to a lack of inter-state agreements on the use and management of the shared water resources. The international dimension of this issue is dealt with in the following chapters.

PART THREE

**DILEMMA OF REGIONAL HYDROPOLITICS
OF THE EASTERN NILE BASIN**

INTRODUCTION

Having examined the plans, potentials, needs and constraints of water resource development in Ethiopia, two things are clear: 1) there are challenges to be dealt with on the national level; and 2) national development automatically gives rise to international challenges because of the transboundary nature of most of Ethiopia's rivers. Part Three deals with the second type of challenges.

The strenuous political relationship among the Eastern Nile basin states, more particularly between Ethiopia and the downstream nations, Egypt and Sudan, is presented in chapter 9. The focus of the analysis of chapter 9 is presented in three stages: 1) bilateral relations among the three Eastern Nile basin states; 2) relations with other upstream basin countries; 3) relations with actors outside of the basin; and 4) attempts at institutional frameworks. Chapter 10 deals with possible ways forward, by exploring how the regional dilemma of unilateralism can be overcome.

To begin with, the indestructible bond of the crossborder water resource links the countries of the Nile basin. In-as-much as they are bound to utilize the water resources, the riparian countries will in the long-term not have many beneficial options other than making a conscious choice to cooperate in their inter-state relations on how best to arrange the utilization of these resources. It is apparent that there are no clear and tough laws to be enforced on the riparian states, in the same way as municipal laws are enforceable on the citizens and institutions within a state. The demand for water by one riparian state is often countered by demands by other riparian states. In particular the dependence of agriculture on irrigation has become a cause for disputes, recrimination and the worsening of relations among the riparian nations. Where commonly accepted legal principles and institutional mechanisms are not in place, good inter-riparian relations and maintenance of peace become fragile.

9. INTER-STATE RELATIONS IN THE EASTERN NILE BASIN

INTRODUCTION

International relations between Ethiopia, Egypt and Sudan have clearly been influenced by how these nations have competed over the control of the Nile water resources. The following sections explain the bilateral relations among the Eastern Nile basin states, followed by different multilateral cooperation efforts. The chapter ends with key challenges faced by the Nile countries.

9.1 ETHIOPIA AND SUDAN

Sudan and Ethiopia mean the same thing but in different languages. It means “black/dark” in the Arabic and Greek languages, respectively. Sudan not only shares the longest border with Ethiopia, but the two countries also have crossborder settlements of communities that have existed since time immemorial. From south to north the Bummie, Nuwer, Anuak, and Berta are the major community groups across the Sudan-Ethiopia borders. The major rivers of Sudan: the Sobat, Blue Nile, Atbara and Mereb, originate in Ethiopia and they drain both water and alluvial soil from the Ethiopian highlands. Historically Sudan and Ethiopia had old polities with roving political centers. Meroe, Napata and Funj in Sudan, for instance, were ancient centers of political power prior to the Anglo-Egyptian invasion of the country in the late 19th century. Similarly, Axum, Lalibela and Gondar were shifting centers of the Ethiopian old polity until the late 19th century. The old polities of both countries competed for dominance and greater control of the territories in the region.

However, in the second half of the 19th century the emergent revolutionary Islamic Government of the Mahdists in Sudan and the more unified Orthodox Christian Government in Ethiopia came into headlong conflict

with each other. The bone of contention in those days was not competition over the water resources. Matters relating to religion were the most important issues in the conflict. The minor crossborder raids and counter raids by local forces kept the Ethio-Sudanese conflict ignited, as the two governments looked at each other not only as political adversaries, but also as rivals for religious dominance. Following Negus Teklahaimanot's (a local warlord in northwest Ethiopia) raid on the Sudanese border town of Gadaref, the Sudanese leader Khalifa Abdellha sent an ultimatum to the Ethiopian Emperor Yohannes, in writing: "...If you will do what I tell you, then I will cease to wage war against you and will instruct my army not to enter your country" (Sanderson, 1969: 19). When Emperor Yohannes refused to yield to Khalifa's ultimatum, the latter declared a Jihad on Ethiopia on 6 January 1888. Three days later the Sudanese forces, true to the words of their leader, invaded Ethiopia and sacked the Gondar town near the Lake Tana. Another ultimatum was sent to the Emperor giving him the choice between "full submission and total destruction" (Sanderson, 1969; 21). In a reply Emperor Yohannes wrote to Khalifa and reminded him of the crushing victories against the Egyptian invaders in 1875 and 1876. The letter further reads thus:

Let us not kill the poor and the harmless to no purpose, but let us both unite against our common enemies, the Europeans. If these conquer me, they will not spare you, but will destroy your country.... It is, therefore, our common interest to agree to fight and conquer them (Sanderson, 1962: 70).

The terms for a peaceful resolution of the conflict were not acceptable to the leaders of Sudan. Instead the two sides met for a battle at Metemma, a border locality in northwestern Ethiopia. In a one-day battle on 10 March 1889, the Ethiopian Emperor Yohannes was wounded, and the Sudanese cut off his head as a trophy to show their folks in Omdurman. Losing their leader the Ethiopian army fled in disarray.

Emperor Menelik II, who succeeded Emperor Yohannes IV, sent similar conciliatory messages to Khalifa Abdellha suggesting cooperation, especially in view of the impending European colonial encirclement of the entire region. An important diplomatic attempt was made by Emperor Menelik

when he sent a Muslim emissary, Mohammed Al-Tayib to Omdurman in the spring of 1895 with verbal proposals for establishing friendship and cooperation. As Ethiopia was aware that Italy was preparing to invade their country from the already occupied province of Eritrea, establishing cooperation and alliance with the Sudanese Government was viewed as an invaluable opportunity. To Ethiopia's great disappointment the Sudanese Mahdist leaders remained suspicious and arrogant, and rejected Ethiopia's propositions.

The Italians were defeated in Ethiopia in March 1896, and the Ethiopians gathered some momentum against an immediate colonial aggression. But the overall colonial onslaught was yet to be faced. Especially evident was the Anglo-Egyptian political and military move up the Nile valley in the direction of Sudan and onwards. Emperor Menelik once again took initiative in July 1896 by sending a message to Khalifa Abdellha and offering an alliance against all Europeans. This time around the Khalifa, at least in principle, was prepared to accept the Ethiopian offer for alliance. He sent his trusted emissary Mohammed Outhman to Addis Ababa to negotiate (Berry, 1968: 8). The Khalifa, however, put forward a condition that Emperor Menelik cease all agreements Ethiopia had entered into with the European governments. Menelik clearly explained that the terms were not acceptable, especially because the trade agreements Ethiopia had entered into with European governments were vitally important for the country. By 1887 a fragile alliance was patched between Omdurman and Addis Ababa. As an evidence of the new alliance, Emperor Menelik provided Omdurman with intelligence information that the British and Egyptian forces were on the move for a definite invasion of Sudan. On his part the Khalifa withdrew from competing with the Emperor for the allegiance of the Shaik of Benishangul, the strong man of the disputed territory between Ethiopia and Sudan (Berry, 1968: 84).

The hard won Sudanese-Ethiopian alliance was patched up too late and it was too weak to ward off the colonial powers in the region. The Anglo-Egyptian forces led by Lord Kitchener invaded Omdurman in 1898, and subjected the Mahdist state to the Anglo-Egyptian colonial occupation. The following year the Anglo-Egyptian Condominium (joint rule) was formally set up as a form of joint colonial administration between the British and the Egyptians. A Sudanese independent state no longer

existed until it regained its independence in January 1956. After the fall of the Mahdist state, international relations in the region changed. Ethiopia was the only sovereign state encircled by colonial powers in all directions. The Italians occupied the Red Sea littorals, the northern most province of Ethiopia and southern Somalia. The British occupied Kenya in the south and northern Somalia in the east. Sudan in the west was occupied by the Anglo-Egyptians. The French occupied Djibouti in the east.

The historical legacy of colonial Britain's interest in cotton production laid the foundation of large-scale irrigated farming in Sudan. Sudan has so far developed about 2 million ha of irrigated agriculture, even if this is a lot, it is little compared to the nation's irrigable land (Elhance, 1999: 61). There are grand plans to expand irrigated agriculture and related development schemes within their Nile basin (Elhance, 2000: 61, see also Hamad, El-Battahani in *Aquatic Sciences*, 67, 2005). The country has an immense potential for irrigation development in its northern dry-land territories. Sudan is the only Nile basin country, which signed the 1959 agreement with Egypt. In the present conflagration of upstream-downstream confrontation Sudan generally behaves like a downstream state, although its relations with Egypt have been not so friendly from time to time. There are times when Sudan, like Egypt, has spoken of transferring water to Saudi Arabia through a pipeline extension under the Red Sea (Starr & Stoll, 1988). With the emergence of the National Islamic Front (NIF) regime since 1989, however, Sudan has started to protest against a transfer of water from its natural basin by Egypt, saying: "The use of waters of the Nile and other shared water resources should be the exclusive right of the co-riparian countries alone, and no transfer should be permitted to any non-riparian country" (Sudan's Country paper, presented at the Nile 2002 Conference held in Kampala, Feb. 1996).

The Sennar and Rosaries dams on the Blue Nile and Kashim el Ghirba dam on Atbara, respectively, are no longer enough to satisfy Sudan's needs for irrigated agriculture. Sudan is in the process of heightening the Rosaries dam to contain more water. Unless check-dams are constructed in the upper courses of the Abbay and Tekeze rivers within Ethiopia, unabated seasonal flooding and silt accumulation will remain overwhelming problems in Sudan. The country has already revealed that it needs 32 bcm of water by the year 2025 (Sudan Country paper, 1996) – although this may

in part be a political figure, rather than one that is based on plans to be implemented in the near future. Since the new regime of the National Islamic Front took control of power in 1989 the Sudanese-Egyptian relations have touched their lowest ebb. Amidst all of this the National Islamic Front (NIF) government has threatened to divert the water that flows to Egypt (Swain, 1997:685). The response of the Egyptian leaders was quick and expressed a stern warning "...not to play with fire and at the same time not to play with water..." (Swain, 1997: 685).

From the provisions of the 1959 agreement it is rather clear that Sudan cannot hope to gain a greater reallocation of water for her increasing demands. It is also not clear if Sudan would wish to collaborate with upstream countries for fresh negotiations towards a new reallocation of the water resources of the Nile. It seems that unless Sudan works with the upstream countries, especially Ethiopia, not only will its fields and plains continue to be flooded and its dams filled up with silt and pebbles carried down from the Ethiopian highlands, but the quantity and quality of the waters Sudan receives may also not be sustainable. Sudan and Ethiopia have agreed several gestures of good will, including the 1980 and 1991 protocols to cooperate on the Nile waters development. Due to North Sudan's geopolitical alliance and cultural attachment to Egypt, its cooperation with upstream states has not gone deeper than declarations of intent. Certainly there has not been a known bilateral or multilateral water development venture between the two countries. The future of the Nile will be greatly shaped by whether Sudan cooperates more with Ethiopia than it has done up until now.

9.2 ETHIOPIA AND EGYPT

Historically, the two permanent and most important elements in Ethiopian-Egyptian relations have been religion and water. The first element relates to the relationship through the Orthodox churches of the two countries. Since the 4th century A.D. Ethiopia used to receive Abunas (bishops or spiritual heads) from the Egyptian Orthodox Church of Alexandria, Egypt. These were Egyptian Coptic bishops ordained for Ethiopia. The Egyptian and Ethiopian Orthodox Christians subscribed to the same Church, origi-

nally 'founded' by the Apostle Mark, following the death of Jesus Christ. The historical seat of this Church has always been in Alexandria. The two sisterly Churches have shared the same rite, rituals and dogma. The only exception has been in the use of languages. The Egyptian Church uses the Coptic language, while the Ethiopian Church uses the Geez language. This practice continued uninterrupted until 1958, when the Coptic Church of Alexandria, upon the insistence of the Ethiopian Emperor, ordained an Ethiopian bishop as the spiritual head of the Ethiopian Orthodox Church, Haile Selassie I. Since 1958 the Church's national Holy Synod appoints the Patriarch and other church leaders of the Ethiopian Orthodox Church.

The other permanent element of Ethiopian-Egyptian relations has been the Nile waters. What Herodotus observed that "Egypt was the gift of the Nile" is not any less true today in that Egypt is entirely dependent on the water that come from outside of the country's territories. Eighty-six per cent of the waters indeed originates in the three Ethiopian sub-basins: the Abbay, Baro-Akobo and Tekeze sub-basins. This natural bond between Ethiopia and Egypt has been there for ages and ages and it will be there as long as the countries continue to exist where they are now. As a matter of climatic variability there were repeated low rainfall years in the Ethiopian source areas of the Nile waters. The low rainfall in the Ethiopian highland areas, naturally, reflected in a decreased water flow, caused alarm to the Egyptian authorities. They further believed that the Ethiopians might have blocked the flow of the waters or diverted the direction of their flow. They sent high-level emissaries to the Ethiopian court to intercede with the authorities that might have been in control of such potential action. Some of the stories relating to this connection include the following:

According to the Arab Historian Al-Makin, Sultan al-Mustansir, the Nile flood failed to reach Egypt in around 1089–1090. The Sultan sent Abba Mikhail, the Coptic Patriarch of Alexandria to the Ethiopian Emperor pleading with him to restore the flow of the Nile water. The story further has it that the Ethiopian ruler let the Nile water flow again with a consequent increase of the level of the water in Egypt (cited by Zewde Gebre Sellasie, 2000: 4).

In the 14th century, during the rule of Mamluk Sultan al Nassir Muhammad Ibn Qala'un, Arab historian Maqrizi recounted that the

Sultan had oppressed his Coptic Christian subjects and demolished their churches. Outraged by the news of the persecution of Coptic Christians in their own country, the Ethiopian Emperor, Amda Tsion (1312–1343) sent a mission to warn the Sultan that if he did not cease to oppress the Christians in their country he would create in Egypt a desert and let the people starve by diverting the direction of the course of the Nile waters stopping them from going to Egypt. An Egyptian courtier, In Fadl Allah al-Umari, stated in his book *Masalik al-Absar fi Mamalik al-Ansar*, written in 1927, that the Habeshi (Ethiopians) claim that they are the guardians of the course of the Nile and that they control its flow and let the water flow down to Egypt out of respect (cited by Zewde, 2000: 5).

The Egyptian perception of the Nile changed with the coming to power of Mohammed Ali Pasha in 1805, followed by his son Said Pasha, his grandson Khedive Ismail and the British. Egypt's modernization drive was propelled, among other things, by what the Nile waters provide, and the country became convinced that there was no power on earth that could delay or divert the direction of the Nile waters. Modern Egyptians and the colonial powers made it a number one priority to stop the Ethiopians or their proxies from using the Nile waters to any meaningful degree. The Nile waters agreements and the upstream-downstream polemics express clearly that the downstream actors are firm in their positions and political-military manoeuvres that the upstream nations should stay away from any substantive use of the water resources.

During the first half of the 19th century Egypt started to assert autonomy from the already declining Ottoman Empire (Europe's sick man). Mohammed Ali Pasha (1805–1849), who was the first leader of modern Egypt, and all his successors relentlessly aimed to expand Egyptian territory southwards moving upstream in the Nile River. By the 1820s much of northern Sudan was conquered. The expansionist Egyptian forces ventured into the frontiers of western Ethiopia and northern Uganda. Khedive Ismail Pasha of Egypt (1863–1879), who was also the grandson of Mohammed Ali, further intensified the Egyptian conquest into the countries upstream of the Nile. Like his grandfather, Khedive Ismail's territorial ambition was to incorporate the entire territories between the Indian Ocean and the Nile. As Jesman (1959: 59) wrote, "The obvious direction of his (Ismail's) plans led towards the heart of the 'dark' continent and along the Red Sea...

He was influenced with the idea of the Unity of the Nile from the Great Lakes to the Delta under the green flag of Egypt”.

Already before Khedive Ismail assumed power, the Taka region of the Sudan had been annexed to Egypt’s territorial domain in 1840. Subsequently an Egyptian post was established at Kassala, a place much closer to the northwestern Ethiopian frontier. By 1853 trading posts with Egyptian flags were established further in the upper stream of the Nile. With Khedive Ismail ascending to power Egyptian forces were garrisoned in Fashoda, for instance, in 1865. The Equatorial region of southern Sudan was annexed in 1870. Territories farther south on the frontiers of Uganda were occupied. During the same time the Ottoman regime transferred the Ethiopian maritime gateway of Massawa to the Egyptian Khedive. Egypt’s southward expansion would have, sooner or later, included Ethiopia. As M. Abir explained, “...the Egyptian expedition was to conquer Ethiopia in conjunction with a much more ambitious plan, attributed to Mohammed Ali, to dominate the entire area between the Red Sea and the Nile” (Abir, 1968: 96). Egypt wanted to control Ethiopia primarily because Ethiopia controlled the headwaters of the Blue Nile, Atbara and Baro-Akobo, which together constitute 86 per cent of the annual flow of the Nile. This emanates from a perception that Egypt would not feel secure as long as another powerful country controlled the most important sources of the Nile waters, which happens to be the nation’s lifeline. Hence, Egypt’s prime security interest is inseparably linked with the Nile waters, hence sensitive to what might happen in the upstream countries.

Egypt’s annexation of the territories in the Nile basin was accompanied by simultaneous conquests of the territories of the Red Sea coast and its hinterland. In 1872 Warner Munzinger, a Swiss adventurer, was appointed as the governor of the port of Massawa and the occupied Red Sea territories in the hinterland (Markakis, 1975: 25). At the same time Warner Munzinger served as consul of the British and French governments at the port city of Massawa. For Egypt he annexed Keren in the northwestern region of Ethiopia. The Ethiopian Emperor Yohannes IV who had just come into power as the new ruler of Ethiopia was not able to prevent the annexation, as he was preoccupied with the internecine strife in the central highlands. After having secured the Indian Ocean port of Zeila from the

Turkish Sultan in 1875, an Egyptian force led by Raul Pasha effectively occupied Ethiopia's eastern city of Harar (Petrides, 1983:11).

The second Egyptian force led by Warner Munzinger Pasha set out from the Red Sea coast to the interior via the 'saltland' of Afar. On the way some 3000 men were ambushed by the local Afar fighters and killed almost to the last man (Jesman, 1959: 77). The third column of Egyptian force, led by Colonel Arrendup, a Danish officer in the Khedive's service, met the Ethiopian forces led by Emperor Yohannes himself at Gundet, south of Asmara, in the Mereb Valley. Arrendup's forces were defeated, and the commander and his force of 2000 men were all killed in the battle (Jesman, 1959: 75). Egypt then prepared a retaliatory expedition with an army 20,000 strong (Ullendorf, 1965: 90). The Egyptian expedition was manned by American, Swiss, Turkish, Armenian, Hungarian and Egyptian officers (Jesman, 1959: 75). Upon learning of the imminent Egyptian invasion the Ethiopian Emperor Yohannes IV aroused the excitement of the Ethiopian populace against the impending Muslim invasion and called for a 'crusade'. A show-down battle took place in 1876 at Gura in the Mereb valley south of Asmara and was concluded in favor of the Ethiopians. At the Battle of Gura "the Egyptian debacle was so colossal that it quenched their imperial expansionism in Ethiopia once and for all" (Ullendorf, 1965: 90).

When all previous attempts at territorial control of the Nile basin would not materialize the post revolution leaders of Egypt wanted to make sure that the Nile waters would be controlled from Egyptian soil. Lake Nassir was therefore created without consulting the upstream nations, from whence the entirety of the waters come. Following the exclusively bilateral agreement the Aswan High Dam was constructed in southern Egypt. The Aswan High Dam is a mammoth structure with a length of 5 kilometers and a height of 100 meters. It has a reservoir that stretches 700 kilometers, of which 250 km extend into Sudan. The total area of the High Dam covers 6000 km². The bottom-line rationale for the High Dam was to ensure water security for Egypt within the nation's territory (see Collins, 1990: 163). The decision to construct the dam came from a hybrid background of the colonial idea of 'century storage' and the Cold War proxy strategic interest of the USSR. The High Dam was constructed

without consultation, consent or participation of the upstream nations. The 1959 Egyptian-Sudanese bilateral agreement on the “full utilization” of the Nile waters and the unilateral decision to construct the dam where water loss through evaporation is high, epitomizes the non-cooperative water development policy of the downstream nations.

Critics have it, however, that in spite of the fact that multiple seasonal cultivation and increased food security have become possible with the construction of the High Dam, there has always been a concern about environmental problems relating to water logging, salinity, siltation, excessive evaporation rate of 10–21 bcm annually (Waterbury, 1979), and loss of soil fertility. Others criticize the High Dam scheme for what it may entail in terms of national insecurity. For instance, the nation’s population, life and property could be endangered in the event of damage or destruction of the High Dam. It was reported that Israel threatened to blow up the High Dam during the Six Day War of 1967 (Gleick, 1992: 5–9). It seems that none of these criticisms have made the Egyptian policy makers reconsider going back to an inter-riparian enterprise of sharing and managing the common good that belongs to all the riparian nations.

During the past three decades Egypt has unilaterally adopted grandiose schemes of water diversion out of the natural valley of the Nile River for new resettlements and urbanization. The Toshka scheme in the southwest and the Northern Sinai Agricultural Development Program are cases in point. After Egypt came to terms with Israel following the Camp David Accord the Northern Sinai Agricultural Development Program was launched. The quantity of water planned for the Northern Sinai project amounted to 4.4 bcm/year (Egypt, MPWWR, nd.). In more recent years construction on a new artificial lake has been underway in the Kharga-Dkhla valley in western Egypt. A diversion canal was planned to link up the artificial lake with the Nile.

Indeed Egypt’s unilateral measures on the otherwise shared water resources underscore the nation’s long-range water strategy in view of which participation or support of upstream states was not considered essential. It is difficult, however, to understand Egypt’s strategic assumption that the upstream states that contribute the entirety of the waters, which fill up Lake Nassir will never, or can never, use it for their own national benefits. Hence, it may be presumed that Egypt’s water strategy unequivocally

cally symbolizes a relentless aspiration for dominance in the entire Nile basin. The longstanding commitment of controlling the water resources whose sources are controlled by other nations remains at the heart of the dilemma in Egypt's water policy.

9.3 ETHIOPIA AND OTHER UPSTREAM COUNTRIES

The East African countries of Uganda, Kenya, Tanzania, Burundi, Rwanda and the Congo Democratic Republic were colonies of different European powers until the early years of the 1960s. It was not possible for them politically or economically to plan and carry out water resource development in their respective countries. They had their hands tied by the colonial masters. Following the end of the 2nd World War the upstream countries of the Nile in the Equatorial region were preoccupied with struggling for their respective national independence. These countries were not in a position to introduce irrigation schemes that would consume the water out of its bank or install hydroelectric power plants that might divert the course of the headwaters. The Congo Democratic Republic, Burundi and Rwanda gained independence from the Belgians in 1960. Tanzania, Uganda and Kenya attained independence from the British in 1961, 1962 and 1963, respectively.

There were, nevertheless, few attempts by the colonial administration to develop water resources in Kenya, Uganda and Tanzania. In Kenya, in the early 1950s a small area of the Kano plain was developed for rice production. By 1957 some 1619 ha of land were cultivated by irrigation. In 1954 the colonial administration had already commissioned Sir Alexander Gibb to study the feasibility of the Kano plain for water use development. According to the report of the Gibb Commission, the irrigation potential in the Kano plain was estimated at 12,097 ha of land, of which 6,095 ha were suitable for growing sugar cane, and 6,002 ha for rice production (Kilerruu, 1962: 11). Due to the increased intensification of the political fights between the colonial administration and the national liberation forces, the Kano project was postponed indefinitely.

Of Kenya's total irrigation potential of an estimated 160,000 ha approximately 40 per cent is situated within the Nile basin of the country,

close to Lake Victoria. Kenya's aspiration for food self-sufficiency will naturally gain attention in the already indicated high potential area of the Nile basin. Kenya assumes that with the facilities of modern technology they could lift water from Lake Victoria in order to develop the country's dry land in the basin area. The Kenyan parliament has already established the Kerio Valley Special Development Authority, which can be viewed as a pilot project of the above-mentioned plan (Okidi, 1990: 218). More recently, together with Tanzania and Uganda, Kenya has established the Lake Victoria Basin Development Authority. The organization is envisaged to pursue programs with respect to regionally addressing the pollution problem, fishery and agricultural development.

In Tanzania, before the outbreak of the First World War, the Germans who were the previous colonial masters of Tanganyika had made a complete survey of the Sukumaland for an agricultural development project. Subsequently a plan was drawn up to develop a large-scale cotton farm covering 2 million acres (809,460 ha) of land. Water for the irrigation was to be drawn from Lake Victoria through tunnels and canals (Kilerruu, 1962: 11). Germany was defeated in the war, and Tanzania fell into the hands of the British imperialists under the mandate of the League of the Nations. The Sukumaland development project was shelved indefinitely. Only during the Suez Canal crisis of 1956 did the British go back to the drawing-board of the Sukumaland project to use it as a political leverage against their Egyptian adversaries. When the Suez Crisis was over, however, the Sukumaland agenda was again postponed. A more recent report indicates that Tanzania plans to develop the Vembere plain in central Tanzania and draw the water from Lake Victoria (Okidi, 1990: 216).

In Uganda, the Lake Victoria region has a great potential for agricultural development. Apart from agricultural development potentials, the hydro-electric power production has attracted more immediate attention of the colonial administration in Uganda. The Owen Falls Hydro-Electric power study started in 1946, and construction of the power plant was completed in 1954. The Owen Falls power plant produces 700 million KWh annually. If the whole of the regulated flow of the Victoria Nile were available for power production the annual output would be 921 million KWh (Kilerruu, 1962: 13). The Uganda electricity board derives over 99 per cent of its power output for domestic consumption from the Owen Falls power station,

which is situated at Jinja on the White Nile. Downstream countries have accepted the Bujagali Falls Dam plan on the Nile in Uganda, as no water is consumed. It is, however, contested within Uganda and internationally, because the Bujagali Falls offer a potential benefit with respect to culture and tourism for the country.

Ethiopia falls geographically in the upstream region of the Eastern Nile, while the other upstream countries belong to the Nile Equatorial region. Although both are upstream regions in their own rights vis-à-vis to Egypt and Sudan, they do not have a single watercourse in common or crossing their boundaries. They are related to the downstream countries in a similar manner. But the main aspect of their mutual relations is an obvious absence of any combined strategy and alliance in view of the downstream countries, thus weakening the upstream position.

9.4 THE ROLE OF EXTERNAL ACTORS

As Terje Tvedt aptly noted (2004: 3), “No international river basin has a longer, more complex and eventful history than the Nile”. Indeed for thousands of years the Nile has attracted the attention of great poets, conquerors, explorers, colonizers, Cold War strategists, as well as potent nationalists. Recent history of the Nile also witnesses that great leaders of the 20th century including: Churchill, Eisenhower, Kruschov, Mussolini, Nasser and Haile Selassie were preoccupied on the Nile question (Tvedt, 2004: 3). Today, the 10 riparian nations of the Nile are actively engaged on the Nile question. For our present purpose, however, the role of external actors can be summarized according to three phases: 1) pre Cold War period (pre 1945), 2) Cold War period (1945–1989) and 3) post-Cold War period (1998-todate).

Pre-Cold War period: The colonial powers, namely Great Britain, France, Italy, Belgium and Germany were all involved in the conflicts over the control of the Nile basin to some degree or other. They entered into conflict with the states in the region on the one hand, and among themselves on the other hand. To a great extent the conflicts between the imperialist forces and the local polities were resolved by means of force, while the conflicts among the colonial contenders were, by and large, re-

solved through diplomacy. In this context the Nile basin was the arena of various conflicts. With regard to Ethiopia the colonial powers used both force and diplomatic methods in order to achieve their interests.

In the 1890s the Belgians, having established themselves in the vast territory of the Congo, were pushing for more territory northwards at the expense of the Sudanese polities, including the Zande. The Germans established their colonies in Tanganyika, Burundi and Rwanda. The French, having established their colonial control over the vast area of western and central Africa, were making utmost efforts to link Dakar with the Red Sea territory of Djibouti. The British were doing everything in their capacity to link up their protectorate of Egypt with their eastern and southern African colonies, and to realize the dream of constructing a Cape-to-Cairo railway line. The Italians on their part did everything possible to extend their 'possessions' on the Ethiopian Red Sea coast of northern Ethiopia to the Italian Somaliland, which was situated next to the Indian Ocean. Ethiopia, having survived the colonial onslaught in the region did everything possible to maintain its national sovereignty and territorial integrity. The two most dominant colonial powers were the British and the French. The British, for instance, not only supported, but also invited the Italians to take the Red Sea coast and the northernmost territory of Ethiopia, which they renamed Eritrea. By a secret protocol signed by Britain, on 15 April 1891, Kassala (eastern Sudan) was ceded to the Italian Government in order to check the possible French expansion in the Eastern Nile region (Work, 1935: 64). The French countered the Anglo-Italian move by forming a strategic alliance with Ethiopia. The latter seized the opportunity to balance out the Anglo-Italian colonial pressure.

In the meantime Ethiopia dispatched a circular notification to the European powers in 1891, informing them of the extent of its territorial expanse in the region. It was indicated in the circular communication that Ethiopia's territory extended to the White Nile in the west, to Lake Nyanza (Victoria) in the south, and to the Indian Ocean in the east. Emperor Menelik II concluded his letter by saying that he would not sit idle and watch while the European powers divided up the territory and region. Instead he explained his intention to incorporate all the territories that had belonged to his forefathers (stated in a circular letter communicated to the major powers, dated Miazia 14, 1883 EC or 22 April 1891, reproduced

in Paulos Gnogno, 1992: 106–107). The Ethiopian leaders intensified diplomatic relations with France. France on her part calculated to exploit a political benefit out of the more intensified contradiction between Ethiopia and the two other colonial powers, i.e. Britain and Italy. Meanwhile, the Italian forces invaded Ethiopia in late 1895. The Ethiopian Government mobilized a peasant army from all parts of the country and waged a counter attack on the Italian forces. The final show down culminated at the Battle of Adwa, on 1 March 1896. The Italian forces were defeated in a single day battle and were forced to retreat. From the European colonial point of view the Italian defeat was totally unexpected and received with a surprise. On the other hand, Ethiopia was taken very seriously and indeed became an African force to be reckoned with in the Eastern Nile Basin and the entire Northeastern Africa. Italy signed a post-war peace agreement with Ethiopia in October 1896.

The French remained officially neutral during the Italo-Ethiopian war. But signed “Convention pour le Nil blanc” on 20 March 1897. In the Convention it was agreed that the French flag would fly on the left banks and the Ethiopian flag on the right banks of the Nile at the confluence of the Sobat-White Nile. Furthermore, Ethiopia would facilitate a French expedition which was to set out from Djibouti to join another expeditionary force led by Colonel Marchand and coming from west Africa to meet at Fashoda, a spot situated south of Khartoum (Sanderson 1964). The two parties also signed a border agreement to determine the boundary between Ethiopia and the Red Sea French territory of Somaliland (later Djibouti). On the other hand, the British diplomats, Rodd and Wingate were busy in Addis Ababa persuading the Ethiopian officials to delimit borders with the would-be British territory of Sudan and to withdraw Ethiopia’s claim of territory up to the White Nile. The Ethiopian officials, however, did not yield to the British proposals. The latter refrained from putting too much pressure on Ethiopia and they decided to delay the territorial issues until after they had dealt with the Mahdists and annexed Sudan. True to what they had planned the Mahdists were defeated, and Omdurman fell to the British in September 1898.

The French expedition from West Africa and the British from the north bumped into each other at Fashoda. The incident became a show down between the Anglo-French forces with far-reaching implications

for conflict between the two colonial rivals (Anene, 1968: 116). The French were forced to back down. In the aftermath of the Fashoda incident the French failed to have a foothold in the Nile basin; Ethiopia maintained her sovereign control over the Eastern Nile basin; and the British colonial power prevailed in the rest of the Nile basin from Cairo to Mombassa.

After the 1898 invasion of Sudan by the joint Anglo-Egyptian forces, and the subsequent establishment of the Anglo-Egyptian Condominium, the entire Nile basin, save Ethiopia, was occupied by colonial powers. Thus the scramble for Africa in the Nile basin was completed. Britain came out as the most dominant power in the entire Nile Basin (Work, 1935: 49). Britain wanted to get all but ended up getting most of the Nile Basin. In addition to the vast territories of Egypt and Sudan, Britain was able to obtain the Bahir El Gazale area of southern Sudan, which was previously claimed by the French. Britain also obtained a corridor on the eastern fringes of the Belgian Congo from Leopold II of Belgium. The Ethiopian Nile basin, which is smaller in terms of territory, but the source of 86 per cent of the waters of the Nile, remained outside of British control. Great Britain, therefore, made all possible covert and overt efforts to control the Ethiopian section of the Nile basin, especially running up to WW II (Tvedt, 2004: 184). For instance, in the 1906 'tripartite' agreement the British were given a sphere of influence in the Ethiopian Nile Basin, although the agreement was nullified by Ethiopia (Wondimeneh, 1979: 74).

Almost two decades after the Tripartite Agreement, Britain and Italy signed another secret agreement with regard to their respective colonial interests over Ethiopia in 1925 (Right, 1968: 331). The bilateral agreement partitioned the country in two. Britain was to control the Ethiopian Nile basin in the western part of the country, while Italy would control the north-eastern and south-eastern parts of the country. Their respective interests behind the partition agreement were that the British wanted to construct a barrage on the outlet of Lake Tana and store water in the lake for irrigation purposes in Sudan. As part of the control of the waters of Lake Tana and the Abbay River, there was a plan to construct a road linking Sudan with Lake Tana. On the other hand, the Italians intended to construct a railway to link up the two colonies of Eritrea and southern Somalia, crossing north-eastern, central and south-eastern Ethiopia. It can be construed that the plan was tantamount to an eventual political

partition of Ethiopia. The Anglo-Italian Agreement drew almost entirely on the Italian proposal to the British Government in 1919 and was now accepted on the basis of an exchange of notes, i.e., Britain to Italy on 14 December 1925 (see full text in Annex VII, No. 1); and Italy to Britain on 20 December 1925 (full text in Annex VII, No. 2; see also Tvedt, 2004: 127–130).

Ethiopia was a fully-fledged member of the League of Nations, like Italy and Britain. The two powers served the Ethiopian Government with a notice on 9 June 1926 informing about their agreement. Later in the same month they also registered the agreement with the League of Nations (Work, 1935: 331). It was ironical that two members of the collective security organization could make a deal to infringe the national sovereignty and state security of a member country. As can be expected, the Ethiopian Government protested against the Anglo-Italian agreement. In an official letter to the Secretariat of the League, the Ethiopian Government made it clear that the Anglo-Italian partition of Ethiopia was incompatible with the spirit and the Covenant of the League.

Ethiopia, however, did not trust the League of Nations that it would stand up for Ethiopia's defense. Ethiopia, therefore, sought diplomatic support from the United States of America, which was not a member of the League of Nations and which was generally opposed to the European colonial systems.

Ethiopia offered the United States a concession for a Lake Tana project. In 1927 a high level delegation headed by Azaj Workneh, the Ethiopian Ambassador to Britain at the time, went to Washington DC and delivered friendly wishes and a proposal for the cooperation of the Ethiopian Government to President Coolidge. At the time British entrepreneurs had been engaged in the huge Gezira cotton plantation in Sudan, using the water coming from Lake Tana. The Sudan Plantations Syndicate Ltd. was working hard to relieve their textile industry from the American cotton imports (Ford & Gannes, 1935: 6). For the Americans it was clear that what they were losing from the decreased cotton market in Britain could be gained by selling water to British enterprises in Sudan. As for Ethiopia, two gains were envisaged: 1) The impending encroachment by British imperialism in her Nile basin would be aborted. 2) The country would obtain royalties from the possible sale of the water.

The American G.J. White Engineering Corporation backed off due to diplomatic pressure from the British Labor Government, and Ethiopia had to put off its water development and use of water as a diplomatic instrument until after the 2nd WW. The subsequent preoccupation of the country thus became, initially, how to avert the impending Italian aggression. When the inevitable invasion became a reality (already by October 1935), the Ethiopian Government and people reverted to surviving one of the worst times in their history. All efforts were geared to organize and maintain the patriotic spirit of the society in order to offer resistance. During the following six years, until 1941, the Ethiopian Government was in disarray. The Emperor and his entourage went into exile. The country was subjected to extremely inhuman atrocities by poison gas bombing from fighter planes and indiscriminate killings and inhuman treatment of innocent persons, resulting in the death of 760,000 persons (approximately 10 per cent of the estimated population of Ethiopia at the time) (Del Boca, 1969: 231–2).

The British Government abandoned its policy of appeasing Italian aggression towards Ethiopia when Italy annexed the British Somaliland in July 1940 and proceeded to further occupy Eastern Sudan, adjacent to their colony of Eritrea. The British Government, outraged by the Italian aggression and the latter's decision to join forces with Hitler in the European war, decided to join forces with the Ethiopian Patriotic Resistance (that had been fighting the Italian forces during the previous four or so years). Italy was defeated in 1941 in Ethiopia by the combined forces of the Ethiopian patriots and the East African contingent of British forces. The Ethiopian Government was restored, the Emperor returned from exile and reassumed the throne. Italy lost all her colonial possessions and claims in the Horn of Africa in general and Eastern Nile basin in particular.

Cold War Period: Under the pretext of “enemy territories” after the end of World War II, Britain placed the former Italian colonies in the Horn of Africa under its colonial administration. Ethiopia was also placed under the shadow of the British colonial control in the guise of post-victory friendship, cooperation and assistance. After two years of political and diplomatic wrangling Ethiopia reasserted her full sovereignty (Spencer, 1977: 145–6). The Ethiopian Government cultivated a renewed friendship with the US Government, which perceived European colonialism as an

anachronistic system. British dominance, however, remained in Ethiopia's eastern province of Ogaden until 1948, and in the northern province of Eritrea until the latter rejoined Ethiopia in 1952 with a United Nations sponsored federal arrangement.

Although the United States official policy stance towards Africa at the time was one of staying aloof and maintaining distance, the US-Ethiopian relations grew warm, and a number of bilateral agreements were signed, including ones in military and development fields. Two agreements were signed in 1953, one on Military Assistance and the second one on a Ethio-US Mapping Mission. Other agreements in the field of cultural cooperation and educational assistance were signed. The agreement with regard to the Abbay/Blue Nile Basin Study Program was signed in 1957. The Ethiopian-US friendship was considered to be the best on the continent until the Ethiopian Revolution overthrew Emperor Haile Selassie's regime and installed an anti-capitalist regime in 1974, headed by a military committee known as Derg.

The new Ethiopian regime refused to renew the 1953 Ethiopia-US agreements and closed down the US institutions that had been established during the previous regime. As the Ethiopian Government continued in radicalizing the revolution and the nationalization of assets of private enterprises, including those owned by American firms, the Ethiopian-US relations reached their lowest ebb. The diplomatic relations of the two countries were down-scaled to a 'charge d'affairs' level. Most importantly, the United States Government was worried by Ethiopia's stance of forming alliance with the Socialist bloc, i.e. with Cuba, East Germany and the USSR. In the Cold War context, Emperor Haile Selassie's Ethiopia had been perceived by the West in general and the United States in particular, as a bastion of anti-communism in the Horn of Africa. The increasingly anti-American political development in Ethiopia became, however, a considerable concern, in view of the West's geopolitical interest in the sub-region of the Horn of Africa.

The significance of the Horn of Africa was further accentuated due to the fact that two strategically important military bases flank the sub-region, one in the Mediterranean Sea and the other on the Indian Ocean. Bell (1973: 9) wrote that: "The Indian Ocean is very large, and no intelligent strategist can hope to ignore the potential of the Horn". Besides, seventy-

five per cent of the oil destined to the Western countries and originating in various Middle Eastern countries is transported by ship through the Red Sea lane (Addis Zemen Newspaper, June 8, 1978). If the states in the Horn of Africa or in the closer range had engaged in the revolutionary changes and pursued anti-western policies in the Cold War context, the western bloc would have quite understandably felt threatened and become defensive. Hence, the West became preoccupied with keeping the Soviet Union out of that strategically crucial area of the globe.

The reason why the US and Western Governments did everything possible to frustrate and stifle the anti-west revolutions and the emergence of pro-Eastern bloc policies in South Yemen and Ethiopia thus becomes much clearer. The US strengthened relations with the post-Nasser government of Egypt, the country that had had a longstanding contention with Ethiopia over the control of the waters of the Nile. In her policy of carrot and stick the United States Government cultivated a new strategic alliance with Egypt whose post-Nasser leaders had distanced the country's ideological, political and military alliance with the USSR and East European socialist countries. This prompted the US Government to perceive Egypt as a new bastion of American interests in the region between the Indian Ocean and the Nile River. The US Secretary of Defense, H. Brown, made this clear when he said: "We look at Egypt as a potential stabilizing force playing a security role in the broader region. ... The whole area south of Egypt is in turmoil, and I think Egypt will be willing and may be able to play a stabilizing role" (Arab Report, March 14, 1979). In summary one can discern that many of the present-day Nile conflict issues have their roots in colonial and Cold War politics.

Post Cold War Period: The role of external actors has shifted to bridging upstream downstream differences since the end of the Cold War. In light of a receptive attitude, external actors have begun to attempt to resolve the conflicting issues through encouraging and supporting negotiations. The World Bank and UNDP have taken a lead role in these efforts. The change of government policies in the Eastern Nile Basin countries since the 1990s has also meant a shift to more conciliatory attitudes. This is made evident in their active participation and full membership in the Nile Basin Initiative process, unlike in the previous institutional frameworks (see section below). Thus a convergence can be identified from more con-

frontative to conciliatory attitudes on the global level (demise of Cold War) and regional level (change in government policies).

9.5 ATTEMPTS AT INSTITUTIONAL FRAMEWORKS

The few partial and inconsequential attempts at establishing an institutional framework for the Nile basin were initiated by downstream nations, and oriented towards their interests. These attempts, as will be described below, served, if anything, as a delaying mechanism to prolong the life span of the status quo. Hence little achievement has yet been made to establish a comprehensive and all-encompassing institutional framework for the basin. The more recent Nile Basin Initiative can, however, be seen as a fresh opportunity.

9.5.1 HYDROMET

Hydromet, known as “The Hydro-meteorological Survey of Lakes Victoria, Kiyoga, and Albert” was established in 1967 with the funding assistance of the United Nations Development Program (UNDP) and the World Meteorological Organization (WMO). Its main purpose was to study, analyze and disseminate to member countries meteorological data on the equatorial lakes and rivers. The more specific task of Hydromet included an evaluation of water balances in the Lake Victoria catchments, in order to control and regulate the lake’s level as well as the flow of water through the lake. The Kagera basin was included in Hydromet in 1972, and the Semliki River basin in 1974.

Hydromet’s signatories in 1967 were: Egypt, Kenya, Sudan, Tanzania and Uganda, as well as the donor organizations UNDP and WMO. Although the geographic area of Hydromet’s concern lay outside of Ethiopia’s Nile basin, the country became an observing member in 1971. The historical background of Hydromet can be drawn from the Anglo-Egyptian exchange of notes of 1950, wherein they intended to cooperate in a meteorological and hydrological survey of the Lake Victoria catchments, and to establish an East African Nile Waters Coordinating Committee, comprising

Kenya, Tanzania and Uganda. The establishment of the Coordinating Committee was meant to play a counterpart role to the Anglo-Egyptian agreement of 1950 (Okidi, 1990: 209). Hydromet remained in operation for 25 years without having any substantive impact on harmonizing the upstream-downstream polarization of interests. There is no evidence that any of its projects have become operational. Useful meteorological data was gathered, however.

9.5.2 UNDUGU

In Swahili language “undugu” means “brotherhood”. The Undugu or “brotherhood” forum was set up in Khartoum, Sudan, in 1983, upon the initiation of Egypt. Egypt, Sudan, Uganda, Congo Democratic Republic and Central African Republic were the founding members. The latter country is, however, not a Nile basin country. The formulated objective of the forum was to create cooperation in such common fields as: culture, environment, telecommunication, electric power, trade, and water resource development. Ethiopia, Kenya and Tanzania chose an observer status in the forum. At an expert meeting held to evaluate the UNDP sponsored Undugu plan of action for the Nile basin, Ethiopia challenged that Undugu, having no legal standing or terms of reference as a legitimate body, had no competence to submit a plan of action for the Nile basin. The forum folded up after its 10th Ministerial meeting held in Addis Ababa in 1993.

9.5.3 NILE BASIN INTEGRATED DEVELOPMENT (NBID)

The Nile basin ministers reached an understanding at their meeting in Bangkok, Thailand, in January 1986 that there was a need for a basin-wide integrated development. They therefore decided to request the United Nations Development Program to provide funding support for the initiative. At their second meeting, held in Addis Ababa in January 1989 the Nile basin ministers decided to commission a basin-wide study to evaluate the state of affairs, with the funding from the UNDP and the Economic Commission for Africa (ECA). Subsequently terms of reference were

drawn up, and experts were commissioned. The report of the experts was submitted at a workshop held in Addis Ababa in October 1989. The report mainly addressed the needs of additional water supply for the downstream countries (Ethiopia, MWR, 2000: 4).

Ethiopia challenged the report, criticizing it as biased and only concerned with the possibilities of conserving water resources in the interest of the downstream countries. It also criticized the fact that none of the interests of the upstream countries were addressed. Following this, the Ethiopian delegation submitted alternative terms of reference. The main content of the new terms of reference proposed an unbiased evaluation of the state of development of water resources in the Nile basin, and proposed that any future projects take into consideration the concerns and interests of all the riparian states in the basin. The alternate proposal was accepted by the Nile basin delegation except for Egypt and Sudan. No progress, however, has been recorded afterwards about the 'Integrated Development of the Nile Basin'.

9.5.4 TECCONILE

TECCONILE (Technical Cooperation Committee for Promotion of the Development and Environment Protection of the Nile Basin) was formed in 1992 initiated by Egypt and with funding support from the Canadian International Development Agency (CIDA). It was meant to fill the void left by the defunct Hydromet. The founding members comprised Egypt, Sudan, Rwanda, Tanzania, Uganda and DRC.

In the short term TECCONILE aimed to: assist member states in developing national master plans and their integration into a Nile basin development action plan; and to develop the infrastructure and build the capacity and techniques required for the basin's water resources (Ethiopia, MWR, 1999: 4). Tecconile's long-term objective appeared even loftier. It aimed at conservation and equitable entitlement of the water resources. Kenya and Ethiopia chose to be observers. From the viewpoint of the Ethiopian Ministry of Water Resources establishing a legal and institutional framework should be given top priority rather than putting this as a vague long-term objective.

It can be noted here that Ethiopia's position has remained consistent in that any Nile waters issue should address the long overdue regulatory and institutional issues. Venturing into operational matters will have greater chances of success when these are based on sound legal and institutional foundations. The significance of a legal and institutional framework include: enhancing confidence-building among riparian states; facilitating regulated dialogue for the cooperative management of the shared water resources; establishing the basis for a long-term cooperative management of the water resources; and enabling the riparian nations to take proactive measures against issues of conflict (International Dialogue Forum, 1998: 11).

During the first three years of its existence, TECONILE's work was not visible, and in its entire tenure until 1998 the organization's achievements were not significant, but limited to a modest contribution towards the "Nile Basin Action Plan" exercise. Ethiopia and the Great Lakes regional states actually belong to geographically different sub-basins. They do, however, have similar interests in that they insist that the downstream nations of Sudan and Egypt must acknowledge the rights of the upstream nations and, in fact, also acknowledge their obligations to develop water resources in their own respective territories. Beyond this they do not embrace any particular course of action vis-a-vis the downstream nations.

9.5.5 NILE BASIN INITIATIVE (NBI)

The World Bank sponsored the Nile Basin Initiative, in collaboration with the Canadian International Development Agency (CIDA) and the United Nations Development Program. The present initiative has been encouraged by the ideas and direction of debate obtained from the Nile 2002 Conferences, which started in 1993 and have been held every year on a rotation basis among the basin countries. Governments, international governmental and non-governmental agencies, as well as independent academics have presented papers and viewpoints.

The NBI hopes to facilitate a cooperative enterprise between and among the riparian states. The four goals of NBI are: building confidence among the basin states; changing perceptions on the issues of the Nile waters; real-

izing that cooperation is more beneficial than confrontation; and knowing the extent of the water resource potential for inter-state collaboration.

NBI was formally set up in February 1999, in Dar-es-Salaam, Tanzania, with all the water ministers of the riparian countries agreeing to come up with a Subsidiary Action Program (SAP) and Institutional and Legal Framework known as D-3 Project. The explicit motto of the NBI is “Sustainable development of the River Nile for the benefit of all”. A provisional structure, comprising Council of Water Ministers (Nile COM), Technical Advisory Commission (Nile TAC) and the Secretariat (Nile SEC) was set up. Terms of reference for a smooth functioning of NBI were also set up. The NBI structure has so far effectively facilitated active consultation and dialogue among the basin countries. As a result significant decisions have been taken at the basin and subsidiary levels. However, the negotiation for legal/ institutional frame work is slow and still has a long way to go.

Initial disagreements were already noted in December 1999 during the deliberation on the draft legal/institutional framework prepared by a UNDP consultant. The upstream countries insisted that a new framework must disregard all previous agreements to which their nations are not a party. On the other hand the downstream countries hope that a new framework would take into account the previous agreements as an integral part of a new agreement. Hence, the D-3 project has not been moving satisfactorily. In the meantime, however, the SAP projects (separately for the eastern and southern Nile) have yielded results in producing shared vision (win-win) project proposals. Accordingly, Ethiopia identified 46 projects, Sudan 6 and Egypt 5. Of the 57 project proposals seven were short-listed and were presented to the ICCON (International Consortium for Cooperation on The Nile) conference, held during June 26–28, 2001, in Geneva. ICCON is an international forum of bilateral, multilateral and private funding agencies from which the Nile basin countries seek funding pledges for their shared vision projects. Priority projects are in the areas of water conservation, early flood warning, power pooling and interconnections, basin development simulation, hydroelectric power generation, watershed management and irrigation projects at a regional level (Mekonnen, Mussa and Fiseha, 2001, 19).

Agreement on these Nile waters development projects was achieved, albeit with difficulty. A mutually acceptable legal and institutional framework has, however, been difficult to agree on. The dialogue and negotiations have been going on since 1999 with all Nile basin states on board. This process is more difficult than many observers may think. Yet without a legal and institutional framework, it will not be easy to achieve sustainable cooperation between and among the Nile basin countries. One disagreement that persists is that the downstream countries would like to hold on to the status quo, while the upstream countries insist on a fresh agreement. This situation was made clear in the speeches of water ministers at the ICCON forum.

The D-3 Project commenced in 1997, its main objective being to prepare legal and organizational principles for regulating the utilization and management of the Nile waters. With funding support and technical backup from the UNDP, the Panel of Experts (POE), comprising three senior experts from each of the basin countries, prepared a draft “Nile Basin Cooperative Framework” document. The draft document contained major sections dealing with 1) General Principles, 2) Rights and Obligations, 3) Institutional Structure, 4) Subsidiary Institutions, and 5) Miscellaneous Provisions.

When the document was presented to Nile COM in August 2000, it comprised 19 provisions for which consensus was obtained in the process of the deliberations of POE; 17 provisions registered having no consensus. The Nile COM, having reviewed the document as presented, set up a “transitional” committee with a mandate, among other things, to prepare further recommendations on the provisions registered with difference, to subsequently present to the “Negotiation Committee”.

The most intractable provision in the draft “Nile Basin Cooperative Framework” is article 15, registered under general principles. The representatives of six upstream countries, Ethiopia included (Rwanda was not at the meeting), upheld the draft article, which reads thus: “The principle that the existing agreements conform to the framework”. The Egyptian and Sudanese delegations registered reservation and proposed an amendment to read as follows: “The principles and framework are without prejudice to existing agreements” (Panel of Experts, NBI, 1999: 5). This and other articles registered with difference have not yet been resolved, and the progress of resolving them is rather slow.

9.6 CONTEMPORARY DIALOGUE ON THE NILE UNTIL 1999

Too many water issues in relation to the Nile basin remain unresolved, while the water resources continue to cross state boundaries. Contemporary issues of hydro-politics of the Nile include: 1) That Egypt is entirely dependent for fresh water resources on the Nile and is bound to share the water resources with nine other nations, all of which are situated upstream. 2) Although Egypt is the most powerful country in the entire basin, economically as well as militarily, it is the most vulnerable in terms of national water security. 3) The demand for fresh water as a crucial factor of development has increased over the past years in every country of the basin. 4) To date no water issue of the Nile basin has been settled by a mutually agreed and earnestly negotiated formula. In a broader sense, lack of inter-riparian agreements, absence of institutional mechanisms and unregulated competition characterize the uniqueness of the hydro-politics of the Nile valley.

In-as-much as the Nile is the national destiny of Egypt, the other countries situated along the Nile also depend on the same shared fresh water resource for their economic development, social welfare and political stability. The basin nations have continued developing the water resources based on their national priorities. The upstream and downstream countries continue to hold to mutually exclusive doctrines and juxtaposed positions as they enter the 21st century. Egypt and Ethiopia, for instance, have associated their positions to appropriation and riparian doctrines, respectively. Egypt's claim for water rights are based on the appropriation doctrine, which is explained by 'historical and natural rights' that are established by those agreements entered between or on behalf of the Nile's downstream countries. Ethiopia's articulation of water rights, on the other hand, is based on the riparian doctrine, which is explained by the fact of ownership of the land and sovereignty over the territory. The two doctrines stand as mutually exclusive and can only be maintained as a zero sum game. Holding on to these mutually contradicting doctrines can have far-reaching implications for military build-up. In this connection Harun Elhance (1999: 54) observed as follows:

“As is the case with many other international river basins in the Third World, hydro-politics in the Nile basin very clearly highlight the complex historical interplay of colonial legacies, superpower rivalry in the Cold War era, interstate relations, and domestic politics in shaping and circumscribing inter-state conflict and cooperation over transboundary water resources.”

It is difficult to imagine that the upstream and downstream countries will be able to continue the hydropolitical stalemate throughout the 21st century. More than anything, the growing scarcity of fresh water, compounded with the fast increasing population, are likely to plunge the riparian states into a callous scramble for water. Any such eventuality can be averted with a fresh outlook and by adopting a basin-wide administrative doctrine. The administrative doctrine is essentially different from both riparian and appropriation doctrines inasmuch as it advocates arrangements for an all-encompassing and cooperative use of the water resources by all riparian nations: 1) It emanates from a mutually agreed upon set of principles. 2) It strives to provide a framework for negotiated arrangements. 3) It enhances the collaborative use and cooperative management of the quantity and quality of water resources between and among the riparian nations. 4) It provides ground rules for sustainable peace building through sustainable management of conflicts of national interests over water use issues. An administrative doctrine logically culminates in water treaties and agreements. As Robin Clarke suggests “...treaties and agreements between countries that share water resources are essential if conflict is to be avoided in the future” (Clarke, 1991: 108). As water becomes scarcer, the need for regulatory mechanisms through inter-state agreements and treaties will become increasingly indispensable.

State policies are supposed to provide rules and procedures for water utilization between and among the administrative units. Hence, it is often the case that upstream-downstream water usage and management is regulated willy-nilly under the legislative and administrative powers of the state authorities. The entire affair is handled within the normal and accepted framework of the internal sovereignty of the state in question. So, in any event of water use conflict between two or more administrative units the national state law is invoked to resolve it in an orderly, peaceful and efficient manner as long as the state is functioning well. Inter-state

conflict resolution over the use of water resources, however, often becomes more difficult to handle. The reason for this lies in the fact that states are sovereign entities and they do not automatically submit to a single source of authority, unlike local administrative units of a country. For this reason: 1) States that share water resources will have to have self-imposing agreements with which the utilization and management of water can be regulated. While efficient results are expected to emerge from inter-state agreements, this cannot be guaranteed. 2) Third parties have no authority to exercise power in imposing a solution. They may emphasize the doctrine of “equitable utilization” of the shared water resources. It is, however, very difficult to provide a clear definition on what is meant by the “equitable utilization” principle in practical terms.

The curious situation of the Nile basin is that the more vulnerable downstream country, Egypt, is more for a status quo, while the upstream actors are not strong enough to apply pressure on their downstream counterparts to accept negotiated agreements. In the usual dynamic of an upstream-downstream situation, the upstream countries have the geographic advantage to utilize the water resources and do not need to seek terms of agreement from downstream states. In the case of Ethiopia, financial support from multilateral funding agencies (e.g. World bank) is, however, made dependent on agreement by all riparians involved. The downstream states should be most interested in limiting the extent of upstream actions by some binding agreements on the waters. What would happen if the upstream states in the Nile basin would proceed unilaterally to utilize the water resources as much as is required for the welfare of their societies? Do the upstream states have the financial capacity and political capability to enable them to carry out such unilateral measures? Would this kind of course of action be more successful in inducing the downstream nations to seek negotiated agreements on the use and management of the water resources?

9.7 UPSTREAM-DOWNSTREAM TENSION AND NEGOTIATION STRATEGIES IN THE EASTERN NILE BASIN

The hydropolitical tensions in the Nile Basin can be summed up as follows: The three nations sharing the Eastern Nile basin comprise Ethiopia, Sudan and Egypt. However, 86 per cent of the Nile waters that reach Sudan and Egypt originate in Ethiopia, the remaining 14 per cent comes from Kenya, Tanzania, Rwanda, Burundi, DRC and Uganda. As a matter of hydrological reality Egypt is almost entirely dependent on the fresh water resources coming from outside its territory. Although Sudan is less dependent than Egypt on the water resources that come from outside its territory, the nation's large dams, hydroelectric power plans and the mammoth irrigation schemes have been developed on the waters that originate in Ethiopia. Idealistically, one would expect hydropolitical interdependence to induce upstream-downstream cooperation. The hydropolitical tension in the Nile basin originates from several factors: 1) downstream insecurity versus upstream actions, 2) lack of legal institutional framework, 3) unilateral development of water resources, 4) latent military threats, and 5) the Afro-Arab divide.

Downstream insecurity: The governments in Egypt and Sudan seem to have been operating in a perceived realm of insecurity, not exactly knowing what course of action the upstream nations would adopt on the waters of the Nile within their respective territories. There is a fear and a sense of insecurity on the part of the downstream countries that the upstream countries could go ahead with their intended utilization plans for the water resources within their respective territories. This intention has already been made clear by the upstream governments of Ethiopia, Tanzania, Kenya and Uganda, for instance.

Lack of institutional framework: The bottom line of the prevailing tension is that the past agreements are not recognized by the upstream states, because the latter were not party to any of those agreements. On the other hand there are no collectively accepted principles and procedures, based on a legal/ institutional framework. A basin-wide agreement would open an opportunity for future security architecture and resolving the prevailing tension in the Nile Basin. But it is evident that the colonial agreements as well as the 1959 Sudanese-Egyptian "full utilization" agreement have

avored Egypt at the expense of upstream countries. Successive regimes in Egypt have insisted that the acquired rights stated in those agreements be recognized and accepted by upstream states. Quite understandably, the upstream states have not been willing to recognize or accept the letter or spirit of those agreements. The agreements are perceived as contrary to the national interests of the upstream countries. It is a matter of common sense that the governments of the upstream countries would not accept any compromise over their national resources without reciprocity or commensurate benefits accruable from such agreements.

The increasing and competing demand for water resources can result in some kind of conflict. The days are gone when populations along the course of the transboundary rivers were small, and the rivers carried more than enough water by the time they crossed the borders of upstream countries. Gone also are the days when riparian countries did not need to divert large quantities of water for irrigating large fields or reclaiming arid territories. In the past they also did not possess the technological capacity to undertake such projects.

Unilateral Water Projects: The problem of unilateral expansion of water use including any attempt of transfer of water to places out of the natural basin by downstream nations can be taken as one cause for the unmitigated tension between upstream and downstream countries. There were reports of public statements by the late Egyptian president, Anwar Sadat, of his country's intention to transfer water through a pipeline under the Suez Canal to Saudi Arabia (cited in Starr, 1991). It was also said that President Sadat entertained the idea of pipelining 400 million cubic meters of water yearly to Israel via the Sinai desert, in exchange for a Palestinian solution (Starr and Stoll, 1988; Clarke, 1991: 101). The transfer was not accomplished, however, due to the opposition by anti-Israel forces within Egypt itself and due to Ethiopia protesting against such an extra-basin transfer.

Military threats: There is perceived threat on the part of downstream countries as can be observed from the intermittent threat of war in an event of any attempt to decrease the amount of water by upstream countries. Sufficient political will or serious diplomatic effort have not been exercised in order to change the ongoing climate of adversity and the upstream-downstream tension. After the peace agreement with Israel at Camp David in 1978 there is no apparent enemy to Egypt. The Egyptian

leaders, however, often emphasized that they envisaged a war over the Nile waters. This is particularly evident in the following statements:

“...Any action that would endanger the waters of the Blue Nile will face a firm reaction on the part of Egypt, even if that action should lead to war.” (A statement by the late Egyptian President Anwar Sadat, 1978, quoted in a press release, Ministry of Foreign Affairs of Ethiopia, 17 Feb. 1978).

“...Once I have decided to divert the Nile waters into Sinai I will not try to get permission from Ethiopia.... If they do not like our measures, they can go to hell.” (Anwar Sadat, The Egyptian Gazette, June 5, 1980).

“...the next war in our region will be over the waters of the Nile, not politics.” (A statement by Dr. Buthros Ghali, the former Egyptian Minister of State of Foreign Affairs (Timberlake, 1985).

“...Egyptian President Hosni Mubarak has already threatened to “bomb Ethiopia” if they build any dam on the Blue Nile.” (Africa’s Potential Wars; Visafric, posted Monday 11 October 1999).

The Egyptian position has been countered by Ethiopia’s unequivocal position as expressed in the statement made by Emperor Haile Silassie (see section 3.2.2.3) or by Ethiopia at the UN Water Conference held in Argentina in 1977. Ethiopia made its position very clear stating that it was “...the sovereign rights of any riparian state, in the absence of an international agreement to proceed unilaterally with the development of water resources within its territory” (quoted in Clarke, 1991:104). More recently the Ethiopian authorities have reiterated the nation’s position in view of the country’s needs and rights. The Ethiopian Foreign Minister, for example, in February 1998, asked the Egyptian side to come to a proper agreement on how to collaboratively utilize the Nile waters among the riparian nations. He went on to say that Ethiopia’s option is to proceed unilaterally if the Egyptians do not yield to the needs and rights of Ethiopia on the transboundary water resources (Yacob Arsano, 2003: 156).

Afro-Arab divide: Another element contributing to the hydropolitical tension is the Afro-Arab divide that discourages a general climate of mutual empathy between the downstream and upstream nations. The Egyptian and Ethiopian perceptions towards each other show perhaps a most graphic picture in this regard.

In summary, inter-state cooperation among Eastern Nile basin countries has been insignificant at best or non-existent. It is evident from both the imperial and post-colonial agreements that they have ignored the interests and rights of the upstream countries. The downstream actors, both during colonial and post-colonial periods refused to accept any rectification to the unilateral agreements, or to establish a new regime of water agreements towards cooperation and mutual benefits. The overall situation therefore remained strained while the upstream and downstream countries pursued different negotiating strategies on the question of utilization and management of the Nile waters. Clearly there is an urgent need for concerted efforts at all levels – local, national, regional and global – to enable and support the states sharing the Eastern Nile waters in cooperatively developing the full potential of their common water resources.

9.7.1 EGYPT'S NEGOTIATING STRATEGY

Egypt has employed a multi-layer negotiating strategy, this consists of trying to bring the upstream country in line with its wishes, if this does not work, the upstream country is isolated, and Egypt goes ahead unilaterally with its water development plans. In the NBI, the Egyptian strategy also holds on to the support of external actors (World Bank, US) to support its interests. This strategy is first shortly presented, followed by some of the frequent arguments that Egypt uses in the debate, and Ethiopia's response to these. Egypt has taken active diplomatic initiatives within the Nile Basin, the perceived attempt being cultivating bilateral and multilateral friendship with the upstream states and with a perceived effect of winning upstream countries over to its cause. Egypt made utmost effort not only in creating ad hoc organizations, like Hydromet and Undugu but also in networking through these fora to maintain the status-quo imbedded in its "prior appropriation" doctrine. The bilateral agreement with Sudan,

on “the full utilization of the Nile waters”, which was signed in 1959 can be viewed as a cooperative strategy towards Sudan, but a conflictive one towards Ethiopia, as Ethiopia, the only other sovereign state at the time in the basin, was not consulted.

If a country will not cooperate along the terms outlined by Egypt, the Egyptian side maintains and elaborates an argument that “Ethiopia has abundant alternative sources of water resources both from seasonal precipitation and alternative water basins available in the country, hence, that Ethiopia does not need to focus on the waters of the Nile which is so vital to Egypt”. The Ethiopian response to this is that rain-fed agriculture is unreliable, and the only alternative basin that is not international (Awash) in Ethiopia has already been developed. Some Ethiopians would also argue that upstream and downstream countries should work on the basis of comparative advantages in view of utilization of the Nile waters. This would mean that Egypt does less agriculture, as the evaporation and evapotranspiration rates are higher in Egypt than in Ethiopia or Sudan.

The Egyptian side also often contends that, “as there is no surplus water for reallocation, upstream countries should focus on non-consumptive use of the available water resources, such as hydroelectric power generation”.

The most recent negotiating strategy of Egypt has been that “reallocation of Nile waters may be possible. But it is contingent upon and commensurate to additional supply of water resources (i.e. Jonglei Canal, Gambella, drying up the swamps)”.

Egypt’s BATNA (best alternative to negotiated agreement) is to cling to the “absolute territorial integrity” doctrine, supported by threat of force and diplomatic influence against upstream use of the Nile waters. Although Egypt has a greater own capacity and better access to outside sources for investment, the country’s limitation remains that the entire water resources in Egypt come from outside.

9.7.2 ETHIOPIA’S NEGOTIATING STRATEGY

Ethiopia’s consistent articulation has been that the country does not only need but is also obliged to make adequate use of the water resources

in general and the Nile waters in particular for mitigating the gnawing poverty in the country. In the circumstances of cyclical droughts and agriculture-based economy, adequate use of water is believed as an immediate means of delivering welfare and sustainable economic development for the burgeoning population of the country.

Ethiopia has shown willingness in sharing the water resources that arise in its territory with downstream nations. Ethiopia wishes to see the prevailing status-quo, embedded in the previous agreements, to be reversed and replaced by a new institutional and legal regime, whereby the riparian countries have “equitable” and “judicious” use of the water resources that bounteously traverse their respective territories. The downstream states have special responsibility not only to understand but also work positively to create a good environment for future collaborative water use and management in the Nile Basin. The present mismanagement of the Nile water resources by downstream countries, especially Egypt, will have to be corrected through collaborative planning in view of economic, environmental, legal-institutional as well as security needs of the Eastern Nile riparian countries.

Pending amicable Nile water use and management arrangements, Ethiopia reserves her sovereign rights and stands duty-bound to harness the water resources within the country’s territorial jurisdiction. The goal of poverty mitigation is presented as a strong case in this regard. Pending establishment of legal institutional arrangement it is likely that Ethiopia clings to the doctrine of “absolute territorial sovereignty”. Ethiopia’s BATNA will be to resort to unilateral water resources development. In this regard Ethiopia’s advantage is that 86 percent of the Nile waters originate in the country. Ethiopia’s drawback, however, will remain the lack of readily available investment capacity for which the country will have to work hard.

Ethiopia’s active participation in the Nile Basin Initiative can be explained as a proactive measure to enhance the country’s water development strategy. In view of this the former water minister of Ethiopia, Shiferaw Jarso, welcomed the Nile Basin Initiative. The minutes recorded agreement by the Ministers of Water Resources of the Nile basin nations on the need for a shared vision towards collaborative development in the Nile basin. It was further agreed upon that legal and institutional mechanisms need to be

prepared, on the one hand, and joint development projects on a win-win basis, on the other hand. In the mean time, however, the minister declared that: "Ethiopia has a clear commitment that her Nile water resources will be harnessed to provide the necessary development to pull the country out of its depressing backwardness" (Ethiopia, MWR, 1999: 8).

9.7.3 SUDAN'S NEGOTIATING STRATEGY

Sudan is in the middle between Egypt and Ethiopia in terms of geographic location. Sudan wishes that each country in the Eastern Nile basin specializes in what they are best at, where they have a comparative advantage. Sudan in irrigation, Ethiopia in hydro-power generating and Egypt in industry and know how. Sudan also argues for an increase in water supply and then to share the increased supply. Measures should be developed to mitigate side effects of its water utilization and management. Sudan is in favor of upstream-downstream cooperation in watershed development, flood and silt control. Historically, Sudan has worked closely with Egypt on the Nile question as a downstream country, and due to the historic relations and cultural affinity between the two countries. But there are increasing voices in Sudan, that it would be beneficial for Sudan to closely work with Ethiopia whence not only the much needed waters but also much hated floods come. It seems that Sudan's national dilemma will stay as one dominant characteristic of the hydro-political dilemma in Northeastern Africa. Hence Sudan's BATNA is not clear right away. It is likely that Sudan will remain on the side of Egypt at least in the short run. This is explicable in view of the circumstances that Egypt is a powerful immediate neighbor and that Sudan belongs to the broader Middle Eastern geopolitics

9.7.4 REACTIONS TO PLANNED WETLAND PROJECTS

There are mixed reactions from the three countries to the planned projects to dry up wetlands to thereby save evaporation and gain more water, e.g.

in the Baro/Akobo (Gambella) and Jonglei projects. The feasibility study of the Baro/Akobo-Sobat multipurpose project is still in the process of being carried out. Without greater clarity on the feasibility and impact of such projects, there is no consensus between the three countries on how to proceed with such projects. There is no clear political stance from the Ethiopian side towards such projects at the moment; one of Ethiopia's main aims is to attract investment money for developing the upstream areas of the Baro/Akobo basin. Sudan seems not to be greatly interested in more water supply as a priority project at the moment. By all means the Egyptians would like more water to be drained and supplied downstream. Key challenges to such projects are any existing inter-group conflicts and the threatened lifestyle and livelihoods of the local communities in these areas. Furthermore, the question of the environmental impacts still needs to be clarified.

CONCLUSION

The states of the Eastern Nile basin can certainly gain from collaborative engagement with one another in all matters of the shared water resources. In this regard the economic, environmental, legal-institutional as well as security needs of the riparian countries must be taken into account as a mutually beneficial approach to all the countries in the sub basin. In the Nile Basin in general and in the Eastern Nile in particular, national and regional factors interact. This situation can be summarized by the following factors:

Wider context: All colonial agreements were self-seeking and, hence, biased towards and favoring downstream interests at the expense of the interests of the upstream countries. The conflict in the Nile can in part be viewed as a legacy of the Colonial and Cold War eras.

Upstream actors: The waters of the Nile are regulated neither by law nor by common sense. The previous agreements are not recognized by the upstream riparian states, because they were not party to any of those agreements, and because there has never been any agreement amicably negotiated at an inter-riparian level. Pending a cooperative solution, the upstream countries hold to the "riparian" doctrine, in reaction to the "historical and natural rights" doctrine held by the downstream nations. There

are increasing demands and definite plans for more water resource usage in the upstream countries.

Downstream actors: The downstream countries of Egypt and Sudan entered into an exclusive agreement aimed at sharing the entirety of the water resources of the Nile between their two countries. They hold onto the “appropriation doctrine” which they conveniently justify as being based on their “historical and natural” rights to the water resources they have been using in the past and plan to use in the future. There is a fear and a sense of insecurity on the part of the downstream countries that the upstream countries may go ahead with their intended water utilization plans. Nervous about the increasing pressure from such projects, the downstream countries have made intermittent threats of war. Egypt’s military budget, for instance, is twice as big as the nine other riparian states combined (World Bank, 1999a). After the peace agreement with Israel at Camp David in 1978 there is still a “cold peace” with Israel, being the main factor for this military build-up. Nevertheless, the Egyptian leaders have often expressed concern envisaging a possible war over the Nile waters. Statements to that effect by Egyptian leaders can be referred to, for instance, in the following sources: *The Egyptian Gazettes*, June 5, 1980; Timberlake, 1985; Visafric, 1999.

Outlook: There has been little political will or diplomatic breakthrough to change the climate of adversity and the upstream-downstream hydropolitical tension. Non-formal tracks have not been sufficient to mitigate the upstream-downstream controversies in the Nile basin. Negotiations on the NBI “framework agreement” have been slow and characterized by stalemate.

10. THE WAY FORWARD

INTRODUCTION

After high-lighting the regional dilemma and the interstate tensions in the foregoing chapter, this chapter picks up and builds on the chapter on “myth and reality” in part one, seeking to explore options to overcome the regional dilemma in the Eastern Nile Basin. It focuses on steps to be taken to move from an unsustainable and uncooperative situation in the Nile Basin to one of cooperative and sustainable resource use. The chapter takes an optimistic look at the possibilities for cooperation and smooth relationships among the Eastern Nile basin states if they were to strive towards responding effectively to the crucially important question of development problems in relation to the common water resources of the Nile. Constructive measures such as creating a community of interest, enhancing shared vision, and replacing unilateralism and hydropolitical anarchy by regulatory norms based on an institutional mechanism can be taken a step further than simply an official diplomatic gesture. Concrete activities based on the existing cultural, spiritual and emotional infrastructures will truly bring about some real change. There is a lot to share and this can be tested on the ground with many opportunities that need to be put to work.

10.1 CREATING A COMMUNITY OF INTEREST

How can the riparian countries cultivate a community of interest, not only with regard to the shared water resources, but also in numerous other areas of mutual interests, such as the exchange of cultural experiences and knowing one another’s values and needs? Egypt, Sudan and Ethiopia have a lot in common. They need to rediscover more about their past and present commonalities that are expressed in actual life experiences of their respective societies. Opportunities for the exchange of a variety of activities will have to be realized. Direct interactions of cultural, professional

and business communities, as well as of different age and gender groups would be of great significance. Cultivating intercommunity actions and solidarity can be taken as a guarantee for more permanent mutual trust and confidence building that continues beyond the life span of the political regimes of the day, or their transient ideologies.

Building on what already exists, and establishing and expanding many more areas of interaction will provide a significant contribution towards making the riparian countries' permanent partners rather than misguided adversaries. It is incumbent upon educators, religious personalities, public figures and even business persons to rediscover the longstanding and vividly available commonalities. People-to-people interaction can be used in a continuous and progressive manner for second and/or third track diplomacy towards better understanding, solidarity, mutual trust and greater confidence building. External actors and international agencies can play a useful role in facilitating these efforts in collaboration with the riparian governments and other actors within the Eastern Nile basin. The modalities of the interaction should be chosen most carefully and in a mutually acceptable manner.

There is no question from a collective view point that adopting and enhancing a cooperative approach to the management and utilization of the transboundary water resources is the best long term option. An added benefit of this approach is that it contributes to sustainable peace building by transforming conflicts of interest over water use issues.

10.2 ENHANCING SHARED VISION

There seems to be a consensus that sustainable development is not imaginable without proper management of the water resources. The problem of water must be addressed today so that human activities in the decades and centuries to come will not be limited by a shortage of water. Globally, the International Conference on Water and Environment (Dublin, 1992) and the United Nations Conference on Environment and Development (Rio de Janeiro, 1992) each committed a chapter on fresh water as a key for sustainable development (WMO, 1997: 6). Regionally, the Nile 2002

Conferences (1993–2002) produced several research papers and guiding ideas on how the riparian countries could amicably utilize and manage the shared Nile water resources. The Nile Basin Initiative (1999–present day) has resulted in instilling the shared vision among riparian nations to opt for a collaborative approach on their shared water resources so that sustainable development become a reality for each and all riparian countries. They even went further in drawing subsidiary action programs and formulating bilateral and multilateral projects.

10.3 OVERCOMING UNILATERAL APPROACHES

With a rapidly growing population the competition for the waters of the Nile is expected to become more severe. In addition all the countries sharing the basin have been experiencing increased water scarcity. In 1959 Sudan and Egypt negotiated a reallocation of the entire waters of the Nile, with a subsequent allocation of 55.5 bcm/year to Egypt and 18.5 bcm/year to Sudan. The balancing 10 bcm/year were allowed for evaporation. One way forward out of unilateral approaches would be to build reservoirs in the upstream countries, where there would be less evaporation, this would then be available for allocation to the upstream countries.

10.4 THINKING BEYOND DROPS OF WATER

To overcome the prevailing unilateral approach, legal principles based on a new doctrine have to be developed. The administrative doctrine, for example, is essentially different from both the riparian and the appropriation doctrines. (1) It provides a framework for negotiated arrangements. (2) It enhances collaborative use and cooperative management of the quantity and the quality of the water resources.

Establishing a legal and institutional regime for the utilization of the Nile waters would ensure that rights and obligations are firmly established, thereby creating trust and mutual confidence between and among the riparian states. This would create a sustainable basis for the equitable

and reasonable entitlement to the water resources, as well as equitable benefit sharing of their development. Ethiopia's relentless efforts in this direction seem to be bearing fruit. It is becoming very clear that without agreed upon rights and obligations between the riparian states that are duly signed and institutionally protected, the bilateral and multilateral arrangements on various water development projects, be they irrigation schemes, hydroelectric power generation, watershed management, flood control or water conservation projects cannot be expected to succeed just because the menu of the wish list looks nice.

With legal and institutional arrangements in place, however, the riparian countries would know their rights and obligations, and hence the possibility of tension and conflict would be mitigated. This would further enable the riparian states to do away with the heretofore bottlenecks in the utilization and management of the shared water resources. Earnest collaboration on mutually beneficial ventures would then become possible, including activities outside the shared water resources. Joint hydroelectric power projects could be promoted, for example, between Sudan and Ethiopia on the Abbay, Tekeze and Baro-Akobo rivers by installing power plants where they are cheaper and placing the power lines where needed. Roads and railways could be constructed to transport goods and services which are vital for the economies of the two neighboring countries. Navigable stretches of the transboundary rivers and other water bodies could be utilized for cheaper transportation and communication. With legal/institutional frameworks in place such joint development projects would have the chance to be pursued rather than avoided.

Thinking beyond drops of water also means considering alternative sources of water, especially for Egypt, that has already developed all the water resources there. Egypt could import more food (virtual water) and thus ease the pressure on the river Nile. The virtual water strategy is less relevant for Ethiopia and Sudan, as they have still the possibility to increase yields and are still further away from an industrial society that would allow the generation of financial resources with which to import food.

10.5 OUTLOOK AND OPPORTUNITIES

The overall concern remains that the growing water scarcity and misuse will continue to pose threats to sustainable development. The scarcity of fresh water resources will continue to exacerbate the situation if the technocratic approach adopted by international, national or local agencies continues. This study argues that water is a cultural and spiritual, as much as a natural resource. Time-tested and culturally cherished ideas of water management will have to be revisited and adopted as alternative guidelines for the future utilization and sustainable management of water. Along this line, the author wishes to contribute by describing ideas that are present in Ethiopian society. The section on myths and perceptions attempted to probe the meaning and relevance of ideas denoted by views such as: “Water is a healing, purifying and promoting power”; “Water is the origin and destiny of humankind, and a source of justice”; “Water is the center of livelihood and an organizing principle”. The central issue of sustainable development of water resources should be based on understanding it as both a material and a spiritual resource.

How can the riparian countries cultivate a community of interest not only with regard to the shared water resources, but also in numerous other areas of mutual interest? It is incumbent upon educators, religious leaders, public personalities and governments to rediscover the longstanding and vividly existing commonalities in order to work towards an improved understanding and solidarity in the utilization and management of water resources at the local, national and inter-state levels.

10.5.1 SPIRITUAL INTERACTION

There are longstanding interactions between and among the Eastern Nile basin communities. The Ethiopian and Egyptian Orthodox churches belong to the same Seat of Apostle Mark. In fact, the two Churches are not only twin spiritual sisters but also share a symbiotic fellowship under the same Patriarch of Alexandria and Coptic Abuna (bishop) who had

been appointed as spiritual figure-head of the Ethiopian Orthodox Church until 1958. Similarly, the Ethiopian, the Egyptian and the Sudanese Islam belong to the same Sunni order. While Ethiopia is the cradle of the first free emergence of Islam, Egypt has always been the center of great Islamic learning, where Ethiopian Islamic scholars straddled back and forth via Omdurman and Khartoum.

10.5.2 CULTURAL INTERACTION

Both Islam and Christianity have given rise to basic tenets that are shared in the cultures of the ancient and great societies of the three countries. Ethiopians and Sudanese, for instance, listen to each other's music and songs with passion. The famous, late Mohammed Wordy of Sudan loved to sing in Amharic to both Ethiopian and Sudanese audiences. His fans in Ethiopia were so huge that his concerts in Addis Ababa were organized in stadiums, as no large halls were big enough to accommodate them. The same is true for the famous Ethiopian singer Menelik Wossinachew who loves to sing in Arabic to Ethiopian and Sudanese audiences and admirers. There is indeed much interweaving in the cultural, economic, psychological and spiritual life of the cross border communities between Ethiopia and Sudan. This can be built on, to strengthen relations between the countries.

10.5.3 CROSS BORDER COMMUNITY INTERACTION

Many communities along the Ethiopia-Sudan border cross freely back and forth as kith and kin on both sides of the frontiers. This is what the Anyuae, Nuwer, Bumme, Shilluk, Berta, etc. have been doing all along and will continue to do in the future. During challenging times Sudan and Ethiopia have invariably been brothers' keepers to each other. Both Sudanese and Ethiopian refugees resort to the other side as their second home. The so-called liberation fighters also feel the same way, and this is presumably why both countries have been used as a haven to each other's

rebel groups. El-Hardallo and El-Battahani (1996: 102–4) describe this pattern of interaction as ‘integration from below’, and would argue thus: “...traditional patterns of trade, population movements, inter-border ethnic relations...and informal networks provide many opportunities for economic cooperation that official macro-economic policy is unable to capture”. However, when the existing solidarity is not enhanced and utilized for the common good, it can be pushed to subversive ends. Unfortunately this has been the case in Sudan and Ethiopia quite repeatedly.

10.5.4 EXCHANGE OF STUDENTS

Thousands of students from all countries of the sub-basin go to Europe or North America for higher or other training programs. Nowadays an increasing number of students also go to Asia or even to Australia. Exchange of students between the riparian countries of the Eastern Nile basin is, however, very small. Few Ethiopian students join Alazar University or The American University in Cairo. Perhaps more Ethiopian students go to Khartoum University or other centers of learning in Sudan, mostly from a refugee origin. A few years ago I noticed a handful Egyptian students or Sudanese students at Addis Ababa University. I remember teaching one Sudanese student in early the 1990s. It is not difficult to understand that there are few opportunities available to attract students from the sub-basin countries. But who would doubt that going to school in other countries in the basin is about more than just studying the subject matter. There is much more to learn and experience about one another. Building relationships at this juncture in life can have a profound impact of building interpersonal relationships and solidarity at more permanent levels. Today’s students can be tomorrow’s leaders of the nations.



Photo 3: Thirty MA students from Ethiopia, Sudan and Egypt at the NCCR North South Nile Capacity Building Forum, Addis Ababa, 30 Jan – 2 Feb 2006. (Simon Mason).

10.5.5 EXCHANGE OF SCHOLARS

Three Egyptian instructors were the first foreign teachers employed in the first modern Ethiopian school established in 1907 in Addis Ababa. The Ethiopian Emperor Menelik II requested the Alexandrian Patriarch Cyrilos V to send him instructors for his newly opened grammar school, and the Emperor thus received three Egyptian teachers sent to him by the Patriarch (Wolde Qirkos, 2002: 29). In the following year more grammar schools were opened. Upon the Emperor's request Patriarch Cyrilos V sent another batch of eight instructors from Alexandria to Ethiopia. Egyptian instructors continued to serve in the Ethiopian Schools up until the Italian invasion of Ethiopia in 1936. At present there are few Egyptian and Sudanese scholars engaged in teaching in Ethiopia. The present author knows of one Ethiopian linguist employed by Khartoum

University some fifteen or twenty years ago. He has no information if there are any Ethiopian scholars working in Egyptian institutions. In any case the exchange of scholars has been too few and far between. It is important to know more about this line of interaction in view of reviving it and enhancing it.

10.5.6 SCIENTIFIC EXCHANGE

Exchange of scientific activities and sharing of knowledge, research findings and experience would be much desired to augment the Eastern Nile basin countries' efforts in capacity building. If this could be done regularly with increasing intensity, the riparian countries would be indispensable to one another. The existing institutions could be shared for research and dissemination. New institutions of research and technology could be jointly established if and wherever necessary in the sub-basin.

10.5.7 GETTING TO KNOW ONE ANOTHER'S VALUES

Egypt, Sudan and Ethiopia have a lot in common. Some of these similarities have already been mentioned above. The three societies belong to the same great civilization of the Nile Valley. They need to rediscover more about their past and present commonalities, which are expressed in the actual lives of the respective societies. Opportunities for cultural exchange in a variety of activities will have become available. Direct contact amongst cultural, professional and business groups would be of great relevance. The "high politics" of water has been stuck for decades. Moving forward is not just the task of political authorities at inter-state levels. In recent decades politicians have viewed one another's countries as "black boxes". This perception was misguided and must give way to mutual trust and confidence. Intercommunity actions and solidarity will guarantee that mutual trust and confidence will be more permanently established, beyond the lifespan of the present political regimes and also beyond their transient ideologies.

10.5.8 TRADE INTERACTION

The Eastern Nile basin countries can be very good trade partners. At a formal level, for instance, Egypt exported to Ethiopia industrial and transport capital goods, durable and non-durable consumer goods, fuel, crude minerals and semi-finished products of a value of ETB 150,574,778 (about 19 million US\$) in 2001 (Chamber of Commerce, Ethiopia, 2001a). Sudan's export to Ethiopia for the same year amounted to ETB 7,464,602 (about 928,000 US\$). The items exported included transport and industrial capital goods, durable and non-durable consumer goods, fuel and fuel products and raw materials, and semi-finished products (Chamber of Commerce, Ethiopia, 2001b: 68–69). Ethiopia's export to Egypt for 2001 included items such as: coffee, dairy products, fruit & vegetables, natural gum, oil seeds, pulses, spices, teas, etc. The total value of the Ethiopian export to Egypt was ETB 21,338,532 (2,653,056 US\$) (Chamber of Commerce, Ethiopia, 2001b: 4). Ethiopian export to Sudan was valued at ETB 3,231,395 (401,765 US\$) for 2001, and the commodities included fruit & vegetables, live animals, pulses and spices (Chamber of Commerce, Ethiopia, 2001b: 12).

The point here is not to argue about an imbalance of trade. Rather it is to show that there are and always have been formal trade relations between and among the Eastern Nile basin countries, and that these economic relations can be enhanced even further and with a greater partnership. In this regard Ethiopia and Sudan have moved a step forward. They have set up a joint ministerial commission and joint border regional development commission. Both commissions have been working quite actively. The two governments plan to construct a railway from Port Sudan to Bahr Dar. They have already embarked upon the construction of roads connecting eastern Sudanese economic centers to those in northwestern Ethiopia. These new roads will link up with existing roads and railway systems in the two countries. They have an agreement in place for the transfer of hydroelectric power from Ethiopia to Sudan. A good example of Ethiopian-Sudanese cooperation from the recent past would be their joint action against health problems across the borders during 1992–93 (Ethio-Sudanese Joint Ministerial Committee, 1992). Trade and many other existing forms of interaction will have to be worked on to such an extent that each country becomes indispensable to the other. In due course the

rather dreary squabbling over the utilization and management of the Nile waters will subside and become just a normal economic resource issue.

CONCLUSION

In view of creating a community of interest in the Eastern Nile basin, it is necessary to find out the extent of the various interactions between and among the countries in the sub-basin. There is a need to know which activities should be given more attention in order to intensify these in order to create a community of interest. Building on what already exists, and establishing and expanding many more areas of interaction will contribute significantly towards making the riparian countries permanent partners rather than misguided adversaries.

Any positive and integrative way forward in the Nile Basin can be most promising in pulling together the long existing interactions including those at sub-state and cross-border levels. The spiritual, cultural and economic interactions can be used as ingredients of such relations. This may help to further enhance mutual empathy between the peoples across the state borders and accentuate shared visions and mutuality of interests. Certainly such interactions can be used as a baseline to resolve the more entangled hydropolitical issues at interstate levels.

II SUMMARY AND CONCLUSION

This chapter is divided into two sections: the first one revisits and discusses the four hypotheses developed in the literature review section. The final conclusion summarizes the key findings of the thesis.

II.1 REVIEW OF HYPOTHESES

The following section is structured in four sub-sections, following the security, legal/institutional, socio-economic and environmental hypotheses developed at the beginning of the thesis.

II.1.1 THE SECURITY HYPOTHESIS

The security hypothesis was formulated as follows: *First, successful negotiation and establishment of a treaty regime will likely rid the protagonist riparian states from mutual insecurity. Second, a legal agreement becomes the basis for the long-term creation of a common security zone in the direction of mutually satisfying national interests through cooperative mechanisms. The national level capacity of the riparian states will likely determine how soon and with what terms cooperative mechanisms will be achieved.*

The interviews and literature studied in this thesis concerning the Nile Basin generally supported this security hypothesis, even though there is no legal agreement yet, and the hypothesis can therefore not be fully verified. Nevertheless, the nascent Nile Basin Initiative seems to be a promising attempt at creating a common security zone. In February 1999, in Dar es Salaam, Tanzania, the water ministers of the Nile basin states agreed on what they believed was a common concern to all the Nile basin countries. This common concern was expressed in the slogan: "Sustainable development of the River Nile for the benefit of all". The water ministers in council explicitly expressed a shared vision: "to achieve a sustainable socio-economic development through the equitable utilization of, and

benefit from, the common Nile basin resources". The ministers further agreed on the subsidiarity principle, which would help the riparian countries take decisions at the lowest possible level, and facilitate action on the ground. Any action under the shared vision is expected to be created by: 1) building mutual trust and confidence among and between the riparian communities; 2) meeting the needs of the populations with benefits accruable from the appropriate management of the Nile waters. It is further envisioned that action on the ground will have to be operational at local, national and sub-regional levels, with a hope that these will be integrated into a basin-wide framework.

The mutual satisfaction envisioned in the NBI from accruable benefits is likely to further enhance the interests of the Eastern Nile Basin countries to establish cooperation on grounds of common security. A breakthrough, however, has not been achieved: the NBI is still a transitional mechanism. A substantial shift from unilateralism has not happened, exemplified in the slow process of the NBI. Some of the main reasons for unilateralism and the absence of a regional legal framework are: 1) On the national level, especially upstream, the low level of economic development and low consolidation of institutional capacity have led to a lack of creating credible influence on counterpart states. 2) On the regional level, contested legal doctrines were used as a position articulation, due to uncertainty of the implications of a future common mechanism.

11.1.2 THE LEGAL/INSTITUTIONAL HYPOTHESIS

The legal/ institutional hypothesis was formulated as follows: *The legal and institutional frameworks are 'sine quo non' for guiding and regulating inter-riparian cooperation over the utilization of shared water resources. Existing doctrines and conventions do not yield cooperative behavior among co-riparian states without negotiated and mediated agreements.*

This hypothesis is strongly supported by the research. The provisional consensus with regard to the Shared Vision Program (SVP) and the Eastern Nile Subsidiary Action Program (ENSAP) can be appraised as an achievement at a level that has been able to create a corresponding provisional level of trust and confidence among the three countries. It

must be acknowledged that the present level of achievement is already a huge stride relative to the longstanding tension in the Nile basin. There is, however, not yet a room for any complacency. The intensive contacts in the NBI process seem to show that the three riparian states, or for that matter all the Nile basin states, have the potential capacity and obviously need to bring the process to a happy conclusion, one whereby the Nile waters will have a regulative regime and institutional framework.

The contention with regard to legal/institutional issues has been reviewed. The principal question that remains open is the non-existence of mutually acceptable legal framework that would serve as a binding principle for all the Nile basin countries. The project-by-project approach adopted in the ENSAP does not have an authoritative reference as to which legal principle should prevail in proceeding with projects, especially those to be implemented in the upstream countries. There is open acknowledgement of the need for such an instrument. Hence, a new legal framework has been suggested by the UNDP, and the riparian states have been negotiating a deal since 1999, trying to reach agreement from their upstream and downstream perspectives. This is taking a long time, there is no breakthrough yet.

11.1.3 THE SOCIO-ECONOMIC HYPOTHESIS

The economic hypothesis was formulated as follows: *A basin-wide approach to water resource development of the Eastern Nile will result in a more efficient use and increased economic benefits for all three riparian countries: Ethiopia, Sudan and Egypt.*

The socio-cultural hypothesis was formulated as follows: *If countries reflect on their common heritage and embrace myths and popular perception, they will find sources that can generate cooperation much more than conflict, complementarity much more than juxtaposition, and mutual empathy much more than mutual rejection.*

There is a growing realization that increased utilization of water resources is indispensable for immediate prevention of food shortage as well as for other agricultural and agro/industrial development and power generation. In each of the three countries, especially in the upstream

countries, water consumption will increase. This has already been indicated in the respective national water development strategies. Past observations of the limited implementation of national strategies in the upstream countries leads to some caution. Nevertheless, some irrigation projects are actually being implemented at the moment (e.g. Fincha), so that the greater commitment on the national level to implement irrigation seems more likely.

On the regional level, in the interest of preventing water conflict, riparian states will have to address the issue of efficient water development and interstate security inseparably. An economic use of water on the national level would be beneficial both on the national and regional level, as increased efficiency means less water consumed per economic output. There is little evidence in the region, that an economically viable approach is being implemented, however.

Concerning the cultural dimension: The Nile is the one central and constant factor that has linked the countries as well as their peoples together. The customary perception of the communities along the Eastern Nile basin is an holistic and unifying one. The livelihood, spirituality and thoughts of millions along the course of the Eastern Nile have for centuries been shaped or influenced by how they have been associated with the river. This great river has meandered for ages across the communities and states along its course. The depth of such an association can be found in the vivid expressions of old stories, popular myths, in the verses of poets and in the writings of some journalists. It is also interesting to note that the unifying features of the myths are still indomitable and continue to influence the people's views, notwithstanding the political boundaries or contending national interests between the upstream and downstream countries.

11.1.3 THE ENVIRONMENTAL HYPOTHESIS

The environmental hypothesis was formulated as follows: *The construction of dams in upstream Ethiopia, where the climate is temperate, can provide a more sustainable alternative to constructing a dam in the desert climate of a downstream area. Irrigation, generation of hydroelectric power and prevention of soil erosion in Ethiopia; eliminating the hazards of seasonal floods and silt*

accumulation in Sudan; and avoiding excessive evaporation for net increase of fresh water in downstream Egypt as well as in midstream Sudan are further benefits accruable from environmentally considered criteria.

This environmental hypothesis is in line with the official Ethiopian perception. Famine and environmental degradation is familiar to quite a few Nile basin countries, and almost all the riparian countries are increasingly challenged by unabated population growth compounded by increasing poverty. Environmental degradation, mainly arising from a lack of cooperative watershed management, has reached an alarming state. Land cover loss and soil erosion in Ethiopia, flooding and sedimentation in Sudan and increased silt accumulation in Egypt will sooner or later be a threatening phenomenon unless mitigated through collaborative efforts. Recent indicators show that the eastern Nile countries have been moving towards extensive development of irrigated agriculture in the Nile basin within their respective national territories. As there are no commonly embraced or enforceable customary rules or amicably negotiated agreements it is expected that the unilateral abstraction of water will continue to cause dispute and recrimination, further resulting in a deterioration of relations and the environment. Although dams in Ethiopia would increase net water availability, without comprehensive watershed management, effective control of reservoir sedimentation will be difficult.

11.2 OVERVIEW AND CONCLUSION

This thesis sets out to examine the elements and the driving forces of the dilemma of hydropolitics in the Eastern Nile Basin, and how these can be transformed towards sustainable water development. The following section summarizes key points of the thesis in light of this goal. Seeking political harmony and a community of interest in the Eastern Nile region cannot be construed as wishful thinking or as an academic dream, but as the sine qua non for sustainable development.

The conclusion seeks to follow the structure of the thesis: 1) Method and approach, 2) dilemma between environmental and cultural unity, and geopolitical tension, 3) national situation, 4) international situation, 5) future outlook.

Method and approach: From a methodological point of view, the upstream-downstream set-up of the ECONILE project proved to be very useful. The independent but coordinated studies carried out downstream (Mason, 2004) and upstream (this study) allowed for dialogue between the researchers to explore ideas and get to better understand the ‘other’s’ perspectives. The neutral academic institutional backing proved to be very important to analyze such perspectives with as little bias as possible. This upstream study gave greater priority on legal and institutional issues, demonstrating that there are not sufficient grounds for equitable water sharing. The downstream study focused more on environmental issues, showing that there is great potential for cooperation. Both studies indicated some of the key national requirements that need to be fulfilled for international cooperation to be successful, e.g. Egypt needs to focus on demand-side management, while Ethiopia has to develop its institutional capacity (see Annex XII for a synthesis of the upstream / downstream ECONILE theses).

Dilemma between environmental and cultural unity, and geopolitical tension: The geopolitical developments in the Eastern Nile basin contrast with the unifying physical / environmental reality and the longstanding traditional heritage. The divisive hydro-political development, notably since the beginning of the 19th century, has characterized the upstream-downstream competition and tension over the control of the Nile waters. The pursuits of the riparian states have been conveniently explained in terms of perceived national interests. It seems evident that the political expression of these national interests has resulted in the unabated water use controversies between the upstream and downstream nations. It is important to note that the riparian states have not been able to resolve the prevailing or future hydropolitical controversies among themselves. The asymmetrical status quo embedded in the non-inclusive water agreements concluded during and after the colonial periods have been maintained and adamantly defended by the downstream states, even though this continues to be a recipe for the tension and mutual insecurity in the region.

National situation: With regard to Ethiopia there is a huge gap between the available water resources in the country and the country’s insignificant level of development. There is also a huge gap between the need for developing the country’s water resources and its institutional, regulatory,

and financial capacity. Development of the available water resources is increasingly perceived as a panacea for mitigating the recurrent problem of drought and the gnawing poverty of the millions. The situation of being perennially impoverished amidst plenty is something that needs to be changed as a matter of urgency. For this institutions will have to be established and these will have to function smoothly, based on the memories of accumulated knowledge and wisdom and the vision of a brighter future.

There is also a clear need for a national water code, which will incorporate and integrate the existing state legislations, old water rulings (originating both from spiritual and secular sources), and those rules, which continue to exist in customary and localized traditional forms in the diverse Ethiopian communities of the varying ecological zones and cultural shades. The need for a national water code remains all the more pressing, especially in view of its desired regulatory function and the stable legal authority it would establish for development of the water sector. The envisaged water code would have a presumed capacity and a mandate for synthesizing the diverse ideas, and the various and long-standing traditions and philosophies of water utilization and management in the country. Thus it would provide institutional stability and promote the efficiency of the country's water resource development.

International situation: The states in the Eastern Nile basin have legitimate aspirations to enhance the economic development and overall welfare of their populations. Their aspiration for development, however, is dependent on the use and management of the water resources of the Nile, which is their common endowment. The practice of a unilateral approach to the usage and exploitation of the shared water resource has placed the states in adversarial postures. Much can be expected from development at a legal and institutional level. The governments in the Eastern Nile region will have to resolve the problem of fear of each other on the one hand and the inescapable need to collaborate with each other on the other hand, if they hope to make the best use of the common water resource for the welfare of their respective societies now and in the future.

In actual fact international cooperation between Ethiopia and the downstream states in the Eastern Nile region was difficult if not unthinkable prior to the end of the Cold War. In the colonial era the use and

management of the Nile waters were geared to British colonial interests. There was no space for the countries in the Eastern Nile basin or in the entire Nile basin to act bilaterally or multilaterally on water or any other resources of inter-state concern. Historically it can further be noted that the longstanding pre-colonial adventures of external forces, namely of ancient Greece and Rome, of the Crusaders and the Ottomans also sought to control the source of the great river and exploit its wealth. But it was the European scramble for Africa and the colonial ambitions for the control of the entire Nile basin, which planted the discord and have been inherited by the post-independence states of the basin.

During the Cold War period the political regimes in the sub-basin were, willy-nilly, engulfed as ideological and/or political-strategic proxies of either the “Western” or the “Eastern” camp, often on opposing sides of one or the other power bloc. In addition, the same country often switched sides, prompted by a change of political regime, or as a result of a change of political system under the same regime. With the Cold War subsiding at the turn of the 1990s, both Egypt and Ethiopia subscribed allegiance to the United States, and to the “unified” world hegemony. The new international rules of the game have become to listen to a single center of world power, to affirmatively respond to the development prescriptions of international financial institutions, and to subscribe to the conventional expectations of “good governance”, “human rights”, “democratization”, etc. It can be said, therefore, that the end of the Cold War has reshaped the behavior of the states in the Eastern Nile basin, to somehow accept and respect one another’s concerns and interests. Hence, the Nile Basin Initiative can be attributed to this, more or less, externally induced process.

Outlook: To attain sustainable development accruable from the shared water resources, a search for the common good requires immediate attention. Idealistically, the riparian countries are from a collective and long term point of view expected to look at one another with empathy and an open heart. Inasmuch as the cross border waters create permanent bonds between the riparian countries, they should serve as the most indispensable elements of inter-state relationships. These waters that flow through the countries of the Eastern Nile basin are a very immediate and practical incentive for the governments to rationalize their foreign policies towards one another in the framework of cooperating on the utilization of the water

resources, which no individual riparian state can possibly monopolize. There should at the very least be an inter-riparian attitude where, for instance, the downstream countries of Egypt and Sudan show sympathy with and understanding for the plight of the drought-stricken farmers in upstream Ethiopia. In a similar manner, upstream Ethiopia should sympathize with and understand the needs of the people in Sudan and Egypt, who depend on the waters they receive from further upstream.

The need for a cooperative framework cannot be taken as a matter of convenience, but should be seen as a compelling necessity to preempt a more precarious situation with the shrinking availability of fresh water resources. The permanent aridity in downstream Egypt and Sudan, the recurrent drought in Ethiopia, the worsening desiccation and soil erosion in the headwater sections of the basin, excessive silt accumulation in the downstream sectors of the basin and the unabated population increase in all the riparian countries can all be taken as alarming reasons for the riparian states to establish more committed cooperation in terms of a strategic action program as well as a regulatory mechanism.

Given the ecological characteristics of the Eastern Nile basin one plausible suggestion could be that a construction of dams in upstream Ethiopia where there is less evaporation would provide a contrasting alternative to constructing a dam in the arid location of the downstream area. A water reservoir in an upstream location would provide possibilities such as: irrigation, generation of hydroelectric power and prevention of soil erosion in Ethiopia; elimination of seasonal flood hazards and silt accumulation in Sudan; and avoidance of excessive evaporation in downstream Egypt. In addition the construction of dams in Ethiopia would increase the total availability of fresh water in all the riparian countries, including Egypt, which is the most downstream.

The states in the Eastern Nile basin face the inescapable obligation to rectify the historically encumbered juxtaposition that was especially embedded in the colonial legacy and built into the various Nile waters agreements. In these agreements the interests of upstream countries were, at best, forgotten or ignored altogether. In the Eastern Nile basin the 20th century has been characterized by an unbridled unilateral approach to the otherwise shared water resources. The modest efforts to shed light on a cooperative approach are still insufficient to provide the riparian

states with mutual trust and security. If the 20th century was characterized by a hydropolitical anarchy, the new millennium will have to bring a transformation whereby all the riparian countries enjoy the inalienable opportunities and benefits from their shared Nile waters.

In view of the growing international conventions on shared water resources, establishing legal and institutional frameworks are *sine quo non*, for guiding and regulating inter-riparian cooperation over the utilization and management of shared water resources. The existing doctrines and conventions can render service on the basis of negotiated and mediated agreements, having the capacity to shape the behavior of co-riparian states in their relations to one another.

Learning from the concept of collective security, establishing an inter-state convention or treaty regime in the Eastern Nile basin will help the riparian states build mutual security. Such a common security zone would satisfy national interests through cooperative mechanisms. On the basis of historical observation, and also from a practical point of view, however, the capacity on the national level will influence when and how such a cooperative mechanism can be realized.

Today's Eastern Nile basin countries must create inter-state mechanisms to overcome the political, environmental, legal and institutional predicaments in order to attain a sustainable system of water utilization and management in the sub-basin. They must collaboratively explore the available economic possibilities as well as complementary and mutually beneficial options for national level water development approaches in the upstream and downstream basins. Using water resources in one country, without considering the supply and demand patterns in the other co-riparian countries, will lead to uneconomic utilization. A basin-wide approach to water resource development of the Eastern Nile will encourage the efficient use and increased economic, environmental, institutional and security benefits for all three riparian countries: Ethiopia, Sudan and Egypt.

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ANNEXES

ANNEX I

Excerpt from Issat woi Abeba, by Tsegaye Gebre Medhin (Poet-Laureate)

Describing the River Nile:

*Abbay is the cradle of the black race,
It is the blood of Ethiopia, the mother of Cush,
The introducer of civilization to the world.
With regard to the River's relations to Egypt and the World:
From the bar of Tana to Karnak,
Milk to be sent by your large udder,
to Ra, the sun God, to Ta the star god,
From the rays of ancient creature
born of the womb of Cush.*

The spirituality related to the River:

*Abby the great, Abbay the Ghion,
The god of gods to Amon,
You become the source for his wisdom, Abbay wings to Horus,
Father to Dionaiseus.*

With regard to the heedlessness of the River:

*You were glorious in the past,
Which becomes the news of the book of the dead,
Today that is all, it is far far back, the world has forgotten your
fame,
Forgotten your goodness and history,
We live in misery,
Yesterday, by outcries of aliens,
And today, by ignorant violence,
...If this persists unresolved,
Your dream about Abbay is far far away.*

ANNEX II

Excerpt from Innatkin Bellulign, by Poet Hailu Gebre Yohannes

*If you have eyes, you, Abbay-the idle,
Please see that man, that man for a moment,
Burnt with thirst, exhausted, such like this,
For you have deserted him to go to other places.*

*Please see the land screaming in pain,
Yelling to receive your favor,
Begging for your mercy,
Begging you for a drop of water.*

*When your land cries out to tell the tale of her woes,
With her throat dried up,
So, what happened to your ears?
For they seem to be deaf to her cries.*

With regard to Lake Tana, the head-waters of the Abbay, the Poet wrote, thus:

*I am amazed by Tana,
It has fallen asleep since it was created,
I am extremely astonished by Tana,
For it has fallen asleep from the time of its origin.*

The poet's vision about the waters of the Abbay are expressed in the following verses:

*Fencing by dams to change you into power,
Distributing by canals to make you fruitful,
Tapping by pipes to feed mankind,
Governed by his power, under his control,
Indeed, he will use you, and
You will never remain mocking at him.*

On what is to be done the poet suggests the following verses in a resounding manner:

*We shall seek solution in unity and cooperation,
We shall get the knowledge, the method, and the system,
To be able to use it in peaceful cooperation,
Unless we take it seriously,
Unless we can use it in unity,
An African wealth – such as the Nile,
...continues to live talking of our worthlessness.*

ANNEX III

Protocolls Between Great Britain and Italy on the Demarcation of their Respective Spheres of Influence in East Africa (15 April 1891)

Desirous of extending towards the north, up to the Red Sea, the demarcation of the respective zones of influence of England and Italy, on which the two parties had come to terms in the Protocol of 24 March and which went from the mouth of the Djouba on the Indian Ocean up to the intersection of longitude 35 east (of Greenwich Meridian) with the Blue Nile, the undersigned: The Marquis of Dufferin and Ava, Ambassador of Her Majesty the Queen of the United Kingdom of Great Britain and Ireland, the Empress of the Indies; The Marquis of Rudini, President of the Council and Foreign Minister of His Majesty the King of Italy; Agree that:

Article 1

The sphere of influence reserved for Italy shall be limited, in the north and in the west, by a line extending from Ras Kasar on the Red Sea up to the point of intersection between the 17th north parallel and the 37th east meridian (Greenwich Meridian). The line shall follow this meridian up to 16' 30' of latitude north; from this point, a straight line shall be drawn extending as far as to Sabderat, leaving the village on the east. Starting from this village, the line shall follow an outline towards the south up to a point on the Gash at 2 English miles above Kassala and shall meet the Atbara at a point shown as being a ford on the Werner Munzinger map "Originalküste von Nord Abessimen und den Ländern am Marels, Barea und Anseba of 1864" (Gotha, Justus Perthes), and situated at 140 25' of latitude north.

The line shall show the Atbara as far as to its confluence with the Kor Kakamot (Habamot), from there, it shall take a western direction until it meets Kor Lemsen whence it shall descend as far as to its confluence with the Rahd.

Finally, having followed the Rahd over a short distance between the confluence of Kor Lemsen and longitude 350 east (Greenwich meridian), the line shall be identified with this meridian, which it follows towards the south until it meets the Blue Nile except for detailed amendments according to hydrographic and orographic conditions of the country.

Article 2

Should the military situation dictate, the Italian Government shall reserve the right to occupy Kassala and the adjoining region up to the Atbara. In case shall such an occupation be extended to the north and north-east beyond the following line:

Extending from the right bank of the Atbara, at the level of Gos Rejeb, the line shall take the eastward direction up to the intersection with 360 east meridian (Greenwich Meridian); then, turning to the south-east, it shall pass three lines to the south of the places named Kilik and Metkinals on the map of Werner Munzinger, mentioned above to join the line mentioned in Article 1, at 25 English miles in the north of Sabderat measured along the said line.

The two Governments shall acknowledge, however, that any temporary military occupation of the outlying territories, stipulated in the present article, shall not abrogate the rights of the Egyptian Government to these territories, but that these rights shall be suspended only up to the time when the Egyptian Government shall be in a position to

re-occupy the region in question as far as to the line indicated in Article 1 of this Protocol and to maintain law and order in the region.

Article 3

The Italian Government shall undertake not to initiate any irrigation works on the Atbara which may alter the rate of flow of the Nile.

Article 4

Italy shall enjoy, for its subjects and protected persons and their goods, free access, without having to pay duty, along the route between Metema and Kassala, Passing successively through Al Affareb-Doka, SUk-Abu-Sin (Ghedaref) and Atbara.

Done in Rome in two copies

On 15 April 1891

DUFFERIN ET AVA RUDINI

ANNEX IV

A Treaty Between Ethiopia and Great Britain on the Delimitation of the Frontier between Ethiopia and Sudan (15 May 1902). (Ratifications exchanged in Addis Ababa on 28 October 1902)

His Majesty King Edward the VII by the grace of God, King of the United Kingdom and Ireland and British Overseas dominions, Emperor of the Indies, and His Majesty Menelik II, by the grace of God, King of Kings of Ethiopia, encouraged by the desire to confirm friendly relations which exist between the two powers and to establish the frontier between Sudan and Ethiopia, and His Majesty King Edward having appointed Lt. Col. John Lane Harrington, Commander of the Royal Order of Victoria Agent Plenipotentiary to His Majesty King Menelik II, Kind of Kings of Ethiopia, vested with full powers in due form, and His Majesty Emperor Menelik, negotiating in his own capacity as Kind of Kings of Ethiopia hereby agree and accept that the following articles like them, their heirs, and their successors:

Article 1

The frontier between Sudan and Ethiopia, accepted by the two Governments shall be as follows: the line drawn in red ink on the map attached in duplicate to this Treaty extending from Kher Um Hagar in Gallabat, to the Blue Nile and the Baro, Pibor, and Akobo in Melile, and thence to the intersection of latitude 60 north with longitude 350 east (Greenwich Meridian).

Article 2

The frontier as defined in Article 1 shall be delimited and marked on the ground by a Joint Frontier Commission which shall be appointed by the two high contracting parties which shall provide information to their subjects after the delimitation.

Article 3

His Majesty Emperor Menelik, Kind of Kings of Ethiopia, shall undertake, before the Government of Her British Majesty, not to construct and authorize the construction of any structures on the Blue Nile, Lake Tana or Sobat which would have the effect of obstructing the flow of their waters into the Nile, except in agreement with the Government of her British Majesty and the Government of Sudan.

Article 4

His Majesty Emperor Menelik II, King of Kings of Ethiopia shall undertake to grant to the Government of her British Majesty and to the Government of Sudan, the authorization to choose, close to Itang on the Baro, a portion of territory with not more than 2,000 metres along the river and an area not exceeding 400 hectares, which shall be given to the Government of Sudan in order that the latter may administer and occupy it as a commercial station as long as Sudan remains governed by the Anglo-Egyptian Government: It shall be understood between the two high contracting parties that this territory thus granted, shall not be used for political or military purposes.

Article 5

His Majesty Emperor Menelik II, King of Kings of Ethiopia, shall grant to the Government of Her British Majesty and to the Government of Sudan, the right to construct a railway line across the Abyssinian territory linking Sudan to Uganda.

The layout of the railway shall be established by a reciprocal agreement between the two high contracting parties.

The present treaty shall come into force as soon its ratification, by Her British Majesty shall have been communicated to the Emperor of Ethiopia.

In faith where of, His Majesty Menelik II, King of Kings of Ethiopia, on his own behalf, and Lieutenant-Colonel John Lane Harrington on behalf of his Majesty King Edward VII, King of the United Kingdom of Great Britain and Ireland and British Overseas Territories, Emperor of the Indies, have signed the present Treaty, drawn up in the English and Amharic languages in duplicate, both texts equally authentic and official, and have appended their seals to them.

Done In Addis Ababa on 15 May 1902

JOHN LANE HARREINGTON LT. COLONEL
SAAL OF HIS MAJESTY EMPEROR
MENELIK II

ANNEX V

Agreement between Great Britain, France and Italy Concerning Abyssinia (Ethiopia) (13 December 1906)

The common interest of France, Great Britain and Italy being to maintain intact, the integrity of Ethiopia, to avoid any form of disturbance in the political conditions of the Ethiopian Empire, to come to a common understanding concerning their conduct in case of change of situation which may occur in Ethiopia, and to ensure that by the action of the three States to protect their respective interests, both in British, French and Italian Possessions around and within Ethiopia itself, no damage prejudicial to the interests of any one of the three powers, France, Great Britain and Italy shall be caused, the three Powers hereby agree on the following Arrangement:

Article 1

France, Britain and Italy shall agree to maintain the political and territorial status quo in Ethiopia as determined by the existing state of affairs now and the following Arrangements:

- (a) The Anglo-Italian Protocols of 24 March and 15 April 1891 and 5 May 1894 and the subsequent Arrangements which modified them including the reservations expressed by the French Government on this subject in 1894 and 1895;
- (b) The Anglo-Ethiopian Convention of 14 May 1897, and its annexes;
- (c) The Italo-Ethiopian Treaty of 10 July 1900;
- (d) The Anglo-Ethiopian Treaty of 15 May 1902;
- (e) The note annexed to the aforementioned Treaty of 15 May 1902;
- (f) The Convention of 11 March 1862, between France and the Danakils;
- (g) The Franco-British Arrangement of 2-9 February 1888;
- (h) The Franco-Italian Protocols of 24 February 1900, and 10 July 1901, regarding the delimitation of Italian and French possessions on the shores of the Red Sea and the Gulf of Aden;
- (i) The Franco-Ethiopian Convention regarding frontiers of 20 March 1897;

It is understood that the various Conventions mentioned in the present article shall be without prejudice to the sovereign rights of the Emperor of Abyssinia and shall in no way affect the relations between the three Powers and the Ethiopian Empire as stipulated in the present Arrangement.

Article 2

For the request of agricultural, commercial and industrial concessions in Ethiopia, the three Powers shall instruct their Representatives to act in such a manner that the concessions which shall be granted in the interest of one of the three States may not be prejudicial to the interests of the two others.

Article 3

Should competitions or internal changes occur in Ethiopia, the Representatives of France, Great Britain and Italy would observe an attitude of neutrality abstaining from all intervention in the affairs of the country and confining themselves to taking such action which, by common agreement, would be considered as necessary for the protection of legations, lives and properties of foreigners and common interests of the three Powers.

In any case, none of the three Governments would intervene in any manner and to any except after achieving common grounds of understanding with the two others.

Article 4

Should events occur to disturb the status quo set forth under Article 1, France, Great Britain and Italy shall make every effort to maintain the integrity of Ethiopia. In all cases, by referring to the Agreements enumerated in the said article, they shall agree to safeguard:

- (a) The interests of Great Britain and Egypt in the Nile Basin, and more specially, with regard to the control of the waters of this river and its tributaries (the consideration due to them being given to local interests) subject to Italian interests mentioned in paragraph (b);
- (b) Italy's interests in Ethiopia in relation to Eritrea, and Somaliland (including Benadir), and more specially with regard to the hinterland, of its possessions and the territorial union between them in the west of Addis Ababa;
- (c) And France's interests in Ethiopia in relation to the French Protectorate of the Somalia Coast in the hinterland of this Protectorate and in the zone required for the construction and traffic of the railway from Djibouti to Addis Ababa.

Article 5

The French Government shall communicate to the British and Italian Governments:

1. The act of concession of the Franco-Ethiopian railway of 9 March 1894;
2. A letter of Emperor Menelik on 8 August 1904 the translation of which is annexed to the present agreement, and which invites the concessionary Company, to construct the second section from Dire Dawa to Addis Ababa.

Article 6

The three Governments shall agree that the Djibouti Railway line be extended from Dire Dawa to Addis Ababa with a possible siding towards Harrar, either by the Ethiopian Railway Company under the acts enumerated in the preceding article, or by any other private French company which may be substituted for it with the consent of the French Government, on condition that nationals of the three countries shall enjoy with regard to questions of trade and transit an absolutely equal treatment both on the railway and within the port of Djibouti. Goods shall be admitted without any transit duties for the benefit of the Colony or the French Treasury.

Article 7

The French Government shall provide assistance so that one Englishman, one Italian and a Representative of the Emperor of Abyssinia be members of the Board of Directors of the French company or French companies which shall be responsible for the execution of work on and the operation of the railway from Djibouti to Addis Ababa. It is stipulated by reciprocity that the British and Italian Governments shall provide assistance to ensure that a post of Administrator is also created in the same conditions for a Frenchman in

any English or Italian company who would have been trained or would be trained in the construction or operation of railways stretching from any point in Abyssinia to any point in the neighboring English or Italian territories.

Similarly, it is understood that nationals of the three countries shall enjoy, for questions related to trade and transit, an absolutely equal treatment both on the railways, which would be constructed by English or Italian companies, and in English or Italian ports from where these railways would start. Goods shall not be liable to any transit duties for the benefit of Colonies or English and Italian Treasuries.

The three signatory Powers shall agree to extend to the nationals of all other countries, the benefit of the provisions of articles VI and VII related to equality of treatment in the field of trade and transit.

Article 8

The French Government shall abstain from all intervention regarding the concession previously granted beyond Addis Ababa.

Article 9

The three Governments shall agree that all railway construction in Abyssinia in the west of Addis Ababa be executed where foreign assistance is necessary, under the auspices of England. Similarly, the three Governments shall agree that all railway construction in Ethiopia linking Benadir to Eritrea in the west of Addis Ababa be, in so far as foreign assistance is necessary, executed under the auspices of Italy.

The British Government reserves the right to use, where necessary, the authorization granted by Emperor Menelik on 28 August 1904, to construct a railway from British Somaliland across Ethiopia up to the Sudanese frontier, on condition, however, that it comes to terms beforehand with the French and Italian Governments; the three Governments undertaking not to construct without prior understanding between themselves any line penetrating Abyssinian territory or linking up Abyssinian lines, and in such a manner as to offer direct competition to those which shall be established under the auspices of one of them.

Article 10

Representatives of the three Powers shall keep themselves reciprocally informed of and cooperate for the protection of their respective interests. Should the English, French and Italian representatives fail to come to terms, they shall refer all matters relevant to their interests to their respective Governments and suspend all action in the meantime.

Article 11

Aside from the Arrangements enumerated in Article I and Article V of the present convention, no agreement concluded by any one of the contracting powers concerning the Ethiopian region shall be opposable to the other signatory powers of the present Arrangement.

Done in London, on 13 December 1906

E. Grey
Paul Cambon
A. De San Ciuliano

ANNEX VI

Agreement between His Majesty King Leopold the Second, Sovereign of the Congo, and His Majesty Edward the 7th King of the United Kingdom of Great Britain and Ireland and of British Overseas Territories, Emperor of the Indies, Amending the Agreement Signed in Brussels on 12 May 1894 (19 May 1906)

The undersigned, Baron Van Eetvelde, Commander of the Order of Leopold, Secretary of State of the Independent State of Congo, on behalf of His Majesty King Leopold the Second, Sovereign of the Independent State of the Congo; and the Right Honourable Sir Edward Grey, Baronet of the United Kingdom, Member of Parliament, Principal Secretary of State at His British Majesty's Foreign Ministry, on Behalf of His British Majesty and duly authorized by their respective Sovereigns have agreed that:

Article 1

The concession of territories granted by Great Britain to His Majesty King Leopold the Second, Sovereign of the Independent State of Congo by Article 2 of the Agreement signed in Brussels on 12 May 1894 shall be annulled by the present act. Neither of the Parties may stress any claims on this concession nor any rights stemming there from. Nevertheless, during duration of His reign, His Majesty Leopold shall continue to occupy in the same conditions as at present, the territory he rules and knows under the appellation "the Lado Enclave". Within the six months following the end of His Majesty's occupation, the Enclave shall be given back to the Sudanese Government. The Governments of Sudan and the State of Congo shall appoint officials who shall undertake an evaluation of the cost of houses, shops and other material installations, which by joint agreement shall also be given away at the same time as the Enclave, the amount agreed upon being paid to the State of Congo by the Sudanese Government. The Enclave includes the territory bounded by a line stretching from a point situated on the west bank of Lake Albert, just on the southern end of Mahagi and going as far as to the nearest point of the partition line between the Nile and the Congo basin; the frontier then follows the line of partition of the waters up to its intersection, in the north, with 300 east of meridian up to its intersection with parallel 50 30' north of latitude from where it follows this parallel up to the Nile; then it follows the Nile towards the south up to Lake Albert and flows along the west of Lake Albert up to the point indicated above, in the south of Mahagi.

Article 2

The frontier between the Independent State of Congo, on the one hand, and Anglo-Egyptian Sudan on the other hand, which starts from the point of intersection in the south of the meridian longitude 300 east (Greenwich Meridian) with the line of partition of waters between the Nile and the Congo, shall then follow this line of partition of waters in the north-west general direction, until it reaches the frontier between the independent state of Congo and French Congo.

Nevertheless, the strip of territory of 25 kilometers wide extending from the line of partition of waters between the Nile and the Congo up to the west bank of Lake Albert and including the port of Mahagi whose concession was granted to the Independent State of Congo by Article 2 of the Agreement of May 1894, shall continue to remain the possession of this State under conditions stipulated in this article.

Article 3

The Government of the Independent State of Congo undertakes not to construct or allow the construction of structures on the Semliki or the Isango, or nearby, which would reduce the volume of water entering Lake Albert except with the consent of the Sudanese Government.

Article 4

The Governments of Sudan and the State of Congo shall agree on the terms of concession which shall be granted to an Anglo-Belgian Company responsible for the construction and operation of a railway line stretching from the frontier of the independent state of Congo to the navigable channel of the Nile near to the Lado, with the clear understanding that when the occupation of the Enclave by His Majesty comes to an end, the railway fall entirely under the jurisdiction of the Sudanese Government. The layout of this railway shall be determined jointly by the Governments of Sudan and the State of Congo.

In order to provide the capital required for the construction of this railway, the Egyptian Government shall undertake to guarantee an interest of 3 per cent on an amount not exceeding 800.000. (800,000 pounds sterling).

Article 5

An open harbour for general trade, with facilities, required for storage and transshipment of goods shall be constructed at the railway terminus.

When the occupation of the Enclave by His Majesty comes to an end, a Belgian or Congolese Company shall be authorized to possess in this harbour, a commercial warehouse and quays on the Nile.

Nevertheless, these warehouses and quays shall in no case lead to the acquisition of rights to extra-territoriality, and all individuals there or attached to them in Sudan, shall be entirely governed by Sudanese Laws and Regulations.

Article 6

Merchant ships flying the Congolese or Belgian flag, shall have navigation and commercial rights in the waters of the Upper Nile, with no distinction being made regarding commercial facilities between the latter and British or Egyptian Merchant Navy, but such ships shall under no circumstances acquire the rights to extra-territoriality and shall entirely be governed by Sudanese Laws and Regulations.

Article 7

Persons and goods crossing Sudanese or Egyptian territory to and from the State of Congo, shall, for transit and transport purpose on the Nile or in Sudanese or Egyptian railways be treated in the same way as Egyptian or British persons and goods going to and from British Territories.

Article 8

Any disputes arising from the boundaries of the Independent State of Congo including the frontier stipulated under paragraph 1 of Article II of the present Agreement, in cases where the parties may not be able to settle them amicably, shall be submitted to the arbitration of the Court in the Hague whose decision shall be binding on the two Parties with the understanding, however, that this clause may not, in any case, be applied to any problem related to the concession referred to in article of the Agreement signed in Brussels on 1 May 1984 and in Article 1 of the present Agreement.

Done in duplicate copies in London on 19 May 1986

ANNEX VII

Exchange of Notes between the United Kingdom and Italy Concerning the Obtaining of Concessions for the Construction of a Dam Over Lake Tana and a Railway Line Passing Through Abyssinia from Erythrea to Italian Somalia (Rome 14/20 December 1925)

No 1:

The British Ambassador in Rome, to the Italian Prime Minister and Foreign Minister.

Dear Council Chairman,

Your Excellency is keenly aware of the vital importance to Egypt and the Sudan of the maintenance and if possible, the increase in volume of water intended for irrigation from the Blue and White Niles and their tributaries. In this perspective, different projects were either commissioned or under study, and you have been informed of the negotiations undertaken in Addis Ababa by Her Majesty's Government in consideration of Egyptian interests in the venture and acting as a fiduciary agent (or trustee) of the Sudanese Government with a view to obtaining a concession from the Abyssinian Government for the construction of a dam over Lake Tana which would make it possible to harness water reserves aimed at "feeding" the Blue Nile. These negotiations have, to date, not succeeded.

In November 1919, Italian Government delegates present in London were obliged to offer Italian cooperation under the following terms:

"Considering the predominant interests of Great Britain with regard to the control of the waters of Lake Tana, Italy shall provide to Great Britain its support with view to obtaining from Ethiopia a concession making it possible for it to undertake the construction of a dam over the same lake, within the Italian zone of influence, while awaiting the delimitation of the scope of the territorial zone which would be recognized as belonging to Great Britain within the perspective of its predominant hydraulic interests and expecting that any reservations made by Italy be taken into account in the Tripartite Agreement also within the perspective of its hydraulic interests. Italy shall also provide its support to Great Britain in order that the latter may obtain from Ethiopia, the right to construct and maintain a road between Lake Tana and the Sudan. Italy shall seek the support of Great Britain with a view to obtaining from the Ethiopian Government a concession making it possible for it to construct and operate a railway from the Erythrean frontier to the Italian Somalia frontier – a railway, which, according to the Tripartite Agreement, should pass through the western part of Addis Ababa. It is understood that this railway as well as all major works required for its construction and operation shall benefit from free passage along the road mentioned above.

Italy shall seek from great Britain, and shall also reserve the right to seek from France, the acquisition of an exclusive economic zone in the western part of Ethiopia and in every territory spanned by the railway mentioned above including the promise to support the

Government of Ethiopia in all requests with a view to obtaining economic concessions within the Italian Zone.”

There had not been any follow-up to this offer, in view of the strong objection raised regarding the idea of allowing a foreign power to gain some control over parts of the watercourse near to the sources which are so vital for the prosperity and even the very existence of Egypt and the Sudan. Within the framework of reciprocal relations of mutual trust existing between our two Governments, Her Majesty's Government would like to tackle this problem in the same spirit of friendly cooperation, which proved so fruitful in other fields. After having carried out an in-depth study of this problem, Her Majesty's Government acknowledged that the Italian proposal was not contrary to the stipulated provisions of the London Agreement of 13 December 1906 in view of the fact that the objective of this agreement was the maintenance of the status quo in Ethiopia on the basis of international agreements stipulated in its first article, as well as the maintenance of coordination of action of signatory States in order to ensure the protection of their respective interests so that these interests are not jeopardized. Her Majesty's Government would favorably welcome the support offered by Italy in so far as this support is not prejudicial to the essential water resource interests of Egypt and the Sudan, which the Italian Government did not fail to acknowledge.

Accordingly, and in conformity with the directives of the Senior principal Secretary in Her Majesty's Foreign office, I have the honour to request His Excellency to use his good offices to contact the Abyssinian Government for a concession making possible the construction of a dam over Lake Tana as well as the right to construct and maintain a road for the transportation of equipment, people, etc... from the Sudanese frontier to the dam.

In exchange, Her majesty's Government is prepared to support the Italian Government in its dealings with the Abyssinian Government with a view to obtaining a concession making possible the construction and operation of a railway stretching from the Erythrean frontier to the Italian Somalia frontier. It is understood that this railway as well as all works necessary for its construction and operation could freely span the above-mentioned route.

In this perspective it would be desirable to dispatch identical instructions to British and Italian representatives in Ethiopia in order that they can embark on concerted action in their dealings with the Abyssinian Government with a view to obtaining, at the same moment, the concessions desired by the Governments of Great Britain and Italy regarding Lake Tana and the construction of a railway line linking Erythrea with Italian Somalia.

It is understood that, should one of the two Governments obtain the desired concession while the other fails to obtain it, the Government which would have obtained satisfaction would not spare its sincere efforts in order to make it possible for the other Government to obtain satisfaction too.

Should Her Majesty's Government with the unstinted support of the Italian Government obtain from the Abyssinian Government the coveted concession on Lake Tana, it would be prepared to acknowledge an exclusive Italian economic influence in the western part of Abyssinia and in the whole territory spanned by the above-mentioned railway. Besides, it would promise to support, vis-a-vis the Abyssinian Government, all Italian requests with a view to obtaining economic concessions in the above-mentioned zone. But this acknowledgement (or recognition) and commitment shall be subject to the condition that the Italian Government, for its part while recognizing the former hydraulic rights of Egypt and the

Sudan shall undertake not to construct, over the parts of the Blue and White Niles near to their sources, tributaries and effluents, structures (such as bridges, viaducts etc.) which may change significantly the rates of flow into the main river.

It is understood that the above condition shall not prevent inhabitants of the region from making reasonable use of the waters in question including even the construction of hydro-electric dams of small reservoirs on minor effluents with a view to harnessing water reserves for domestic use as well as for the cultivation of food stuffs necessary for their subsistence.

Her Majesty's Government seizes this opportunity to assure the Italian Government of the fact that the construction and operation of the dam will certainly be within the bounds of possibility, and with local labour and will not allow the water levels of the lake to go above the level reached hitherto during rainy seasons. It is also convinced that the existence of this dam shall be, not only of great value to Egypt and the Sudan, but shall contribute to enhancing the prosperity of inhabitants of the region and to the development of their economic progress.

I seize this opportunity, etc.

R.Graham
Rome, 14 December 1925

No. 2:

The Italian Prime Minister of Foreign Affairs to the British Ambassador in Rome.

Your Excellency,

I have the honour to acknowledge receipt of the note of 14 December in which your Excellency, fully authorized by your Government had drawn my attention to the problem of irrigation in Egypt and the Sudan and also to negotiations held hitherto without any result, by the concession enabling it to construct a dam on Lake Tana aimed at harnessing the waters of the Lake in order to feed the Blue Nile.

Your Excellency will, to this end, recall the proposals which had been made in London, in November 1919, by delegates of the Italian Government with a view to establishing an Anglo-Italian friendly cooperation on this point, and you did inform me that these proposals had not been accepted at that time in view of the objection which had been raised on the idea of allowing a foreign power to exercise any control on the sources of the river which are of such a vital importance for the prosperity as they are for the very existence of Egypt and the Sudan. However, at present, within the framework of reciprocal relations of mutual trust which exist between our two Governments, Her Majesty's Government would be desirous of tackling this problem in the same spirits of friendly cooperation which proved so fruitful in other fields.

Your excellency wishes to add that the Government of Her British Majesty, has accordingly, undertaken a more attentive study of the problem and acknowledges that the Italian proposals

do not go counter to the stipulated provisions of the London Agreement of 13 December 1906, in view of the fact that the objective of this Agreement is the maintenance of the status quo in Ethiopia on the basis of international agreements stipulated in Article I of the very Agreement as well as the coordination of action of signatory States in order to ensure the protection of their respective interests so that these interests are prejudiced.

Accordingly, adhering to the Italian proposals, the British Government would favorably welcome the support of Italy in so far as this support does not jeopardize the essential hydraulic interests of Egypt and the Sudan which the Italian Government did not fail to recognize.

Accordingly and in conformity with the directives of your Government, your Excellency shall solicit the support and assistance of the Italian Government in its dealings with the Ethiopian Government with a view to obtaining from the latter, the concession making possible the construction of a dam on Lake Tana and the right to construct and maintain a road for purposes of transporting equipment, men etc., from the Sudanese frontier to the dam.

Your Excellency declared to me that in exchange, Her Majesty's Government was prepared to support the Italian Government vis-à-vis the Abyssinian Government with a view to obtaining a concession making possible the construction and operation of a railway stretching from the Erythrean frontier to the Italian Somalia frontier with the understanding that this railway line as well as all the works needed for its construction and operation could freely span the above-mentioned route.

Within this perspective, your Excellency went on, it would be desirable to send identical instructions to British and Italian representatives in Ethiopia in order that they could undertake a concerted action vis-a-vis the Abyssinian Government with a view to obtaining at the same time, the concessions desired by the Governments of Great Britain and Italy relative to Lake Tana and the construction of a railway linking Erythrea to Italian Somalia. It is understood that should one of the two Governments obtain the desired concession while the other Government failed to obtain it, the Government which would have obtained satisfaction would not spare its sincere efforts in order to enable the other Government to obtain satisfaction too.

Your Excellency further declared that should Her Majesty's Government, with the unstinted support of the Italian Government obtain from the Abyssinian Government the coveted concession on Lake Tana, the British Government would also recognize the exclusive character of Italian economic influence in western Abyssinia and in the whole territory spanned by the above-mentioned railway.

The British Government would also lend its support vis-à-vis the Ethiopian Government concerning all Italian requests with a view to obtaining economic concessions in the above-mentioned zone. This recognition and commitment are nevertheless subject to the condition that the Italian Government, for its part, recognizing the former hydraulic rights of Egypt and the Sudan shall undertake not to construct along the parts of the Blue and White Niles near to their sources, tributaries and affluents, any structures which could significantly modify their rates of flow into the main river.

Your excellency finally wishes to declare that it is understood that the above condition shall not prevent the inhabitants of the region from making a reasonable use of the waters in question including even the construction of hydroelectric dams or small reservoirs on minor affluents with a view to storing water reserves for domestic use as well as for food crop cultivation needed for their substance.

Obeying the directives of your Government, your Excellency assures the Italian Government that the construction and operation of the dam should be done within the limits of possibility, with local labour and shall ensure that the level of the water of the lake shall not rise above the level reached hitherto during the rainy season. It is for this reason that the British Government is convinced that the existence of this dam will be not only of great value to Egypt and the Sudan, but will contribute to enhancing the prosperity of inhabitants of the region and the development of their economic progress.

In reply to the above-mentioned declarations and requests by Your Excellency, I have the honour to declare, for my part, that the Royal Government has taken good note of the desire expressed by the British Government to tackle this problem in the same spirit of friendly cooperation which proved so fruitful in other fields; we have taken note of it with as much satisfaction as I am convinced that such a cooperation will be all the more useful as it is developed.

The Royal Government has also taken good note of the fact that Her British Majesty's Government is at present convinced that the Italian proposals presented in November 1919 do not go counter to the stipulated provisions of the London Agreement of 13 December 1906 given that the objective of this Agreement (as Italy has always maintained) is the maintenance of the status quo in Ethiopia on the basis of international agreements stipulated in Article I of the very Agreement as well as the coordination of action of signatory to ensure the protection of their respective interests so that these interests are not jeopardized.

This point having been achieved, and although the proposals mentioned above and presented in London in November 1919 had been a part of a wider colonial based negotiation, emanating from the London Treaty of 1915, a negotiation which achieved only partial results, the Royal Government accepts nevertheless to undertake a fresh study of the proposals in question, sharing the desire of the British Government to apply the principle of friendly cooperation and convinced that this principle will only extend to the protection and development of respective Italian and British interests, on the bases and within the limits of the stipulated provisions of the London Agreement of 1906.

This is why I have the honour to declare to your Excellency that the Royal Government will support the British Government in its dealings with the Ethiopian Government with a view to obtaining from the latter the concession making possible the construction of a dam on Lake Tana as well as the right to construct and maintain a road for the purpose of transporting equipment, people etc., from the Sudanese frontier to the dam.

Moreover, the Royal Government notes that in exchange, the British Government shall lend its support to the Italian Government in its dealings with the Abyssinian Government in order to obtain a concession making possible the construction and operation of a railway line stretching from the Erythrean frontier to the Italian Somalia frontier with the clear

understanding that this railway as well as all works required for its construction and operation could freely span the above-mentioned route.

In this perspective, the Italian Government shall dispatch the necessary directives to the Italian representative in Addis Ababa – these directives bearing resemblance to those that the British Government will dispatch to its own representative, with a view to embarking on a concerted action vis-a-vis the Abyssinian government in order to obtain, at the same time, the concessions desired by the Governments of Great Britain and Italy relative to Lake Tana and the construction of a railway linking Erythrea to Somalia. It is understood that should one of the two Governments obtain the desired concession while the other Government fails to obtain it, the Government which would have obtained satisfaction would not spare its most vigorous efforts to ensure that the other Government also obtains satisfaction, in order to ensure that the practical execution of these two concessions be, if possible, simultaneous.

The Royal Government has taken good note of the fact that, should the Government of Her British Majesty, with the unstinted support of the Italian Government obtain from the Abyssinian Government the coveted concession over Lake Tana, it would acknowledge the exclusive character of Italian economic influence in the western part of Abyssinia and in the entire territory spanned by the above-mentioned railway and would also support vis-a-vis the Ethiopian Government, all Italian requests with a view to obtaining economic concessions in the above zone.

The Italian Government for its part, recognizing the former rights of Egypt and the Sudan, shall undertake not to construct, over the parts of the Blue and White Niles near to their sources and along their tributaries and affluents any structures which could modify significantly, their rates of flow into the main river.

I wish to note that the Government of Her British Majesty is determined to observe the already existing rights to water of the inhabitants of territories bordering Italy's exclusive sphere of economic influence. It is understood that within the limits of possibility and in compatibility with the essential interests of Egypt and the Sudan, the project under study should be formulated and executed in such a manner as to meet the economic needs of these populations.

Yours sincerely...

MUSSOLINI
Rome 20 December 1925

ANNEX VIII

Exchange of Notes between Her Majesty's Government in the United Kingdom and the Egyptian Government on the Use of Waters of the Nile for Irrigation (Cairo, 7 May 1929)

No I:

Mohammed Mahmoud Pacha to Lord Lloyd, office of the Council of Ministers
(Cairo, 7 May 1929)

Your Excellency,

Further to our recent conversations, I have the honour to bring to the knowledge of your Excellency the viewpoint of the Egyptian Government on the irrigation problems, which formed the subject of our discussion.

1. The Egyptian Government wishes to acknowledge that a solution to these problems would not be deferred to a subsequent date when it became possible for the two Governments to come to terms on the status of the Sudan but, regarding the settlement of the present provisions, it expressly reserves every freedom at any negotiations which could precede such an agreement.
2. Obviously, the development of the Sudan needs a quantity of water flowing from the Nile higher than used hitherto by the Sudan. Your Excellency is keenly aware of the fact that the Egyptian Government has always been desirous of encouraging such a development and shall continue in this direction. It would be ready to come to terms with her Majesty's Government on an increase in this quantity in so far as this would not infringe on neither the natural and historical rights of Egypt on the waters of the Nile nor on its agricultural development needs subject to obtaining satisfactory assurances with regard to the protection of Egyptian interests as set forth in the ensuing paragraphs of the present note.
3. This is why the Egyptian Government accepts the conclusions of the 1925 Nile Commission whose report features in the Annex and which is considered as forming an integral part of the present agreement. Nevertheless, in view of the delay on the construction of the Gebel Aulia dam which, according to paragraph 40 of the Nile Commission Report is considered as being the counterpart of the Gezira project, the Egyptian Government suggests that the date and the quantities of gradual sampling of waters of the Nile carried out by Sudan during the months of flood as stipulated in Article 57 of the Report of the Commission be modified in such a manner that Sudan may not take out more than 126 cubic metres per second before 1936 with the understanding that the periods set forth in the above article will remain unchanged until the stipulated figure of 126 cubic meters per second is reached. These quantities are based on the Nile Commission Report, and may therefore cover the reviews as set down in the Report.
4. It is also understood that the following provisions will be observed with regard to irrigation works of the Nile:

- (i) The Inspector General of the Irrigation Service in Sudan, his staff as well as other officials that the Ministry of Public Works may appoint shall have every liberty to cooperate with the resident engineer of Sennar with a view to measuring the rates of flow and the maximum levels in order that the Egyptian Government may ensure that the water distribution and control of the dam be executed in observance of the Agreement concluded. The detailed practical provisions adopted by joint agreement by the Minister of Public Works and the Irrigation Adviser to the Sudanese Government shall come into force on the date on which the present note shall be confirmed.
 - (ii) Except with the prior consent of the Egyptian Government, no irrigation works shall be undertaken nor electric generators installed along the Nile and its branches nor on the lakes from which they flow if these lakes are situated in Sudan or in countries under British administration which could jeopardize the interests of Egypt either by reducing the quantity of water flowing into Egypt or appreciably changing the date of its flow or causing its level to drop.
 - (iii) In order to enable it take all necessary steps with a view to conducting a study and recording the water conservation of the Nile in Sudan, the Egyptian Government shall enjoy all the facilities required to this end.
 - (iv) Should the Egyptian Government decide to undertake work on the river and its branches, or take steps with a view to increasing water supply for the benefit of Egypt, it shall beforehand, come to terms with the local authorities on the measures to be taken in order to safeguard local interests. The construction, maintenance and management of works mentioned above shall be placed under the direct control of the Egyptian Government.
 - (v) The Government of Her British Majesty in the United Kingdom and Northern Ireland shall use its good offices so that the carrying out of surveys, taking of measures, the conduction of preceding paragraphs be facilitated by the Government of regions under British influence.
 - (vi) It is obvious that within the framework of the implementation of operations envisaged by the present note, uncertainties may appear from time to time regarding the interpretation of a question of principle or technical or administrative points. Each problem of this nature shall be examined within a spirit of reciprocal honesty. In case of a dispute arising from the interpretation or execution of the above provisions or if one of the parties contravened the stipulated provisions of the present note and should the two Governments fail to resolve this problem, this problem shall be referred to an independent body for arbitration.
5. The present agreement can in no way be considered as affecting the control of the River – this being a problem which will cover free discussions between the two Governments within the framework of negotiations on the Sudan.

I seize this occasion, etc.

M.MAHMOUD
Chairman of the Council
of Ministers

No 2:
Lord Lloyd to Mahmoud Pacha
(Cairo, 7 May 1929)

Sir,

1. I have the honour to acknowledge receipt of the note that your Excellency addressed me today.
2. By confirming the provisions on which we mutually agreed and which were enumerated in your Excellency's note, I am entrusted with the task of expressing the satisfaction of her British Majesty's Government in the United Kingdom and Northern Ireland at the fact that these discussions have led to an agreement which will certainly facilitate the development of Egypt and the Sudan and promote their prosperity.
3. Her Majesty's Government in the United Kingdom shares the viewpoint of his Excellency on the fact that this agreement should deal, and deals essentially with the control of irrigation devices on the basis of the Nile Commission Report and does not affect the status quo in Sudan.
4. In conclusion, I would like to remind your Excellency that Her Majesty's Government in the United Kingdom has already recognized the natural and historical right of Egypt to the waters of the Nile. I am entrusted with the responsibility of declaring that Her Majesty's Government in the United Kingdom considers the observance of these rights as a fundamental principle of the policy of Great Britain and wishes to assure your Excellency that the principle of this agreement as well as its detailed stipulated provisions will be observed irrespective of the time and circumstances.

I seize this occasion, etc.

Lloyd
High Commissioner

The Residence
Cairo, 7 May 1929

ANNEX IX

Exchange of Notes between the United Kingdom Government and the Egyptian Government on the Construction of a Hydroelectric Power Station along the Owen Falls in Uganda (19 January 1949 - February 1949 / May 1949 - January 1953)

Note 1

19 January 1949

Dear Minister,

1. Further to Note No 237 (124/1/1) of 7 May 1947 addressed to the Royal Egyptian Foreign Ministry regarding the building project of a reservoir on Lake Albert, I have the honour to inform your Excellency under the directives of the Principal Secretary in Her Majesty's Foreign Ministry that the Ugandan Government in view of its pressing need in electric energy has decided to place an order to carry out construction works of a hydroelectric power station, at the Owen Falls, on the basis of documents elaborated by technical experts of the respective Governments, in Cairo, last April, which will become operational, at the initial stage, only on the basis of the natural rate of flow of the river.
2. The dam is designed in such a manner that the installed capacity will be 150,000 KW. The Government of Uganda has, at the moment, the intention to install turbines of a capacity of 90,000 KW only. No increase of capacity which would require for its operation, more than the natural flow rate of the river will be undertaken without prior consultation between our respective Governments in accordance with the commitment undertaken of Her Majesty in the United Kingdom by exchange of Notes on the use of the waters of the Nile, of 7 May 1929.
3. By means of the present communication, I also wish to transmit to his Excellency, the assurance of Her Majesty's Government that the construction and operation of this electrical power station shall not be prejudicial to the interests of Egypt, either through the reduction of the quantity of water flowing into Egypt or through the change in the date of its flow into Egypt, or even through the drop in its level, while observing the stipulated provisions set forth in paragraph 2 above. Should the Egyptian Government express the desire to endorse the above conditions, the Government of Uganda would be prepared, after the works have been completed, to receive an Egyptian irrigation expert who, through a personal on-the-spot examination will ascertain that the operation of this project is in line with the commitments undertaken and mentioned above.

I have the honour, etc .

His Excellency

Ibrahim DESOUKY Pacha
Ministry of Foreign Affairs, Cairo

Note 2

Royal Government of Egypt
Cairo, February 1949

Your Excellency,

Further to Your Excellency's letter of 19 January 1949 in which you informed me, under the directives of the Principal Secretary of State in Her Majesty's Foreign Service that: "The Government of Uganda in view of its pressing need for electric energy has decided to place an order for the construction works of a hydroelectric power station at the Owen Falls, on the basis of documents elaborated by the technical experts of the respective Governments in Cairo last April; this hydroelectric power station will operate at the initial stage, only on the natural flow rate of the river.

The dam is designed in such a manner that the installed capacity will be 150,000 KW. The Government of Uganda intends, for the moment, to install turbines of a capacity of 90,000 KW only. No increase in capacity which would require, for its operation, more than the natural flow rate of the river shall be undertaken without prior consultation between our respective Governments, in line with the commitment undertaken by Her Majesty's Government in the United Kingdom through the exchange of Notes on the use of the waters of the Nile of 7 May 1929.

By the Present Letter, I also wish to convey to His Excellency, the assurance of Her Majesty's Government that the construction and operation of this electric power station will not be prejudicial to the interests of Egypt either through the reduction in the quantity of water reaching Egypt, or through the change in the date on which this water may reach Egypt or even through the drop in its level while observing the stipulated provisions set forth in paragraph 2 above. Should the Egyptian Government express the desire, the Ugandan Government would be ready, once the works are completed to receive an Egyptian irrigation expert so that he may be able to ascertain, through a personal on-the-spot examination, that the operation of this project is in line with the commitments undertaken and mentioned above.

I have the honour to inform your Excellency that while appreciating the fact of having been informed of the Ugandan Government's intention to undertake this project, the Egyptian Government is desirous of emphasizing to his Excellency that Egypt is under the Obligation of undertaking these all-important irrigation projects aimed at increasing the summer flow rate of the river in order to meet the needs of agricultural development of the country and to provide, within the bounds of possibility, the needs of a growing population.

Given that the irrigation policy of Egypt is based on different projects aimed at controlling the waves of the Nile including the storage of water over a period of one year and the accumulation of a reserve in Lake Victoria, it seems that Egypt and Uganda have an interest in cooperating in the construction of the dam at the outlet of the lake; the dam would serve irrigation purposes for Egypt and provide electric energy for Uganda.

This will lead to the change in the plans of hydroelectric power projects in order to meet this dual need.

This is why the Egyptian Government wishes that this dam be designed in such a manner that it may allow the storage of water reserves in Lake Victoria within a limit of 3 metres and that the sluice gates be constructed in such a manner that they may allow maximum outflow at the lowest level of the lake.

The Egyptian Government is of the opinion that, right from the beginning, it should participate in the design and construction of the dam, as well as the operation of the reservoir after it has been completed, and that it will participate in the cost of construction and bear the annual expenses in proportion to the advantages reaped by each of the two countries.

I have the honour, etc.

Note 3

Embassy of Great Britain
Cairo, 30 May 1949

Dear Council Chairman,

I have the honour to recapitulate below the different points on which her Majesty's Government in the United Kingdom and the Royal Egyptian Government came to terms on the construction and operation of the dam to be erected on the Owen Falls in Uganda:

1. In the spirit of the 1929 Agreement on the waters of the Nile, the Royal Egyptian Government and Her British Majesty's Government approve the construction of a dam on the Owen Falls in Uganda aimed at the production of hydroelectric energy and the control of the waters of the Nile.
2. The plans and detailed estimates of this project were prepared in consultation with the Egyptian Ministry of Public Works and the Ugandan authorities and approved by them. The Royal Egyptian Government and the Government of Her British Majesty have accordingly agreed to entrust to the Ugandan Electricity Corporation the task of initiating the despatch of tenders and the award of contracts in conformity with these plans and detailed estimates.
3. The contracts shall be submitted to the two Governments, which shall study them promptly and shall communicate their consent by an official exchange of notes which the Government of Uganda shall endorse immediately.
4. The two Governments also agreed that although the construction of the dam be entrusted to the Ugandan Electricity Corporation during the period of construction, Egypt's interests shall be represented at the worksite by a resident Egyptian engineer of appropriate rank and his staff appointed by the Royal Egyptian Government to whom all the facilities for fulfilment of their functions shall be granted. Furthermore, the two Governments agreed that, the dam, after its construction, shall be administrated and maintained by the Ugandan Electricity Corporation; this Corporation shall control the flow of water which should pass through the dam under the directives of the Egyptian resident engineer assigned for this purpose to the dam together with his staff, by the

Royal Egyptian Government in line with the agreements which shall be concluded between the Egyptian Ministry of Public Works and the Ugandan authorities following steps which shall be taken between the two Governments.

5. The two Governments also acknowledged that during and after the construction of the dam, the Ugandan Electricity Corporation may take all measures that it shall deem appropriate regarding the Owen Falls and ensure that, irrespective of how small in quantity they may be, these Falls shall not be prejudicial to the interests of Egypt in accordance with the 1929 Agreement on the waters of the Nile and shall not adversely affect the rate of the water supposed to pass through the dam in line with agreements which shall be concluded between the two Governments.
6. The Egyptian Ministry of Public Works and the Ugandan Electricity Corporation shall consult with each other on problems of mutual interest. Any dispute which may arise regarding the control of the water or the generation of electric energy shall be discussed and resolved in the spirit of friendly cooperation between the two Parties. Any dispute which would not be possible to resolve by these authorities, shall be submitted to an Arbitration Tribunal in conformity with steps which should be taken by joint agreement between the two Governments.

I have the honour to propose that, should the Royal Egyptian Government accept, this note as well as the reply of Your Excellency should constitute an official agreement between our two Governments on the dam to be erected on the Owen Falls and related works.

I have the honour, etc.

Ronald Cambell

Note 4

Ministry of Foreign Affairs,
Political Department
British and American Section,
124/1/1
N:170

Your Excellency,

I have the honour to inform Your Excellency that I received your letter No 97/62/49 of 20 May 1949, which contained a summary of the points of agreement between the Royal Egyptian Government and Her Majesty's Government on the Administration of the dam whose construction is scheduled to take place at the Owen Falls in Uganda.

These points, in the English text are the following: "reference to the translation of the enclosed letter, of Her Majesty's Ambassador". In reply to this letter, I have the honour to inform Your Excellency that the Royal Egyptian Government accepts that the exchange

of these two letters mentioned above and its reply, constitute an official agreement between our two Governments on the Owen Dam.

Accept, Your Excellency, the assurance of my highest consideration.

31 May, 1949

Ibrahim ABDEL-HADI

Note 5

The Egyptian Minister for Foreign Affairs to Her Majesty's Charge d'Affaires at Cairo
Ministry for Foreign Affairs
Cairo, July 16, 1952

M. le Ministre,

I have the Honour to transmit herewith a draft agreement on the subject of the construction of the Owen Falls Dam in Uganda, and to propose, subject to approval, that the present draft agreement and your reply thereto constitute a formal agreement between our two Governments.

I avail, &c.

H. SIRRY

Enclosure

The Royal Egyptian Government

- (i) Will bear that part of the cost of the dam at Owen Falls which is necessitated by the raising of the level of Lake Victoria and by the use of Lake Victoria for the storage of water;
- (ii) Will bear the cost of compensation in respect of interests affected by the implementation of the scheme or, in the alternative, the cost of creating conditions which shall afford equivalent facilities and amenities to those at present enjoyed by the organisations and persons affected, and the cost of such works of reinstatement as are necessary to ensure a continuance of the conditions obtaining before the scheme comes into operation, such costs to be calculated in accordance with arrangements to be agreed between our two Governments;
- (iii) Will pay to the Uganda Electricity Board the sum of ú 980,000 as compensation for the consequential loss of hydroelectric power, such payment to be made on the date when power for commercial sale is first generated at the Owen Falls;
- (iv) Agrees that, for the purpose of the calculation of the compensation under the provisions of sub-paragraph (ii), all new flooding around Lake Victoria within the agreed range of three metres shall be deemed to be due to the implementation of the scheme.

Her Majesty's Ambassador at Cairo to the Egyptian Minister for Foreign Affairs
British Embassy
Cairo, January 5, 1953

M. le Ministre,

With reference to the letter of July 16 addressed to Mr. M. J. Creswell by Maitre Hussein Sirry concerning financial arrangements which will arise out of participation by the Royal Egyptian Government in the Owen Falls Scheme in Uganda, I have the honour to confirm that the text proposed by the Royal Egyptian Government is acceptable to Her Majesty's Government in the United Kingdom and that Maitre Sirry's letter under reference and this reply will constitute a formal accord between our two Governments.

2. I also confirm that the text should read as follows:

I have, &c.

Ralph Skrine STEVENSON

Source: <http://www.internationalwaterlaw.org/RegionalDocs/Owen-Falls-Dam2.htm>

ANNEX X

Agreement Between the Republic of Sudan and the United Arab Republic on the Full Utilization of the Waters of the Nile (8 November 1959).

Considering the need felt by the Republic of Sudan and the United Arab Republic to undertake, on the basis of technical agreements other than those applied at present, new projects on the Nile making possible the full control and the increase in its output in order that its waters be fully utilized;

Considering that these projects require for their execution and administration, full agreement and total cooperation between the two Republics in order to control the advantages accruing to them and to use the waters of the Nile in such a manner as to secure the present and future needs of the two countries;

And considering that the Agreement on the waters of the Nile concluded in 1929 only provided for the partial utilization of the waters of the Nile and did not include the total control of the waters of the river, the two Republics agree that:

First:

The vested interests up to the present time

1. The quantity of waters of the Nile used by the United Arab Republic until this agreement is signed, shall be its vested interest prior to obtaining the advantages stemming from projects undertaken for the control of the Nile and works which shall increase its output-works featuring in this Agreement. The total amount of this vested interest shall be 48 bcm per year, measured in Aswan.
2. The quantity of water currently used by the Republic of Sudan shall be its vested interest prior to obtaining advantages which stem from works mentioned above. The total amount of these vested interests shall be 4 bcm per year measured in Aswan.

Second:

Works for the control of the Nile and the distribution between the two Republics, of advantages stemming from there

1. With the aim of regulating the waters of the river and controlling its flow into the sea, the two Republics agree that the United Arab Republic shall construct the Sudd el Aali in Aswan, the first of a series of structures on the Nile for the storage of waters over a one-year period.
2. In order to allow Sudan to use its share of water, the two Republics agree that the Republic of Sudan shall construct the Roseires Dam over the Blue Nile as well as any other structure that the Republic of Sudan shall deem necessary for the utilization of its share.

3. The net advantages stemming from the Sudd el Aali reservoir shall be calculated on the basis of the natural flow of the river at Aswan, taken over the years of this century, which is estimated to be 84 bcm per year. The vested interests of the two Republics, mentioned in the "first" articles as measured at Aswan as well as the average losses in water caused by storage over a period of one year in the Sudd el Aali reservoir shall be deducted from this output, and the difference shall constitute the net profits that the two Republics shall share.
4. The net profit of the Sudd el Aali reservoir mentioned in the preceding paragraph shall be shared between the two Republics in the ratio of 14 1/2 for Sudan and 7 1/2 for the United Arab Republic as long as the average output of the river remains within the limits of the average output mentioned in the preceding paragraph. This means that if the average output remained the same as the average of the preceding years of this century and which is estimated at 84 billion and if losses due to storage over the entire year remain the same as the present estimates of 10 billion, the net advantage of the Sudd el Aali reservoir will be 22 billion, the share of the Republic of Sudan being 14 billion 1/2 and the share of the United Arab Republic being 7 billion 1/2. By adding these shares to the vested interests, the total share of the net output of the Nile after the Sudd el Aali reservoir has gone into full operation will be 18 billion 1/2 for the Republic of Sudan and 55 billion 1/2 for the United Arab Republic.

But if the average output increases, the net advantage resulting from this increase shall be divided between the two Republics in equal proportions.

5. As the net advantage stemming from the Sudd el Aali reservoir (mentioned in paragraph 3 of the "second" article) is calculated on the basis of the average natural output of the river at Aswan in the course of the years of this century, after deduction of the vested interests of the two Republics, and the losses due to storage for a period of one year in the Sudd el Aali reservoir, it is agreed that this advantage shall be subjected to reviews by the Parties, at reasonable intervals which shall be determined by joint agreement once the Sudd el Aali reservoir goes into full operation.
6. The Arab Republic of Egypt accepts to pay to the Republic of Sudan the sum of 15 million Egyptian pounds as compensation for damage caused to Sudanese goods as a result of the water storage in the Sudd el Aali reservoir up to a level of 182 meters (base reference). The payment of this compensation shall be carried out according to the attached agreement between the two Parties.
7. The Republic of Sudan pledges to ensure, before July 1963, the final transfer of the population of Halfa and other Sudanese nationals whose lands shall be flooded by the stored waters.
8. It is agreed that when Sudd el Aali goes into full operation and stores water over a period of one year, the United Arab Republic shall no longer need to store water in the Gebel Aulia dam. The two contracting parties shall then examine all the problems stemming from this renouncement.

Third:

Works for the utilization of waters lost in the Nile Basin

Considering the fact that at present, considerable volumes of water of the Nile Basin are lost in the swamps of Bahr El Jebel, Bahr El Zaraf, Bahr El Ghazal and the Sobat, and that it is essential that efforts be made in order to avoid these losses and to increase the output of the river for purposes of agricultural development in the two Republics, the two Republics have agreed that:

1. In agreement with the United Arab Republic, the Republic of Sudan shall erect structures with a view to increasing the output of the river by checking water losses from the Nile Basin, from the swamps of Bahr El Jebel, Bahr El Zaraf, Bahr El Ghazal and their tributaries, from the Sobat and its tributaries and from the White Nile. The net output of these projects shall be distributed in equal proportions between the two Republics and each shall participate in the costs in equal proportions. The Republic of Sudan shall finance the projects mentioned above from its own funds, and the United Arab Republic shall pay its share of costs in the same proportion of 50% which falls to it from the output of these projects.
2. If, as a result of the progress made in its agricultural development programme, the United Arab Republic considers that it is necessary to undertake one of the projects intended for increasing the output of the Nile mentioned in the preceding paragraph, after it has been approved by the two Governments and at a time when the Republic of Sudan does not need these projects, the United Arab Republic shall inform the Republic of Sudan of the date on which it can conveniently undertake the construction of the structure in question. In the two years following such a communication, each of the two Republics shall submit a programme spread over the period for the use of its share of waters thus recovered by the projects; each programme linking the two parties. On the expiry of two years, the Arab Republic of Egypt shall undertake the construction of works on its own account. When the Republic of Sudan is ready to use its own share according to the programme agreed upon, it shall pay to the United Arab Republic a share of the advantages due to Sudan in relation to the totality of advantages stemming from these projects: with the understanding that the share of each of the Republics shall not exceed one-quarter of the advantages stemming from these projects.

Fourth:

Technical cooperation between the two Republics

1. In order to ensure technical cooperation between the Governments of the two Republics with the aim of pursuing research and studies required for control works of the Nile and for the increase in its output and in order to pursue hydraulic studies of its surface waters, the two Republics agree that immediately after the signing of this Agreement, a Joint Permanent Technical Commission shall be set up which would comprise the same numbers of each party and whose functions would be:
 - (a) The elaboration of basic work projects aimed at increasing the output of the Nile and the control of studies required for the development of these works before presenting them for approval by the Governments of the two Republics.

- (b) The supervision of the execution of works approved by the two Governments.
 - (c) The development of the modus operandi for all the works which shall be undertaken on the Nile within the frontiers of Sudan and for those which shall be contracted outside the frontiers of Sudan in agreement with the authorities concerned in the countries in which such works shall be undertaken.
 - (d) The supervision of the application of all the modi operandi mentioned in (c) relative to works undertaken within the frontiers of Sudan and relative to the Sudd el Aali reservoir and the Aswan Dam is secured by official engineers appointed for purpose by the two Republics; as well as the supervision of the performance of structures erected on the Upper Nile as set forth in the agreements concluded with the countries in which such structures are erected.
 - (e) As it is probable that there could be a series of “ low level” years which would lead to a succession of low levels in the Sudd el Aali reservoir, to the extent that it might not be possible for the two Republics to draw all the water that they would need at any given time during the years specified, the Technical Commission is responsible for taking equitable steps which shall be followed by the two Republics; the recommendations shall be submitted for approval by the two Governments.
- 2. In order to make it possible for the commission to discharge the functions set forth in the preceding paragraph, so as to attend to the continued gauging of the Nile and maintain observations of surface water plans, these tasks shall be carried out under the technical supervision of the commission by engineers of the Republic of Sudan and engineers of the United Arab Republic in Sudan, in the United Arab Republic and in Uganda.
 - 3. The two Governments shall set up the Joint Technical Commission by a joint decree and shall grant it the funds required for its budget. Depending on the requirements of the works, the commission may meet either in Cairo or Khartoum. Subject to the approval of the two Governments, the commission shall draw up the regulations governing the organization of technical, administrative and financial meetings and activities.

Fifth:
General Provisions

- 1. Should negotiations on the waters of the Nile with another Nile River State outside the frontiers of the two Republics be necessary, the Government of the Republic of Sudan and that of the United Arab Republic shall adopt a common viewpoint after the problem has been studied by the Technical Commission. The common viewpoint shall serve as a basis for all negotiations between the Commission and the said States.

If the negotiations result in an agreement allowing the construction of works on the river outside the frontiers of the two Republics, after having consulted with Government authorities of the States concerned, the Joint Technical Commission shall prepare all the technical details of the execution of works and operation and maintenance. After the Governments concerned have sanctioned these measures, the Commission shall supervise the implementation of these technical agreements.

2. Each time that River States other than the two Republics emphasize their right to a portion of the waters of the Nile, the two Republics have agreed that they shall examine together these requests and shall come to a common viewpoint concerning them. If it results from this examination that a part of the waters of the Nile should be granted to one or the other of the said States, the quantity accepted shall be deducted from the share of the two Republics in equal proportions, calculated in Aswan. The Technical Commission mentioned in this agreement shall take the necessary steps with the States concerned with a view to ensuring that the water consumption shall not exceed that volumes agreed upon.

Sixth

Transitional period to deriving full advantage from the completed reservoir in Sudd el Aali

Since the two Republics shall not be able to derive from the net advantage offered by the Sudd el Aali reservoir before the completion of its construction and before the reservoir can be fully used, the two Parties shall come to terms on their agricultural development programmes within the transitional period beginning and extending as far as the completion of the Sud el Aali reservoir without prejudice to their current water needs.

Seventh

This agreement shall come into force after ratification by the two contracting Parties subject to the condition that each of the Parties shall inform the other Party of the date of ratification through diplomatic channels.

Eight

Annexes (10 and (2,A and B) attached to this Agreement are considered as forming an integral part of the Agreement.

Drafted in Cairo, in Arabic, in two original copies on the 7th day of the month of Gumada El Oula 1379, on 8 November 1959.

For the Republic of Sudan
Lewa
MOHAMED TALAAT FARID

For the United Arab Republic
ZAKARIA MOHIE EL DIN.

Annex (1)

Special provision for a water loan requested by the United Arab Republic

The Republic of Sudan accepts in principle to grant to the United Arab Republic a water loan taken along the Sudan portion of the waters of Sudd el Aali in order to make it possible for it to pursue its already envisaged agricultural development programmes.

The United Arab Republic shall submit its loan request after a re-examination of its programmes, within the five years following the signing of this Agreement. If this re-examination undertaken by the United Arab Republic reveals that it needs this loan, the Republic of Sudan shall grant it a loan paid out of its own share not exceeding one and half billion, with the understanding that this loan shall discontinue in November 1977.

Annex (2)

(A) To: The Head of Delegation of the Republic of Sudan

In accordance with the (second) article, paragraph 6, of this agreement signed on this day, concerning the full utilization of the waters of the Nile, the compensations amounting to 15 million Egyptian pounds payable in pounds sterling or in another currency on which we two Parties shall agree, and calculated on the basis of a fixed rate of \$ 2.87156 to the Egyptian pound, shall be paid as agreed upon by the Government of the United Arab Republic in installments, as follows:

3 million pounds on 1 January 1960
4 million pounds on 1 January 1961
4 million pounds on 1 January 1962
4 million pounds on 1 January 1963

I would be grateful if you would confirm your agreement on the above conditions.

With my highest consideration,
Head of Delegation,
United Arab Republic

ZAKARIA MOHIE EL DIN

Annex (3)

(B) To: The Head of Delegation of the United Arab Republic

I have the honour to acknowledge receipt of your letter this day stipulating the following:

“In accordance with the (second) article, paragraph 6, of this agreement signed this day, concerning the full utilization of waters of the Nile, the compensations amounting to 15 million Egyptian pounds payable in pounds or in another currency on which the two parties shall agree, and calculated on the basis of a fixed rate of \$ 2.87156 to the Egyptian pound, shall be paid as agreed upon by the government of the United Arab Republic in installments, as follows:

3 million pounds on 1 January 1960
4 million pounds on 1 January 1961
4 million pounds on 1 January 1962
4 million pounds on 1 January 1963

I would be grateful if you would confirm your agreement on the above conditions.”

I have honour to confirm the agreement of the Government of the Republic of Sudan to the content of this letter.

With my highest consideration,
Head of Delegation,
Republic of Sudan
(Lewa)
MOHAMED TALAAT FARID

ANNEX XI

Framework for General Cooperation between Ethiopia and the Arab Republic of Egypt (Cairo, 1 July 1993)

Ethiopia and the Arab Republic of Egypt:

Determined to consolidate the ties of friendship, to enhance cooperation between the two countries and to establish a broad base of common interest;

Desirous of the realization of their full economic and resource potentials;

Recognizing the importance of the traditional ties existing between the two countries that have been consolidated during their long history of close relations and linked by the Nile River with its basin as a center of mutual interest;

Reaffirming their commitment to the UN and OAU Charters, Principles of International Law, as well as the Lagos Plan of Action;

Hereby agree on the following framework for cooperation:

Article 1

The two parties reaffirm their commitment to the principles of good neighbourliness, peaceful settlement of disputes, and non-interference in the internal affairs of states.

Article 2

The two parties are committed to the consolidation of mutual trust and understanding between the two countries.

Article 3

The two parties recognize the importance of their cooperation as an essential means to promote their economic and political interests as well as stability of the region.

Article 4

The parties agree that the issue of the use of the Nile waters shall be worked out in detail through discussions by experts from both sides, on the basis of the rules and principles of international law.

Article 5

Each party will refrain from engaging in any activity related to the Nile waters that may cause appreciable harm to the interests of the other party.

Article 6

The two parties agree on the necessity of the conservation and protection of the Nile waters. In this regard, they undertake to consult and cooperate in projects that are mutually advantageous, such as projects that would enhance the volume of flow and reduce the loss of Nile waters through comprehensive and integrated development schemes.

Article 7

The two parties will create an appropriate mechanism for periodic consultations on matters of mutual concern, including the Nile waters, in a manner that would enable them to work together for peace and stability in the region.

Article 8

The two parties shall endeavour towards a framework for effective cooperation among countries of the Nile basin for the promotion of common interest in the development of the Basin.

This framework for cooperation is made in two originals in the English and the Arabic languages, both texts being equally authentic.

Done at Cairo this 1st day of the month July 1993

For Ethiopia

For the Arab Republic of Egypt

Signing

Signing

Meles Zenaw
President of the Transitional Government

Hosni Mubarak
President of the Republic

ANNEX XII

Synthesis of Upstream / Downstream ECONILE Theses Similarities and Differences in Upstream / Downstream Theses Findings

Similarities

National level	There are national requirements that have to be fulfilled for international cooperation to be successful.
Third party	<p>Third party plays a key role in:</p> <ul style="list-style-type: none"> • Financial support • Bringing the parties together <p>The clear task division between different third party actors (World Bank, UNDP and CIDA) is an important factor in order to provide successful support of cooperation.</p> <p>An open question concerns how sustainable third party supported cooperation is, in other words, what happens when the Nile countries are left on their own?</p>
Dialogue workshops	Dialogue workshops play an important role to enhance communication. Transfer is possible through publications and attendance of people from track one. Dialogue is important to learn to understand the other side, discuss openly and explore options.
Environment	Optimal management of environmental resources (in this case water) requires cooperation. An integrated watershed management can benefit both upstream and downstream countries.
Methodology	<p>A joint, but independent study of an international river basin is very helpful due to the following reasons:</p> <ul style="list-style-type: none"> • Exchange of literature. • Active interaction and dialogue between the two researchers serves as a testing ground for ideas. • Contact and frequent meetings between the two researchers helpsto understand the other side, to facilitate perspective change. • A neutral and independent academic institutional backing is very important as an affiliation center for both researchers. • The two researchers need to work independently on their theses; the final product of each does not depend on the product of the other. The dialogue is important, the independence is just as important. • The two researchers benefit from an interdisciplinary approach. They should not try to prove the purity of their methods, but be flexible in developing adequate approaches.

Differences

Legal Issues	<p>The upstream study gives greater emphasis to legal issues than the downstream study for the following reason:</p> <ul style="list-style-type: none">• The existing legal agreements do not provide grounds for equitable water shares (Y. Arsano). <p>The downstream study sees the legal aspects as less important, for the following reason:</p> <ul style="list-style-type: none">• A legal agreement can codify and stabilize cooperation once it exists, but debating legal principles will not lead to cooperation (S. Mason).
Cooperation	<p>Both researchers agree that the Nile basin is heading towards cooperation. They disagree, however, on the speed and distance the countries have already gone. The upstream study is less optimistic about international cooperation than the downstream study.</p>

ANNEX XIII

Selected List of Resource Persons Interviewed or Consulted for Perceptive Inputs (2001–2003)

Ministry of Water Resources (MWR)

H.E. Shiferaw Jarso	Minister of Water Resources
Aduugna Jabessa	Head, Irrigation Department
Bekele Sanbetie	Head, Water Fund Department
Kidane Assefa	Formerly Head, Design Department
Mekonnen Lulseged	Head, Water Research and Development
Mohammed Hagos/ Dr	Formerly, Chief Engineer, MWR
Mussa Mohammed	Acting Head, Transboundary Department
Assefa Affeta	Senior Irrigation Expert
Messele Fescha	Head, Basin Development Department
Tesfay W/Mehret	Head, Strategic Water Development Program

Ministry of Foreign Affairs (MFA)

Girma Amare	Head, Legal Directorate, MFA
Seifessilassie Lemma	Senior Legal Expert, MFA
Yibeltal Aemero	Senior Expert, Neighboring Countries

Ethiopian Electric Power Corporation (EPCO)

Sendeku Araya	Head, Corporate Public Relations
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Environmental Protection Authority (EPA)

Dessalegn Mesfin	Deputy Manager
Matewos Makiso	Senior Expert

Meteorological Services Authority (MSA)

Demilew	Deputy Manager
Yohannes Gebre Hiwot	Public Relations Officer

Disaster Prevention and Preparedness Commission

Yibrah Hagos	Head, Research Division
Asfawn Yirda	Senior Researcher

Fincha Sugar Factory (FSF)

Defaru Garedeu	General Manager, Fincha Sugar Project
Tegene G/Hawariat	Factory Manager, Fincha Sugar Project
Mekonne Gobana	Administrative Head
Dereje Gutema	Head, Agriculture Division
Tekolla Talew	Administrative Officer, Factory Division
Ato Dessalegn	Senior Management Staff

Guder Valley

Mulleta Ammana	Irrigation Farmer, winner of best farmer prize
Lemma Desta	Small Irrigation Expert, Ambo District
Atnafu W/Gabriel	Head, Birbisa-Chirecha Dve't Project (small irrigation)
Taffese Ouwisa	Chairman, Birbisa-Morech Irrigation Association
Dabare Tujja	Agricultural Expert, Ambo District

Baro/Akobo Valley

Olkello Akuagn	Former President, Gambella Regional State
Omod Agua	Head, Security and Justice, Gambella Regional State
David Ott	Chairman, Lare-Jikawo, Downstream Baro/Akobo
Philip Opio	Local elder, formerly teacher
Yonas Kabato	Resident Engineer, Abobo Dam, Alwero River

Renown Personalities

Zewde Gebre Sellasie, Dejazmatch/Dr.	Retired Former Minister of Works, commissioned the Abbay Basin Study (1958–64), established WRD in 1959
Imeru Tamirat	Formerly Head, Transboundary Department, MWR
Teshome Work,	Retired Senior Eng., Former staff, Abbay Basin Study
Girma Hailu	Assistant Res. Rep. (Programs) UNDP, Addis Ababa
Habtamu Gessese	Chairman, Ethiopian Rainwater Harvesting Association

ANNEX XIV

About the Author

Yacob Arsano (Ethiopia), is assistant professor of Political Science & International Relations at Addis Ababa University. He received a PhD from University of Zurich in Political Science, two MA degrees from Ohio University, one in Political Science and another in International Affairs and a BA in Government Affairs from Addis Ababa University. He has published articles and co-authored books in the areas of Hydro-politics, Conflict Transformation and Comparative Politics. He has been a research fellow of Center for Development Studies of University of Bergen, Norway; Center for Security Studies of Swiss Federal Institute of Technology-ETH Zurich; and National Center for Competence in Research-North-South, University of Berne, CH.



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“Yacob Arsano examines the question of the Nile conflict from the upstream side. The reasons for the conflict and options to solve it are presented in a systematic and ‘conflict-sensitive’ research approach. The main approach of the ECONILE project was not only that of a scientific research but also the practical realization of the results in a series of three ‘Dialogue Workshops’ between participants from Egypt, Sudan and Ethiopia. I was deeply impressed by the transparent presentation of these results and their communication. I was convinced without any doubt that the ECONILE project of Yacob Arsano (upstream perspective) and Simon Mason (downstream perspective) deserved the ‘Junior Peter-Becker Prize for Peace and Conflict Research from Philipps University of Marburg’.”

Peter Becker, Lawyer, from his speech at the nomination of the prize in Marburg, Spring 2005.

“Yacob Arsano’s research carefully elucidates the historical, cultural and legal factors relevant to the transformation of the Eastern Nile water use conflict. Of practical relevance for policy-makers, it highlights obstacles and options for future cooperation and ways to ‘enlarge the pie’ in the Eastern Nile Basin.”

Guenther Baechler, Swiss Federal Dept. of Foreign Affairs.

“The coordinated yet independent ECONILE studies are a unique example of the advantages of focusing different disciplines and academic cultures on the analysis of a specific conflict. Bias is minimized, problem-solving capacity is maximized, and context-sensitivity / generality are better balanced.

Kurt R. Spillmann, Professor Emeritus, Director of the Center for Security Studies and Conflict Research 1986–2002, Swiss Federal Institute of Technology, ETH Zurich



Environment and Cooperation in the Nile Basin (ECONILE)

Upstream Perspective

“This is a very important study laying the foundations for more detailed analysis on specific issues on the Nile and the associated problems of the Riparian States. It is evident that the author has spent much time and energy in painting a clearer picture of the metamorphosis of cooperative thinking among the Riparian States, particularly, Ethiopia, Sudan and Egypt.”

Seyoum Gebre Selassie, Professor Emeritus and former Dean of College of Social Sciences, Addis Ababa University.

“Yacob Arsano’s thoughtful analysis of hydro-politics in the Eastern Nile Basin is well worth the effort of a careful reading. Writing with extraordinary sensitivity for local and regional culture and politics, Arsano describes the current unsustainable use of the Nile waters and highlights with clarity Ethiopia’s dilemma between its own inadequate national water management capacity and the lack of international cooperation for a basin-wide sustainable water resource development.”

Andreas Wenger, Professor, Director of the Center for Security Studies, Swiss Federal Institute of Technology, ETH Zurich