INTEGRATED WATER RESOURCE MANAGEMENT AND GOOD WATER GOVERNANCE IN A TRANSBOUNDARY CONTEXT: CASE STUDY OF THE NILE BASIN REGION

A thesis submitted to the University of Manchester for the degree of Master of Science in the Faculty of Engineering and Physical Sciences

2007

FATEMA RAJABALI

SCHOOL OF EARTH, ATMOSPHERIC AND ENVIRONMENTAL SCIENCES
IWRM and Good Water Governance in a transboundary context: case study of the Nile Basin Region

This thesis is submitted in fulfillment of the Master of Science degree awarded as a result of successful completion of the Erasmus Mundus Masters course in Environmental Sciences, Policy and Management (MESPOM) jointly operated by the University of the Aegean (Greece), Central European University (Hungary), Lund University (Sweden) and the University of Manchester (United Kingdom).
TABLE OF CONTENTS

TABLES & FIGURES
LIST OF ABBREVIATIONS
ABSTRACT

CHAPTER I – INTRODUCTION

1.1 RATIONALE OF RESEARCH
1.2 AIM AND OBJECTIVES OF STUDY
1.3 STRUCTURE OF THESIS

CHAPTER II – LITERATURE REVIEW

2.1 HISTORICAL PERSPECTIVE ON WATER RESOURCE MANAGEMENT
2.2 THEORETICAL AND PRACTICAL STUDY OF IWRM & IRBM DISCOURSE
2.3 CRITICISMS OF IWRM & IRBM
2.5 WHAT IS GOOD WATER GOVERNANCE IN THE IWRM DISCOURSE?
2.6 DEBATE ON GOOD WATER GOVERNANCE
2.7 ISSUES OF COMPLEXITY IN TRANSBOUNDARY WATERS
2.9 HISTORY OF THE NILE BASIN
2.11 IDENTIFICATION OF RESEARCH GAPS

CHAPTER III – RESEARCH METHODOLOGY

3.1 METHODS USED
3.2 DATA CALLECTION
3.2.1 Secondary Literature
3.2.2 Interviews and Questionnaires
3.3 INSTRUMENTAL CASE STUDY
3.3 PROBLEMS AND LIMITATIONS

CHAPTER IV: CASE STUDY OF THE NILE BASIN REGION

PART I – NILE BASIN INITIATIVE

4.1 NBI BACKGROUND OF THE NBI
4.2 STRUCTURAL BREAKDOWN OF THE NBI
4.4 FOCAL CHALLENGES IN THE NILE BASIN
4.3.1 Economic pressures
4.3.2 Political challenges
4.3.3 Environmental constraints
4.3.4 Social and Cultural issues
4.3.5 Regulatory framework
4.3.6 Capacity Building
4.4 OTHER SUB-BASIN CAPACITIES IN THE NILE BASIN

PART II – INTERVIEW ANALYSIS

4.6 NBI IN A TRANSBOUNDARY CONTEXT
4.7 STEPS TAKEN BY THE NBI TO INCORPORATE WATER GOVERNANCE
4.8 PARTICIPATION OF STAKEHOLDERS
4.9 PROBLEMS FACING THE NBI IN INSTILLING GOOD WATER GOVERNANCE AND IWRM
IWRM and Good Water Governance in a transboundary context: case study of the Nile Basin Region

4.11 HAVE THE EXPECTATIONS OF THE NBI BEEN MET? .................................................................62

CHAPTER V – RECOMMENDATIONS AND CONCLUSIONS .................................66

6.1 CONCLUSION .........................................................................................................................66
6.2 RECOMMENDATIONS .........................................................................................................68

BIBLIOGRAPHY .........................................................................................................................71

ANNEXES .................................................................................................................................78

ANNEX 1 - Thirteen key IWRM change areas
ANNEX 2 - Twenty benchmarks of mature, auto-adoptive RBOs implementing river basin management
ANNEX 3 - IWRM tools addressing governance failures
ANNEX 4 - Types of cooperation and benefits on international rivers
ANNEX 5 - Map of African river and Lakes
ANNEX 6 - Questionnaire/Interview questions sample
ANNEX 7 - Interview and Questionnaire participants
ANNEX 8 - Nile Basin Initiative structural overview
ANNEX 9 - IWRM Tool Box
ANNEX 10 - Photos of various activities in the River Nile Basin
IWRM and Good Water Governance in a transboundary context: case study of the Nile Basin Region

TABLES
Table 1 - Objectives and research questions of study.................................................................14
Table 2 - Dublin Principles.........................................................................................................18
Table 3 - Research methods used for each objective.................................................................34
Table 4 - Participants for data collection..................................................................................37

FIGURES
Figure 1 - The three pillars of IWRM........................................................................................17
Figure 2 - IWRM and its relations to sub-sectors....................................................................19
Figure 3 - Levels of Cooperation within the Nile Basin Initiative............................................24
Figure 4 - Breakdown of focal areas in the Shared Vision Project...........................................43
Figure 5 - Rising poverty in Sub-saharan Africa.......................................................................44
Figure 6 - Overview of Immediate and Underlying Environmental Threats in the Nile Basin...48
Figure 7 - Overview of immediate and underlying environmental threats in the Nile Basin....51

MAPS
Map 1 - Nile Basin Region.........................................................................................................40
ABREVIATIONS

ADB – African Development Bank
ATP – Applied Training Programme
CBOs – Community Based Organisations
CSOs – Civil Society Organisations
CBSI – Capacity Building Stakeholder Initiative
CIDA – Canadian International Development Agency
GEF – Global Environment Facility
EAC – East African Community
ENSA E - Eastern Nile Subsidiary Action Program
IDRC – International Development Research Centre
IWM – Integrated Water Management
IWRM – Integrated Water resource Management
IWMI – Integrated Water Management Institute
MDG – Millennium Development Goals
NBDF – Nile Basin Discourse Forum
NDSS – Nile Basin Decision Support System
NILE-COM –Commission of Ministers
NELSAP - Nile Equatorial Lakes Subsidiary Action program
NILE-SEC – Nile Secretariat
NILE-TAC – Technical Advice Committee
NGOs – Non governmental Organisations
NTEAP – Nile Transboundary Environmental Action Programme
RBM – River Basin Management
RBO – River based organisation
SIWI – Stockholm International Water Institute
SAP – Subsidiary Action Programme
SVP – Shared Vision Programme
SWBM – Shared Water Basin Management
TECOnILE - Technical Cooperation Committee for the Promotion of the Development and Environmental Protection of the Nile
TRIB – Transboundary River Basin Initiative
TWRM – Transboundary Water Resource Management
IWRM and Good Water Governance in a transboundary context: case study of the Nile Basin Region

UN – United Nations
UNDP – United Nations Development Programme
WRM – Water Resource Management
WRMP – Water Resource Management Plan
WB – World Bank
ABSTRACT

Integrated Water Resource Management (IWRM) is internationally recognised as an effectual approach in managing water resources in an integrated, holistic manner. However, for this approach to be yielding, IWRM needs to work within a water governance framework that balances out the competing needs for environmental sustainability, economic growth, and equity in access.

The aim of my study is to assess how IWRM can be strengthened through good water governance practices in the Nile Basin region. The thesis is broken up into three main components: the first component assesses the current discourse on IWRM, good water governance and the complexities of transboundary waters where key principles, tools and critiques are identified. The second component focuses on the Nile Basin Initiative (NBI), a temporary mechanism in place that provides a forum for coordinated cooperation and projects between 10 riparian states. In this section, effective tools for good water governance and IWRM are discussed in addition to the challenges that are being faced in the region that directly and indirectly affect the implementation and strengthening of the above two concepts. The third component, conducted through interviews and questionnaires examines the steps that the NBI has taken in this area. The main methods used for this research was an instrumental case study in addition to discourse and content analysis.

Through the study, it is demonstrated that measures have been initiated by the NBI for good water governance and IWRM to be put into practice; however, for further development the NBI needs to, along with other factors, evolve into a permanent institution with a legal cooperative framework in place.
DECLARATION

No portion of the work referred to in the dissertation has been submitted in support of an application for another degree or qualification of this or any other universities or other institute of learning.
COPYRIGHT STATEMENT

i. Copyright in text of this dissertation rests with the author. Copies (by any process) either in full, or of extracts, may be made only in accordance with instructions given by the author. Details may be obtained from the appropriate Graduate Office. This page must form part of any such copies made. Further copies (by any process) of copies made in accordance with such instructions may not be made without the permission (in writing) of the author.

ii. The ownership of any intellectual property rights which may be described in this dissertation is vested in the University of Manchester, subject to any prior agreement to the contrary, and may not be made available for use by third parties without the written permission of the University, which will prescribe the terms and conditions of any such agreement.

iii. Further information on the conditions under which disclosures and exploitation may take place is available from the Head of the School of Earth, Atmospheric and Environmental Sciences (or the Vice-President and Dean of the Faculty of Life Sciences for Faculty of Life Sciences’ candidates.)
ACKNOWLEDGEMENTS

I am grateful to my supervisor Dr. Iain White for guiding and encouraging me, as well as, Dr. Brendan Anthony for his supportive feedback. I would like to thank all the interview participants who not only took the time to participate in my study, but were also very enthusiastic and helpful. I would to also acknowledge the assistance given by LTC Instructor, Ms. Ezster Timar, and Dr. Tamara Steger, an assistant professor at the Central European University.

None of this would have happened without the MESPOM programme’s support and the Erasmus Mundus scholarship – I would like to thank Dr. Aleg Cherp for making this happen.

In Manchester, most of the past three months were spent at the IDPM library with a colleague and friend, Marta Vetier, who was a continuous source of energy as well as a fun diversion from work.

As always I would like to thank my parents, Jamila and Noordin, who provide never-ending support and strength.
CHAPTER I - INTRODUCTION

The Adoration of the Nile

Hail to thee, O Nile, that issues from the earth
And comes to keep Egypt alive!
He that waters the meadows which He created . . .
He that makes to drink the desert . . .
He who makes barley and brings emmer into being . . .
He who brings grass into being for the cattle . . .
He who makes every beloved tree to grow . . .
O, Nile, verdant art thou, who makes man and cattle to live

1.1 RATIONALE OF THESIS

In the South, particularly Africa, the success of multi-country basin institutions has been disappointing (Uitto and Duda 2001) where water governance has often been weak, capacity inadequate, with a lacking commitment. This, in effect, hinders the development of Integrated Water Resource Management (IWRM) strategies that requires a framework that balances out the competing needs for environmental sustainability, economic growth, and equity in access (UNDP 2004).

Managing transboundary rivers has been a highly political and emotional issue internationally; increasingly however, there is a realisation that regional cooperation for a transboundary water resource can bring benefits to all parties involved. With this in mind, the Nile Basin Initiative (NBI) in the Nile River basin is providing a platform for cooperative action in the region for the first time. While it is facing numerous challenges from political power struggles between the riparian states to poverty on the ground, this forum could change the region’s face if it cooperatively manages the Nile River basin, allowing for economic growth to prosper through national and joint regional partnerships’. At a June 2001 meeting of Nile Basin States, the international donor community, NGOs, and participants

---

expressed hope that the NBI will emerge as “an example of how international waters can become catalysts for cooperation, development, and stability” (Beaumont 2000).

The challenge for IWRM and water governance in the Nile basin is to guarantee water security and equity; in seeking this, IWRM will have to adapt and incorporate relevant aspects of traditional cultures and practices in water policies and strategies for it to be effective in the region. There is no one correct approach to implementing IWRM and water governance principles, but in order for them to be effective on the ground this requires local control and local solutions backed by local adaptation of internationally accepted knowledge and principles (UNDP 2004).

Although collaboration between the riparian states has been a struggle, significant progress has been made with the establishment of the NBI which has initiated the creation of an institutional basis for cooperation with a shared vision. Now at the stage of implementing investment projects, the NBI represents an unparalleled opportunity to develop the waters of the river with protection and conservation of the resource factored in (Mohamoda 2003). For this to incur, it is important that good water governance principles are instilled, for management approaches such as IWRM to be effective.

1.2 AIMS AND OBJECTIVES OF STUDY

The aim of the study is to analyse and make recommendations as to how IWRM in the Nile River Basin can be strengthened at the regional level through good water governance. This has been done by breaking the study into specific objectives shown in Table 1, which also presents the research questions posed for each objective.
Table 1 – Objectives and Research Questions of the study

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Research Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Critically assess the IWRM and water governance concepts</td>
<td>How can good water governance instil IWRM?</td>
</tr>
<tr>
<td></td>
<td>In what ways does IWRM contribute to the management of transboundary waters?</td>
</tr>
<tr>
<td>2. Review the current good water governance and IWRM practices in place to manage the River Nile Basin</td>
<td>What institutional capacities are in place to ensure effective management of the Nile River basin?</td>
</tr>
<tr>
<td></td>
<td>What tools can be used in the Nile basin region to further strengthen good water governance and IWRM?</td>
</tr>
<tr>
<td>3. Identify the practical problems and obstacles that the NBI is facing in the region</td>
<td>What constraints have there been to develop an effective institutional capacity in the Nile basin region?</td>
</tr>
<tr>
<td></td>
<td>What challenges has the NBI faced in incorporating good water governance and IWRM?</td>
</tr>
<tr>
<td>4. Examine the extent to which the expectations of the NBI have been met by practitioners</td>
<td>Has the NBI prioritised water governance and IWRM?</td>
</tr>
<tr>
<td></td>
<td>To what extent is there an inter-sectoral approach to problems in the basin?</td>
</tr>
<tr>
<td></td>
<td>Is the current institutional capacity developing relevant programmes with key stakeholder (i.e. CSOs, NGOs,) involvement?</td>
</tr>
<tr>
<td>5. Make recommendations on the way forward for the NBI</td>
<td></td>
</tr>
</tbody>
</table>

1.3 STRUCTURE OF THESIS

This study has been broken down into five chapters: this particular chapter rationalises my research topic, discusses the main objectives of my study that will answer my research questions (as seen in Table 1), and outlines the structure of my thesis.

The second chapter is made up of the literature review which is the backbone of my research. This section looks at the historical and contemporary discourse on IWRM and water
governance, where it outlines the main theories and principles and provides a critique of the concepts. A section on transboundary waters is added to present the complexities of managing water resources in a region. The reader here is also introduced to the Nile Basin region.

Chapter III of my thesis focuses on the research methodology used to rationalise my study as discussed in the introduction. The aim of this section is to present the research tools that have been adopted for my work and the various data collection methods used to assess the current IWRM and water governance practices in the Nile Basin and their effectiveness on the ground.

Chapter IV is devoted to the Nile Basin case study which is broken into two sections. Part I provides a clear background to the history of the NBI and the structural breakdown of the initiative. A number of tools are outlined that are necessary for good water governance and IWRM, after which, the major challenges and constraints are presented that impact the region and the NBI process directly and indirectly. In part II of the chapter the data compiled from the interviews and questionnaires conducted are discussed and assessed to gain a comprehensive understanding of the success and failures of incorporating the two key concepts in the basin.

The final section, Chapter V, is made up of the main conclusions and findings of my whole study as well as recommendations for the case study, where suggestions are made for the way forward.
CHAPTER II - LITERATURE REVIEW

2.1 HISTORICAL PERSPECTIVE OF WATER RESOURCE MANAGEMENT

Saha and Barrow (1981) describe that many of the world’s greatest civilizations have had close association with rivers - the Hindu-Indian, Egyptian, Chinese and Sumerian civilisations emerged and flourished in the major river valleys of the Indus, Nile, Hwang-Ho and Tigris-Euphrates respectively. Conceptually, the integrated approach is not new; early signs of IWRM existed as early as the tenth century, where multi-stakeholder participatory water tribunals were set up to plan water usage in Valencia, Spain (Schilz 2006).

River basin planning, in its narrower form of WRM, has been practiced in many parts of Asia and Africa for at least 9000 years (Saha and Barrow 1981). In Egypt, for instance, a system of basin irrigation involving dykes to control and regulate flood water through an intricate network of canals, creating a storage area of flood water for later use was developed around 3400 BC (Hamdan 1961). In the next sections a more detailed study is presented on IWRM and IRBM concepts and the role of water governance in the sustainable management of water resources.

2.2 PRACTICAL AND THEORETICAL STUDY OF IWRM & IRBM CONCEPTS

Currently, there are a range of water crises that we are facing globally, due to widespread scarcity and increasing pollution of water resources, along with the rapid increase of water demand caused by lifestyle changes and population growth (Castelletti and Soncini-Sessa 2005). Biswas (2004); Downs and Gregory (1991) discuss that water problems vary considerably from one region to another, from one season to another and solutions to water problems range on a number of factors, which include: how institutional capacities manage the resource, socio-economic and political conditions, level of governance instilled, implementation of appropriate legal framework, etc.

---

2 As cited in Sara and Barrow (1981)
GWP (2000) found that a change in the management paradigm is necessary to deal with the water crisis - the new point of view must be holistic and the decisions integrated and participatory with a wide range of stakeholders (Castelletti and Soncini-Sessa 2005). IWRM was reconceptualised as potentially a more ideal concept of managing and sustaining resources. This concept while having become popular and universally accepted has also met with a lot of criticism that will be discussed later in the chapter.

A number of definitions can be found on IWRM, but the most commonly quoted one comes from the Global Water Partnership’s Technical Advisory Committee (GWP/TAC), which defines IWRM as: “a process which promotes the coordinated development and management of water, land and related resources in order to maximize the resultant economic and social welfare in an equitable manner, without compromising the sustainability of vital systems” (GWP 2000). This definition attempts to encompass a broad range of issues from a holistic perspective. Figure 1 below presents the three key pillars for IWRM to be incorporated: enabling environment, institutional framework and economic efficiency.

**Figure 1 - The “three pillars” of Integrated Water Resources Management**

Since the 1970’s water conferences have discussed and debated various policies that can manage water resources more effectually. More recently the World Water conferences have emphasised that the solution lies with the implementation on IWRM (GWP 2000). The main
principles of IWRM were outlined at the Dublin Conference in 1992, where the guiding goals, namely the Dublin Principles (see Table 2), of concerted action on the control and management of water resources were adopted by all countries and set out (FAO 2004).

Tortajada (2002) emphasises that economic, social and environmental dimensions need to be synchronically considered within the goals of water development. As shown in table 1, the Dublin Principles focuses attention not only on the essential role of water for development, but also for nurturing life and the environment, presenting the broad range of interrelationships that need to be considered when managing water resources.

**Table 2 : Dublin Principles**

<table>
<thead>
<tr>
<th>Principle No. 1</th>
<th>Fresh water is a finite and vulnerable resource, essential to sustain life, development and the environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principle No. 2</td>
<td>Water development and management should be based on a participatory approach, involving users, planners and policy-makers at all levels</td>
</tr>
<tr>
<td>Principle No. 3</td>
<td>Women play a central part in the provision, management and safeguarding of water</td>
</tr>
<tr>
<td>Principle No. 4</td>
<td>Water has an economic value in all its competing uses and should be recognized as an economic good</td>
</tr>
</tbody>
</table>


Although the IWRM definition itself is rather controversial due to its broadness, GWP (2000) argues that it allows *'some room for flexibility on a global scale, and encourages that it be fine-tuned locally'*. There is no ‘one size fits all’ IWRM plan. Tortajada (2002) describes that each country will have to base its water development agendas on their own socio-economic, cultural and environmental conditions and available institutional and technical capacities. The GWP’s (2005) list of thirteen key areas of change required for a strong IWRM approach,
as shown in Annex 1, is broken down into three focal areas: enabling environment, institutional roles and management instruments.

As discussed by Biswas (2004) earlier, there are a number of components that need to be taken account when discussing various solutions to effective water management. This is further reiterated by UNDP (2004), in their report *Water Governance for Poverty Reduction* which articulates that IWRM is a complex challenge and depends upon effective, transparent governing institutions with the capacity to bring about significant changes in the way in which politics, laws, regulations, institutions, civil society, and consumers interact. As IWRM embraces a holistic approach it requires cross-sectoral planning, to ensure that one area will not have detrimental effects on another as presented in figure 1 below.

*Figure 2 – IWRM and its relations to sub-sectors*

Mitchell (1990) discusses how IWM can be implemented using three levels: normative (what ought to be done), strategic level (what can be done) and operation level (what will be done). He states that integration can occur at all levels, but suggests that at the strategic level, to think comprehensively where the broadest possible range of factors are considered. On the operational level, there should be a focused direction; here an integrated approach should be used which is more selective, and narrowed down to a smaller number of variables to deal with the problem(s) efficiently. Mitchell (1990) emphasises, in *Integrated Water Management*, a comprehensive perspective is valuable for the initial review of the problem,
but should be followed at the operational level by an integrated approach which is more focused for more effective plans and policies.

As noted by the Dublin principles IWRM needs to have a participatory approach. One mechanism of attempting to combat the problem of weak capacity building is strengthening stakeholder participation in waters projects (Gerlak 2004). He further adds that dissemination of information to stakeholders is necessary as projects that fail to effectively rely on local people may be less likely to succeed.

Blomquist et al (2005) discuss that IWRM and organising it primarily at the river basin level is one of the most widely repeated recommendations – at this level it is known as IRBM. GWP (2000) defines IRBM as: “the process of coordinating conservation, management and development of water, land and related resources across sectors within a given river basin, in order to maximise the economic and social benefits derived from water resources in an equitable manner while preserving and, where necessary, restoring freshwater ecosystems.”

When looking at IRBM it is important to note that there are a variety of interpretations of what it means, and according to Downs and Gregory (1991); Lorenz et al (2001), the range of interpretations can be classified into 3 groups:

1. Emphasis on multiobjective nature, for e.g. integrated, comprehensive, total, unified.
2. Attention to spatial scale, which stresses that the drainage basin is the basin functional unit area (e.g. river basin, catchment, ecosystem, etc.).
3. Focus on institutional change needed to evolve from the fragmented to an integrated management (e.g. management, planning and development).

Lorenz et al (2001) distinguish three important preconditions for integrated river management in a transboundary context: a good political atmosphere among riparian states; an effective legal-institutional organisation of international agreements and plans and institutional models to execute them. Hooper (2006) has developed a list of benchmark for RBOs to be able to incorporate IRBM is an effective way that could be translated in every basin (see Annex 2)
2.3 CRITICISMS OF IWRM & IRBM CONCEPTS

Despite the broad acceptance of the IWRM and IRBM approaches, their implementation has proved to be challenging. These concepts have been criticised by a number of authors including Biswas (2004); Mitchell (1990); Ramaswamy (2004); Falkenmark (1985); Tortajada (2002); Lundqvist (2004). In the process of implementing an effective integrated approach, there are a number of problems faced due to a wide range of components and interrelationships that need to be taken into account, as well as the fact that it is a political process (GWP 2004). It is observed by Mitchell (1990) that participants are learning as they proceed as there is no set model to follow.

Vries (2006) suggests that in order to ensure operationalisation of these approaches, a gradual multipartner joint learning approach is needed which would handle three dimensions of integrated approaches to water: spatial (across where to integrate), temporal (over how much time to integrate and find the optimum solution?) and social (recognise the water sources and needs from different stakeholder groups and aim at acceptable compromises in water usage).

Another criticism lies in the development of a centralised authority (in a region or nation) to develop a clear framework for practically translating these concepts on the ground. According to Ramaswamy (2005), IWRM and IRBM: “carry the seeds of centralization and gigantism, [and] fail to incorporate adequately the elements of decentralised, local, community-led planning and management”. Mitchell (1990) points out that other problems such as lack of public participation and collaborative planning, along with financial constraints and the unavoidable boundary problem are inherent in IWRM.

As discussed by Mitchell (1990) in section 2.1, while it is valuable at the initial stage to look at WRM comprehensively, at the operational level it needs to be more integrated. Nevertheless, it has been argued by De Jong et al (1994) that at present, a significant gap still exists between the theory on integrated and comprehensive water management and its implementation where three types of bottlenecks are identified:

1. Institutional fragmentation of water management where as highlighted in section 2.2, it is important for IWRM and IRBM to be cross-sectoral in ensuring a more integrated approach, but at this stage, Lorenz et al (2001) observe that water
management is currently organised in a fragmented way where there are numerous sectoral policies (fisheries, agriculture, transport, drinking water etc) and they are hardly coordinated together even though they influence the same water system.

2. Communication problems within and between various institutions, disciplines, and countries due to the use of different languages or disputes over competence.

3. Socio-political set backs relating to views on water of single and multiple usages.

When discussing IRBM, the issue of how a boundary is defined for the resource is a contentious area of research. Downs et al. (1991) argue that the ‘notion of creating a perfect spatial fit underlies a purist interpretation of RBM’. They discuss that the replacement of existing institutional units by other institutions oriented around specifically biophysical systems will inevitably create a new boundary. But as Moss (2004) points out boundaries not only relate to the physical area but also the political, economic and social domains, which could be undermined (Moss 2004), and here actors may overlap which results in tension, a common existence today (Mitchell 1990).

The issue of water rights is another area that is rather contentious, where on the one hand the mechanisms in place for administering rights to water and land use allow for considerable management flexibility, but on the other hand the control of groundwater resources is particularly weak which represents a vulnerability of the overall basin sustainability effort (Blomquist et al 2005).

Water quality issues are not as highlighted in comparison to water development, allocation and supply aspects in IWRM (Lundqvist 2004). He argues that an integrated approach should “follow water through the landscape and society”, where water-after-use should be an important component of management - this is absent in IWRM. Merrey et al (2003) further add that IWRM does not put improving livelihoods of people at the centre or take a truly holistic “natural resources” view.

The IWRM and IRBM concepts themselves are continuously debated and deserve comprehensive examination before being applied into practice. Poor implementation of plans as Mintzberg (1994) presents is also the problem of poor design. Rogers and Hall (2003) argue that IWRM demands a new framework within which there may be a need for significant adjustments in existing interactions between politics, laws, regulations,
institutions, civil society, etc.; the capacity to make these changes, Rogers and Hall add, depends on reforms in governance as water management problems cannot be tackled without good governance (GWP 2000; Manzungu 2003).

2.4 WHAT IS GOOD WATER GOVERNANCE?

“Africa must govern itself better and manage its natural resources better.”

Kofi Annan
Former United Nations Secretary-General
(July 2000, Lome, Togo)³

The aim of this section is to discuss the theories behind governance and its subset water governance, and it’s the relationship to IWRM. Hirsch (2006) discusses that governance implies management and regulation of the public good beyond the centralised nation-state.

The complexity lies with the fact that there are many different schools of thought concerning theory of governance and the actual approach varies depending on a number of factors. Rogers and Hall (2003) in Effective water governance discuss that some see governance as specifically focusing on financial accountability and administrative efficiency while others look at it from a broader political angle looking at issues of democracy among many other forms.

UNDP (2001) defines governance as: “the exercise of economic, political and administrative authority to manage a country’s affairs at all levels . . . it comprises the mechanisms, processes and institutions through which citizens and groups articulate their interests, exercise their legal rights, meet their obligations and mediate their differences”. Some necessary conditions for good governance are recognised as inclusiveness, accountability, participation, transparency, predictability and responsiveness (Hirsch 2006; Rogers and Hall 2003). When the governing system does not fulfil these conditions it is termed as poor governance.

³ Cited from UNECA (2000)
Kaufmann et al (1999) observe that social analysts through various studies have shown that there is a strong cause and effect relationship between better governance and better development after-effects, such as higher per capita incomes and lower infant mortality, etc. Various authors and international organisations have promoted that effective governance is thus essential to poverty reduction, etc., a key principle of IWRM, as can be found in the UNDP Report on *Water governance for poverty reduction* in 2004.

At the 2000 World Water Forum in The Hague, the GWP Framework for Action (GWP 2000) stated that the “water crisis is often a crisis of governance” making effective water governance one of the highest priorities for action. The Hague Ministerial Declaration reinforced this view and called for ‘governing water wisely to ensure good governance, so that the involvement of the public and the interests of all stakeholders are included in the management of water resources’ (GWP 2003a). At the 2001 Freshwater Conference the ministers recommended action in water governance proposing that every country should include arrangements of governance of water affairs at all levels. (Rogers and Hall 2003). For these plans to be purposeful, Rogers and Hall (2003) emphasise that reforms need to be undertaken over time within the current governance structures. Figure 3 below portrays how various dimensions of governance reforms could in effect deal with certain challenges being faced.

*Figure 3 - Water governance issues and reform measures*

<table>
<thead>
<tr>
<th>Problem</th>
<th>Dimension of Governance Reform</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top-down control</td>
<td>Decentralization to local government and principles of subsidiarity</td>
</tr>
<tr>
<td>Bureaucratic control</td>
<td>Enhanced roles for civil society</td>
</tr>
<tr>
<td>State ownership, micromanagement, and</td>
<td>A place for the market; enabling and regulatory role</td>
</tr>
<tr>
<td>allocative inefficiency</td>
<td>for the state through law, policy, and administrative improvements</td>
</tr>
<tr>
<td>Closed and corrupt decision making</td>
<td>Participation, accountability, transparency</td>
</tr>
<tr>
<td>Geographical fragmentation</td>
<td>Transboundary management</td>
</tr>
<tr>
<td>The “silo” effect of bureaucratic fragmentation</td>
<td>Holistic and/or whole-of-government approaches</td>
</tr>
</tbody>
</table>

*Source: Hirsch 2006*
Manzungu (2004) also highlights that there is a wide range of literature that shows clear governance structures are a necessity in managing common pool resources like water resources. UNDP defines water governance broadly as “the range of political, social, economic and administrative systems that are in place to regulate the development and management of water resources and provision of water services at different levels of society.”

Increasingly, it has been found that a traditional public sector or the ‘market’ is not able to fully resolve water resource management challenges (Hall et al. 2003). This has resulted in the creation of a much more dynamic system based on relationships between different players and stakeholders requiring a new form of governance (Kooiman 1993), now commonly referred to as ‘distributive governance’, “with effectiveness sought in complementarity rather than in authority” (Hall et al. 2003). Rogers and Hall (2003) highlight that distributive governance, is a new term to discuss the combination of formal and informal institutions. The Dublin Principles of IWRM, as discussed in the earlier section (2.2), manifestly reflect this concept of distributed governance (Rogers and Hall 2003).

Like IWRM, there is no single effective model of good water governance as each system is unique to its own political, social and economic environment. Regardless, some basic key principles are considered essential for effective water governance and are broken up into approaches and performance, and operation as discussed by Roger and Hall (2003):

- Principle approaches include: must be open and transparent, inclusive and communicative, coherent and integrative and, equitable and ethical.
- Performance and operation principles include: accountability, efficiency, responsiveness and sustainability.

Bucknall et al (2006) present the key principles more explicitly stating good water governance should include: legal and regulatory frameworks, more effective implementing organisations, a civic participation, and appropriate investments.

---

4 UNDP website URL: http://www.undp.org
5 Under UNDP’s definition institutions are interpreted here to include both the formal (codified and legally adopted) and informal (traditional, locally agreed and non-codified)
The role of institutions in developing the primary principles of water governance is integral. A number of institutional changes have become apparent in the water sector in recent years, as part of this emphasis for governance (Saleth & Dinar 2000), reflecting something of a new development of old practices that is being universalised through the development of “best practice.” Manzungu (2002) adds that institutions are evaluated with respect to the scope of functions and responsibilities assigned; the power, authority and autonomy that they are allowed to command; and the internal and external dissemination of information and knowledge. These efforts have not resolved institutional capacity problems, but have improved the previous situation (Bucknall et al 2006).

One essential area for water governance is the need for inter-ministerial committees which would bring together various government representatives from the multiple and competing sectors (Roger and Hall 2003). Coordinated action across sectors is also critical to the IWRM approach, as discussed in the section 2.2.

For water resource management, Bucknall et al. (2006) comment that governance processes determine types of water use, regulation of extraction and discharges, and allocation between competing uses, etc. This is a rather complex area, as there are many uses of water, so it behaves as several different commodities at the same time; and depending upon how water is to be used, it may belong to one of several markets (Abate 1990). In bringing up the discussion of allocation Kilgour and Dinar (2001) observe that it is well known that agreements without active enforcement are unlikely to create a favourable environment for water governance to be built in.

2.5 DEBATE ON GOOD WATER GOVERNANCE

Although there is a general consensus that there is a need for good water governance framework, a central argument by a number of authors including Manzungu (2002); Hirsch (2006) is that it is rather complex to assess how effective water governance is, as governance definitions and agendas are too varied and stakeholders too heterogeneous in their interests, which makes it difficult to ‘come up with a straightforward “best practice” of catchment-oriented water governance toward which policy reform should aspire’ (Hirsch 2006).
Bucknall et al (2006) further add that what makes water governance particularly challenging is a complex and diverse range of aspects, which include:

1. An emotional and spiritual value towards water by certain population groups
2. The issue of a common pool resource, where a group of users may have better access to the resource than other groups and may choose to stop other groups from accessing the resource
3. Uncertainty in the amount and quality of the water resource
4. The issue of effective management, as the water resource need to be managed at different scales and time-frames from international to local and from small community projects to large international projects.

Major international organisations like UNDP, ADB and IUCN involved in water governance and the reform process recognise the continuing mismanagement of water resources (Hirsch 2006), and after years of detrimental impacts, the issue of water governance has been brought to the international platform for discussion. Hirsch (2006) articulates water governance needs to be socially, culturally and politically embedded. However, as Miller (2003) argues most of the problems lie at the local level; therefore, when ‘generic’ principles are incorporated it results in friction as it does not generally take into account the local context of where it needs to be translated. This can also be stated to be similar to IWRM principles. Davidson & Frickel (2004) point out that there is clearly a need for comparative studies of water governance to-date.

However, Wolf (1998) observes that the problems of water management and governance are made more complex in the international realm by the fact that the international law that governs it is poorly developed, contradictory and unenforceable as criticised by Biswas (1999); Beaumont (2000). The 1997 Convention on the Non navigational Uses of International Water Courses Commission, which took 27 years to develop, reflects the difficulty of marrying legal and hydrologic intricacies (Wolf 1998). He adds that the convention provides many important principles of cooperation, the two most fundamental being ‘equitable and reasonable utilization’ and ‘no significant harm’ taking relevant factors into account, which have always been an area of controversy and dispute for the Nile Basin nations.

---

6 Cited in Hirsch (2006)
It is clear, that each country and region needs to establish their own governance systems not by simply translating the principles, but gaining from lessons learnt from appropriate models in other countries through reforming their own governance systems taking account of their own historical and cultural background (Roger and Hall 2003).

In conclusion to the examination of the discourse on IWRM and good water governance, it has been discussed that the IWRM concept is difficult to implement due to the wide variety of components that it encompasses as well as the fact it is a highly political process, which involves conflicts of interest that must be mediated (Jønch-Clausen 2004). Effective water governance is crucial for the implementation of IWRM plans as it provides a context in which the IWRM approach can be applied making it more effective. However, water governance itself is challenging, and requires that it be translated taking account of the local context while having a clear definition on its agendas.

2.6 THE COMPLEXITY OF TRANBOUNDARY WATERS

Like for IWRM and good water governance there is no blueprint for transboundary water management. Gerlak in her 2004 article, One Basin at a Time: the Global Environment Facility and Governance of Transboundary Waters states that around 263 of the world’s rivers are shared by two or more countries and these transboundary watersheds make up 60% of the world’s freshwater supply, which are also inhabited by 40% of the world’s population. According to reports submitted to the UN as quoted in Ganoulis (2006), about 50% of the world's landmass\(^7\), is located in transboundary shared water catchments.

Kilgour & Dinar (2001) have found that the unidirectional flow of a river causes particular problems that do not arise for countries that are separated by a boundary river, or nations that share a lake or sea. A number of upstream–downstream disputes include controversial projects such as the desalination facility near Morales Dam on the Colorado which caused tension between Mexico and USA (Kilgour and Dinar 2001), not to mention the long history of dispute over the Nile agreements of 1929 and 1959 in the Nile Basin. Even though there have been a number of conflicts there have also been examples of cooperation over transboundary water resources (Ganoulis 2006).

\(^7\) This excludes Antartica
Homer-Dixon (1999) argues that although resource scarcity has initiated disputes between and within countries, there is no ‘historical or contemporary evidence to support that major wars have been fought over water resources’. A number of authors (Uitto & Duda 2002; Jägerskog et al 2007 believe that instead of shared waters being a ‘zones of conflict’, transboundary water resources that are cooperatively managed can make a significant contribution to regional peace and stability, to sustainable economic growth and provide a basis for benefit sharing. Mohamoda (2003) points out that the Nile Basin in one example of such cooperation.

Sadoff and Grey (2002) have developed a simple framework to analyse in a transboundary water governance context potential gains from cooperation which consist of four layers:

Type 1 - Benefits to the river - cooperation will enable better management of the ecosystem

Type 2 - Benefits from the river – by cooperatively managing the resource it could lead to increased food and energy production potentially leading to better livelihoods

Type 3 - Reduction of costs because of the river – cooperation between the riparian states can lead to less tension resulting in reduced costs

Type 4 - Benefits beyond the river – can pave the way to greater cooperation between states and even economic integration between them

The above ‘cooperation’ framework can be translated to the Nile basin at all four layers for instance as explained by Sadoff and Grey (2002) ‘preserving’ the river through cooperation can bring the first type of benefits to the river, the second type of cooperation could lead to better flood control, energy projects which numerous states could benefit from, etc. By gaining trust and diminishing tension between the countries, other forms of cooperation could develop that go beyond the river. Annex 3 shows the various challenges faced and opportunities gained in 4 different types of cooperation discussed here.

Water is an intensely political issue at all levels and introducing a new layer of administration can interfere with political sensitivities causing governance difficulties that should not be dismissed lightly (GWP 2003). Another challenge for transboundary waters as commented by Uitto and Duda (2001), is dealing with sovereign states that have their own priorities and needs. These demands, they further add, if not monitored properly can result in degradation of the resource from a localised level spreading to a national level that then can grow to transboundary proportions.
2.7 HISTORY OF THE RIVER NILE BASIN

Evans (1990) in his paper presented on the Nile at the Royal Geographical Society and SOAS stated that the Nile has fascinated philosophers, geographers, historians, engineers and politicians of all creeds and races over many centuries. The Nile River is one water system, but is not a homogenous geographical, climatic, or ecological unit (Erlich and Gershoni 2000). No other river provides such a wealth of information where available records go back to before 3000 BC where the Egyptian dynastic society and their heavy dependence on the Nile floods lead to years of plenty and famine (Evans 1990).

The Nile basin is geographically very versatile, draining over 2.9 million square kilometres and covering $\frac{1}{10}$th of the African continent (see Annex 4). It is the second longest river in the world with a total length of 6,700 kilometres and includes sovereign states of Burundi, Democratic Republic of Congo, Egypt, Eritrea, Ethiopia, Kenya, Rwanda, Sudan, Tanzania and Uganda (Abate 1990). The Nile has two main sources of water: the Ethiopian plateau and the equatorial region around Lake Victoria (see Map 1). The contribution from the Ethiopian portion of the Nile Basin by way of the Blue Nile River amounts to averagely 86 percent of the total Nile flow; in contrast, the East African catchment contributes only about 14% (Abate 1990). Rwanda and Burundi are extended into the Nile Basin region as the Kagera river which flows into the Lake Victoria (Allan 1990). The quantity of fresh water, in terms of volume, carried by the Nile is rather small in comparison to the Amazon, Mississippi and Mekong (Collins 2002).

Looking at the more recent history of the Nile basin region, over the past century, which saw most of the countries in the region gain their independence, the legal agreements signed on sharing the river Nile resource have been the dominant area of controversy and dispute in the region. Fifteen bilateral treaties and agreements, dated from April 15, 1891 to July 1, 1993 (Mohamoda 2003) were signed in the region and as Collins (1990) in The Waters of the Nile: Hydropolitics in the Jonglei Canal8 points out a number of the treaties were based on British colonial aspirations that were rejected after the independence by most countries on whose

---

8 Cited in Mohamoda (2003)
behalf the British signed the agreements. The most controversial of the agreements is the 1959 treaty between Egypt and Sudan which is still in place today.

The 1959 agreement as observed by Collin (2000) came about after the Aswan dam was conceived, which would store water for up to a year’s supply. He further describes that in order for the dam to be constructed, Sudan needed to agree to the project as its riverine lands would disappear in the process. The 1959 agreement of utilization and shared rights to the Nile water was signed where the treaty aimed at full utilization of the Nile Waters (Waterbury 2002), allocating 48 billion m3 to Egypt and 4 billion m3 to the Sudan per year as measured at Aswan and excluded all other riparian countries (Collin 2000).

Upstream countries led by Ethiopia have rejected the treaty. Kendie (1999) points out the invalidity of the agreement arguing that the bilateral agreement was to divide the Nile waters between themselves, ignoring the rest of the riparian states.

The historical distrust between the riparian nations over the use of the Nile water has been discussed in detail by Waterbury (2007); Collins (2000); Allan (1990) where the socio-cultural and religious differences along with political suspicion has created a difficult environment to initiate regional cooperation on managing the Nile basin. Since the early 1990’s, the spirit of brotherhood and unity seems more likely than ever before.

2.8 IDENTIFICATION OF RESEARCH GAPS

Based on the discourse presented in the literature review that focused on IWRM, water governance, transboundary complexities and the history of the Nile basin, a number of research gaps have presented themselves which include the lack of an effective method in operationalising the IWRM approach, the absence of a structured water governance regime due the complexity of its varied multiple concepts and definitions, and insufficiency of institutions in developing a clear framework. What is most importantly evident is that there is no clear established water governance system that enables IWRM to be applied as highlighted by Roger and Hall (2003). From a transboundary angle, there is also a gap on efficient water sharing agreements among countries within an international river basin.
As has been discussed, there is no blue-print approach to IWRM and good water governance in a transboundary context; therefore, my study, based on the above research gaps will present what water governance means in the Nile basin region, and how in the context of the local environment, the NBI can establish a good water governance regime which can in effect enable IWRM approach to be incorporated to manage the Nile basin resources as a unit.
CHAPTER III – RESEARCH METHODOLOGY

3.1 METHODS USED

Qualitative research methods were used in my study. Chapter II consisted of the current debate on the IWRM and good water governance and its complexity in relation to transboundary waters. The IWRM approach was chosen for my thesis as it is a “management that considers all physical spaces and societal interests simultaneously, while taking a long term perspective” (Lorenz et al 2001). Good water governance is recognised as necessary for effective translation of IWRM on the ground.

Water as a topic is highly politicised (GWP 2003a) as it is critical for development in any country. To ensure that objectivity was kept of the review, the discourse method was applied (Mukhtarov 2005). Jupp (1996)9 points out that “Discourse embraces all aspects of a communication – not only its content, but its author (who says it?), its authority (on what grounds?), its audience (to whom?), and its objectives (in order to achieve what?)”.

In chapter II of my thesis, a critical analysis of secondary literature was conducted from a wide source of reputable articles, books, and strategic documents (section 3.2.1) that assessed the relevancy and critiques of IWRM and water governance and their dynamic interrelations.

As part of my study, chapter IV focuses on the instrumental case study presented through secondary literature and primary data compiled from interviews and questionnaires (section 3.2.2). In the process of assessing the available information on the Nile Basin region along with the content analysis from the interviews and questionnaires, I was able to prioritise key areas of focus for my study.

To answer the question as to whether water governance and IWRM has been instilled by the NBI in the Nile Basin region, key tools presented by the GWP IWRM Tool box have been highlighted, which are further assessed in the analysis provided by the interviews and questionnaires. This in turn, provides a comprehensive understanding of the successes and

9 Cited in Mukhtarov (2005)
challenges in incorporating water governance and IWRM for the Nile basin region’s mechanism, the NBI.

In chapter V, recommendations based on the analysis presented in the earlier chapters are made for the instrumental case study.

Table 3 below presents the key methods used to meet each objective in the study.

**Table 3 - Research methods used for each objective**

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Methods</th>
<th>Critical/Content Analysis</th>
<th>Analysis of interviews</th>
<th>Instrumental case study</th>
<th>Discourse method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critically assess IWRM and water governance concepts</td>
<td></td>
<td>+</td>
<td></td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Review the current good water governance and IWRM practices in the Nile basin</td>
<td></td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Identify the practical problems and obstacles that the NBI is facing</td>
<td></td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Examine whether the NBI has been met the expectations of practitioners</td>
<td></td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Make Recommendations</td>
<td></td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
</tbody>
</table>

3.2 DATA COLLECTION

3.2.1 Literature Review

The secondary literature used largely consisted of journal articles and books stocked at the University of Manchester’s John Ryland’s Library, the Institute of Development Policy and Management (IDPM) and online journal database. Some of the key journals that were
integral source of information included: *Water Resource Management, Water Policy, Journal of Contemporary Water Research and Environmental Management*. Brunnee and Toope’s 2002 article: *The Changing Nile Basin Regime: Does Law Matter*” and Bruce Hooper’s article, “*IWRM: Governance, Best Practice and Research Challenges*” are some of the articles that have been dominantly used in the study due to the importance of their analyses and relevance to my study.

Grey literature consisting of reports published from various organisations such as GWP, SIWI, World Bank and Human Development Reports (UNDP) were an essential source of information which were found online and in the IDPM library. Another available source for books was on my visit to the School of Oriental and African Studies, University of London, which also has an extensive library. Accessing previous dissertations in this area was found through the University of Manchester’s online database for abstracts.

In Chapter II, a number of documents published by the Global Water Partnership have been extensively used, most especially the TEC background paper on ‘*Good water governance*’ written by Peter Rogers and Alan Hall, which I found to be the most comprehensive paper on this topic. Another thorough source of information for the Nile basin came from Dahilson Mohamoda in ‘*Nile Basin Corporation*’. In chapter IV of my thesis, which focuses on the case study of the River Nile Basin, a large part of the available literature was accessed through the official website. I was also recommended papers and reports, many of which were emailed to me by interview participants. Although a few documents were difficult to access, the NBI website contained adequate information.

The University of Bergen’s Nile Basin Research Programme, has a very useful ‘News from the Nile Region’ section where articles from newspapers across the region are linked to the website.

3.2.2 Interviews and Questionnaires

Tellis (1997), states that interviews are one of the most important sources of information for a case study. Hague (1993) further notes that questionnaires do not stand in isolation but are seen as aid to the collection of data in an interview. Noting this, as part of my case study, 16 people were contacted for interviews and questionnaires for the data collection process,
which specifically focused on assessing whether water governance and IWRM is being implemented by the NBI, the challenges and constraints that have been faced and whether the NBI has met specific required expectations (see Annex 5 for the interview outline). Prior to developing the questionnaires and interview questions, a thorough investigation of the literature on the case study was carried out to ensure specificity of area of focus. The questionnaires were sent out to people who were unable to do the interview due to lack of available time, geographical location or simply because of bad telephone lines.

Predominant number of interviews (10 in total) was conducted via telephone/skype as most specialists in this field are not located in the UK, with the exception of one face-to-face interview in London. For further information on details of participants please see Table 2. For more detailed information on reasons of contacting the interviewees and time of each interview, please see Annex 6.

In order to get a practical understanding of what is happening on the ground in the Nile basin region and the NBI, I chose to interview water resource specialists from a wide range of organisations including the NBI, the World Bank and GEF, (large financial supporters of the NBI), UNDP Water Governance Facility in Sweden, other international organisations such as IDRC, academics from SOAS and the University of Bergen, etc. All of the interviewees have focused on water resource management issues professionally and/or have worked in the Nile Basin region therefore having first hand knowledge of the region and the NBI.

The snowballing method was used for my data collection process; by contacting professionals in the sector, other suitable colleagues were always suggested and recommended including reports and articles that became an additional source of information for my research.

For my questionnaires and interview questions, constructive feedback was provided by my supervisor Iain White, Antony Brandon, lecturer at CEU, Tamara Steger, a lecturer on Qualitative research at CEU and Ms. Eszter Timar, an academic writing advisor at CEU. Through their feed back and guidance, the questionnaire and interview questions were refined to meet specific objectives of my research. The interview questions and questionnaire formats are exactly the same although certain questions were ignored by the researcher on discretion, based on the specialisation of the interviewee. Anonymity of personal details was
offered to all interviewees; a number of interviewees requested that they would prefer not to be directly quoted in the analysis of the research.

**Table 4 – Participants for data collection**

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution and Location</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Gordon Mumbo</td>
<td>Nile Basin Initiative, Uganda</td>
<td>Regional Project Manager Confidence Building and Stakeholder Involvement</td>
</tr>
<tr>
<td>Mr. Andrea Merla</td>
<td>Global Environment Facility (GEF), US</td>
<td>Programme Manager, International Waters</td>
</tr>
<tr>
<td>Professor Tony Allan</td>
<td>Kings College/ SOAS, Dept?, London</td>
<td>Professor</td>
</tr>
<tr>
<td>Ms Mirey Atallah</td>
<td>GEF/UNDP, Lebanon</td>
<td>Portfolio Manager</td>
</tr>
<tr>
<td>Anders Jagerskog</td>
<td>UNDP Water Governance Facility at SIWI, Sweden</td>
<td>Project Director, SIWI Projects</td>
</tr>
<tr>
<td>Dr Joakim Harlin</td>
<td>UNDP Water Governance Facility at SIWI, New York</td>
<td>Water Resources Specialist</td>
</tr>
<tr>
<td>Dr. Seid</td>
<td>NBI, Ethiopia</td>
<td>Regional DSS Lead Specialist</td>
</tr>
<tr>
<td>Ms. Catherine Kilelu</td>
<td>IDRC, Kenya</td>
<td>Project Officer</td>
</tr>
<tr>
<td>Mr. Jakob Granit</td>
<td>World Bank, US and Sweden</td>
<td>Sr. Water Resources Management Specialist</td>
</tr>
<tr>
<td>Dr Terje Tvedt</td>
<td>Professor Historian of the Nile Basin, Norway</td>
<td>University of Bergen, Development Studies</td>
</tr>
<tr>
<td>Mr. Gedion Asfaw</td>
<td>Regional Manager, Sudan</td>
<td>Nile Transboundary Environmental Action Programme (NTEAP), Nile Basin Initiative</td>
</tr>
<tr>
<td>Mr. Frank Habineza</td>
<td>Nile Basin Discourse Forum in Rwanda, Rwanda</td>
<td>National Coordinator</td>
</tr>
<tr>
<td>Dr. Seleshi Bekele</td>
<td>Office Director, Ethiopia</td>
<td>IWMI – Sub regional Office of Nile Basin and Eastern Africa</td>
</tr>
<tr>
<td>Mr. Enock Wanyonyi</td>
<td>Regional Manager, Kenya</td>
<td>WRMA-LVNCA</td>
</tr>
<tr>
<td>Mr. Yasir A. Mohamed</td>
<td>Senior Researcher I, Ethiopia</td>
<td>IWMI</td>
</tr>
<tr>
<td>Alan Nicol</td>
<td>Head, Water Policy Programme</td>
<td>Overseas Development Institute</td>
</tr>
</tbody>
</table>
3.3 INSTRUMENTAL CASE STUDY

Case studies have been used to develop critical thinking (Alvarez, et al. 1990 as cited in Tellis 1997a) and are an ideal methodology when a holistic, in-depth investigation is needed (Tellis 1997a). Peil et al (1982) further add that certain sites for a case study research are purposively selected for research, because the issues being studied are likely to be prominent there. With this in mind, the Nile Basin Institute became a specific mechanism of interest in order to give a comprehensive understanding of how IWRM and water governance in a transboundary context, in this case the Nile Basin region, can be implemented and strengthened.

Yin (1994) in *Case study research: design and methods* discusses how single cases are used to confirm or challenge a theory, or to represent a unique or extreme case. This region was specifically chosen for its multi-perspectival dimension and uniqueness; to-date regional cooperation and planning between 10 nations for a single river basin has never been attempted before in a region with developing economies, high levels of poverty and increasingly growing populations.

The unit of analysis is a critical factor in the case study (Tellis 1997a). To provide a coherent and comprehensive study of IWRM and water governance in the Nile Basin region, a variety of relevant documentation was gathered and various actors interviewed, from professionals working with the NBI to external specialists who have personally observed the change in the regional management and planning of the Nile River basin since the inception of the NBI.

As a case study should be studied in-depth, and over a period time rather than a single point in time (Gomm, Hammersley and Foster 2004 as cited in Tellis 1997a), the NBI will be examined from the late 1990’s to-date; however, what is of particular interest is the current IWRM and water governance processes in place and the way forward.

Yin (1994) identifies six primary sources of evidence for case study research that could be used for data collection, which include: documentation, interviews, direct observation, participant observation, etc. Although all these sources do not need to be used for every case...
study, it is recommended that to ensure reliability of the information acquired it is useful to use more than one source (Yin 1994). As part of my research, documentation and interviews/questionnaires were key sources of information, which have been described above.

### 3.4 PROBLEMS AND LIMITATIONS

The process of collecting data was rather challenging during this particular research, as it was not possible to access all the relevant individuals, most especially within the NBI, due to the unmarked changes in email addresses and lack of availability because of field trips being conducted in rural areas, etc.; therefore, the number of interviewees from within the Nile Basin was much lower than expected.

On a number of occasions, it was particularly hard to get a clear connecting line, most especially when contacting interviewees in Rwanda and Ethiopia. On these occasions, we agreed that it would be preferable for them to fill out the questionnaire instead.

Personally, I found it rather challenging to conduct interviews via the telephone. Without being able to observe the individual first hand, I was at times uncertain of how the interviewee was reacting to my questions and comments. Interviewing in person, would have had a different impact on my research and would have allowed a number of participants to give more detailed information.
MAP 1 - Map of the River Nile Basin Region

Source: NBI website: http://www.nilebasin.org/nilemap.htm
CHAPTER IV: CASE STUDY OF THE NILE BASIN REGION

PART I – THE NILE BASIN INITIATIVE

“To achieve sustainable socioeconomic development through equitable utilizations of, and benefit from, the common Nile Basin water resources”

Shared Vision of the NBI

INTRODUCTION

As highlighted in the literature review, the rich history of the river Nile, the geographical and cultural diversity of the region along with the added complexity of poverty, conflict and population growth issues make the Nile basin unit, a unique case study of analysis. Part one of this chapter will provide an assessment of the current mechanism in place, namely the NBI, and the challenges that are being faced in the region that influence the development and reform of good water governance and IWRM.

4.1 BACKGROUND OF THE NBI

Brunne and Toope (2002) identify four factors that contributed from a competitive shift to a more cooperative attitude in the Nile basin region:

1. Realization that the status quo on the Nile’s water is unsustainable due to population and irrigation growth;
2. Both upstream and downstream countries recognised the need for a regime to regulate the Nile;
3. Acknowledgement that not all action creates winners and losers and cooperation could benefit all the basin countries;
4. The engagement of the multi and bi-lateral organisations.

Nile basin Website - [http://www.nilebasin.org/Documents/TACPolicy.html](http://www.nilebasin.org/Documents/TACPolicy.html)
In 1977, UNDUGU from Swahili *ndugu* (meaning brotherhood) was formed, which after numerous meetings, was reformed into the TECCONILE (Colin 2000). In 1993, a series of conferences were agreed upon to allow an “*informal mechanism for riparian dialogue and exchange of views between countries, as well as with the international community*” (NBI website).

In 1998, the riparians’ further coordinated efforts to work together to gain mutual benefits from managing the Nile resource. In 1999, this resulted in the official launch of the Nile Basin Initiative (NBI), which would work as a *transitional mechanism* for cooperation until a permanent cooperative framework would be established. This process for the first time brought all the riparian countries of the Nile together.

The Council of Ministers of Water Affairs of the Nile Basin States (Nile-COM), the highest level of authority within the NBI, requested the World Bank along with UNDP and CIDA, to operate as “cooperating partners” to oversee and facilitate dialogue between the riparian states. To move forward in building a formal institution with a legal framework, a ‘Panel of Experts’ (POE) was formed made up of three-person teams from each riparian country. In 2000, they developed a draft text of a ‘Cooperative Framework’ (World Bank website) which is currently in the process of being re-negotiated.

### 4.2 STRUCTURAL BREAKDOWN OF THE NBI

The Nile Basin is a very complex development area. Under the framework of the NBI, programmes are being developed to improve water management which have in effect a wide range of direct and indirect impacts on environmental protection, economic growth, poverty reduction, food security, etc. This is made transparent through the NBI’s policy guidelines that explicitly state that the main objectives (NBI 2006) are to:

1. Ensure cooperation and joint action between the riparian countries, seeking win-win gains

---

12 Nile History: From TECCONILE to NBI - [http://www.nilebasin.org/From%20_hdromet_to_NBI.htm](http://www.nilebasin.org/From%20_hdromet_to_NBI.htm)
13 NILE-COM is supported by Nile-TAC, made up of two senior officials from each riparian country. The NBI maintains a secretariat, the Nile-SEC in Uganda
2. Develop the water resources of the Nile Basin in a sustainable and equitable way to ensure prosperity, security, and peace for all its peoples
3. Ensure efficient water management and the optimal use of the resources
4. Target poverty eradication and promote economic integration

As described by the NBI website\textsuperscript{15} to achieve these objectives the NBI has established a Strategic Action Programme with two complementary sub-programmes:

(i) A basin-wide “Shared Vision Programme” (SVP) to articulate a common agenda among the riparians
(ii) “Subsidiary Action Programmes” (SAPs) which are geographically broken into two sub-regions: the Eastern Nile countries made up of Egypt, Ethiopia, and Sudan, called ENSAP and the Nile Equatorial Lakes countries called NELSAP

Annex 7 shows the structural breakdown of the NBI looking both the SVP and SAP while Figure 3 below presents the different levels of cooperation between the riparian states.

\textit{Figure 4 - Levels of Cooperation within the Nile Basin Initiative}

\textsuperscript{15} Nile History: From TECCONILE to NBI - [http://www.nilebasin.org/From\%20_hdromet_to_NBI.htm](http://www.nilebasin.org/From%20_hdromet_to_NBI.htm)
The SVP’s main objective is the creation of a “coordination mechanism and an enabling environment to realize the shared vision through action on the ground” (Nile Basin website\(^\text{17}\)). The SVP includes seven focal projects, which is further detailed in figure 2:

- Nile Transboundary Environmental Action
- Efficient Water Use for Agricultural Production
- Water Resources Planning and Management
- Confidence Building and Stakeholder Involvement
- Nile Basin Regional Power Trade
- Applied Training
- Socio-Economic Development and Benefit-Sharing

**Figure 5 - Breakdown of focal areas in the Shared Vision Programme**

![Diagram showing breakdown of focal areas in the Shared Vision Programme]

*Source: Nile Basin Website\(^\text{18}\)*

---

\(^{16}\) [http://www.nilebasin.org/Documents/TACPolicy.html](http://www.nilebasin.org/Documents/TACPolicy.html)

\(^{17}\) Ibid

\(^{18}\) Ibid
SAPs involve actual development projects, in collaboration with two or more countries at the sub-basin level, allowing for a move from planning (SVP) to action (SAP). The NBI discusses (2005) that local and national governments will address their respective needs in parallel to endorsing the importance of regional cooperation through transboundary associations. Therefore, according to NILE-COM, development actions on the ground need to be designed at the lowest appropriate level, referred to as “the principle of subsidiarity”\(^{19}\). As described by Foulds (2002), the guidelines for the implementation of SAPs include:

- Appropriate planning level needs involving all those affected.
- Building on principles of equitable utilization, no significant harm, and cooperation.
- A range of development project options.
- Investigations that will seek solutions for all involved including the environment
- Bundling several projects into a program to counterbalance impacts of different projects

Posthumus (2000) points out that despite the consequences of NBI projects, given Egypt’s regional dominance and historical ‘distance’ from other riparian states, the current level of cooperation under the NBI is remarkable. James Wolfensohn, the former World Bank President articulated: “It may the first time in history that we are able to have the scientific and technical resources, capacity, knowledge, and experience to come together”\(^{20}\) Despite this cooperation, however, problems do remain, which will be discussed in the section 4.3.

### 4.3 TOOLS FOR WATER GOVERNANCE AND IWRM IN THE NILE BASIN REGION

As discussed in Chapter II, there is no blue print approach for IWRM – each country and region has its own local context and prevailing situations that need to be taken account in the process of incorporating the main principles of IWRM. It has been stressed in Chapter II that in order to achieve an effective sustainable water management system in a country or region, water governance is important as it looks at the broader picture (the social, economic and political and administrative systems) of how water management can be effective.

---

\(^{19}\) Ibid - The principle of subsidiarity refers to the concept that a larger and more powerful body should not control functions which could effectively and efficiently be carried out by a smaller body which in fact should be supported to coordinate its activity with the activities of the whole community

\(^{20}\) cited in Foulds (2002)
The GWP tool box (see Annex 8) is internationally recognised as providing clear guidelines on providing essential tools for the effective incorporation of IWRM\textsuperscript{21}. These tools have come about through international experiences and case studies. To further comprehend the key requirements of water governance for IWRM to be more effective in the Nile Basin, I have through the use of the tool box highlighted some of the key tools that are fundamental for good water governance, which have been briefly outlined below.

1. **Legislative Framework – water policy translated into law**
   The Nile River waters’ is a scarce resource, as discussed earlier. A legal framework would, along with other measures, ensure that the each riparian state, or collectively, use the Nile resource without detrimental effects. Here tools for water rights, legislation for water quality are highlighted.

2. **Creating an organisational framework – forms and functions**
   The NBI, a transitionary mechanism, will evolve into a transboundary institution that should embrace an inter-sectoral approach as well as consider other non-water issues. It is at this institutional level where water governance becomes an integral issue including the development of relevant policies.

3. **Building Institutional Capacity – developing human resources**
   At this level, there needs to be the capacity to develop IWRM policies and operational capacities (GWP 2003b). Tools here include capacity building in stakeholders and in water professionals. The NBI is conducting training sessions on IWRM internally as well as for relevant stakeholder groups such as CBOs.

4. **Water Resources Assessment – Understanding resources and needs**
   The assessment looks at both the quantity and quality of surface and groundwater (GWP 2003b). Here tools such as Water resources knowledge base, Modelling and DSS (a new undertaking in the NBI), and Water management indicator tools are recommended. These initiatives are being taken seriously by the NBI, where a DSS unit has been recently established.

\textsuperscript{21} For further information on the tools see GWP (2003b)
5. Plans for IWRM – Combining development options, resource use and human interaction
The emphasis here is on the process of establishing priorities and actions for integrated management of water resources (GWP 2003). Plans need to be flexible and continuously monitored. Tools include basin management plans, environmental, economic and social assessments, etc. Through the NTEAP and WRMP, steps are being taken to create IWRM priorities and processes (also discussed in section 4.3).

Here, it is promoted to encourage attitude changes on how the basin’s society perceives IWRM, where education, awareness and communication are promoted to change mind sets.

7. Conflict resolution – managing disputes and ensuring sharing of water
In a transboundary context, especially the Nile basin region, this is essential where tools such as shared vision planning, consensus building are needed to diminish potential conflicts to further develop cooperation. This is a strong focal area for the NBI.

8. Regulatory for allocation and usage
This is made up of direct regulation, economic and market regulation, self regulation and social regulation. Without a legal cooperative framework in place, these issues are difficult to be broached upon at an institutional level. Tools include: regulations for quantity and for land use and planning.

These tools briefly present the basic requirements that need to be expanded upon and brought together in the process of developing and reforming a water governance regime and IWRM strategies in the Nile Basin region. While this is not prescriptive, it provides a guideline of the key components needed in a larger framework. However, there are a number of social, economic, environmental, regulatory and political constraints that need to be highlighted which may create challenges for the NBI in evolving into a formal institution and incorporating strong IWRM strategies.

4.4 CHALLENGES IN THE REGION
To ensure that the NBI’s short-term goals and long-term vision is met, a number of obstacles need to be resolved which have a direct or indirect influence on establishing adequate
principles and tools for good water governance and IWRM, which were highlighted in the literature review, in chapter II, and in the previous section, 4.3.

4.4.1 Economic pressures

About 150 million people live within the basin confines where poverty is widespread, and up to 100 million people live on less than a dollar a day within the basin (NBI 2006). The 2001 Report on Transboundary Environment Analysis by GEF, WB, UNDP and the NBI states that 6 of the 10 countries in the Nile basin are some of the poorest in the world with a GDP of less than $250 dollars. Coupled with this there are huge disparities in wealth distribution - the GNP/capita of the richest basin state is nearly 10 times that of the poorest (NBI 2006). Figure 6 below shows that poverty in the sub-Saharan region, (a large part of the Nile basin) has been increasing with more people living on less than a dollar a day.

Figure 6 - Rising poverty in Sub-Saharan Africa

Population living on less than a US dollar a day – in millions

Source: World Bank 2005

Section 2.2 discusses the Dublin principles, which include that water is an economic good with economic value in all its competing uses where realistic prices should be attached and costs met to ensure sustainability of services. In the Nile region, the widespread lack of
appropriate economic infrastructure and incentive to use water more efficiently inhibits the adoption of innovative and efficient solutions and constrains the economies of the Nile Basin (Jagerskorg et al. 2007).

For most of the Nile Basin countries, the first development priority is to be able to sustain and grow food for the millions of people residing within it; and each country takes this as a primary goal, usually in terms of a self-sufficiency food policy (Abate 1990). However, the difficulty of achieving this is highlighted by Alan Nicol who states that in Africa, this requires an effective resource-management environment that goes beyond linear thinking of the “more water leads to higher agricultural production leads to greater food security” (Nicol 2005).

4.4.2 Social and cultural problems

With 10 riparian nationals involved, who make up a population of over 150 million people (NBI 2006), there are bound to be social and cultural differences influenced by their national identities and history.

The current poverty problems and high levels of formal illiteracy, pose major challenges in hindering the development of projects as the poorest of the poor need to survive and long-term gains are not a real priority. Here a change in attitude and awareness is necessary (as one tool highlights in the GWP tool box in section 4.3). Acknowledging this problem, the CBSI (along with other projects) was created as part of the SVP to create a platform for interactions with communities, dissemination of information and encouraging local participation.

Up until 1999, the NBI had been largely led at the political level in between governments and ministries. In many ways, civil society remained far behind in terms of involvement and participation in the process (El Khodari 2003), which is still the case today. Now, there is a substantial amount of work to actively involve civil society into the Nile Basin development. Many CSO’s in the Nile basin are already engaged in debates on PRSP’s plans, grass-root participation and multi-stakeholder dialogues while others have key sector-specific knowledge (NBD 2006). However, as one interview participant discussed, there is still a need
to see how effective these initiatives are on the ground as the monitoring and tracking process has not been strict so far.

The Nile Basin Society (NBS), an independent organisation has an ongoing on-line forum that provides a ‘space’ for dialogue and discussion on the initiatives being taken in the Nile Basin. The NBS has been critical of the level of input from civil society, NGO’s and CBO’s by the NBI, stating that these stakeholders have not been effectively included and the process has not been transparent or accountable in the involvement of these independent groups (El Khodari 2003). Foulds (2002) through her experience at the Nile basin found that the absence of NGOs implicates a shortage of active community participation and micro-level information in the resulting in ineffectual project designs that do not adequately incorporate community issues and hindering the impact of the project.

4.4.3 Environmental Constraints

A major area of concern to ensure sustainable management of the Nile Basin is the growing number of environmental dilemmas (Abate 1990). Almost all the countries in the basin are faced with serious environmental dilemmas like, deforestation, pollution, soil erosion, eutrophication, sedimentation which are inadequately dealt with due to inappropriate institutional setups within their own nations, ineffective approaches and tools, and lack of financial resources and specialised professionals for environmental management (Abate 1990).

Figure 3 below presents the various environmental threats and concerns for the various basin states. As Abate (1990) articulates, these problems can result in a serious impact to the resource base and the life support system of the basin’s environment. Mohamoda (2002) articulates that now another challenge faced that could affect the Nile flow and therefore influence cooperation is climatic changes, as the IPPC report in 1996 revealed: “the equatorial belt which includes the Nile basin, is subject to the highest uncertainty of any climatic change projections”.
Figure 7 - Overview of Immediate and Underlying Environmental Threats in the Nile Basin

<table>
<thead>
<tr>
<th>Root Causes Basin-wide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basin-wide causes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Priority Environmental Threats by Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burundi</td>
</tr>
<tr>
<td>D.R. Congo</td>
</tr>
<tr>
<td>Egypt</td>
</tr>
<tr>
<td>Ethiopia</td>
</tr>
<tr>
<td>Kenya</td>
</tr>
<tr>
<td>Rwanda</td>
</tr>
<tr>
<td>Sudan</td>
</tr>
<tr>
<td>Tanzania</td>
</tr>
<tr>
<td>Uganda</td>
</tr>
</tbody>
</table>

Source: NBI 2001

One of the largest SVP’s, the ‘Nile Transboundary Environmental Action Project’ (NTEAP) has promoted action through various activities which are meant to promote knowledge and understanding of the river hydrology; additionally, providing a platform for participation and information-sharing in a transboundary context. Also various methods such as modelling and DSS techniques are being slowly developed for the region, which are necessary tools as discussed in section 4.3.

4.4.4 Political challenges

In one interview conducted as part of this study, it was commented: “the Nile, being a transboundary river has another added layer of complexity, the issue of politics . . . where the resource management and allocation needs to be politically acceptable”. The respective governments of the region by coming together have committed themselves to finding collective and cooperative solutions for sustainable good governance of shared natural resources in the region (NBI 2001).
However, the issue of power struggles especially in regards to the 1959 legal agreement (discussed in section 2.7), has accentuated the distrust between Egypt and Ethiopia where Erlich (2002) states: “the more Egypt and Ethiopia liberalise their views of themselves, the greater the chance for mutual understanding”, which could lead to better relations. There is a regional imbalance in power as particular nations have stronger demands that need to be prioritised in the region. Tools for conflict resolution and management have been promoted here to diminish potential conflicts (as recommended in section 4.3).

Brunnee and Toope (2002) assert that the informal processes from the 2002 conference, which is linked to the official evolving cooperation, has played a significant role in changing the political climate along the Nile as interactions between various professionals (an institutional capacity tool – see section 4.3) has realised the need for cooperation as well as a sense of trust, which was previously evidently lacking.

### 4.4.5 Regulatory constraints

Ten sovereign nations share water resources from the Nile basin to varying levels but to-date have not developed any comprehensive set of rules and agreements that regulate that sharing (Waterbury 2002). As mentioned earlier, the NBI is working to develop an agreed ‘Cooperative Framework’ (Mohamoda 2003) which aims at “supporting the Nile basin countries in defining adequate and acceptable framework for cooperation”. Here, as Brunnee and Toope (2002) note, the UN Watercourse Convention has provided fundamental principles and guidelines, which now have to be ‘fleshed out’ by the Nile countries. In 2000, the Council of Ministers (NILE-COM) announced that the negotiations for a cooperative framework will extend, and the on-going dialogue, it is hoped, will resolve a number of contentious issues.

With the NBI being a transitional mechanism, a legal framework is essential in developing into a formal institution like an RBO that can establish sound water governance system that can be incorporated by all nations, ensuring better transparency and development of basic regulations, permits and taxes, including issues of water allocation, polluter pays principles.

---

22 Cited from Mohamoda (2002)
23 Nile Basin Website - [http://www.nilebasin.org/aboutUs.htm](http://www.nilebasin.org/aboutUs.htm)
no significant harm, etc. The importance of such a legal framework as a tool is further discussed in chapter II and section 4.3.

In discussing allocation Abate (1990) argues the Nile waters as a resource would have to be divided in such a way that the allocation to one individual nation can improve the well-being of that nation without decreasing the well-being of the other riparian nations (Abate 1990). Mohamoda (2002) articulates that this challenge is made more complex as riparian countries are independently developing projects, which undermines future cooperative negotiations.

Theoretically speaking, the 1929 and 1959 agreements between Egypt and Sudan do not allow for an ‘equitable and reasonable’ allocation of resources as under the 1959 bilateral agreement, the Nile water is shared only between these two states, Egypt and Sudan (Beaumont 2000). This along with under contentious areas, are currently under negotiation, for a cooperative framework in the region.

### 4.4.6 Institutional capacity

Three gaps have been identified of IWRM capacity in the Nile basin which as highlighted by NBI-ATP (2003) include:

1. **Weak human and institutional capacity** (the NBI is a temporary mechanism) not only at the regional level but also at the national levels, as well as a fragmented sectoral approach both within sectors such as agriculture, domestic, energy as well as between quality, quantity, surface and ground water disallowing the process to be integrated in its approach (as shown in section 4.3, building institutional is a necessary tool for IWRM).
2. **Another problem** is the varying distribution in specialists and trained people between the riparian states. Certain countries like Egypt and Kenya already have strong established water professional community whereas other countries have a smaller number of trained personnel.
3. **An additional issue** is the lack of interaction between these professionals made more complex by political, social and cultural issues separating these states.

A number of conferences such as the 9th Nile 2002 conference with a theme of “Comprehensive water resources development of the Nile Basin: Building a Nile Basin
“Community” has brought technical experts, academics and other professionals from within and outside the NBI to facilitate dialogue and exchange of views where policymakers and project managers can explore cooperation for further management and sound development of the Nile’s resources (Mohamoda 2003).

One primary problem in the region as mentioned above is the lack of trained personnel. Dr Seid, a DSS Lead Specialist with the NBI discussed that educational programmes are being set-up by the NBI by building partnerships with Universities and research institutions in the region. Another observation by an interviewee of institutional capacity at the Nile basin, as mentioned above, is that there is a lack of human capacity to conceptually translate policies into practice.

4.5 SUB-BASIN CATCHMENTS IN THE NILE BASIN REGION

Brunne and Toope (2002) question whether the NBI could be better enhanced by focusing on sub-basin approach instead of a basin-wide cooperation. Dagne et al. (1999) as cited in Mohamoda (2003) argue that by focusing on the sub basin level, it would strengthen and lay a firm foundation for future basin-wide initiatives while reducing current tensions without stalling a basin-wide cooperation (Swain 2002). At this level, building institutional capacity, incorporating a strong water governance regime as well as effective management tools such as IWRM would be to some extent slightly simpler.

Swain (2002) further adds that in studying the Nile basin, it is evident that some riparian countries for instance in the Great Lake Region are not particularly interested in the issues of allocation and equity of the Nile river as they are more reliant on a sub-catchment like the Lake Victoria. Waterbury (2002) explains that although there is ‘a particular risk of consolidating sub-basin regimes’ (Mohamoda 2003) rather than a basin-wide cooperation, this could be seen as a building block which over time can be consolidated into a basin wide accord as the number of players are reduced and coordination of activities less complex. Waterbury (2002) finds that there could be at least six sub-basins groups, including the Lake Victoria and Kagera Basin which have already formalised their own RBOs.
4.5.1 Victoria basin organization

Lake Victoria is the second largest freshwater lake in the world shared by Kenya (6%), Tanzania (49%) and Uganda (45%) where a third of the combined population of 30 million people live and depend on the catchment for fishing, agriculture and domestic use (UN-IRIN 2007) (See map 1). In 1997, Kenya, Tanzania and Uganda signed a treaty that established the EAC (UNECA 2000), where the Lake Victoria Basin Commission (LVBC) was created to promote and coordinate activities of different actors towards the sustainable development of the Lake Victoria basin which is recognized as a regional economic zone. The Lake Victoria basin is one of the sub basins under the Nile Equatorial Lakes Subsidiary Action Program (NELSAP) an investment program of the NBI. These ties are further strengthening cooperation between the EAC and NELSAP to sustainably manage the water catchment resource for the benefit of the whole basin.

4.5.2 Kagera basin organization

The Kagera river basin is the only sub-basin in the Nile river system outside of the two lower riparian countries i.e. Egypt and the Sudan that has a cooperative arrangements based on all aspects of water resources (UNECA 2000). Waterbury (2002) referred to KBO, “as one of the most ambitious and coherent organizations in Africa if not the world”. Burundi, Rwanda, Tanzania established the Kagera Basin Organization (KBO) in 1977 with Uganda joining in 1981 (UNECA 2000). In the 1990s the civil conflict in Rwanda and Burundi setback the work of the KBO, which has over recent time been able to resume many its functions again.

Various projects over the decades have been initiated and developed over the past three decades including: transport networks of railways and roads; a telecommunication project for the sub-region; energy and environment conservation projects; and agriculture (UNECA 2000). In the future, KBO’s priorities will be focused on: strengthening of its structures, rehabilitation and implementation of the priority projects, and cooperation with other regional and international institutions, including the NBI, in dealing with basin management (UNECA 2000).
CONCLUSION

Part I of this chapter introduced the NBI and its structural breakdown. Through the use of the GWP IWRM tool box, key tools were highlighted for effective water governance and IWRM for the region; however, as highlighted there are a number of constraints faced on the ground. These challenges have been discussed to create an understanding of the complexities of developing water governance regimes and implementing IWRM approaches and to also note the action being taken by the NBI through various project initiatives. The next part of the chapter through the interviews conducted will discuss how the NBI to-date has been able to instil water governance and IWRM and the challenges that the mechanism has faced in the process.
PART II – ANALYSIS OF INTERVIEWS

INTRODUCTION

This section, as part of my analysis, is to: generate a deeper understanding of how successfully the NBI has been able to instil good water governance and IWRM, examine the challenges and constraints that the initiative is facing, and to assess whether the NBI has met key expectations of the practitioners who participated in the study. The analysis has been conducted through interviews and questionnaires of 16 water professionals and specialists (for details see Annex 6) working with the NBI or with relevant international organisations, as previously discussed in Chapter III.

4.6 NBI IN A TRANBOUNDARY CONTEXT

Several of the interviewees discussed that every basin has its own context and that institutional capacity is fundamental in creating a framework for good water governance and IWRM for each basin (as discussed in Chapter II). This includes: planning and development, communication/awareness, monitoring, assessment, etc. to create an enabling and conducive environment for strong policy developments.

As pointed out by a number of participants that although there is no prescriptive way of doing this, there are a number of cruces that need to be emphasised in the NBI, (also highlighted in part 1)

1. Sharing of information openly and ensuring that the process does not lack transparency.
2. Building of trust through negotiations where principles are agreed upon to be gradually put into practice.
3. An inter-ministerial approach by stressing that all relevant sectors need to be represented.
4. A common policy on transboundary management where the staff involved should have an understanding of the macro wide level rather than just narrowed sector thinking.
5. A regional binding legal agreement for enforcement, allocation, etc. purposes.

A number of participants highlighted that in a transboundary setting, consensus is needed and through the NBI, a forum has been created to reach such an accord, which is necessary for management. One interviewee further discussed this issue, stating that in the Nile Basin, the process has started from the development of the NBI, which now needs to evolve from a transition mechanism to a RBO in order to institutionalise key principles and concepts.

4.7 STEPS TAKEN BY THE NBI TO INCOOPERATE GOOD WATER GOVERNANCE

The NBI is currently facilitating the legal and institutional cooperative negotiations among the riparian states; it has also put in place the building blocks of IWRM under the SVP (see section 4.2). An interviewee discussed that since the cooperative framework is not yet concluded and unifying permanent basin institution is not yet in place its success cannot be fully judged at this point in time. Another participant observed that the NBI is not yet in a position to say it has put in place good water governance, but it is paving the way through SVP’s, which serve as pillars to the process.

Numerous interviewees pointed out that at each countries national and ministerial levels the NBI cannot exert a significant impact on IWRM and good governance implementation, but through best practices, the use of ‘due diligence’ and benchmarks, improvements within each riparian state can be made. One participant stated, “the NBI has started to address and incorporate good water governance, as the issue has been coming up recently . . . Water affairs departments have started springing up in Ministries to focus on good water governance”. Here again, the issue of enforcement comes in where a regional legal agreement needs to be in place to create a ‘standardised’ system across the region.

Another observation was that the NBI has transboundary programmes running between member states which have been initiated to develop trust between nations, for conflict resolution and funding projects for poverty reduction. Splitting the basin into sub-basins made of NELSAP and ENSAP (see figure 4) has been recognised as an excellent approach. It has set up programs and projects that are more relevant to the hydrological, geographical and
social setting. A number of interviewees suggested that these should be further split into even smaller projects in a sub-basin; from these steps the process can move towards a holistic approach to the Nile (see section 4.5 on sub-basins).

It was commented that the NBI, a transitional mechanism, is still young. It is in the process of collecting information to share and disseminate between the riparian states. Each riparian country varies; some have better ‘good practices’ developed than others. Institutional capacity in the transboundary context makes evident that there is a lack of capacity both sectorally and nationally.

4.8 PARTICIPATION OF STAKEHOLDERS

The concept of who is a stakeholder was questioned by a few interviewees who felt that there are so many and made more complex by the fact that each stakeholder has its own vision and interests. Another challenge presented through the example of the Nile Micro-Grant Programme is that in certain areas it has been difficult to find civil organisations and NGOs to be able to apply and use the grant as these types of organisations are non-existent or still at their infancy stage. In a number of locations the programme has had to start from scratch. A specialist with the NBI felt that another problem is lack of infrastructure development resulting in an inability to access everyone.

One criticism was that this is not yet happening as, “governments feel uncomfortable with civil society, and they take [stakeholders] as police instead of viewing [stakeholders] as partners”. He felt that collaboration needs to be further enhanced. It was noted that the challenge of low awareness and dissemination of information among the population needs addressing as there needs to be an understanding of what the NBI is doing and how they as stakeholders can participate in the process.

Another problem widely felt in the region is the issue of illiteracy where information disseminated through newspapers and leaflets are not suitable in large parts of the region. The CBSI project has used other mediums to spread information like the use of theatre and vernacular FM radio stations and mobiles. Mr. Mumbo, the Regional Manager of CBSI,
discussed that recently he had been on a radio station talking about his project and during the show’s run they received over a 100 hundred calls for queries and comments.

However, it was felt that through the NBI more people have been able to participate. As one participant stated, “Although they [the NBI] work with specific communities there are resource limitations. They are doing the best they can”.

4.9 PROBLEMS FACING THE NBI IN INSTILING GOOD WATER GOVERNANCE AND IWRM

Although the NBI is still a mechanism, water governance framework needs to be conceptualised for the process to be effective as well as strengthening IWRM strategies. Participants in their discussions highlighted various problems that the NBI is facing in relation to underlining good water governance and IWRM practices as discussed below. There are different policies in each riparian nation with different levels of economic development, each with its own cultural heritage and history. This as discussed in section 4.3.2, is a major barrier to developing a regional water governance framework. The key problems facing the NBI in regards to this have been categorised into four groups: politics, institutional capacity, regulatory and information and participation.

A. Politics

Political power struggles and distrust is seen as a significant constraint that needs to be managed in order for the NBI to manage the Nile basin in any effective way. One participant discussed: “Egypt has clear and aggressive policies as it is totally reliant on the Nile with one of the largest population of all the riparian states”.

B. Organisational framework and Institutional capacity

Regarding the issue of a lack of inter-sectoral approach, one important point made by a water specialist was: “NILECOM and NILETAC are made up of professionals with a water background . . . there is a predominance of water ministries instead of a more multi-ministerial approach”. One participant emphasised that a key problem is that a forum is lacking between the formal and informal processes, i.e. a link between the closed negotiations between government officials and practical discussions by NBI staff and CSO’s
on implementing projects on the ground. This presents a barrier to transparency and information filtering between the two processes.

Numerous participants discussed the administration levels, which are still at the infancy stages in many countries resulting in an imbalance between the riparian states in the region (as discussed in section 4.4.6). Another problem it was generally felt by interviewees is that there are different protocols in each state on sharing data and information on water use and water levels in each riparian state. Although the NBI is working to systemise this, there seems to be a disgruntled attitude.

The countries sharing the river Nile are at different levels of use and development of the resource. The basins country-level institutes that are based in each riparian state needs to create a nucleus for IWRM at various levels. As one interviewee commented, “In some of the [riparian] countries one can find a well established system and in other nations there isn’t a focal institute dealing with IWRM”.

A professional associated with the NBI highlighted that the information gap is a big problem as currently ‘specialised’ information is not being translated (like technical reports) into a reader friendly medium for internal use within the NBI as well as for the mass population.

Another challenge faced is the lack of personnel (see section 4.4.6). One participant stated: “Although there are trained and skilled Africans from the Nile basin states, a significant percentage of them are not based within the region”.

C. Regulatory related

Most interviewees, as mentioned many times in my study, discussed how the absence of a cooperative framework is seen as a major problem in translating good water governance. This, many added, is made even more complex by the previous agreements and treaties in place as discussed in section 4.4.5. Along with the lack of a legal framework, issues of equitable utilization and allocation become difficult to resolve. Dr. Seid from IWMI and other interviewee’s emphasised that without a legal agreement the IWRM process will not have the impact in managing the transboundary resource and in regional development.
D. Information and Participation

One specialist personally felt that one key area that has not been given enough priority for good water governance is the issue of science. The specialist went to explain that DSS and water models are recognised as essential tools as they focus on disputed issues such as allocation (discussed in section 4.3) as well provide essential data. In order to get Egypt, a dominant country in the region which relies heavily on the Nile, to come to the table for talks, the data must be accurate and trustworthy. This requires engaging an independent scientific body in the basin region.

Most interviewees discussed that stakeholders are not being involved to the level that they need to be especially civil society groups. The role of participation and stakeholders needs to be further looked at by the NBI, as one participant suggests that perhaps it is time for the NBI to carry out an evaluation to critically assess where they are going wrong.

4.10 ARE THE EXPECTATIONS OF THE NBI BEING MET?

The NBI has met the expectations (balance, information availability, etc) of the riparian states

Seven participants agreed that the initiative has taken positive steps in the area of capacity building, enhancing awareness and creating a platform for discussion on Nile basin issues. For certain groups, expectations have been exceeded, for example, the agreement between Sudan, Egypt and Ethiopia for an irrigation project, which a few years ago due to political tension would have never come into existence. Four participants disagreed stating that the NBI is young and in the process of compiling information and hence it is too early to judge. It was also mentioned that the process has been very slow, especially for the SAPs’ to come into effect. The other interviewees felt that it is an ongoing process and time is still required for expectations to be met.

The NBI has given an understanding of the importance of IWRM and how it can achieve sustainable development objectives

Six participants agreed that this is evident through documentation and through various projects like NTEAP where the environmental principal is central, and CBSI which is providing a forum to address sustainable development issues. One interviewee agreed but
with reservation as it was felt that the NBI had not done this consciously, but incidentally. Dr Seleshi from IWMI discusses that the NBI projects were designed to create action on enhancing transboundary understanding, management, and governance – these efforts have helped to understand IWRM in the process. The other participants were uncertain or disagreed with the above statement.

**The NBI has allowed the plan preparation process to incorporate good water governance**

The vast number of participants felt that some action has been taken by the NBI to instil water governance. As Dr. Seid stated that they are laying the foundations towards good water governance. Another participant argued that good water governance is seen as secondary and is assumed that will instil itself naturally.

**The lack of a legal framework within the Nile Basin is negatively impacting good water governance**

Most of the professionals agreed that a lack of legal framework was hindering the process as one participant stated: “it gives initiatives more teeth where regulations are followed”. But the 1959 agreement, as discussed in section 2.6, is still a contentious issue which will require careful facilitation and negotiation. Another interviewee highlighted that visibility of policies is a little diminished without a legal agreement in force. Additionally it was stated that this process has taken too long.

**The NBI can only be successful if good water governance is instilled**

Eight participants agreed that good water governance is essential. One interviewee discussed that good governance is essential when: “discussion ensues between states, information and data is exchanged and when principles such as the Dublin principles, precautionary principle and environmental justice are taken into account”. It was further added that these are all encompassed by good water governance. The rest of the interviewees were unsure as one comment was that there should be a clear understanding of what good water governance should be, with specific principles, to guide the management of the Nile basin.
CONCLUSIONS

To summarise, the data compiled through interviews and questionnaires, provide a clear understanding of some of major constraints that are being faced by the initiative in developing good water governance and IWRM strategies in the region. Some of the most common points made were that the NBI needs to be formalised into a permanent institution with a legal framework in place. Other issues discussed included political power struggles, information gaps, lack of effective public participation, insufficient levels of inter-sectoral thinking and weak institutional capacity.

It is important to note that some of the key challenges that are being faced by the NBI have been outlined by the IWRM Tool box (section 4.3) as some of the fundamental tools required for the effective implementation of water governance and IWRM.

I have addressed a number of the constraints mentioned in this section through my recommendations in Chapter V (section 5.2) for the NBI process.
CHAPTER V – CONCLUSIONS AND RECOMMENDATIONS

5.1 CONCLUSIONS

This section highlights the main findings of the study by going back to my main objectives and research questions that were posed in the introduction (Chapter I).

5.1.1 Challenges of good water governance and IWRM

Through the theoretical discourse of water governance and IWRM it has been made evident that key principles and concepts such as institutional roles and their capacity, legislative framework, open public participation and social change creates a conducive environment for the formulation and reform of good water governance, strengthening practical translation of IWRM in a transboundary context. However, the concept of governance itself is still vague as is IWRM, as reiterated by GWP (2003); much more work needs to be done to establish governance regimes where IWRM tools can be applied. It was also discussed that stakeholders’ interests are very varied and complex, which makes it impossible to come up with a straightforward “best practice” of catchment-oriented water governance toward which policy reform should aspire (Hirsch 2006). As Merrey et al. (2005) explain, governance remains the core issue in IWRM, with many developed and developing countries struggling to find institutional mechanisms for its effective implementation.

5.1.2 Good water governance and IWRM practices in the Nile Basin

The NBI only represents a transitional arrangement, until the riparian countries agree on a permanent legal and institutional framework for the cooperative management of the Nile basin. At this moment in time, through the 7 focal areas of SVP’s, which include NTEAP, WRMP, CBSI, etc, SAP’s have initiated projects on the ground that are directly and indirectly promoting IWRM, although an inter-sectoral approach is still evidently missing. The NBI through experience and lessons learnt concurrently with the formalisation of a permanent institute can further strengthen the foundations being laid for water governance and IWRM. Realisation of this challenge is the biggest trial ahead.
5.1.3 Challenges and Constraints for the NBI in the region

The economic, social, political, environmental, institutional capacity constraints of the region, creates a much more complex environment and process for the establishment of a joint effort between the riparian states. Stakeholder participation is to a wide extent still lacking, an inter-sectoral approach has not yet been embraced, and institutional capacity requires further attention. However, as has been evident, efforts with the support of multilateral organisations have resulted in great strides forward, especially at the political level. Now what is required is an agreement of a cooperative framework to create a permanent institution in the basin with a legal standing so that principles and issues of equity, allocation, etc can be practically enforced in order to be able to move to the next level.

5.1.4 Have the expectations of the NBI been met?

As has been discussed, the NBI is still ‘young’; efforts are being made to lay a foundation for water governance and the enhancement of IWRM. It has been generally found that although action is being taken, there is a lack of an inter-ministerial approach, which entails macro-wide thinking. This requires a change in attitude in how the Nile basin projects are approached by project planners, policy developers, the national ministries of each riparian state, as well as other relevant stakeholders.

Through the SVPs and SAPs, stakeholder involvement has been recognised as being particularly successful; however, to what extent are the stakeholders actively involved on the ground and what effect are they having on the NBI process is yet to be seen.
5.2 RECOMMENDATIONS

The following recommendations have been made to mitigate some of the constraints being faced by the NBI, as presented in Chapter IV, part I. to further develop water governance to strengthen IWRM in the region.

Looking at the institutional hierarchy of the NBI, NILE-COM needs to broaden up, as it is currently dominated by water ministries. By including other sectoral ministries, a stronger multidisciplinary approach would be taken when decisions are made about the management of the Nile basin region. Additionally, there needs to be further joint collaboration between ministries in each riparian state, establishing IWRM from the national level, which in turn can be strengthened at the regional level. NBI should also encourage participating countries to strengthen their water and related agencies to institute IWRM and IRBM at the national level. Political will and commitment of participating countries are crucial elements here.

One of the primary constraints of water governance is the complexity of its varied concepts and heterogeneous stakeholders. To overcome this, the NBI needs to clearly define what good water governance means for the NBI, and who the primary and secondary stakeholders are with clearly defined transboundary water governance strategies.

As discussed throughout the case study, legislation is one key component that is still lacking. IWRM and water governance require effective coordination and a platform for genuine dialogue among riparian states, which the NBI has to deliver through a well designed cooperative framework. The legal framework would allow for constructive formal dialogue on contentious issues such as allocation, equity, taxes, permits, etc

It is evident that capacity building for stakeholders at different levels in the IWRM approach needs to be in place within the Nile region, so as to ensure for effective participation. This is also important in changing the mindset and attitude toward IWRM. Capacity building for employees within the NBI is crucial to further encourage understanding of inter-sectoral thinking and enhance knowledge of key concepts and principles. IWRM requires adequate capacity in social, economic, technical fields including negotiation skills.
Although it is in the process of being developed in the NBI, more attention needs to be given to water resource assessment, where the compilation of data and indicators on Nile waters is essential in making informed decisions. This includes tools such as modelling and DSS and the development of indicators. Accurate and trustworthy scientific data is integral for negotiations of the cooperative framework. An independent scientific body could be employed by the NBI to build this capacity further.

One common problem brought up by a number of interviewees is the lack of a data-sharing mechanism. The lack of information also shows the short-comings in transparency to a wide extent. The NBI needs to develop an administrative set-up to focus on this issue where data (non-sensitive) and information compiled within and between riparian countries is made accessible.

While IWRM has been the main area of discussion for most the case study, as a subset IRBM also needs to be given more priority, by developing a capacity to educate both NBI personnel and other relevant stakeholders on the definition of IRBM in the Nile basin context, and how its tools can be translated within the catchments and sub-catchments.

As we have seen, institutional capacities in various countries are highly variable. Pulling them together to develop the Nile Basin wide institution may not work effectively. It may be more useful to establish an umbrella ‘organ’ for this purpose, while at the same time develop the capacities of each countries institution. National institutions of the riparian states are also facing their institutional capacity problems that could in this situation be mutually resolved.

The further development of sub-basins such as LVBC and KBO could be encouraged in concurrence to developing a regional cooperation (see section 4.5). Working within sub-basins would be building blocks that could enhance the basin as a unit. Sub-basins and its environs would require less investment and would have a specific spatial focus of integrating socio-economic development and environmental protection and conservation. This over time could be consolidated as part of Nile basin unit. Sub-basins such as the LVBC and the KBO are working within their own sub-catchment area to develop and protect the resources there in the process establishing and strengthening their own water governance structure.
Like all historical processes, patience is needed. Part of the process, as discussed previously, in developing a water governance and IWRM framework is fitting the needs of the local context, which with its varied differences within the region itself, may require time. One important point that needs to be underlined here is that there should be an avoidance of unrealistic proposals and aims – it makes better sense to aim towards a realistic goal, where targets are met and local and regional confidence is built.

Lessons learnt from other cases in regional initiatives in Africa should be encouraged; most especially Southern Africa, which has over the years, developed strong integrated water policies. These cases could provide an opportunity to examine and benchmark various measures that have been taken that to some effect could be ‘moulded’ to fit the Nile Basin region.

The NBI needs to further promote an alignment between water, land, and wetlands to build upon a more integrated approach. Lastly, innovative solutions and ideas are important in any new initiative and should be promoted and encouraged by the NBI.

In conclusion, these are some of the many recommendations for further development and enhancement of good water governance and IWRM strategies in the region, which in turn will strengthen the development of relevant policies in the region.
BIBLIOGRAPHY


Erlich, H and Gershoni, I., eds. *The Nile.* London: Lynne Rienner Publisher


____________ 2003a. Effective water governance: Learning from the Dialogues. n.p.: GWP


Merrey, D., Drechsel, P., Penning de Vries, F., and Sally, H. 2005. Integrating “livelihoods” into integrated water resources management: taking the integration paradigm to its logical next step for developing countries. *Regional Environmental Change* 5: 197-204


________. n.d. URL: [http://www.nilebasin.org/aboutUs.htm](http://www.nilebasin.org/aboutUs.htm) [Consulted on May 10 2007]


United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) 2004. *Institutional Changes for achieving the water-related targets of MDGs in Asia and the Pacific Region*.


**Personal Communication**

Allan, T. Professor, Kings College. Formal Interview. London, 4 of April, 2007

Atallah, M. Portfolio Manager for Land Degradation and International Waters, UNDP-GEF. Formal Interview. Lebanon, 16 of April, 2007

Harlin, J. Water Resources Specialist, UNDP Water Governance Facility at SIWI. Formal Interview. New York, 5 of April, 2007


Jagerskog, A. Project Director of SIWI Projects, UNDP Water Governance Facility at SIWI. Formal Interview. Stockholm, 5 of April, 2007

Kilelu, C. Project Officer, IDRC. Formal Interview. Nairobi, 13 April, 2007


ANNEXES

ANNEX 1 – The thirteen key IWRM change areas

<table>
<thead>
<tr>
<th>The enabling environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Policies – setting goals for water use, protection and conservation.</td>
</tr>
<tr>
<td>2. Legislative framework – the rules to follow to achieve policies and goals.</td>
</tr>
<tr>
<td>3. Financing and incentive structures – allocating financial resources to meet water needs.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Institutional roles</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Institutional capacity building – developing human resources</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Management instruments</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. Water resources assessment – understanding resources and needs.</td>
</tr>
<tr>
<td>8. Demand management – using water more efficiently.</td>
</tr>
<tr>
<td>13. Information management and exchange – improving knowledge for better water management.</td>
</tr>
</tbody>
</table>

Source: Adopted from GWP (2005)
ANNEX 2 - Twenty Benchmarks of mature, auto-adaptive river basin organisations implementing effective river basin management

Decision-making
1. Decision-making by the river basin organization occurs within a national framework of natural resources management objectives and investments
2. Decision-making is consensual and coordinates across sectors in the basin
3. Decision-making is reflected in the river basin organization’s business plan, is prioritized, focuses on efficiency, links vertically to governments and provides stakeholder access to government

Goals, Goal Shift, and Goal Completion
4. An IWRM approach is agreed to and practiced by the river basin organization
5. Objectives are specified in and articulated through feasible options in a river basin management plan

Financing
6. River basin management is financed through cost-sharing
7. Financing is on-going, guaranteed, adequate, linked to national and state priorities
8. Ex-ante and ex-post economic assessments of management options are practiced
9. Water pricing and alternative demand management are practiced

River Basin Commission Functions
10. Stable democratic conventions exist to provide stability to the institutional setting
11. The river basin organization’s functions are co-ordination driven and realistic

Law
12. Ongoing laws exist to enact natural resources management relevant to basin management
13. The roles and responsibilities of the river basin organization are clearly specified in both national water policy and law

Staff Training
14. The river basin organization has a program in place to improve staff quality for management skills, leadership and communication

Information and Monitoring
15. The river basin organization has its own, or joint access to, a well developed, accurate, up-to-date, information and monitoring system
16. Science informs the river basin organization through modelling and spatial representation of options, which are costed and linked to the river basin organization’s decision system: options which are delivered through strategic planning and decision-making processes
17. The information management system reports on how the basin is being managed and resources are consumed and protected

Coordinated Management With Stakeholders
18. Public involvement processes are effective, providing for joint decision-making and conflict resolution
19. The roles and responsibilities of stakeholders are specified and understood
20. The river basin organization uses joint ventures and coordinates strategic decisions between partners

Source: Hooper 2006
### ANNEX 3 - Types of cooperation and benefits on international rivers

<table>
<thead>
<tr>
<th>Type</th>
<th>The challenge</th>
<th>The opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Type 1: increasing benefits to the river</em></td>
<td>Degraded water quality, watersheds, wetlands, and biodiversity</td>
<td>Improved water quality, river flow characteristics, soil conservation, biodiversity and overall sustainability</td>
</tr>
<tr>
<td><em>Type 2: increasing benefits from the river</em></td>
<td>Increasing demands for water, sub-optimal water resources management and development</td>
<td>Improved water resources management for hydropower and agricultural production, flood-drought management, navigation, environmental conservation, water quality and recreation</td>
</tr>
<tr>
<td><em>Type 3: reducing costs because of the river</em></td>
<td>Tense regional relations and political economy impacts</td>
<td>Policy shift to cooperation and development, away from dispute/conflict; from food (and energy) self-sufficiency to food (and energy) security; reduced dispute/conflict risk and military expenditure</td>
</tr>
<tr>
<td><em>Type 4: increasing benefits beyond the river</em></td>
<td>Regional fragmentation</td>
<td>Integration of regional infrastructure, markets and trade</td>
</tr>
</tbody>
</table>

Source: Sadoff and Grey (2002)
ANNEX 4 - Map of River and lake basins in Africa

Source: UNECA 2001
ANNEX 5 – Questionnaire/Interview Questions Sample

Interview for Thesis Research for Masters in Environmental Sciences, Policy and Management, University of Manchester

Researcher: Fatema Rajabali
Email: fatema_rajabali@postgrad.manchester.ac.uk
Mobile: +44 (0) 7895-702-576 Skype: f_rajabali

Please return by Saturday, 22nd of April, 2007

<table>
<thead>
<tr>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of interviewee</td>
</tr>
<tr>
<td>Institution</td>
</tr>
<tr>
<td>Position</td>
</tr>
<tr>
<td>Date</td>
</tr>
</tbody>
</table>

Would you like your personal details to be kept anonymous?

1. General Questions on IWRM/IRBM

1.0 How can IWRM contribute to achieving sustainable management of transboundary water? If it cannot, why and what improvements would you suggest?

1.1 How can IRBM contribute to achieving sustainable management of transboundary water? If it cannot, why and what improvements would you suggest?

1.2 What institutional capacity is needed to promote or build transboundary water resources management in a way that would benefit all states (stakeholders)?
IWRM and Good Water Governance in a transboundary context: case study of the Nile Basin Region

1.3 How do you define good governance to its relationship to IWRM/IRBM?

1.4 In what following ways, if any, does good governance influence or affect the following:
   a) Developing effective policies in IWRM/IRBM?

   b) Managing transboundary water resources effectively?

1.4 How would you describe any international principles that might be used to benchmark IRBM?

2. Questions on the Nile Basin and the Nile Basin Institution

2.0 What steps has the NBI taken to incorporate good water governance? How successful has the NBI been?
2.2 What problems has the NBI faced in instilling good water governance in the planning process?

2.3 Has the NBI been successful in ensuring that all the stakeholders have been involved in the above process? If it has not, why and what improvements would you suggest?

2.4 Are the current institutional capacities developing relevant and effective IRBM policies for the benefit and development of the whole region? If yes, how? If not, why?

2.5 What do you think are the major obstacles of translating IRBM in the Nile Basin?

3.0 **How much do you agree with the following statements** (1=disagree, 2 = unsure 3=agree)? Please add any additional comments you may have as to why you agree or disagree

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>The NBI met the expectations (balance, information availability) of the riparian states Why?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>The IRBM has helped to strengthen the management of the Nile Basin Why?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
The NBI has developed policies that have been meeting the Millennium Development Goals? Why?  

The NBI has given a better understanding of how sustainable development objectives can be met through IRBM Why?  

The NBI has allowed the plan preparation process to incorporate good governance Why?  

The lack of a legal framework within the Nile Basin is negatively impacting policies being translated by the riparian states Why?  

The NBI can only be successful if good water governance is instilled Why?  

4.0 What recommendation would you give for effective translation of IRBM in the Nile Basin looking at institutional capacity and good governance and institutional capacity?

Any additional comments?
## Annex 6 – Interview and Questionnaire Participants

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution and Location</th>
<th>Position</th>
<th>Questionnaire/ Interview</th>
<th>Reasons for contacting</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Mr. Gordon Mumbo</td>
<td>Nile Basin Initiative, Uganda</td>
<td>Regional Project Manager Confidence Building and Stakeholder Involvement</td>
<td>Interview via skype – structured/semi structured</td>
<td>Key Employee of NBI</td>
<td>55 minutes</td>
</tr>
<tr>
<td>2. Mr. Andrea Merla</td>
<td>Global Environment Facility, US</td>
<td>Programme Manager, International Waters</td>
<td>Interview via telephone – structured</td>
<td>Specialist on water resources management</td>
<td>45 mins</td>
</tr>
<tr>
<td>3. Professor Tony Allan</td>
<td>Kings College/ SOAS, London</td>
<td>Professor</td>
<td>Interview in person – semi-structured/informal</td>
<td>Specialist on water resources management with experience in the Nile Basin</td>
<td>2 + hours</td>
</tr>
<tr>
<td>4. Ms Mirey Atallah</td>
<td>GEF/UNDP, Lebanon</td>
<td>Portfolio Manager for Land Degradation and International Water</td>
<td>Interview via skype semi structured</td>
<td>Works with the NBI</td>
<td>1 + hour</td>
</tr>
<tr>
<td>5. Anders Jagerskog</td>
<td>UNDP Water Governance Facility at SIWI, Sweden</td>
<td>Project Director, SIWI Projects</td>
<td>Interview via skype semi-structured</td>
<td>Has worked on the Nile Basin Region</td>
<td>1 + hour</td>
</tr>
<tr>
<td>6. Dr Joakim Harlin</td>
<td>UNDP Water Governance Facility at SIWI, New York</td>
<td>Water Resources Specialist</td>
<td>Interview via skype semi-structured</td>
<td>Water Resource Specialist</td>
<td>1 hour</td>
</tr>
<tr>
<td>7. Dr. Seid</td>
<td>NBI, Ethiopia</td>
<td>Regional DSS Lead Specialist</td>
<td>Interview via skype semi-structured</td>
<td>Employee of the NBI</td>
<td>1 + hour</td>
</tr>
<tr>
<td>8. Ms. Catherine Kilelu</td>
<td>IDRC, Kenya</td>
<td>Project Officer</td>
<td>Interview via skype semi-structured</td>
<td>Professional experience within the Nile Basin Region</td>
<td>1 + hour</td>
</tr>
<tr>
<td>9. Mr. Jakob Granit</td>
<td>World Bank, US and Sweden</td>
<td>Sr. Water Resources Management Specialist</td>
<td>Interview via skype semi-structured</td>
<td>Specialist in water resources and working in</td>
<td>1 + hour</td>
</tr>
<tr>
<td>No.</td>
<td>Name</td>
<td>Position and Institution</td>
<td>Method of Research</td>
<td>Role/Desk</td>
<td>Duration</td>
</tr>
<tr>
<td>-----</td>
<td>--------------------</td>
<td>-----------------------------------------------------------</td>
<td>----------------------</td>
<td>-------------------</td>
<td>----------</td>
</tr>
<tr>
<td>10.</td>
<td>Dr. Terje Tvedt</td>
<td>Professor, Historian of the Nile Basin, Norway</td>
<td>Interview via phone</td>
<td>Historian of the Nile Basin Region</td>
<td>35 mins</td>
</tr>
<tr>
<td>11.</td>
<td>Mr. Frank Habineza</td>
<td>Nile Basin Discourse Forum in Rwanda, Rwanda</td>
<td>Questionnaire</td>
<td>Working with the NBI</td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>Mr. Enock Wanyonyi</td>
<td>Regional Manager, Kenya</td>
<td>Questionnaire</td>
<td>Professional experience in the Nile Basin region in water management</td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>Dr. Seleshi Bekele</td>
<td>Office Director, Ethiopia</td>
<td>Questionnaire</td>
<td>Water Specialist with professional experience in the Nile Basin region</td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>Mr. Frank Habineza</td>
<td>Nile Basin Discourse Forum in Rwanda, Rwanda</td>
<td>Questionnaire</td>
<td>Professional experience in the Nile</td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>Mr. Yasir A. Mohamed</td>
<td>Senior Researcher I, Ethiopia</td>
<td>Questionnaire</td>
<td>Professional experience in the Nile Basin region</td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>Alan Nicol</td>
<td>Head, Water Policy Programme</td>
<td>Questionnaire</td>
<td>Water Specialist and professional experience in the Nile Basin region</td>
<td></td>
</tr>
</tbody>
</table>
ANNEX 7 – Nile Basin Initiative Structural Overview

Source: NBI 2005
## ANNEX 8 - IWRM Tool Box

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong></td>
<td><strong>THE ENABLING ENVIRONMENT</strong>&lt;br&gt;A1 Policies – setting goals for water use, protection and conservation.&lt;br&gt;A group of tools in the ToolBox deal with water policies and their development. Policy development gives an opportunity for setting national objectives for managing water resources and water service delivery within a framework of overall development objectives.</td>
</tr>
<tr>
<td><strong>A2</strong></td>
<td>Legislative framework – the rules to follow to achieve policies and goals.&lt;br&gt;The ToolBox includes tools for use in the development of water law. Water law covers the ownership of water, the permits to use (or pollute) it, the transferability of those permits, and customary entitlements and underpin regulatory norms for e.g. conservation, protection, and priorities.</td>
</tr>
<tr>
<td><strong>A3</strong></td>
<td>Financing and incentive structures – allocating financial resources to meet water needs.&lt;br&gt;The financing needs of the water sector are huge, water projects tend to be indivisible and capital-intensive, and many countries have major backlogs in developing water infrastructure. The ToolBox has a group of financing and incentive tools.</td>
</tr>
<tr>
<td><strong>B</strong></td>
<td><strong>INSTITUTIONAL ROLES</strong>&lt;br&gt;B1 Creating an organisational framework – forms and functions.&lt;br&gt;Starting from the concept of reform of institutions for better water governance, the ToolBox can help the practitioner create the needed organisations and institutions- from trans-boundary organisations and agreements, basin organisations, regulatory bodies, to local authorities, civil society organisations and partnerships.</td>
</tr>
<tr>
<td><strong>B2</strong></td>
<td>Institutional capacity building – developing human resources.&lt;br&gt;The ToolBox includes tools for upgrading the skills and understanding of public decision-makers, water managers and professionals, for regulatory bodies and capacity building for empowerment of civil society groups.</td>
</tr>
<tr>
<td><strong>C</strong></td>
<td><strong>MANAGEMENT INSTRUMENTS</strong>&lt;br&gt;C1 Water resources assessment – understanding resources and needs.&lt;br&gt;A set of tools are assembled to assist water resources assessment. Assessment starts with the collection of hydrological, physiographic, demographic and socio-economic data, and setting up systems for routine data assembly and reporting.</td>
</tr>
<tr>
<td><strong>C2</strong></td>
<td>Plans for IWRM – combining development options, resource use and human interaction.&lt;br&gt;Tools are available for river and lake basin planning entailing the comprehensive assembly and modelling of data from all relevant domains. The planning should recognise the need for parallel action plans for development of the management structures.</td>
</tr>
<tr>
<td><strong>C3</strong></td>
<td>Demand management – using water more efficiently.&lt;br&gt;Demand management involves a set of tools for balancing supply and demand focusing on the better use of existing water withdrawals or reducing excessive use rather than developing new supplies.</td>
</tr>
<tr>
<td><strong>C4</strong></td>
<td>Social change instruments – encouraging a water-oriented civil society.&lt;br&gt;Information is a powerful tool for changing behaviour in the water world, through school curricula, university water courses and professional and mid-career training. Transparency and product-labelling are other key aspects.</td>
</tr>
<tr>
<td><strong>C5</strong></td>
<td>Conflict resolution – managing disputes, ensuring sharing of water.&lt;br&gt;Conflict management has a separate compartment in the ToolBox since conflict is endemic in the management of water in many countries and several resolution models are described.</td>
</tr>
<tr>
<td><strong>C6</strong></td>
<td>Regulatory instruments – allocation and water use limits.&lt;br&gt;A set of tools on regulation is included covering water quality, service provision, land use and water resource protection. Regulations are key for implementing plans and policies and can fruitfully be combined with economic instruments.</td>
</tr>
<tr>
<td><strong>C7</strong></td>
<td>Economic instruments – using value and prices for efficiency and equity.&lt;br&gt;The ToolBox holds a set of economic tools involving the use of prices and other market-based measures to provide incentives to consumers and to all water users to use water carefully, efficiently and avoid pollution.</td>
</tr>
<tr>
<td><strong>C8</strong></td>
<td>Information management and exchange– improving knowledge for better water management.&lt;br&gt;Data sharing methods and technologies increase stakeholder access to information stored in public domain data banks and effectively complement more traditional methods of public information.</td>
</tr>
</tbody>
</table>

Source: GWP 2003