The Nile Story

15 Years of Nile Cooperation: Making an Impact

Acknowledgements

This report is based on extensive document review, along with interviews and editorial review by a wide range of people intimately involved in the Nile cooperation process, including:

- Current and former Nile Basin Initiative (NBI) staff across the NBI Secretariat (Nile-SEC), Eastern Nile Technical Regional Office (ENTRO), and Nile Equatorial Lakes Subsidiary Action Program Coordination Unit (NELSAP-CU);
- Representatives from the Nile Council of Ministers (Nile-COM) and Nile Technical Advisory Committee (Nile-TAC), and other government officials across NBI member countries;
- Project staff, civil society groups, academics, and private sector representatives; and
- Development Partners supporting the Nile, through and in parallel to the NBTF.

Attempts have been made to capture the wide range of views of all involved in the Nile cooperative process. Contributions from all are gratefully acknowledged.

Contents

Foreword

Transboundary waters form a significant part of the world's freshwater resources, and are of great importance to development. It is estimated that 60% of the world's freshwater flows are shared by two or more countries, and 40% of the world's population depends upon these shared waters for their livelihoods and productivity. Sustainable management and development of transboundary waters are needed to foster climate resilient growth, particularly for the world's poorest populations.

While the transboundary aspect of shared waters adds political, technical, environmental, and financial complexity to development efforts, it provides the opportunity for countries to engage cooperatively for greater economic growth, improved water security, and more climate resilience. Towards these ends, the World Bank offers services to countries to facilitate dialogue, to help identify and finance sustainable investments, as well as to build capacity to engage on transboundary water issues. Between 1998 and 2014, over 343 World Bank lending and technical assistance projects totaling US$ 29 billion involved transboundary water resource management and development. The World Bank's support to the Nile Basin is amoung these critical engagements.

At the request of the Nile countries, the World Bank served as the coordinator and trustee of the Nile Basin Trust Fund for 13 years, to support the Nile countries in their pursuit of greater cooperative

engagement. During this time, the Nile countries established the Nile Basin Initiative as an effective regional water organization, developed sophisticated water management tools, implemented cross-border information sharing, and advanced an investment pipeline totaling over $5 billion.

The decision taken by the Nile countries, to advance technical cooperation in the midst of negotiations and disagreements in other spheres, was historic and unprecedented. The process has not been without challenges. The countries' programs supported by the NBTF yield many lessons for those engaging in transboundary water endeavors in other basins. The Nile Story aims to capture and share these results, so that they might inform and inspire future cooperative water resources management and development in the Nile and in other areas of the world. The World Bank, in its multiple capacities, stands ready to support such endeavors.

Junaid Kamal Ahmad
Sr. Director, Water Global Practice, World Bank

Acronyms

AFD	Agence Française de Développement
AfDB	African Development Bank
ATP	Applied Training Project
CBSI	Confidence Building and Stakeholder Involvement Project
CBWS	Comprehensive Basin-Wide Study
CFA	Cooperative Framework Agreement
CIDA	Canadian International Development Agency
CIWA	Cooperation in International Waters in Africa
CRA	Cooperative Regional Assessments
CSO	Civil society organization
DANIDA	Danish International Development Agency
DFID	UK Department for International Department
DRC	Democratic Republic of the Congo
DSS	Decision Support System
EAC	East African Community
EAPP	East African Power Pool
EN	Eastern Nile
EN-COM	Eastern Nile Council of Ministers
ENSAP	Eastern Nile Subsidiary Action Program
ENTRO	Eastern Nile Technical Regional Office
EU	European Union
FEWS	Flood early warning system
FPEW	Flood Preparedness and Early Warning project
GDP	Gross domestic product
GEF	Global Environment Facility
GIS	Geographical information system
GIZ	Deutsche gesellschaft für internationale zusammenarbeit (giz) gmbh (German Agency for International Cooperation)
GWh	Gigawatt hours
HDI	Human Development Index
ICCON	International Consortium for Cooperation on the Nile
ISP	Institutional Strengthening Project
IWRM	Integrated water resource management
KfW	German Development Bank
kV	Kilovolts
LEAF	Lakes Edward and Albert Fisheries project
MDG	Millennium Development Goals
MSIOA	Multi-Sector Investment Opportunity Analysis
MW	Megawatts
NBD	Nile Basin Discourse
NBI	Nile Basin Initiative
NBSF	Nile Basin Sustainability Framework
NBTF	Nile Basin Trust Fund
NCORE	Nile Cooperation for Results Project
NEL	Nile equatorial lakes
NEL-COM	Nile Equatorial Lakes Council of Ministers
NELSAP	Nile Equatorial Lakes Subsidiary Action Program
NELSAP-CU	Nile Equatorial Lakes Subsidiary Action Program Coordination Unit
Nile-COM	Nile Council of Ministers
Nile-IS	Nile Information System
Nile-SEC	Nile Basin Initiative Secretariat
Nile-TAC	Nile Technical Advisory Committee
Norad	Norwegian Agency for Development Cooperation
NTEAP	Nile Transboundary Environmental Action Project
RPTP	Regional Power Trade Program
SAP	Subsidiary Action Program
SDBS	Socioeconomic Development and Benefit Sharing project
Sida	Swedish International Development Cooperation Agency
SSEA	Strategic/Sectoral Social and Environmental Assessment
SVP	Shared Vision Program
TECCONILE	Technical Cooperation Committee for the Promotion on Development and Environmental Protection of Basin
UNDP	United Nations Development Programme
WRPM	Water Resource Planning and Management Project

Preface

In 2001, at the request of the ministers in charge of water affairs in the Nile countries, the World Bank agreed to establish the Nile Basin Trust Fund (NBTF). It was funded by a group of international development partners to support the countries sharing the Nile Basin in pursuing their Shared Vision: to achieve sustainable socio-economic development through equitable utilization of, and benefit from, the common Nile Basin water resources. Over the next 12 years, the NBTF provided over US$200 million for 30 projects implemented largely by the Nile Basin Initiative (NBI) and its three centers – the NBI Secretariat in Entebbe, the Eastern Nile Technical Regional Office in Addis Ababa, and the Nile Equatorial Lakes Subsidiary Action Program Coordination Unit in Kigali.

Today, the Nile countries have advanced cooperative water resources management and development. The countries have transitioned from having little dialogue or collaboration on water resources, to an environment with active information sharing, dynamic regional institutions, and joint prioritization, planning, and implementation of investments. The early success of this cooperation and its tremendous future potential are evidenced by the pipeline of $6 billion in investments currently being advanced by the Nile countries.

The progress made by the Nile countries would not have been possible without the leadership, commitment, and work of the Nile country governments and the NBI. Ten development partners supported these efforts through the NBTF, including Canada, Denmark, the European Union, France, Finland, Netherlands, Norway, Sweden, the United Kingdom, and the World Bank. Many of the NBTF donors also provided support in parallel to and in coordination with the NBTF. Other coordinating development partners included the African Development Bank (AfDB), Germany (through GIZ and KfW), the Global Environment Facility (GEF), Japan (through the World Bank's Policy and Human Resources Development Fund), the Swiss Agency for Development and Cooperation, the United States, and the United Nations Development Programme (UNDP). Through the course of the NBTF, the Nile Program at the World Bank was led by David Grey, Barbara Miller, Gustavo Saltiel and Eileen Burke; under the guidance of Jeffrey Racki, Jaime Biderman, Ashok Subramanian and Jonathan Kamkwalala.

The Nile Story, comprised of this report and a series of accompanying communication briefs, aims to capture the Nile cooperation process since the formation of the NBI – including challenges, responses, and achievements facilitated by the Nile Program – to commemorate the support from the NBTF at its closing in 2015.

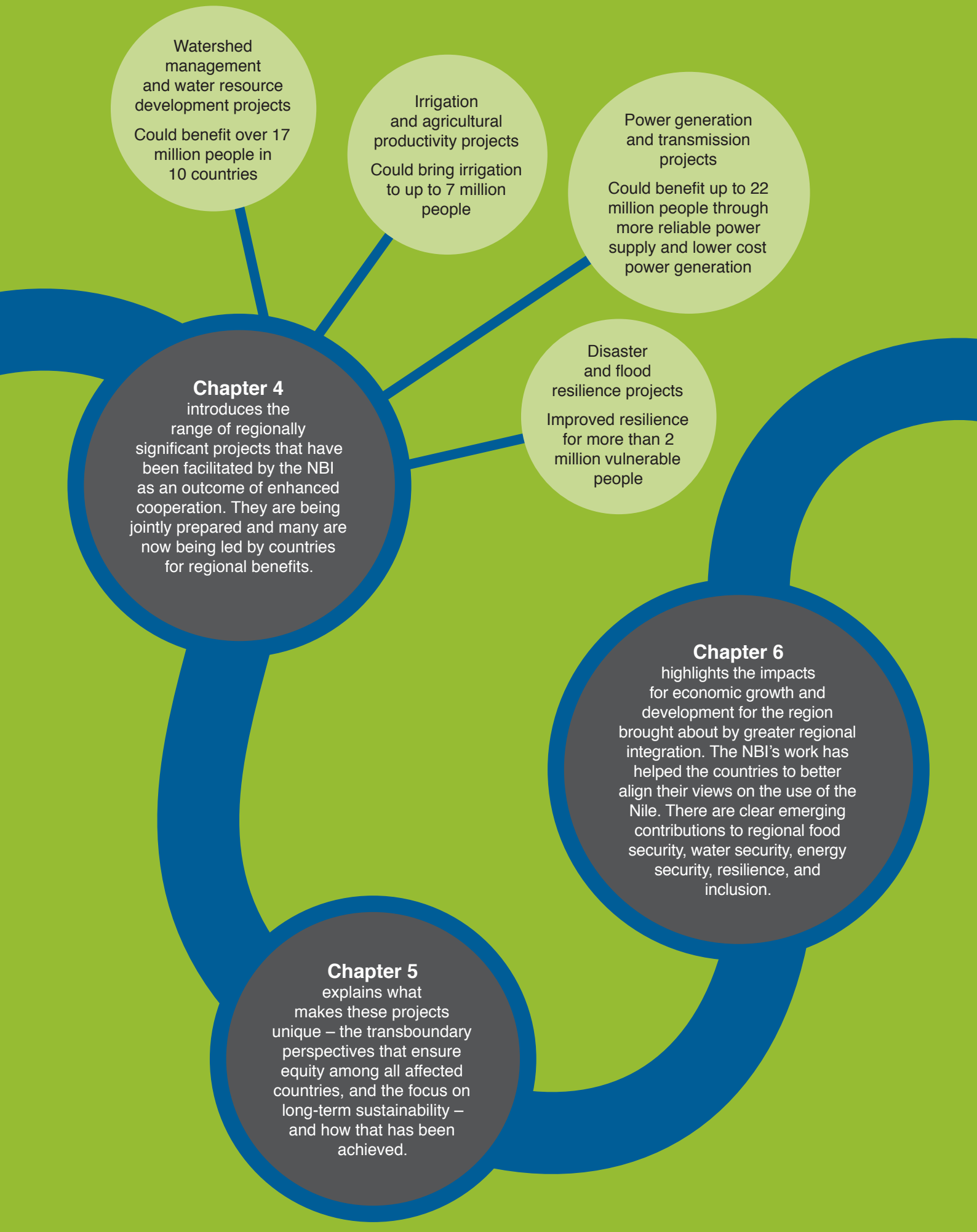
Executive Summary

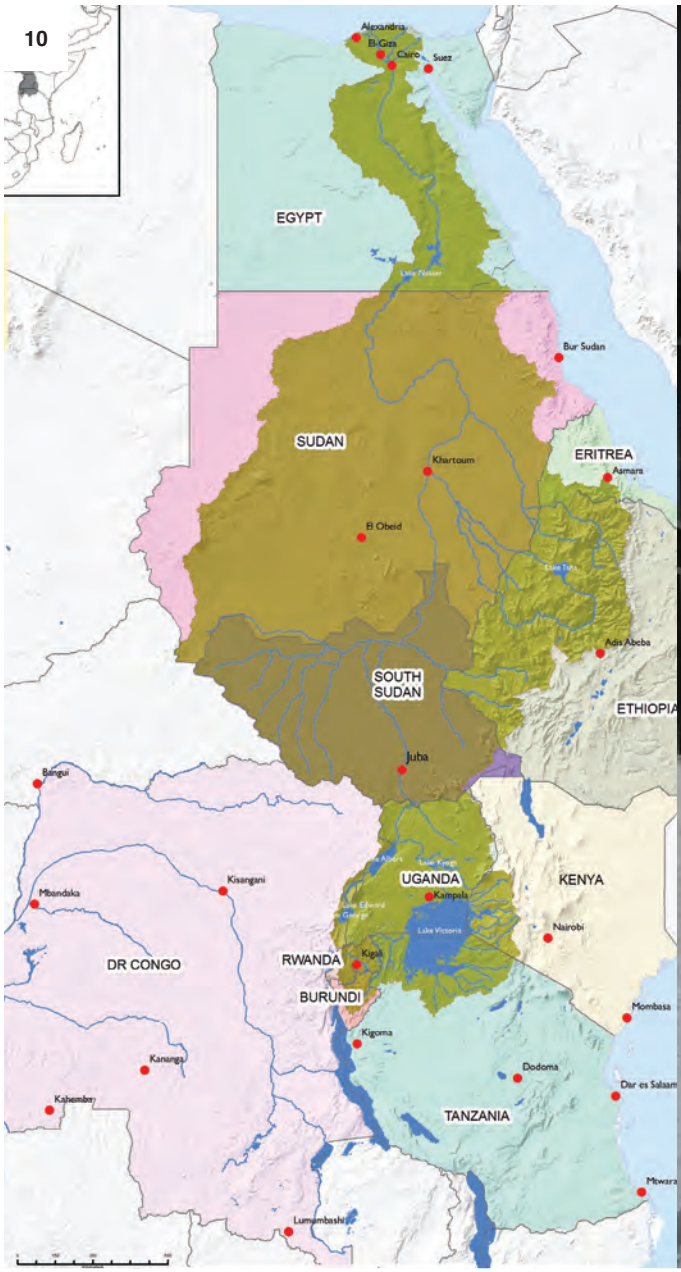
The Nile Story is one of immense challenges and remarkable achievements for the economic development of the region. It begins in 1999, when the ministers in charge of water affairs in the Nile countries agreed to form the Nile Basin Initiative (NBI). Between 2003 and 2015, the Nile Basin Trust Fund (NBTF) supported and coordinated cooperative work in the region, which has been delivered mainly through the NBI. This book – commissioned by the World Bank on the closure of the NBTF – captures some insights to this 15 year story, the role of the NBI, and how its many achievements have been made along the way.

Chapter 1
sets the scene. The Nile region is one of complex hydro-geography and politics, alongside significant pressures and challenges for development. But a new era for cooperation is emerging.

Chapter 2
describes the emergence of the NBI as a shared, visionary institution that offers an effective and neutral platform for cooperation. As a partnership between 10 Nile countries, this was an historic development, both significant in its own right and setting the foundation for further cooperation.

Chapter 3
explores the journey to cooperation, how – through dialogue, information sharing, and capacity building – the NBI as a neutral platform has led to greater trust and cooperation among the Nile countries. Now, transboundary perspectives are integrated in policy and practice across the region.


Watershed management and water resource development projects
Could benefit over 17 million people in 10 countries
Irrigation and agricultural productivity projects
Could bring irrigation to up to 7 million people
Power generation and transmission projects
Could benefit up to 22 million people through more reliable power supply and lower cost power generation
Disaster and flood resilience projects
Improved resilience for more than 2 million vulnerable people
Chapter 4
introduces the range of regionally significant projects that have been facilitated by the NBI as an outcome of enhanced cooperation. They are being jointly prepared and many are now being led by countries for regional benefits.
Chapter 6
highlights the impacts for economic growth and development for the region brought about by greater regional integration. The NBI's work has helped the countries to better align their views on the use of the Nile. There are clear emerging contributions to regional food security, water security, energy security, resilience, and inclusion.
Chapter 5
explains what makes these projects unique – the transboundary perspectives that ensure equity among all affected countries, and the focus on long-term sustainability – and how that has been achieved.



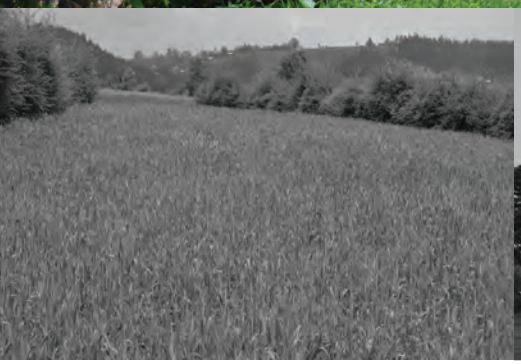
Chapter 1: SETTING THE SCENE

“The Nile flows through areas with great climatic diversity and with unevenly distributed water resources”

1.1 The Nile River: a complex hydro-geography

The Nile is the longest river in the world, and its basin encompasses parts of 11 countries (Burundi, Democratic Republic of Congo (DRC), Egypt, Eritrea, Ethiopia, Kenya, Rwanda, South Sudan, Sudan, Tanzania, and Uganda). However, compared to other major rivers of the world it does not provide an abundance of water. Annual renewable flow for the Nile is just over 80 cubic kilometers, compared to 1,300 cubic kilometers for the Congo River. Moreover, much of the Nile Basin is in semi-arid and arid zones, with minimal run-off from rainfall and high evapotranspiration, resulting in water scarcity in many areas of the Basin. The quality of the Nile waters has also deteriorated in recent decades because of population and urbanization increases, growing agricultural activities, increasing pollution, and accelerating soil erosion.

The Nile Basin has a drainage area exceeding 3 million square kilometers,and has two main tributaries, the White Nile and the Blue Nile, which meet in Khartoum, Sudan. Rainfall in the Nile Basin is concentrated in the Nile equatorial lakes (NEL) area and on the Ethiopian plateau. Originating in mostly humid areas, after Khartoum the river flows northwards through the Sahara Desert, where there is very little rainfall. Here, precipitation is less than 100 millimeters per year. The rainfall seasons are shorter, from the Bahr el Ghazal and Sobat-Baro tributaries, and the Ethiopian stations, to the relative dry regime of the LowerBlue Nile and main Nile reaches.



The two main tributaries have very distinct hydrological profiles: the Blue Nile and the other rivers coming from the uplands in Ethiopia contribute seasonal, high-volume flows to the Nile, and carry large sediment loads; the White Nile, coming from the NEL region, by contrast has a steady flow with lower sedimentation. The Nile therefore flows through areas with great climatic diversity, and with varied water resources.

In addition, the Nile Basin consists of eco-regions with enormous diversity, including huge tributary rivers, waterfalls, large lakes, wetlands, floodplains, forests, and savannah, as well as arid land and deserts. It has important environmental assets, including one of the world's largest freshwater wetlands, the Sudd in South Sudan, and the world's second-largest inland lake, Lake Victoria, with its endemic flora and fauna.

1.2 Mounting pressures in the Nile Basin

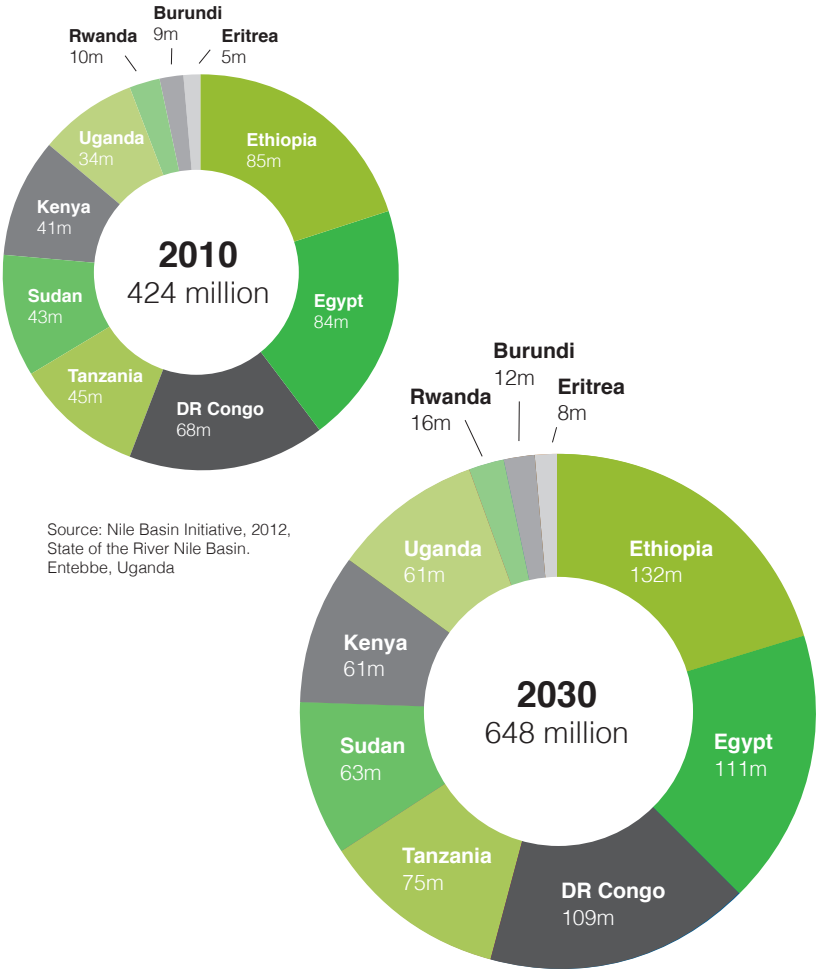
The Nile Basin is facing mounting pressure from a fast-growing population. The Nile countries currently have a population of 430 million, over 50% of whom live in the Nile Basin. Many of these people rely on the Nile waters for agriculture, drinking water, and energy that comes from hydropower. For example, Burundi, DRC, Ethiopia, and Uganda rely on it for 80% or more of their power.

Significantly, most of the Nile countries will see a doubling of their populations in the coming 20 to 25 years. Population growth rates are high, ranging from 2.5% to 3.5%. The trend for this population growth remains strong because of the young

> **"mounting pressure from a fast growing population"**

Projected Population Growth

Total population 2010 and 2030
(medium projection)



Source: Nile Basin Initiative, 2012, State of the River Nile Basin. Entebbe, Uganda

age structure of the population. A rising population means increasing intensification of agriculture, further degradation of natural resources, increased food security concerns, more pressure on education, health, water, and energy, and more rural–urban migration. Total annual water use is on the increase, and many countries in Africa, including those in the Nile region, will experience water stress by 2025.

The upper catchments of the Basin also face huge soil loss and land degradation due to intensifying agriculture, the wetlands are increasingly threatened by unsustainable commercial agriculture and land conversion, and the Nile Delta is at risk of seawater intrusion and salinization. These pressures are causing ongoing biodiversity loss in the region.

In addition, climate change, rainfall variability, floods, and droughts will exacerbate these challenges. Most people who live in the Nile Basin depend on agriculture for their livelihood, and the majority of them rely on rain-fed crops. This makes them highly vulnerable to a changing climate, with increased variability and unpredictability of rainfall, and more frequent and intense droughts and floods. This means farmers cannot plan effectively, and are at risk of water-stressed or failed crops, or loss of fodder for livestock. Droughts and floods also have serious social and economic impacts, with loss of lives and declines in annual gross domestic product (GDP) sometimes greater than 10%.

A region vulnerable to recurrent droughts and floods

Floods are common in the eastern Nile, Lake Kyoga, and Lake Victoria regions. Given the infrastructure gap, even moderately sized floods, which occur on average once every 10 years, lead to disruption of transport, cuts in telecommunications, and the breakdown of electricity and water supplies. The major direct impacts of flooding are destruction of crops and homesteads, drowning of animals, increased incidence of disease and other social burdens, and siltation of reservoirs.

In the last 40 years, there have been major drought episodes in each decade within the Nile Basin region. Severe droughts occurred in 1973/74, 1984/85, 1987, 1992 to 1994, 1999/2000, 2010, and 2011. Millions of people were affected by malnutrition, and there were hundreds of thousands of deaths each time. Drought is a recurring phenomenon, and there will always be certain locations experiencing localized drought conditions.

Sedimentation, caused by soil erosion due to unsustainable agricultural practices followed by heavy rain, in a tributary river to Lake Tana, Ethiopia.

The capacity, institutions, and infrastructure needed to manage and mitigate these potentially major challenges are generally not adequate. For example, Ethiopia has more rainfall variability than North America, but Ethiopia has less than 1% of the artificial water storage capacity required per capita to manage that variability. Significant investments in infrastructure and in institutions are therefore essential to meet these challenges.

1.3 Development challenges

The countries that share the Nile face development challenges of poverty, land degradation, and food insecurity. According to the Human Development Report of 2014, seven Nile Basin countries were ranked among the bottom 25 in terms of their Human Development Index (HDI) score. Key poverty and human development issues relate to the following areas.

Water security

Safeguarding sustainable access to sufficient water of acceptable quality is essential for development. It sustains livelihoods, human wellbeing, and socioeconomic development. It ensures protection against water-borne pollution and water-related disasters, and preserves ecosystems in a climate of peace and political stability.

Yet many of the Nile Basin countries lack good access to clean drinking water and sanitation, and have insufficient water storage facilities. Total water use is increasing, and combined with increasing demands on the land this often leads to deterioration in water quality.

Food security

Food security is an ongoing concern for many Nile Basin countries. Food shortages are already a serious issue, especially in downstream countries where droughts and flooding have been common. Without food security, people are unable to contribute to economic growth. When famines occur, for instance as has happened over recent years in Ethiopia and Kenya, the result is a depletion of natural assets (especially livestock), volatility in food prices, and a diversion of resources away from potentially productive uses. Future scenarios do not look set to improve. This is mostly due to climate change and extreme weather events, and long-term global supply/demand imbalances driven by increased demand for food, combined with scarcity of water, arable land, and energy. Today, most Nile Basin countries are net food importers, and many depend on food aid during all too frequent humanitarian crises.

> **increasing competition over use of the Nile water resources**

Energy security
Energy plays a critical role in the process of growth and development. It is important as a domestic necessity, but also as a factor of production, and the price of other goods and services. Energy is important to attract investment, to create employment, and for effective schools, hospitals, and services. Most Nile Basin countries suffer from 'power poverty', with most of their population having little or no access to power and electricity. In the Nile region, dependency on renewable energy (such as wood fuel) is estimated at 77%, while the average percentage of electrification is 30% – a statistic skewed upwards by Egypt's 99% coverage. In countries such as Burundi, South Sudan, DRC, and Rwanda less than 20% of the population have access to electricity. Electricity production per capita is very low compared to international averages: six of the countries generate less than 100 kWh per person per year, compared to the global average of over 2,750 kWh.

Defining energy security. The International Energy Agency (IEA) defines energy security as the uninterrupted availability of energy sources at an affordable price. Energy security has many aspects. Long-term energy security mainly deals with timely investments to supply energy in line with economic developments and environmental needs. On the other hand, short-term energy security focuses on the ability of the energy system to react promptly to sudden changes in the supply–demand balance. Lack of energy security is thus linked to the negative economic and social impacts of either the physical unavailability of energy, or prices that are not competitive or are overly volatile. Energy markets are vulnerable to disruptions precipitated by events ranging from geo-political strife to natural disasters.

In addition to challenges related to energy, food, and water security, the poorest in the Nile Basin are also faced with:

- **Social exclusion**. The poorest and most marginalized people in society, including women, tend to slip through the net of development and economic growth.
- **Vulnerability to shocks**. Poor people are often unable to withstand the impacts of floods and droughts, which are becoming an increasing feature of the region's climate.
- **Limited opportunities for economic growth**. Opportunities to generate incomes, or grow enterprises, are constantly constrained by these development challenges.

Consequently, all the Nile Basin countries have strong poverty reduction objectives and have agreed to achieve the Millennium Development Goals. They recognize the enormous potential economic benefits from the use of Nile water, estimated to be worth US$7 billion to US$11 billion just from irrigation and hydropower.

The countries of the Nile Basin are all looking to the Nile as a way to achieve their development objectives – providing a source of water supply for drinking, irrigation, and hydropower. This results in increasing competition over use of the Nile water resources.

1.4 Why is transboundary water management important?

Transboundary cooperation on integrated water resource management approaches is therefore necessary to ensure the equitable sharing and sustainable management

> **"the equitable sharing and sustainable management of the Nile's resources will be crucial in the future"**

of the Nile's resources, which will be crucial in the future.

"When we're talking about the Nile, we're not just talking about water but about natural resources. Mutual development is important and the benefits should be for the people," says Achilles Byaruhanga, Chair of the Board, Nile Basin Discourse (NBD).

Shared waters of the Nile mean interdependence across national frontiers, linking users in different countries within a shared system. Managing that interdependence is one of the development challenges facing the Nile Basin countries.

The way that any one Nile country uses water has impacts on other countries, usually through one of three mechanisms: (i) competition for a finite supply of water, (ii) timing of water flows, and (iii) impacts on water quality. When and how much water is used by a country has crucial implications for the other countries on the river, thus setting the stage for either dispute or cooperation. As water becomes scarce relative to demand, competition for the resource has the potential to lead to conflict.

Cooperative institutional mechanisms for transboundary water management, and a regional approach focusing on benefit-sharing, offer a flexible framework, and are important for minimizing the risk of conflict by increasing trust, cooperation, and equity. Nations will work together when they can clearly see it is in their interests to do so, and if they see that it provides greater benefits than not doing so. These benefits can be environmental, economic, or even broader – beyond the river to other areas of trade. Cooperation on international rivers such as the Nile can range from information sharing to joint basin management and development. Benefit- and cost-sharing can promote more efficient and more equitable river basin management through pooling resources, and by separating the physical location of river development (where activities are undertaken) from the distribution of economic costs and benefits (that is, who pays for and profits from those activities). Transboundary cooperation has a number of benefits including:

- Enabling equitable benefit sharing
- Building trust and cooperation between countries, through joint working
- Enabling resources to be pooled by countries
- Helping to minimize negative impacts on neighbouring countries

1.5 Before the Nile Basin Initiative

Despite the recognized potential benefits of cooperation, for many years Nile countries were beset with conflict and tension over the Nile waters. In the past, countries looked at the water that flows through their countries as a national resource, not recognizing it as a common, 'shared water'. This caused tensions along the river.

“But now we can disagree without becoming enemies. We can move forward, because we recognize that we are different, with different interests, so we need to try to harmonize them”

“In the beginning it was a different environment”

Unresolved issues – such as who owned the river or who had control over its resources – added obstacles to development and cooperation.

Many Nile countries did not openly interact, and rarely shared technical information on the Nile waters. The level of technical capacity, training, and skills related to water resource development and management varied significantly across the Basin. For example, while there were 20,000 experts in some countries, there were only six in others. Expertise typically focused on water resource development, not on the management of the resource and its supply. Consequently, data and information availability was limited, few people understood regional hydrological issues in depth, and the concept of integrated, transboundary water resource management was not well understood. Regionally, there was a shortage of skills to optimize the management of the river resource, and there was no Basin-wide mechanism to resolve disputes over resource use or access. Nevertheless, as the 20th century progressed, water resource management and development began to be seen as a real opportunity for addressing development and poverty challenges.

Consequently, several efforts were made to resolve some of these problems. These efforts started in 1967 with the Hydromet Project, which was created to conduct hydro-meteorological surveys. In 1983, Undugu (‘Brotherhood’) was spearheaded by Egypt and Sudan. Between 1992 and 1999, the Technical Cooperation Committee for the Promotion of Development and Environmental Protection of the Basin (TECCONILE) engaged 10 Nile countries.

However, all these efforts focused largely on hydro-meteorological data collection and technical studies. Also, they did not have full representation from all Nile countries, and were typically driven by those countries with greater capacity, contributing to distrust in the Basin. The Nile countries had large disparities in wealth, power, and negotiating capacity, which influenced trust and the willingness to cooperate or negotiate. For decades, some countries had felt they had no basis to question activities in other countries.

Donors were funding inputs to the Basin in a bilateral way, with limited harmonization or cooperation. Above all, there was no comprehensive institutional framework, or common vision on which to focus on cooperation.

1.6 The emergence of a new era for Nile cooperation

“In the beginning, it was a different environment. People from different countries never talked or worked together. Some countries didn’t quite realize the impacts of their activities,” says Dr. Barbara Miller, former Senior Water Resources Specialist in the World Bank’s Africa Region. *“Previously, they didn’t have mechanisms to work together.”*

In 1997, ministers involved in TECCONILE, having developed an action plan, approached the World Bank for US$150 million to support technical projects identified by the committee. However, to secure funding from development organizations, a different focus was needed. It was recognized that the countries needed to take a fully inclusive approach, focused on regional development challenges. Consequently, TECCONILE efforts culminated in the establishment of a remarkable partnership.

Nine Nile countries (Burundi, DRC, Egypt, Ethiopia, Kenya, Rwanda, Sudan, Tanzania, and Uganda, with Eritrea as an observer) came together to form the Nile Council of Ministers (Nile-COM). (South Sudan joined shortly after it emerged as a country in 2012). In 1998, the nine countries signed a strategic agreement for the establishment of an all-inclusive

Chapter sources and references
Grey, D. and Sadoff, C. (2006) Water for growth and development. Theme One in Thematic Documents of the IV World Water Forum. Comision Nacional del Agua: Mexico City.
Manyitabot Takang, J. (2012) Water use and Water rights. University of Cologne: Germany.
Nile Basin Initiative (2012) State of the River Nile Basin. NBI: Entebbe, Uganda.
Whittington, D and Sadoff, C. (2005) Water Resources Management in the Nile Basin: The Economic Value of Cooperation. World Bank: Washington D.C.

cooperative process. This was an historic moment, taking advantage of a changing political landscape. There was emerging stability across the region, with a growing political and economic strength of some countries and a desire of others to demonstrate a geo-political maturity that would enable them to engage globally.

The Nile Basin Initiative (NBI) – launched in 1999 – has been able to transform how the Nile countries work together, successfully addressing wider development constraints and providing opportunities on an equitable, regional level.

"Before the Nile Basin Initiative," recalls Dr. Callist Tindimugaya, Uganda's Commissioner for Water Resources and current Nile Technical Advisory Committee (Nile-TAC) member, *"no one would talk in meetings because of the suspicion. But now we can disagree without becoming enemies. We can move forward because we recognize that we are different, with different interests, so we need to try to harmonize them."*

The NBI was launched with a shared vision to explore opportunities for maximizing the benefits of the river's waters for all the partners. Nile-COM acknowledged the challenges faced and lessons from past efforts, and built on the useful foundations of TECCONILE. For example:

- TECCONILE's action plan was used to shape the policy guidelines of the NBI, which focused on enhancing cooperation and implementing technical support activities to generate and share information and knowledge, and to help countries prepare Nile-based development projects that would be regionally significant.
- Nile-COM decided to continue legal negotiations towards a Cooperative Framework Agreement (CFA) to formalize rights and obligations in relation to Nile water development and management. However, they recognized that this required a separate and challenging political dialogue, and therefore designed a technical track of activities for the NBI to pursue in parallel.

It was the beginning of a new era for cooperation on the Nile – a significant and momentous step forward.

The Nile Basin Initiative (NBI) is a regional inter-governmental partnership led by the Nile riparian countries. NBI provides riparian countries with the only all-inclusive regional platform for multi-stakeholder dialogue, information sharing as well as joint planning and management of water and related resources in the Nile Basin.

Chapter 2: THE NBI: AN ORGANIZATION FOR REGIONAL COOPERATION

> **“a strong effect on development, peace, and security”**

“The NBI was based on a shared vision with Nile countries working together. The strong interest of the EU, as a regional organization, is related to the experience of transboundary water management frameworks in Europe. That experience shows that shared vision and shared activities have a strong effect on development, peace, and security.” André Liebaert, Water Policy Adviser, European Union

Using transboundary water resources management as an incentive to growth was the key concept behind the NBI. The NBI’s role was, and still is, to ensure these resources are equitably and sustainably developed and managed by the Nile countries, by increasing the opportunities and openings for dialogue and cooperation.

The NBI was launched by Nile-COM with the expectation that it would be a transitional institution. The intention was that the parallel political processes would formalize a regional organization for cooperation.

Why are institutions for working on a transboundary river basin important? Institutions that work to agreed and accepted principles, or provide forums for communication can provide a means for states to meet and discuss issues, promote information sharing between signatory countries, coordinate water resource development and management plans, and can serve as a platform from which to secure donor assistance. They can also serve as a forum for building trust, confidence, and capacity for the resolution of conflicts between signatory states. Furthermore, transboundary institutions can play a significant role in bringing states together in areas that go beyond the waters they are designed to govern, for example, in achieving further political cooperation. Even in two of the most contested landscapes in the world, the Middle East and South

Asia, water resources have formed the cornerstone of international cooperation. Water sharing played an integral part in the 1994 Israel–Jordan Peace Treaty, as well as in the 1995 Interim Agreement between Palestine and Israel, while the institutions built to share water on the Indus River have withstood the pressures of two wars between India and Pakistan.

Sadoff.C., Greiber,T., Smith,M. and Bergkamp, G. (2008) 'Share – Managing water across boundaries'. IUCN, Gland, Switzerland. www.unwater.org/downloads/2008-016.pdf

The NBI was also designed to grow stepwise. The process of building the institution started with a shared vision, after which it was agreed to set up the three NBI centers: the coordinating Nile Secretariat (Nile-SEC), and the two regional centers in the eastern Nile and the Nile equatorial lakes regions.

The NBI has been the most inclusive technical endeavor on Nile water to date. However, the participation of several countries has varied over the years. Eritrea only participates as an observer. When negotiations over the CFA ended in disagreement in 2010, Egypt and Sudan suspended their participation in the NBI, with Sudan resuming participation in 2014. Non-participation has affected implementation of some programs within the NBI, in particular in the eastern Nile.

While the NBI has encountered numerous challenges, it has continued to strengthen and to play an active and transformative role in regional strategic planning on management and development of the Nile waters.

“an active and transformational role”

> **a strategic action program that would promote joint working and stimulate transboundary investments**

2.1 Vision and action: a two-pronged approach to achieve cooperation

To work towards sharing benefits, Nile-COM recognized the need for a strategic action program that would promote joint working and stimulate transboundary investments.

Basin Cooperation
The NBI actively provides and operates a unique platform for inter-country dialogue and negotiation by Nile Basin ministers of water affairs and senior officials on issues of sustainable water management and development. The NBI facilitates regional liaison among water-related interests, and makes it more effective through the provision of strategic information.

Water Resource Management
The NBI monitors and assesses the water and related natural resources of the Nile Basin to provide member states with a shared knowledge base and an interactive information system. The NBI maintains and operates analytical and scenario evaluation systems that support sustainable management of the Basin's water resources.

Water Resource Development
The NBI assists its member states with achieving cooperative, joint water development projects and management programs by supporting the identification of development opportunities and preparation of projects and facilitating funding, which then enables member states to implement the projects.

Its vision was based on a two-pronged approach for the NBI, combining a Shared Vision Program (SVP) – which aimed to build trust, capacity, and an enabling environment for investments – with the Subsidiary Action Programs (SAPs), which would identify, prepare, and support the implementation of nationally-led cooperative investment projects for mutual benefit.

The two programs were designed to complement each other, with the SVP as a critical foundation for getting transboundary projects off the ground, while the SAP projects would reinforce the shared vision through demonstrating the benefits of cooperative action.

Strategically, the NBI has tackled this approach through three core functions: Basin Cooperation, Water Resource Management, and Water Resource Development. The overall approach shaped the institutional set up of the NBI.

2.2 The NBI: an institution for Nile cooperation

The NBI is driven by the member countries. Its highest decision- and policy-making body is Nile-COM, which is comprised of ministers in charge of water affairs in each of the NBI member states. They are supported by the Nile Technical Advisory Committee (Nile-TAC), which comprises 20 senior government officials, two from each member state.

NBI activities are then implemented by Nile-SEC and two regional centers in the eastern Nile and NEL regions.

Nile-COM directs the NBI, and is responsible for:

- Providing policy guidance and ensuring adherence to NBI transitional arrangements.
- Approving programs and projects.
- Approving work plans and budgets.

Nile-SEC, based in Entebbe, Uganda, is responsible for the overall corporate direction, and is the lead center for two core functions: Basin Cooperation and Water Resource Management. In this way, it leads the cooperation and shared knowledge elements of Nile-COM's shared vision, while two regional centers, in Addis Ababa and Kigali, have focused on driving the SAPs towards investments in projects for Water Resource Development.

The Eastern Nile Technical Regional Office (ENTRO) is the executive and technical arm of the Eastern Nile Subsidiary Action Program (ENSAP), an institution jointly owned by Egypt, Ethiopia, South Sudan, and Sudan. ENTRO is responsible for driving the Water Resource Development function in ENSAP by assisting member states to identify and prepare investments in regional/transboundary water-related projects. ENTRO provides expertise on investment-oriented opportunities that focus on water supply, sanitation, hydropower development, irrigation, flood control, drought management, fisheries, and watershed management. It also provides secretariat services to ENSAP's governing body, the Eastern Nile Council of Ministers (EN-COM), and the Eastern Nile Subsidiary Action Program Team (ENSAPT).

The Nile Equatorial Lakes Subsidiary Action Program Coordination Unit (NELSAP-CU) is the executive and technical arm of the Nile Equatorial Lakes Subsidiary Action Program (NELSAP), an institution jointly owned by Burundi, DR Congo, Egypt, Ethiopia, Kenya, Rwanda, South Sudan, Sudan, Tanzania, and Uganda. NELSAP-CU is responsible for driving the Water Resource Development function in NELSAP by assisting member states to identify and prepare investments with transboundary significance. It promotes cooperative and consultative investment projects of regional significance, which include irrigation and drainage development, agricultural trade, fisheries development, hydropower development, power pooling and trade, watershed management, sustainable management of wetlands and biodiversity conservation, sustainable management of lakes, river regulation, flood management, and water quality management.

It also provides secretariat services to NELSAP's governing body, the Nile Equatorial Lakes Council of Ministers (NELCOM) and the Nile Equatorial Lakes Technical Advisory Committee (NEL-TAC).

> **"The NBI is driven by the member countries"**

“practical channels for transboundary cooperation”

2.3 The Shared Vision Program: driving trust and confidence for cooperation

By focusing on relational and technical issues, and developing specific skills, the NBI aimed to build practical channels for transboundary cooperation. Key to this was the SVP, an extraordinary multinational effort that ran until 2009.

“The Shared Vision Program was created to bring all of the countries together, to create a platform for reflection and discussion,” said Henrietta Ndombe, former Executive Director of the NBI, 2009. *“It was difficult to do that, because the countries are very different. That’s why we created facilities for people of different countries to work together on technical issues, and slowly bring it to the political level. And it has been a success.”*

Although there had been previous efforts at cooperation before the NBI was established, there were a number of linked obstacles to securing better Nile cooperation:

- An emphasis on national sovereignty. Nile countries typically viewed the management and use of Nile water resources as national issues, with little political recognition of the reality of the river as a common resource, or of potential impacts in other countries.
- Unequal basis for cooperation. The Nile countries had large disparities in wealth, power, and negotiating capacity, which at the outset had some effect on trust, and the willingness to cooperate, negotiate, and share benefits.
- Minimal transboundary perspectives. There was a lack of understanding about why a regional perspective would bring benefits, what benefits cooperation could bring, or how it would work in practice.
- No sharing tradition. There was mistrust and suspicion between countries, and data was not shared. Therefore, a key element for building trust and confidence was seen to be the sharing of information.
- No Basin-wide forum. There was no formal Basin-wide mechanism for exchange of Nile Basin-related information and data. Incorporating views from a wide range of stakeholders in the Nile Basin was identified as important for this information exchange.

Central to the SVP’s objectives was the need to enhance information exchanges and promote stakeholder participation – between countries and bringing in the voices of civil society. The SVP therefore focused on measures to share information and data, and to build confidence. For example, people in national water ministries knew little about regional issues, so the Confidence Building Stakeholder Initiative (CBSI) sub-program launched an intensive information campaign designed to raise awareness of Nile cooperation at all levels, which had considerable success. And there has been collaboration with the Nile Basin Discourse (a civil society network) throughout.

“There was a lot of stereotyping, which was a manifestation of the lack

of information, and there were no opportunities for countries to come together. Platforms for dialogue were not there, and dissemination of information was a problem. And, since information was lacking, awareness on a regional perspective was lacking," says Gordon Mumbo, the Regional Project Manager for CBSI.

Through eight different multi-sectoral, multi-country sub-programs, the SVP developed an impressive range of institutional and human resource capacities, created networks of stakeholders in all NBI member countries, compiled practical tools, and disseminated information. Capacity was built to enable joint planning. Above all, the SVP built trust and confidence among the Nile countries and enhanced dialogue.

"The main themes under SVP were relational – that is, building trust and confidence in the vision," says Jane Baitwa, of the NBI.

When the SVP came to an end in 2009, it was recognized that further support was needed, especially in the absence of resolution of the negotiation of the CFA which would establish a permanent river basin organization. The Institutional Strengthening Project (ISP) was initiated in 2008 to advance the institutional strengthening of NBI's three centers, build capacity, and to continue work on trust and cooperation. Development partners contributed US$33.4 million for the three-year program.

Through this program:

- The NBI undertook strategic planning to clarify its three core functions, and to develop a new financial strategy for future sustainability, through which core costs of the NBI are covered by member states.
- Coordination meetings became a regular feature, and cross-center thematic working groups were formed.

"created to bring all of the countries together, to create a platform for reflection and discussion"

The SVP projects:

1. **Applied Training Project (ATP)** – strengthened capacity in water resource planning and management, strengthened centers to develop and deliver programs and expand engagement among water professionals.
2. **Confidence Building and Stakeholder Involvement (CBSI)** – developed confidence in regional cooperation.
3. **Efficient Water Use for Agricultural Production (EWUAP)** – provided the basis to increase the efficient use of water and its availability for agricultural production.
4. **Nile Transboundary Environmental Action Project (NTEAP)** – provided the strategic framework for environmentally sustainable development of the Nile River and supported Basin-wide and transboundary environmental actions.
5. **Regional Power Trade Project (RPTP)** – established the institutional means and knowledge to coordinate the development of regional power markets.
6. **Socioeconomic Development and Benefit Sharing (SDBS)** – strengthened Basin-wide socioeconomic cooperation and integration.
7. **Water Resources Planning and Management (WRPM)** – enhanced analytical capacity for a Basin-wide perspective to support the development, management, and protection of the Nile Basin resources.
8. **Shared Vision Program Coordination (SVPC)** – strengthened the capacity of the NBI institutions to execute the programs and ensure effective oversight of the SVP.

> **“bringing countries together to consider, explore and design projects that can bring shared benefits”**

- The governance bodies (Nile-COM and Nile-TAC) were given stronger technical information and support to inform decision making. For example, when South Sudan joined NBI as a formal member in 2011, ISP supported its orientation.
- The Nile Basin Sustainability Framework (NBSF) was developed. This is a valuable strategic planning tool that seeks to: (i) ensure that all relevant guiding policies and strategies needed to support the SAP-prepared investment projects are available in a timely manner, (ii) promote the consideration of the transboundary dimension in riparian states' approaches to water management, and (iii) provide overall direction for the cooperative management and development of the Basin.
- Corporate management was streamlined and harmonized. Improved financial management, procurement, human resources, monitoring and evaluation systems and procedures, and strategic plans were put in place.
- Well-designed and established policies, guidelines, and safeguards for sustainable water resource management and development were developed. These include:
  - The NBI Gender Mainstreaming Policy and Strategy
  - The NBI Environmental and Social Policy
  - NBI interim data and information sharing and exchange procedures and guidelines
  - The NBI Wetland Strategy
  - The NBI Climate Change Strategy
  - The Nile Information System (Nile-IS), a Basin-wide knowledge base, widely used by many stakeholders.

More recently, NBTF has supported the NBI through a new sub-program, Nile Cooperation for Results (NCORE). Reflecting the increasing maturity of the NBI, this results-based project supports NBI activities that consolidate previous work, apply newly-built capacity, address new water resource challenges (for example, by adding a specific focus on climate resilience), and enable stronger service delivery.

2.4 Subsidiary Action Programs: preparing the investment projects

The SAPs form the second prong of the overall vision of Nile-COM. These two regionally-based programs, led by ENTRO and NELSAP-CU, have worked in parallel to the SVP by preparing investment projects with transboundary benefits for the countries to implement. The SAPs have focused on bringing countries together to consider, explore, and design projects that can bring shared benefits. They have helped identify priorities for new investments, and taken those forward through dozens of feasibility studies, project preparation processes, and investment plans.

Studies and assessments undertaken through the SAPs have investigated the viability of regional water projects – including hydropower, irrigation, flood management, and watershed and river basin management projects. These have helped identify and test

the feasibility of potential investments in order to determine which projects to take forward, and the best way to do so. Support throughout the project identification, development, and preparation cycle has helped to transform concepts into real investment opportunities.

These project preparation processes provide an opportunity for Nile countries to cooperate and work together. The resulting actions on the ground – investment projects that use the Nile resources for economic growth – demonstrate the benefits of joint working. ENTRO and NELSAP-CU work closely with governments at every stage of project preparation to prepare them to implement country-led projects.

In order to ensure best practice and sustainability in the projects, the NBI has developed policies and strategies on environmental and social issues, such as gender, livelihoods, and climate change, for application in the project preparation stage. For example, the NBI's Gender Mainstreaming Policy is now included in all transboundary projects, and both ENTRO and NELSAP-CU apply environmental and social management plans to guide project preparation and implementation.

As will be discussed in subsequent chapters, these projects are of regional significance, helping to improve the livelihoods of the Basin's poorest populations, to alleviate the region's power shortage, and to facilitate agreement among the countries to move contentious investments forward.

2.5 Providing tools for research, management, and decision making

Through the SVP and the SAPs, the NBI has developed extensive information and knowledge, and has used these to develop a number of tools and approaches that are supporting national policy development, management planning, and decision making about investment projects. Tools and information are necessary for riparian countries in understanding interdependencies, and identifying the benefits of cooperation. Many instances of tension over the Nile resource arise more from mistrust and poor information about the use of water resources than from substantive differences. Joint working on information can build the foundations of long-term trust.

The role of the SAPs in preparing projects of regional significance

Regional and sectoral studies provide data and identify project opportunities with shared benefits

→ Feasibility studies explore opportunities and benefit-sharing mechanisms in more detail

→ Project preparation applies NBI policy on environmental and social issues

→ Investment plan notes costs and opportunities for securing financing

→ Countries own and implement the projects for regional economic growth

> **“tools and approaches that are supporting national policy development, management planning, and decision making”**

Nile-IS is a web-based system, and is becoming a comprehensive information system on the Nile, supporting the systematic storage, retrieval, exchange, and analysis of relevant information (e.g. documents, institutional structures, data, maps) on water, environmental, and socioeconomic aspects of the Nile Basin. Nile-IS contains knowledge that has been generated through NBI activities and through collaboration with NBI partners. It is interactive, and users can access information from, and contribute to, it.

The Decision Support System (DSS) is a state-of-the-art system which contains extensive hydrological modeling information to assist with Basin-wide decision making on the use of the Nile waters. The DSS was developed through a participatory process with the Nile countries; therefore it is a model that they own, and there is enthusiasm at the regional levels to use it. It is a licensed, river system-modeling tool, in use today by around 150 national government organizations and universities. Several ministries in Nile countries are now using the tool, including those in Kenya, Tanzania, Ethiopia, and Uganda.

Application of the DSS has strengthened multi-sector and integrated planning, which guides water development and planning efforts, enhances the impact of each sectoral activity, and ensures synergy in investment planning. In this way, it is effectively improving information availability and use to stimulate action which considers regional impacts and opportunities in the Nile Basin and beyond.

The DSS in action

The Ministry of Water and Environment in Uganda has used the DSS for studies on hydropower, irrigation, and municipal water supply in the Mubuku-Sebwe catchment.

“In Kenya, DSS licenses have been issued and applied in a water project in Nanyuki. The Water Resources Management Authority (WRMA) holds seven licenses, and is currently installing it in the six regional offices and its headquarters. Training and use will follow,” explains Mohammed Abdullahi Hassan, Senior Lecturer in the Department of Biosystems and Environmental Engineering at the Technical University of Kenya, Nairobi, who is currently using the DSS models to research flooding in the Tana and Nyando sub-basins.

“The DSS is used across all nine basins in Tanzania. In a pilot case, the DSS is being used to model the water resources systems in the Great Ruaha Catchment of Rufiji Basin,” says Dr. George V. Lugomela, Assistant Director of Water Resources and National DSS focal person in Tanzania.

In Rwanda, the DSS supports strengthening of water resources investment planning in the Nyabarongo Basin, Rwanda. The Nyabarongo is part of the Kagera river system, which contributes an estimated 34% of flows into Lake Victoria. Using the DSS influenced investment decisions to optimize

both national and regional benefits from this significant resource. Two hydropower plants and expansion of hill-slope irrigation have been planned, both of which will have minimal negative impacts on downstream flows. A framework for investment prioritization and optimization was established, and lessons from this framework contributed to the formulation of Rwanda's national water resources master plan.

In Ethiopia, the DSS was used in identifying and exploring the potential for both irrigation and hydropower development opportunities in the Tana and Beles basins. These form important sub-basins of the Blue Nile basin of Ethiopia, and regulate dry-season flow of the Blue Nile (Lake Tana contributes about 25% of the total dry season flow of the Blue Nile entering Sudan). The DSS was used to examine the impacts of irrigation on hydropower opportunities, and on Lake Tana's water levels and navigability. The outcome: the Ethiopian government identified the potential to develop 114,000 hectares of irrigation and 460 MW of hydropower capacity in the Tana Basin.

The Multi Sector Investment Opportunity Analysis (MSIOA) is a framework developed by NELSAP-CU, building on the DSS. It has been used by NELSAP for identifying and prioritizing potential regional investment options, taking into account their economic, social, and environmental implications, and investigating the alignment of potential regional investment options with national-level priorities. As a planning framework, the MSIOA uses economic and water resource information, and has been applied to different scenarios of water resource management and development. It enabled the development of a regional water investment strategy and action plan that supports NEL Basin-wide socio-economic development, poverty reduction, and the reduction of environmental degradation. Through the MSIOA, preliminary assessment of water resources investment options was conducted, and investments prioritized and sequenced. For example, the assessment identified potential opportunities to develop watershed management plans for at least 500,000 hectares (compared to 45,000 hectares currently covered by such plans), and to produce 6,000 MW of electric power. Compared to the original situation, the MSIOA predicted the creation of an estimated 1.3 million jobs. This analysis has contributed to the countries in the NEL region agreeing on 20 projects of regional significance.

Agricultural trade and productivity planning tools have been developed and used under the NELSAP regional agricultural trade and productivity project. They enable the prediction of changes in agricultural demand and trade, and their implications for regional water resources. They assess the impact of country agricultural investment plans on transboundary water resources, and anticipate changes in food supply based on

> **“stimulating action which considers regional impacts and opportunities”**

improvements in water productivity and expansion of irrigation. They also provide a foundation for future estimation of the impact of climate change on water resources.

NELSAP has also developed sub-basin hydrological knowledge bases and tools (including water allocation models), building on the DSS. These were built for the Lake Kyoga, Yala, Gucha-Migori, Aswa, Mara, Kagera, and Sio-Malaba-Malakisi sub-basins. They enhanced understanding of the sub-basin hydrological systems and their investment potential, and whether proposed projects could actually supply the various sectoral demands while respecting ecological needs, even during droughts.

ENTO has also produced a range of tools to help countries better understand development trade-offs between sectors, as well as to help identify opportunities for joint development and benefit sharing. They have contributed to ENTRO becoming a knowledge resource for the region.

2.6 Harmonizing donor funding: the Nile Basin Trust Fund (NBTF)

The World Bank’s involvement began with Nile-COM’s formal request to the World Bank President to coordinate financial support to the NBI. The International Consortium for Cooperation on the Nile (ICCON) met in Geneva in 2001, convening the Nile Basin governments and their international development partners, who pledged over US$140 million in support of Nile cooperation, in particular the SVP and SAPs.

This resulted in the establishment of the Bank-led consortium of development partners, and the setting up of the Nile Basin Trust Fund (NBTF) in 2003. The NBTF ran for 12 years, closing to the NBI at the end of 2014. The NBTF was the mechanism by which 10 donors – the UK’s Department for International Development (DFID), Swedish International Development Cooperation Agency (Sida), European Union (EU), Canadian International Development Agency (CIDA), Danish International Development Agency (DANIDA), Norway, Netherlands, France, Finland, and the World Bank) – made their financial contributions. The World Bank managed and coordinated NBTF funds, 90% of which went through the NBI. Several other development partners have supported the NBI centers directly, in coordination with the NBTF. These include: the United Nations Development Programme (UNDP), the African Development Bank, Germany (through GIZ and KfW), Japan (through the World Bank’s Policy and Human Resources Development (PHRD) Fund), Swiss Development Cooperation, and the Global Environment Facility (GEF).

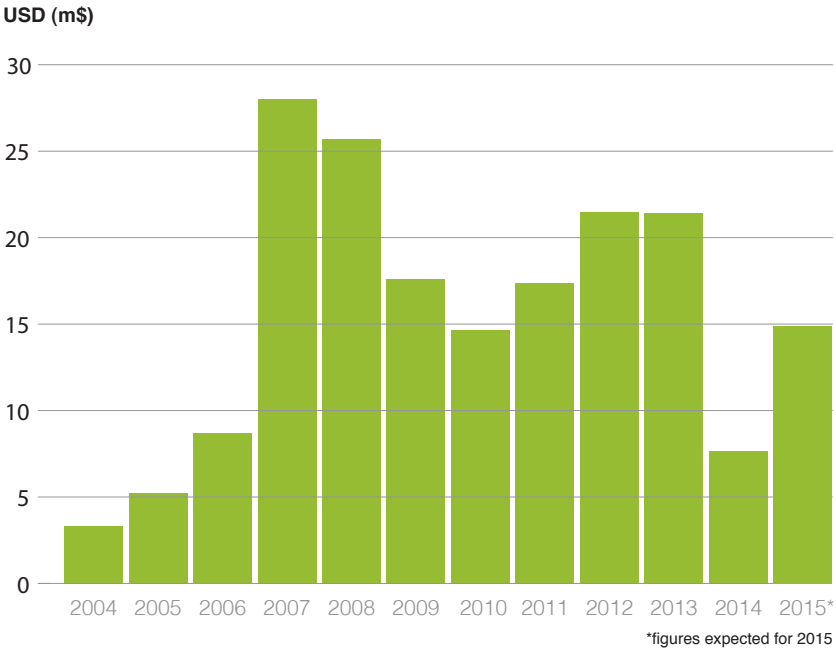
The NBTF has channeled a total of US$179.72 million to the NBI. Over the years, the annual contributions responded to changes in the capacity and level of activity of the NBI. The NBTF played a catalytic role in ensuring regional coordination could be achieved.

The June 2001 ICCON meeting in Geneva brought together the international donor community and non-governmental organizations (NGOs) in support of the NBI. It was a high-profile, inspirational event to motivate engagement in, and support for, the NBI's program of work. It achieved a commitment of over US$140 million from development partners.

"The ICCON meeting hailed the Nile Basin Initiative as a new development paradigm of regional cooperation that could help address many of the challenges of the Basin. While concerns were expressed over instability in the region, it was hoped that this initiative might serve as an example of how international waters can become catalysts for cooperation, development, and stability." Press Release, 2001, World Bank, NBI, 'Donor Community Supports Poverty Reduction, Prosperity and Peace through the Nile Basin Initiative'

Importantly, the NBTF's pooled funding mechanism helped to ensure coordination and best use of funds, and to keep everything working efficiently towards a single, shared vision. This is an excellent example of donor collaboration, which has been key to NBI's success. The NBI's also provided a platform for coordination and alignment of non-NBTF funds. The NBTF engaged key players in national governments (ministers are integral to NBTF

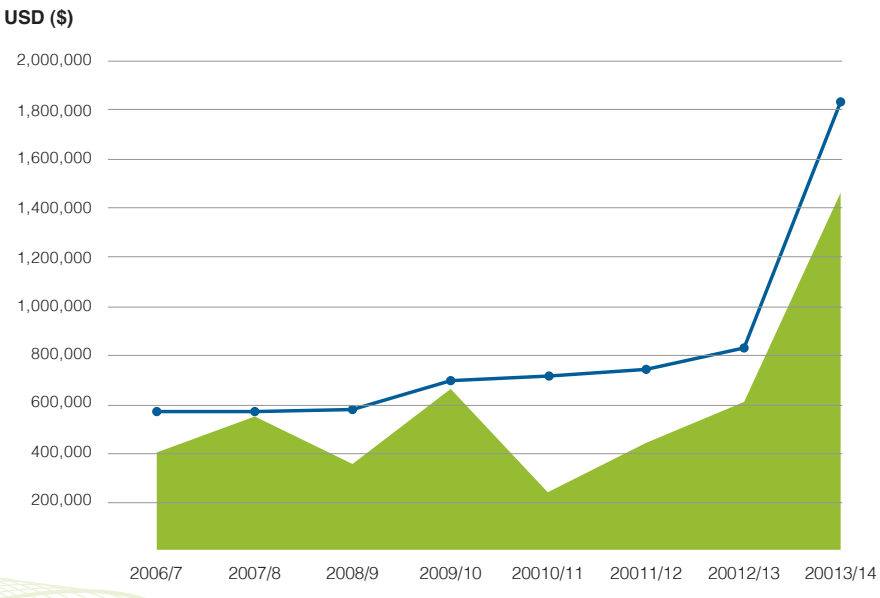
NBTF disbursements to the NBI over the years



*figures expected for 2015

Growth in NBI member countries' cash contribution

Source: Dorothy Kagwa Presentation, Nile Basin Development Forum, Nairobi, Oct 2014



> **a strong institution valued by its member states**

governance, for instance), and enabled capacity development within national governments. Pooled funds also reduced the transaction costs of aid for recipients by channeling finance from multiple donors through one instrument, allowing funds to flow efficiently to produce results on the ground, which worked well. In addition, it promoted mutual accountability by ensuring good monitoring systems, and by ensuring that donors and recipients were accountable for development results.

"These were unexpected results – donors working together – we always came to a consensus, which was amazing. It makes everything a lot easier, and transaction costs are much lower." Durk Adema, Water Policy Advisor, Environment and Water Department, Dutch Ministry of Foreign Affairs

In addition to the NBTF and bilateral funding, the Nile countries have been supporting the core functions of Nile-SEC through member payments which amount to more than US$69 million in actual and in-kind payments over the past 15 years, signifying a significant commitment to the NBI on the part of national governments. NBI member countries are now contributing in cash to the NBI, and have committed to continue to do so.

2.7 The NBI: strengthened institutional capacity over the years

Since its establishment, the NBI has become the 'go to' organization for national government staff wanting to engage across borders for information, planning, and project development. Unlike some other river basin organizations, it is directed, advised, and staffed by a cadre of experts from within the region. The NBI is truly regional.

The NBI has played a pivotal role in clarifying issues of benefit sharing, and in ensuring equal access to information, technical skills, and expertise in decision making. The NBI's success is demonstrated through replication of its best practices and benefit sharing in national government projects. For example, according to Tumaini Mwamyalla, NBI Desk Officer in Tanzania: *"Burundi, Rwanda, Tanzania, and Uganda are jointly working to manage the Kagera river basin with win-win benefits for all the member states. Lessons from the field are being replicated in water basins throughout Tanzania."*

Now fully functional, the NBI has become a strong institution valued by its member states. A strengthened NBI has helped to chart a practical course for the future. Cooperation in this area is being scaled up through the transfer of institutional knowledge to the member states.

Chapter sources and references
Interviews with LTS International (July–October 2014) Addis Ababa, Dar-es-Salaam, Entebbe, Kampala, Khartoum, Kigali, Nairobi.
Nile Basin Initiative (2009) Bridging the Nile–Unity and Growth Through the Shared Vision Program. NBI: Entebbe, Uganda.
Nile Basin Initiative (2013) NBI Corporate Report. NBI: Entebbe, Uganda.
Nile Basin Initiative (2014) NBI Corporate Report. NBI: Entebbe, Uganda.
World Bank (2014) Nile Basin Trust Fund Annual Report 2014. World Bank: Washington D.C.

It has developed an extensive and effective suite of policies, procedures, guidelines, and action plans to promote and guide best practice in transboundary cooperation on water. It has developed data sets and knowledge management tools that are widely used across the region, in the planning of transboundary projects and in the development of national plans and strategies.

"The NBI is an institution that provides dialogue, information, and promotion of cooperation. It provides countries with a structured mechanism for talking to each other. It also created a technical foundation for understanding the river – and a cadre of professionals who didn't exist before," says Dr. Barbara Miller, former Senior Water Resources Specialist in the World Bank's Africa Region.

Institutionalizing the NBI Set up to be a transitional organization, the NBI is becoming something much more. An organization provides a function or services, but could be replaced. An institution is something more based on values, something more trusted, credible and sustainable, something that would be missed if it were not there. An institution is more attractive to investors and financial institutions, because it is likely to face less social, political, financial, and environmental risks.

Source: Wubalem Fekade, ENTRO (presentation at Nile Basin Development Forum, October 2014).

"a pivotal role in clarifying issues of benefit sharing, and ensuring equal access to information, technical ability and expertise in making decisions"

Chapter 3: A COOPERATIVE APPROACH: TRUST AND COOPERATION AMONG COUNTRIES

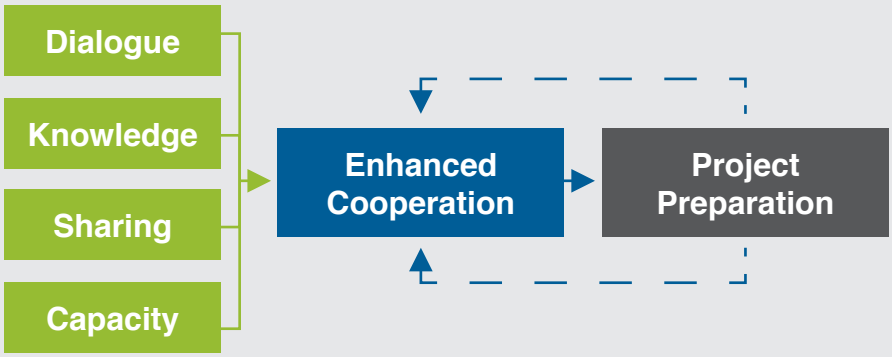
With the NBI established, transboundary approaches had begun to be seen as mutually beneficial and important to increase the pace of social and economic development in the region, and a shared vision was in place. However, there were still real constraints to cooperation. As noted earlier, these included poverty, low levels of infrastructural development, inadequate technical capacity in the water sector, a focus on national self-interest, and an underlying distrust between a group of very different countries. There was a significant hill to climb before meaningful cooperation could be achieved.

The cooperative approach that the Nile countries are now adopting – as described in this chapter – can therefore be seen as a significant achievement.

Progress towards cooperation is rarely linear. It tends to face challenges, takes forwards and backwards steps, and requires trust to be reinforced in different ways to achieve success. The combination of complementary and interlinked approaches and activities supported by the NBTF has therefore been important in making cooperation on the Nile possible. The combination included:

- Building a platform for dialogue
- Generating and sharing information and knowledge
- Capacity building
- Joint preparation of investment projects

"Development is inevitable and the only way forward is cooperation, which should bring all countries peace and stability." Dr.Adbulkarim Seid, Head of Water Resource Management, Nile-SEC



3.1 Building a platform for dialogue

In terms of trust and cooperation, the NBI has come a long way in the last 15 years, and has brought countries together. There are now regular Nile-COM and Nile-TAC meetings on transboundary water issues, bringing together water and environment ministers, water technical advisers, Nile-SEC, ENTRO, NELSAP, and regional centers to share data and discuss potential investment projects. This is a considerable achievement, and a contrast to previous times when countries did not want to work together.

> **“Development is inevitable and the only way forward is cooperation, which should bring all countries peace and stability.”**
>
> Dr. Adbulkarim Seid,
> Head of Water Resource Management, Nile-SEC

> **A real sign of success of cooperation can be seen in the NBI's investment projects already under implementation**

> **providing the only basin-wide platform for regional dialogue in transboundary water issues**

The SVP and ISP have added to this foundation for today's Nile Basin cooperation. Under the SVP, there were extensive transboundary sectoral studies, cooperative regional assessments (CRAs) to identify project opportunities, capacity building projects, and decision making tool development processes that brought people from different countries together to share and discuss ideas. The SVP's CBSI program was particularly successful in raising awareness, and building trust and cooperation in the region.

According to a 2008 opinion poll, a number of stakeholder groups, including lawyers, media professionals, and female leaders, reported that measurably greater levels of trust had been achieved through CBSI. Through work on joint projects on a range of critical issues, the SVP advanced a shared understanding of the need for regional engagement among the countries, including in water resource management, the environment, wetlands protection, and regional energy trade.

These processes have been pivotal in helping governments to understand that cooperation is key to development and economic growth. Staff in water ministries in Kenya, Tanzania, Uganda, Ethiopia, and Sudan testify to this. For example, in Sudan, Ministry of Water staff have noted that NBI programs have helped government ministries, and have brought a major breakthrough in understanding and believing that cooperation is a 'must'. They have also recognized the value of awareness raising (including policy formulation, project management, stakeholder involvement, integrated water resource management (IWRM), water resource modeling, and decision support systems).

The power of NBI dialogue – what has been influenced?

- **Convergence** Regular meetings between countries mean that there has been a growing convergence in the understanding of Nile issues.
- **Regional perspectives** A suite of NBI policies and strategies, including the NBSF, supports policy development on transboundary water issues at a national level. A large number of regional, sectoral analyses (for example, power generation and trade, irrigation, watershed management, and fisheries) brought together experts to assess, identify, and prioritize investment opportunities using the 'no borders' approach. These processes have resulted in Basin-wide perspectives being integrated, not only into NBI projects, but also into national policy and projects through the people involved. National projects are now more likely to be prepared within a Basin-wide context, and to result in positive and negative economic, social, and environmental impacts.

- **Open sharing** The NBI Interim Data Sharing Protocol enables information to be more freely shared between countries.
- **Trust and confidence for regional working** Eventually, as the countries have started to know and appreciate each other's needs and fears better, they have grown in confidence and have made the decision to move from single-country, single-sector, and simple projects to multi-country, multi-sector, complex, large-scale, and transformational cooperative projects.

A real sign of successful cooperation can be seen in the NBI's investment projects already under implementation. These are currently valued at US$1.5 billion, a staggering feat for a 10-country member organization that started from scratch fewer than 15 years earlier, and has had only US$260 million in financial support. Planning for these projects was done cooperatively, and with shared benefits in mind. The projects are now at various stages of implementation by the member states themselves, and a series of new projects are now prepared and ready for implementation.

"During my one-year tenure [as Chair of Nile-COM] *from July 2012 to June 2013, the NBI continued to advance a cooperative process, building trust and confidence among riparian countries, providing the only Basin-wide platform for regional dialogue in transboundary water issues. In this respect, it is gratifying to recognize that Sudan resumed its participation in NBI activities after two years of non-participation. In addition, NBI's membership grew from nine to ten, with the admission of South Sudan. All of this clearly demonstrates that riparian countries believe cooperation is the only way forward."* Hon. Amb. Stanislas Kamanzi, Former Minister of Natural Resources, Rwanda

Today, the dialogue platform has proliferated beyond government to include civil society, local people, and industry. Basin-wide processes and practices have been strengthened.

3.2 Generating knowledge for influence

Knowledge should inform riparian countries' perceptions of the costs and benefits of cooperation, and is therefore a crucial element in motivating transboundary management. A shared understanding of the river system among key stakeholders, as well as river basin planners, is crucial for creating trust and using evidence for decisions.

The NBI generated extensive new knowledge for the region, including research to highlight the realities of transboundary flows of water, the impacts of riparian developments on other countries, and the value of working cooperatively. The SVP sub-programs, for example, studied agricultural productivity and opportunities for water savings, distribution and characterization of wetlands, environmental sustainability issues, power generation and transmission options, and benefit-sharing mechanisms.

> **"The NBI generated extensive new knowledge for the region"**

> **"increasing cooperation has placed a real emphasis on the benefits of sharing information"**

> **“data is now exchanged much more freely”**

The SAPs extended this knowledge base further, adding sectoral studies (such as the Regional Power Trade Project (RPTP) and the Coordinated Water Program) and cooperative regional assessments both of which helped to identify new projects and led to project-specific feasibility studies. Collectively, these contributed to a body of information that would help countries understand the options for transboundary management and development of the resources – and the risks of not doing so.

3.3 Enabling open sharing of information and knowledge

The vision for increasing cooperation has placed an emphasis on the benefits of sharing information, both as a tool for building trust, and as an outcome of trust built. Fundamentally, shared data are vital for a Basin-wide resource management model to work.

Data sharing, when managed effectively, can provide a framework for developing patterns of cooperation in the presence of more contentious issues. Developing informal and formal channels to share information, ideas, and perspectives between riparian states can also help to avert conflict before it arises. Within the NBI member states, data are now exchanged more frequently, an important achievement.

“There is now a regular exchange of information and hydrological data and this builds trust. It is needed for flood forecasting and other types of planning. Data is sent into NBI and then collected and used for modeling.” Maria Vink, Sida, Embassy of Sweden, Nairobi

To promote cooperation, the Nile countries have developed protocols for information sharing, developing a range of systems and procedures to ensure smooth communication on transboundary projects. Over time, as trust has increased, the NBI has led a successful drive for greater information exchange, not only on the river itself, but on energy, agriculture, and trade. Countries now use the NBI as a mechanism to notify each other of certain development projects related to the Nile waters, through prior notification. It is a clear sign of enhanced cooperation.

Prior notification – thinking beyond boundaries

NELSAP and ENTRO facilitate a prior notification system. Through this, Nile countries now notify each other of certain planned investments prior to implementation. The procedure sets out the impacts of the proposed activity so that other countries can have a chance to comment, giving them an opportunity to express any concerns about a project through prior consideration of the plans.

This was the case, for example, with Uganda’s Water

Management and Development project, the Lake Victoria Environmental Management Project, and for the Rusumo Falls hydropower project. In all three projects, prior notification played a significant role in enabling the onset of implementation.

While giving Sudan's 'no objection', Professor Seifeldin Hamad Abdalla, Chairman of the Water Resources Technical Organ and TAC member for Sudan, noted that: *"Sudan is supporting the project and encourages the other riparian countries in the equatorial region to replicate this valuable experience in other sub-basins, to ensure the win-win approach that is a corner stone in the NBI. Please pass our consent to the governments of Rwanda, Burundi, and Tanzania for consideration. With best wishes in the implementation phase."*

Prior notification is a useful tool to ensure that a country considers the transboundary implications of its national plans or projects, and has an opportunity to minimize potential negative consequences it had not foreseen.

In addition to implementing prior notification, ENTRO issues regional flood bulletins with hydrological forecasts for the eastern Nile, to assist national, regional, and community authorities in predicting floods. For regional planning exercises, countries have frequently shared their master plans and expansion plans for development of power and agriculture. It is this knowledge sharing that has been the key to the NBI's success.

According to one government official from the Ministry of Water in Tanzania, there is evidence of the positive impact from information sharing: "*NBI studies provided data and information that facilitated [the] making of informed decisions on transboundary interests. Tanzania and Kenya are now cooperating in conservation and management of the Mara river basin, covering three regions in Kenya and four in Tanzania. The sustainable management of the Mara river basin that traverses the Maasai Mara-Serengeti ecosystem is also a good example of shared benefits.*"

Gathering and sharing knowledge in a cooperative manner also builds confidence in the knowledge base, minimizes duplication of data gathering and analysis, and effectively fills knowledge gaps. Installing strategic hydrological monitoring stations across the NEL region has enhanced the information available of the shared water resource, and has generated reliable, shared data for regional planning. With knowledge management tools, including Nile-IS and the DSS, the NBI offers a wealth of knowledge on: hydrological, environmental, and socioeconomic data; economic, ecological, and social values for natural resources; development scenarios; environmental and livelihood sustainability; and institutions that are involved in the water sector.

> **"NBI data facilitate the making of informed decisions"**

“By sharing data and information, the countries are steadily developing trust”

These tools provide decision making support to individuals and countries, and are becoming widely used by government departments, policy makers, universities, and civil society.

By sharing Basin-wide data and information, the countries are steadily developing trust. Anicet Nkurikiye, Advisor to the Minister of Water, Environment and Urban Planning in Burundi, notes that: *“The capacity of the hydro-meteorological department in Institute Géographique du Burundi (IGEBU) has been built.”* He points out that most of the stations were previously dysfunctional due to civil strife. *“We had data gaps due to malfunctioning equipment, but then river gauging stations, automatic weather stations, and a portable water quality laboratory were installed. Burundi now performs regular data collection for national water resources planning. The data are also shared with NELSAP to facilitate regional planning.”*

“Before the NBI and NELSAP, it was ad hoc – project planning and preparation were different. Now we’re aided by technical expertise and tools such as the DSS and that has created understanding based on dependable sound technical knowledge,” commented Vincent Ssebuggwawo, Water Resources Modeler, NELSAP-CU, who provides training on the DSS to various government ministries, including water and agriculture.

“There is now a knowledge base, policies have been harmonized, a DSS has been created, and there is transboundary planning. This has all taken longer, but this is a basis for cooperation. One unexpected outcome was that we found that cooperation really helps and that knowing about other countries can help you develop.” Dr. Callist Tindimugaya, Water Ministry, Uganda

3.4 Capacity building

To a large extent, the achievements in confidence and cooperation have been made possible through capacity building. Limited capacity in the water sector was a problem before the NBI, especially in upstream countries, making for an ‘uneven playing field’ for Nile cooperation. To date, over 14,000 people have been trained through NBI programs, including 150 postgraduate degrees and more than 800 sector professionals, and 500 exchange visits have been conducted to other river basin organizations, in addition to many more training sessions on climate change and IWRM. This training started with technical staff, but later cascaded to community members. For example, a number of user-friendly manuals have been prepared and translated into local languages for use by community members.

The capacity building process has promoted enhanced cooperation in a number of ways:

Integrated Water Resource Management (IWRM) is a process that promotes the coordinated development and management of water, land and related resources in order to maximize economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems. The basis of IWRM is that the many different uses of finite water resources are interdependent. Worldwide, water policy and management are beginning to reflect the fundamentally interconnected nature of hydrological resources, and IWRM has emerged as an accepted alternative to the sector-by-sector, top-down management style that has dominated in the past. IWRM is the foundation of the shared vision for Nile cooperation.

Source: Global Water Partnership, http://www.gwp.org/The-Challenge/What-is-IWRM/

Leveling the playing field

The SVP's Applied Training Project (ATP) has been seen as fundamental to leveling the playing field to achieve effective and equitable Nile cooperation. In collaboration with stakeholders across the region, the ATP built technical capacity at all levels in member governments, focusing on training, networking and applied research. At least 150 people were trained to post-graduate level in water resource management, building the cadre of water professionals significantly in some countries. The ATP also created the Nile Basin Universities Forum, bringing together 18 universities, to broaden cooperation in capacity building and promote joint research programs. Universities in the Nile countries began to appreciate the value of opening relevant faculties to train more people in IWRM.

According to Gordon Mumbo, former project manager of the CBSI: *"The Applied Training Program built individual capacity at all levels, with the aim of increasing the member states' ability to tackle complex issues in integrated water resource management."*

Capacity has also been built across many other NBI projects and programs. For example, the SVP's Water Resource Planning and Management (WRPM) project had a significant element of capacity building included in its project planning and management component, funded by the African Development Bank (AfDB). It aimed to enhance skills and abilities in Nile Basin countries for planning and managing multi-country projects, and included a series of short introductions to project preparation and management for senior managers. This familiarized the participants with the different steps in the project cycle, including negotiation, stakeholder involvement, and project financing, in relation to the SAP projects. The project cycle training, together with targeted technical training delivered through the SAPs, has enhanced member states' capacity to prepare and mobilize investment finance for projects.

Through the NBI, Jackson Ndayizeye completed an MSc in Water Resources Engineering (2008–2010) at the University of Dar-es-Salaam. The training gave him a real advantage, as at that time there were few hydrologists in his home country of Burundi, and it changed his career pathway. Previously, he was working as an engineer in a private construction company, but after the MSc he began working in the humanitarian aid field. He designed the first solar-powered water system in Burundi, supported teaching of hydrology in his national university, and is now working in South Sudan. He knows that the NBI training changed the way he thought about water and environmental flows and impacts, and helped him secure his current job with World Vision International. He also values the professional contacts he made during the course – professionals from southern Africa and Europe.

Entrenching the transboundary perspective

Capacity building has helped NBI member countries become more aware of the impacts their own activities may have on neighboring countries, for example, building open recognition that downstream flooding and siltation problems can only be solved if upstream countries address land degradation and soil erosion.

The recent intern program spearheaded by ENTRO has supported this too. It was introduced to promote learning between countries, and to stimulate discussion of transboundary perspectives in young professionals.

The intern program at ENTRO brings in participants from Egypt, Ethiopia, South Sudan, and Sudan, to equip them with appropriate water science knowledge. It provides networking and collaboration opportunities to water resource professionals, academic institutions, and government officials. ENTRO continues to provide support to its alumni.

Victoria Andrew, an intern from South Sudan, said: "I believe ENTRO has given me the chance of knowing the challenges of managing our common resource and the importance of collaboration."

The intern program results include:

- Ongoing internship opportunities and the creation of a network of 79 young water resource professionals who will become future decision makers.
- Creation of a knowledge community made up of professionals, academics, students, and researchers.
- Strongly enhanced inter-university cooperation.
- Trainees confident in approaches for improved IWRM.

The ENTRO program interns have established their own website and communicate with each other regularly, exchanging notes on their work. They understand ENTRO projects and Basin-wide risks. According to Wubalem Fekade of ENTRO: *"They consider themselves 'Nile' citizens who are sympathetic to the aspirations and concerns of all eastern Nile countries."*

Embedding the NBI ethos – Ivan Geoffrey Ebong

Ivan worked as the regional project coordinator for the Lake Edward and Albert Fisheries Project (LEAF) under NELSAP until 2009. Here, he received considerable training from NBI programs, notably on IWRM and socioeconomic considerations. He applied this experience from the NBI in his subsequent work as a project manager for the Semuliki River Catchment and Water Resources Management Project in his native Uganda, ensuring that there was integration of water, biodiversity, and other natural resources to meet basic human needs and sustain ecosystem functions. This project has since become a guide for the design of similar projects in the country, and also informs organizational learning and lessons for the Uganda Directorate of Water Resources Management in its national rollout of catchment management plans, with US$135 million funding from the World Bank. Ivan went on to join the International Union for Conservation of Nature (IUCN), working on climate change resilience in the Mt. Elgon region of the Lake Victoria basin, and now works as a freelance consultant, bringing his experience to other areas of the Nile Basin.

Embedding the NBI vision

The NBI has embraced the principles of integration, sustainability, equity, and sharing of information, risks, and benefits. Much of its training has emphasized these principles, with trainings on stakeholder assessments, social analysis, gender, environmental management, resettlement programs, IWRM, and water resources in general. For example, in Sudan, the NBI has helped with capacity building within the government, where a large number of government staff went through training courses and Gezira University introduced IWRM as an MSc course.

The DSS has been a critical component of the NBI's more recent work, and has included significant training and capacity building. For example, three post-graduate environmental modeling workshops have been conducted for 18 specialists from across the region, building their capacity to use the DSS software. The same group has also been trained in remote sensing and GIS. This team is expected to oversee the use of the 150 DSS licenses that have been distributed to member countries.

"The NBI has supported government ministries in capacity building, providing innovations such as the DSS, which has replaced software that was not as comprehensive for water resources modeling and research. There has been a lot of capacity building, especially on DSS, IWRM, and climate change." Silas Mutia, Assistant Director Water Resources/Transboundary Waters, Ministry of Environment, Water and Natural Resources, Kenya

Bringing people together, building relationships for change

Training programs have brought people together on common issues. This goes beyond capacity building, and has wider benefits in terms of cooperation. Bringing technicians from different countries together means that they build cooperative relationships, and often remain familiar with each other over the years. According to Peter Sutcliffe, Advisor to NELSAP and ENTRO: *"This means that there are people now at a higher level who have personal relationships built from NBI training when they were technicians together. This drives cooperation even further."*

An example is Gideon Asfaw, who worked in the SVP's environmental program (NTEAP) in Khartoum in the early days of the NBI. In this role he acquired new skills and knowledge and also developed some lasting relationships with professionals from other countries. He took this experience to subsequent senior positions in government in his native Ethiopia, and has been a driving force for transboundary projects. Now he is building on his experience further, as a senior advisor on high level dialogue between eastern

"regional training builds cooperative relationships"

> **“transboundary water resource management and development is now included in national policies”**

Nile countries on infrastructure development. He has stated that his current views on transboundary waters has been influenced by his time with the NBI, and its emphasis on ensuring equitable benefits and the ‘no harm’ principle.

3.5 Key outcomes: transboundary working in practice and policy

The enhanced cooperation that has resulted from the combination of the activities described above has led to some important outcomes. While some politically-charged issues remain on the table, most of the countries now talk to each other about water issues, particularly on a technical level. This is on a more equal footing than they did previously. Countries can now discuss and work together with confidence and trust. As a result:

- Countries have committed to develop and implement transboundary investment projects together.
- Transboundary perspectives are being included in national water polices.

The NBI has set in motion a historic shift from unilateral investment planning towards a focus on more cooperative, system-wide development and management of Nile waters. This new perspective is enabling the Nile countries to create greater economic benefits for all people of the Nile Basin, as discussed in subsequent chapters.

Transboundary investment projects are now agreed and undertaken with relative ease. These are in a range of sectors, including energy generation and transmission, watershed management, disaster resilience, agricultural and fisheries production, and trade. The SVP has contributed to an enabling environment in Nile Basin countries for investment in these shared projects. It has stimulated understanding of the benefits of a transboundary perspective, and helped to formulate templates and guidelines for policy alignments, including water resource management policies, environmental policies (for example on impact assessments), wetland policies (for example the 2013 NBI Environmental and Social Policy), and institutional frameworks for regional power trade, which have been crucial to the region.

The project preparation processes through the SAPs have also contributed to the cooperative approach. The feasibility studies undertaken have helped national governments understand exactly what they can get out of joint work, and ensured their commitment to implementing investment projects – for example, the Ethiopia-Sudan-Egypt flood preparedness project, which saw the three countries (not without conflicts on other issues) cooperating on weather data and early warning systems. The NBI has been instrumental in:

- Identifying appropriate and relevant project opportunities.
- Undertaking feasibility studies and project design work.
- Bringing government staff together, and giving them the skills and information to make decisions in a transboundary context.
- Facilitating investments.

“I wish to underscore the need to mainstream NBI projects in our national programing cycles. In this respect, my country has deliberately embarked on taking up the NBI-prepared projects to be implemented within the national plans,” commented Hon. Prof. Judi Wakhungu, Cabinet Secretary, Ministry of Environment, Water and Natural Resources, Kenya, in her speech at the 22nd Nile-COM meeting. NBI-prepared projects that the Government of Kenya is implementing include dams, irrigation, municipal water supplies, and electricity transmission projects with neighboring countries.

Not only do the NBI projects clearly demonstrate the achievements from enhanced cooperation, but they also stimulate further cooperation, giving countries a reason to come together, and a focus for negotiations. This reinforces the gains made through dialogue, knowledge sharing, and capacity building.

"It's very important we identify projects that national governments can take forward. The NBI process helps with trust and cooperation." Dr. Seifeldin Hamad Abdalla, Ministry of Water Resources and Electricity, Sudan, and Chairperson, Nile-TAC 2014

Transboundary perspectives in national policies

There is now evidence that transboundary perspectives are being included in national water policies. Through its water policy component and the preparation of river basin management projects (for example Kagera, Mara and Sio-Malaba-Malakisi), the NBI identified gaps in transboundary water policies and related instruments across the region, and established best practice in water policy formulation. With support from the NBI (funded by Germany and Sweden), each of the countries was facilitated in aligning their transboundary water policies with international best practice. Transboundary policies were formulated for Rwanda and Kenya, and they were reviewed for Tanzania, Uganda, and Sudan. Policy consistency has promoted cooperation on water management and development at regional level.

Peter Kanyi, Head of Monitoring and Evaluation at NELSAP , explains: *"NELSAP pushed for the transboundary considerations in national water policies. Most of the countries now have this policy. This will lead to increased productivity, conservation of water, and protection of the environment."*

> **"a historic shift towards cooperative, system-wide development and management of the Nile waters"**

Examples of transboundary perspectives in national policies

1 In Kenya, the NBI's work is in use in catchment planning, and the Government has formulated a transboundary water policy, awaiting Cabinet approval. This was supported by the NBI through training Government staff (many of whom have been on short courses, three of whom gained MSc degrees, and one a doctorate), and documentation of best practices in integrated transboundary water management. The NBI also supported drafting of bilateral cooperative frameworks for sharing water between Kenya and Tanzania, and Kenya and Uganda. The Government believes this new policy will result in better management of transboundary water resources, within and beyond the country.

"Most studies funded through NBI have been mainstreamed into national policies. All activities ultimately are improving the way we manage water resources through both policy and practice. The Government can now save money, avoiding further studies and getting on with implementation." Silas Mutia, Assistant Director Water Resources/ Transboundary Waters, Ministry of Environment, Water and Natural Resources

2 In Tanzania, the Ministry of Water has a well-functioning unit on transboundary water. According to Eng. Mbogo Futakamba, Acting Permanent Secretary in the Ministry of Water: *"NBI studies and workshops demonstrated the importance of transboundary initiatives for effective management of transboundary natural resources. Policy and decision makers attended workshops and study tours on transboundary development. Lessons learned from the NBI studies contributed to the preparation of the Water Resource Management Act (2009). Implementation of IWRM is now also a priority at policy level and in practice at the field."*

3 Uganda's Cabinet passed the National Climate Change Policy in October 2014, which obtained significant benefit from data generated by the NBI's Nile-IS and DSS. Under this policy, Uganda has adopted key guidelines elaborated in its water quality monitoring program and transboundary strategies for wetlands and biodiversity that emerged from the SVP's Nile Transboundary Environmental Action Project (NTEAP).

4 In Rwanda, transboundary water resource management concerns are increasing. Most of its rivers and lakes are transboundary, with 90% within the Nile Basin. Following the development of a National Water Policy, a strategy for water resource management in Rwanda was compiled. The need for a new strategy arose out of the Government of Rwanda's plan to increase water use as a strategic factor of production, and because of the declining quantity and quality of water, as well as the need to ensure equity and sustainability in water allocation. The preparation of this strategy has been supported by GIZ through its project on transboundary water cooperation with the NBI. Rwanda is consolidating its regional integration agenda, especially with regard to the NBI, where transboundary water resource management is a critical issue.

5 In Sudan, several people in the Ministry of Water and Energy observe that there are now mechanisms for transboundary water resource management and development included in national policies and institutions, which they feel are due to the NBI. In Sudan, transboundary management plans for flooding, early warning systems, and disaster risk management were developed through ENTRO work on forecasting models. Sudan now has a new Flood Early Warning System (FEWS). This was the result of different stakeholders (including ENTRO, the Ministry of Water and Energy, civil society organizations, and regional governments) all working together to mitigate flood impacts. There is a flood committee that assesses incoming flood information and informs other groups (for example, the Government, civil societies and local people) through a daily bulletin during the flood period, to help them prepare and respond, with some equipment provided by the NBI. This committee can now use and disseminate NBI flood forecasts. Other NBI data and tools are now used in national planning and policies.

Chapter sources and references
Interviews with LTS International (July-October 2014) Addis Ababa, Dar-es-Salaam, Entebbe, Kampala, Khartoum, Kigali, Nairobi.
Nile Basin Initiative (2013) NBI Corporate Report. NBI: Entebbe, Uganda.
Nile Basin Initiative (2014) NBI Corporate Report. NBI: Entebbe, Uganda.
Government of Rwanda (2011) Water Resource Management, Sub-Sector Strategic Plan (2011 – 2015). Ministry of Natural Resources: Rwanda.


LIBYA
EGYPT
CHAD
SUDAN
5
ERITREA
DJIBOUTI
CENTRAL
AFRICAN REP.
SOUTH
SUDAN
ETHIOPIA
SOMA
UGANDA
3
DEMOCRATIC REP.
OF THE CONGO
KENYA
1
RWANDA
4
2
TANZANIA
BURUNDI

Chapter 4: PREPARING INVESTMENT PROJECTS TO ADDRESS DEVELOPMENT CHALLENGES

The NBI and its program of Nile cooperation has managed to achieve some significant change despite the constraints it faced at its outset. It has built a strong institution, trust and cooperation, a firm knowledge base, tools, and a cadre of trained professionals. In addition, the NBI has put in place the building blocks for real development impact by facilitating the preparation of investment projects.

In collaboration with national governments and investors, NBTF funding has enabled the NBI to identify potential projects, undertake feasibility studies, and prepare projects for countries to implement. NBTF resources of US$202 million over 12 years has helped the NBI to leverage over US$1.5 billion in commitments to regional investment projects. These projects promise to deliver economic development across the region, addressing the development challenges of food and water insecurity, energy poverty, vulnerability, and weak economic growth.

4.1 NBI-facilitated investment projects

So far, projects have largely fallen into four broad categories, reflecting the region's key development challenges:

Watershed management

Addressing environmental, soil, and water quality issues, expansion of rain-fed agriculture, and livelihood benefits, including benefits of increased food and water security.

Power generation and transmission

Installing hydropower capacity, and linking up power sources for increased energy security.

Irrigation and agricultural productivity

Addressing problems of crop failure, climate vulnerability, and inefficient water use, and linking to farm and fisheries production, processing, and markets, with benefits for food security.

Flood preparation and early warning systems

Helping farmers cope with shocks from floods and droughts, and building resilience and food security.

4.2 Watershed management

Land use can cause degradation and soil erosion, resulting in lower agricultural yields locally and causing siltation downstream. This reduces water quality, and the potential for hydropower and irrigation, and contributes to increased flooding. As a result of this, watershed management has come to be recognized as a critical issue in the Nile Basin. Natural hazards, such as storms and droughts, worsen land and wetland degradation, and climate change increases the frequency and severity of these extreme events. This threatens water, power, and food security.

> **“these projects promise economic development for the region”**

> **“different perspectives, costs, and benefits are considered”**

> **“water and soil conservation can improve productivity of the farming system”**

Early NBI work on watershed management was initiated through ENTRO's fast track of the Eastern Nile Watershed Management Project, which had five components: (i) capacity building, (ii) enhancing knowledge through studies and research, (iii) monitoring and evaluating watershed interventions, (iv) identifying and preparing national and transboundary investment projects, and (v) establishing and strengthening project coordination at national and regional levels.

Out of this emerged the highly successful Tana-Beles Watershed Management Project in Ethiopia. Initially, ENTRO undertook a CRA, which was used by the Amhara district government to develop and implement a pilot that covered over 80,000 hectares and approximately 4,000 households. ENTRO's CRA processes have been well regarded, and are considered a real added value to the NBI. They are a way of assessing the feasibility of and designing projects, and importantly they are cooperative, bringing together stakeholders from different countries to ensure that different perspectives, costs, and benefits are considered.

In addition, ENTRO has trained over 500 people in community-based watershed management. This has, in turn, cascaded through the broader community, with a further 960 people trained at the community level. The training has now become a national program in Ethiopia, with field manuals translated into local languages.

In NELSAP a similar approach has been taken. The NEL water resource development project was a comprehensive sectoral study, which worked with the countries towards identifying meaningful transboundary project opportunities for watershed protection.

Watershed management and agriculture in the Nile Basin

The agricultural sector in the Nile Basin countries is a major contributor to GDP, employment, and food security. However, only about 36% (14 million hectares) of potential agricultural land is cultivated. In addition, productivity remains low in most areas. Nearly 90% of agricultural land is rain-fed, which supports predominantly subsistence farming and results in low yields of crops and livestock. There is real potential to address these issues and increase overall productivity.

Currently there are only about 5.6 million hectares of land under irrigation, or equipped with irrigation facilities, in the Nile Basin, and 97% of that is in Egypt and Sudan, where crop productivity and water-use efficiency are high in the irrigation schemes. The huge potential of the agriculture (growing and processing) sector in the Nile Basin is underdeveloped. Although more food has been produced over the years, it is still not enough to provide for the growing population and all countries have to import food. There is little trading between Nile Basin countries as few of them generate enough to be able to trade.

Watershed programs normally introduce more sustainable and productive agricultural methods, along with soil and water resource conservation measures, resulting in the generation of large numbers of rural jobs. Watershed management therefore has significant potential to improve livelihoods and reduce food insecurity by improving productivity.

Eastern Nile transboundary watershed management in Ethiopia, Sudan, and Egypt. Mitiku Kibede, Tana-Beles District watershed project officer in Ethiopia advises a local farmer, Amsanu Wondnagegnehu, on preventing soil erosion, which causes siltation in the Nile and downstream flooding in Sudan. Better soil management has also meant greater productivity for Amsanu; his wheat production has increased from 400 kilograms to 1,000 kilograms per harvest.

Tana-Beles Project

The Tana-Beles Project, situated in Amhara, Ethiopia, has proved very successful. It was prepared by ENTRO and implementation began in 2011, with the aim of undertaking a pilot project to rehabilitate degraded lands through water and soil conservation. The pilot project is being implemented in the severely degraded Rib, Jema, and Gumera sub-watersheds of the Nile, which cover approximately 85,000 hectares of land. Significant time was invested in project preparation with training, workshops, and exposure visits both regionally and to other water basins in China and India.

The project has a component for livelihood support, including provision of social services (e.g. health services and access to clean drinking water, which is significantly reducing the incidence of water-borne diseases within the community), and introduction of income-generating activities. In fact, the youth in the community have been so inspired by the project that they have formed an association that provides a platform to raise credit for building income-generating activities. Today, the youth are increasingly engaging in improved farming activities as they see the positive results of the project.

The community is also involved in the monitoring and evaluation processes, which builds on their sense of responsibility as environmental stewards. As a result, improvements are already visible, including a reduction in erosion, and an increase in soil fertility, crop yields, and land restoration.

In addition, sedimentation has been reduced. For example, monitoring at Tana-Beles has recorded a reduction of around 50% in sedimentation levels since the project started.

Another success has been the introduction of a no-grazing policy on agricultural land, since grazing animals often destroy crops and soil fertility. Today, the Amhara district government has decided to repeat this in the whole province, and introduced a Community Watershed By-Law in 2014.

The watershed project has been so successful that the district government has replicated it elsewhere in the province, thus benefiting thousands more farmers.

> **countries identified where watershed management would benefit the region**

It looked for entry points at the catchment and sub-basin levels, and some of these became the focus of further work through the multi-sectoral investment opportunity analysis.

These processes of engagement and conducting sectoral studies (which involved stakeholders from all countries) resulted in several 'hotspots' being jointly identified, where watershed management would enhance livelihoods and food security, and benefit the region more broadly. From this, specific project opportunities were identified for further exploration through feasibility studies.

The following section describes examples of watershed management projects for which feasibility studies and project preparation have been undertaken through the NBI.

The Lake Victoria Environmental Management Project (Phase II)

NELSAP worked closely with regional organizations on the preparation of this

Lake Victoria Environmental Management Project (Phase II): Truly regional, highly collaborative

This project was identified by the five East African Community (EAC) states, which requested that NELSAP prepare the Rwanda and Burundi component, building on earlier work in Uganda, Kenya, and Tanzania, as well as on other watershed management project preparation work being done for the Kagera sub-basin. Investment finance mobilization of US$40 million from the World Bank, Sweden, and the Global Environment Facility was done in coordination with the Lake Victoria Basin Commission and the EAC member states.

Lake Victoria and its basin support a large fishing industry (for export and local consumption) and hydropower production, and it provides drinking and irrigation water, as well as an important navigation route. But these benefits have become threatened and there is:

- Deteriorating water quality – due to increased sedimentation caused by upstream activities (such as deforestation and forest degradation), which exacerbate pollution from increasing urbanization and industrialization.
- Declining lake levels and river flows – due to increasing extraction of water for irrigation and hydropower.
- Resurgence of water hyacinth growth – due to water quality issues. These plants obstruct waterways and contribute to reduced water flows and lower oxygen levels in the water. This excessive growth consequently affects aquatic biodiversity.
- Reduced fish stocks – due to pollution, sedimentation, hyacinth growth, and high levels of fish harvesting.

Rwanda and Burundi are part of the upper watershed that drains into Lake Victoria through the Kagera River, and activities there influence the problems in the lake. The river contributes about 30% of the total flow into the lake, but also brings high levels of sediment from upstream soil erosion, resulting in an estimated two hectares additional coverage of water hyacinth every day.

The project therefore has a strong focus on watershed management (alongside institutional capacity building, policy harmonization, and pollution control measures). Over 6,000 hectares of rangelands and wetlands are being brought under sustainable land management, hillsides are being restored for production and conservation, and community-driven livelihood activities that are less degrading are being initiated. In both Rwanda and Burundi, the project is implemented in districts within the Kagera basin, working closely with national land and water management programs.

Integrated water resource management in the Kagera River Basin includes a rainwater harvesting component. Muwinga School secretary, Mwizerwa Peace, stands by the water-harvesting container, which is reducing the school's need to buy water. When the school cannot get water during the dry season, it spends approximately US$130 a month buying water.

project. It is now being implemented by Rwanda and Burundi, with regional supervision from the Lake Victoria Basin Commission. The aim is to improve upstream watershed management, and to contribute to reducing environmental stresses on the lake, ensuring that it is better able to support regional economic growth in the future.

Kagera Sub-basin Integrated Watershed Management Project

Deforestation, poor farming practices, and the resulting severe land degradation mean low yields for the rural farming communities in the project countries (Burundi, Rwanda, Uganda, and Tanzania). NELSAP has employed a sub-basin-wide approach that is focused on agroforestry, watershed restoration, wetland management, water quality monitoring, community-driven development activities, carbon sequestration, and conservation agriculture.

In addition to institutional arrangements and capacity building for watershed management, water supply is important. The project includes a component on small, multi-purpose dams and water supply systems in Burundi, Uganda, and Tanzania. Fifteen rainwater-harvesting tanks for 15 schools in Nyagatare, Rwanda, have been constructed, and agro-forestry projects in the four countries have been implemented. Studies for the Bigasha water-harvesting sub-project in south-western Uganda noted the potential to provide water supply for about 784,500 people and irrigation development for 2,024 hectares, in addition to livestock watering. This sub-project is now under implementation by the Government of Uganda's Ministry of Water and Environment.

"The project is important for the country because it is located in a dry belt with mainly pastoralists who normally cross the border into Tanzania in search of water and pasture, sometimes leading to cross-border conflicts," noted Eng. John Twinomujuni, Assistant Commissioner Water for Production, Ministry of Water and Environment, Uganda. *"When the project is completed, it will provide water for the population as well as the animals, in addition to providing water for fodder production, which will reduce conflicts – in addition to diversifying and improving the livelihoods of about 7,000 people in Isingiro district."*

Building on the studies, sub-catchment management plans have already been prepared for some of the critically degraded watersheds. These plans address the range of land degradation issues, and were prepared through participatory processes to ensure all issues were covered and prioritization reflected local needs for food productivity and resilience. The plans have been adopted by the member states.

The Kagera pilot project is now fully prepared and investment-ready, and investment for implementation is being negotiated. The pilot project will benefit around 200,000 people once it is operational, and 2 million people across the catchment area could subsequently benefit from implementation of the full catchment project.

> **"the project is important to my country"**

Investment projects in watershed management, water resource development, and agriculture facilitated or prepared by NBI

1

Project:	Eastern Nile Watershed Management Project
Country/ies:	Egypt, Sudan (eastern Nile Regional)
Status:	Under Implementation
Prepared by:	ENTRO
Hectares of watershed:	40,000 ha (rehabilitated and under sustainable land management)

2

Project:	Tana-Beles Integrated Water Resources Development Project
Country/ies:	Ethiopia
Status:	Under implementation
Prepared by:	ENTRO
Hectares of watershed:	83,000 ha (irrigation and improved watershed management)
Projected beneficiaries:	400,000

3

Project:	Lakes Edward and Albert Fisheries Project
Country/ies:	Uganda, DRC
Status:	Phase I Under Implementation
Prepared by:	NELSAP
Hectares of watershed:	10,000 ha (restored)
Projected beneficiaries:	Phase I: 200,000 (7,000,000 indirectly)

4

Project:	Lake Victoria Environmental Management Project – Phase 2
Country/ies:	Rwanda, Burundi
Status:	Under implementation
Prepared by:	NELSAP-CU
Hectares of watershed:	6,150 ha (watershed management)
Projected beneficiaries:	193,000

5

Project:	Kagera Sub-Basin Integrated Watershed Management Project
Country/ies:	Burundi, Rwanda, Tanzania, Uganda
Status:	Pilot projects prepared, resource mobilization ongoing
Prepared by:	NELSAP-CU
Hectares of watershed:	2,024 ha (irrigation)
Projected beneficiaries:	Pilot: 200,000 Potential full catchment project in future: 2,000,000

6

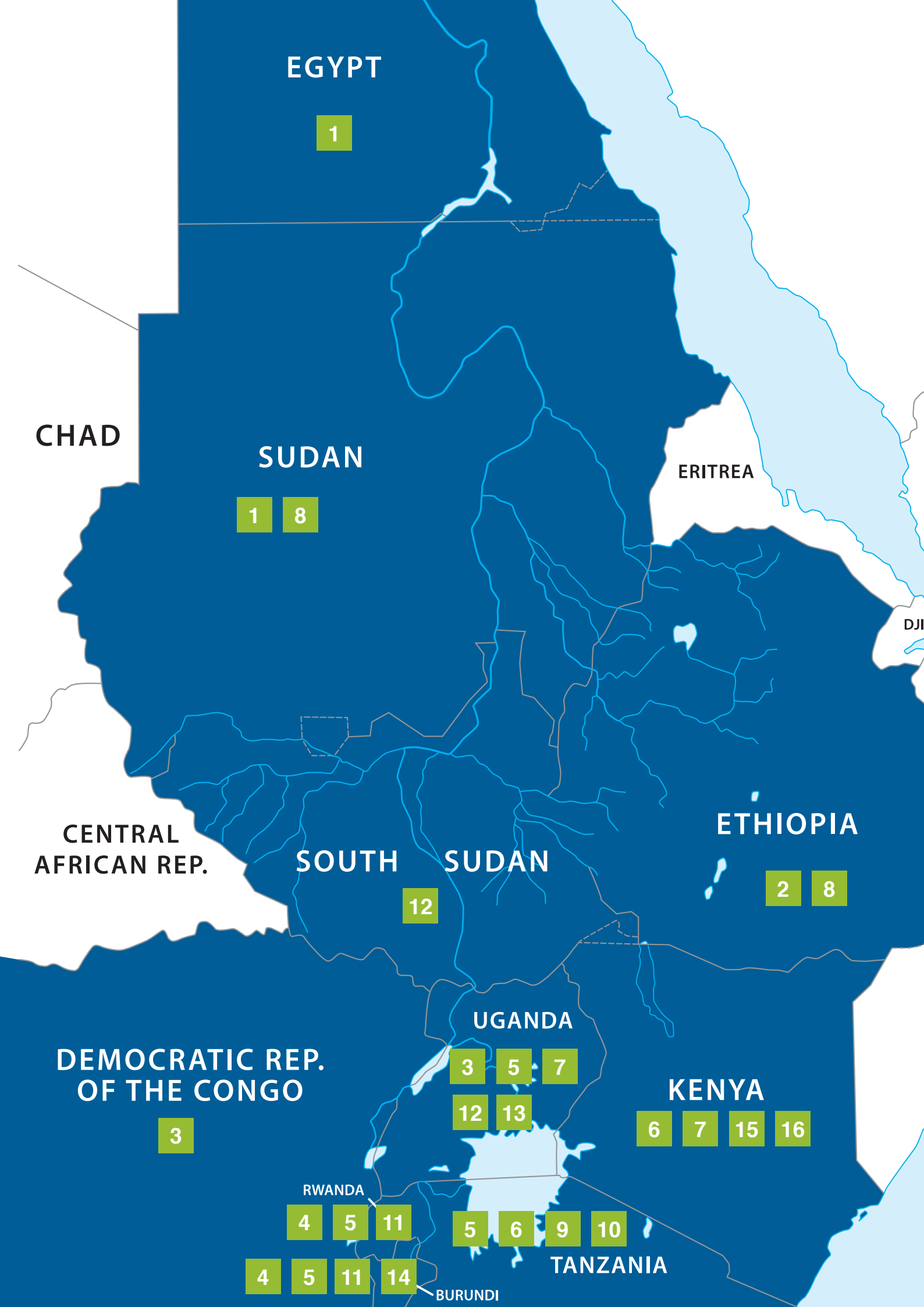
Project:	Mara Sub-Basin Integrated Watershed Management Project
Country/ies:	Tanzania, Kenya
Status:	Pilot projects prepared, resource mobilization ongoing
Prepared by:	NELSAP-CU
Hectares of watershed:	42,207 ha (irrigation, restoration and watershed management)
Projected beneficiaries:	Pilot: 175,000 Potential full catchment project in future: 500,000 (plus 1,000,000 indirect)

7

Project:	Sio-Malaba-Malakisi Sub-Basin Integrated Watershed Management Project
Country/ies:	Kenya, Uganda
Status:	Pilot projects prepared, resource mobilization ongoing
Prepared by:	NELSAP-CU
Projected beneficiaries:	Pilot: 600,000 Potential full catchment project in future: 2,500,000

Further watershed management, water resource development and agriculture projects under preparation
(total projected beneficiaries over 4 million, total projected area over 1.5 million hectares)

8. Eastern Nile Watershed Management Projects
9. Mara Valley Water Resource Development Project
10. Ngono Water Resource Development Project
11. Bugesera Integrated Water and Irrigation Project
12. Nyimur Water Resource Development Project
13. Kabuyanda Water Resource Development Project
14. Ruvyironza Water Resource Development Project
15. Sio-Sango Water Resource Development Project
16. Gogo Falls Water Resource Development Project


EGYPT
1
CHAD
SUDAN
1
8
ERITREA
DJI
CENTRAL AFRICAN REP.
SOUTH SUDAN
12
ETHIOPIA
2
8
UGANDA
3
5
7
12
13
DEMOCRATIC REP. OF THE CONGO
3
KENYA
6
7
15
16
RWANDA
4
5
11
4
5
11
14
5
6
9
10
TANZANIA
BURUNDI

“plans reflect local needs for food productivity and resilience”

Mara Sub-basin Integrated Water Management Project

In the Mara basin in Kenya and Tanzania, natural resources are threatened by forest degradation, while poor farming practices and climate change have affected the river flow. The result has been flooding downstream, increased soil erosion, and heavy sedimentation loads. Communities have been displaced, and the wildebeest migration has been affected. A framework for shared development and management of the Mara basin is being developed by NELSAP through a Memorandum of Understanding between the governments of Kenya and Tanzania, along with investment proposals informed by extensive information collection and planning. The proposed project interventions include soil and water conservation, agroforestry development, watershed restoration, biodiversity conservation, and wetland management.

Several sub-projects have been prepared with support from various development partners, including:

- The restoration of the heavily degraded Mau forest complex. This is an important catchment for Lake Victoria. This US$67 million, 10-year proposed project focuses on forest management for the Maasai Mau and Trans-Mara forest blocks, including livelihood improvements and institutional capacity development. The project has been mainstreamed by the Government of Kenya.
- Rehabilitation of critically degraded watersheds and wetlands in the mid-stream and lower Mara. Sub-catchment management plans (SCMPs) were prepared for four critically degraded priority sub-catchments. The plans are under implementation by the two governments, with NELSAP support. According to Joseph Kones of Bomet County, Kenya: *“Our watershed governance has improved, following training of the Water Resources Users Association in IWRM. We are excited that the just-concluded SCMP has elicited support to implement conservation, livelihood, and income-generating activities.”*
- Development of a sustainable management plan for the Mara (Masururua) wetlands. The wetlands cover an area of 400 km^2 , where the Mara river empties into Lake Victoria. The wetlands flood perennially, and proposed interventions include land-use planning and biodiversity conservation to create buffers to improve river flow and protect against extending floods.
- Building of Borenga dam. This has been regionally prepared, and will be nationally implemented by the Government of Tanzania as part of national measures to improve water harvesting for productivity. The scheme is focused on irrigation (8,340 hectares), water access, and some hydropower production (3 MW). It is planned to have seasonal rather than multi-year storage, so that the irrigation will be reliable, and discharges will support downstream river and wetland ecosystems.

About 1.5 million people across the catchment area are expected to benefit once investment projects for the whole catchment are implemented.

Sio-Malaba-Malakisi Sub-Basin Integrated Watershed Management Project

Poor farming practices in Kenya and Uganda have resulted in extensive catchment degradation. Local farmers cultivate right up to riverbanks, and there is indiscriminate sand harvesting, collectively causing significantly increased sediment loads in the rivers. The feasibility study for this project recommended five small-scale investment projects that include agroforestry, watershed restoration, biodiversity and wetland conservation, carbon sequestration, water-quality monitoring, and pollution control. An example is the Sio-Siteko community-based wetlands management project, which will address land fragmentation, encroachment of farms into fragile areas, and soil erosion. Informed by the SVP's NTEAP and wider Sio-Malaba-Malakisi plans, the project will protect wetlands, consider alternative livelihoods for the communities, improve extension services, planning and monitoring, and offer training.

The pilot watershed management plans that have been prepared will benefit 600,000 people once implemented. Once watershed management is implemented across the whole catchment is implemented, about 2 million people across the catchment area are expected to benefit from improved arable land, reduced flood events, decreased siltation, and improved water storage. Other benefits include income generation and diversification, market access, and overall better ability to cope with extreme weather events.

Bugesera Integrated Water Resources Management Project

This proposed project focuses on the maintenance of globally significant biodiversity and the associated ecosystem goods and services. It covers the Akanyaru marshland, which forms a natural border between Rwanda and Burundi. The area once prided itself on being the bread basket of the two nations. However, today it suffers from frequent droughts, soil erosion, and lack of grazing land. The project will strengthen water resource monitoring and management, and implement community-based catchment, irrigation, and wetland management plans for over 30,000 hectares of productive land. It will protect 765 hectares of lakeshore, develop agroforestry, and plant fruit, bamboo, and indigenous tree species and fodder grass along the Akanyaru riverbanks. It will also address pollution and getting related environmental agreements into policy, planning, and law.

Once the project is fully prepared, funded and implemented, approximately 1 million people across the catchment area are expected to benefit from decreased erosion, improved agricultural productivity, improved water storage, and a reduction in flooding events and siltation.

> **“informed by extensive collection of knowledge and information”**

> **irrigation is a key opportunity for improving food security**

Key outcomes from NBI-supported watershed and water resource management projects

Over 17 million people are expected to benefit from the watershed and water resource projects which have been prepared, once they are implemented. This will be through more sustainable land management, reduced erosion, increased crop yields, water storage, livelihood improvements, better water quality and flow, and flood risk reduction. In addition, watershed management contributes to the success of work on hydropower and irrigation, protecting and maximizing their potential development benefits.

4.3 Irrigation and agricultural productivity

The Nile Basin has abundant land and water resources, and agriculture is important in terms of food security and growth. Agriculture is a priority area in national poverty reduction strategies. Irrigation plays a major role in addressing problems of low agricultural productivity prevalent in the region, enabling higher yields, lower risk of crop failure, and higher year-round farm and off-farm employment. Irrigation can allow smallholders to adopt more diversified cropping patterns, and to switch from low-value subsistence production to high-value market-oriented production. Increased production makes food available and affordable for poor people.

Yet irrigation has not been applied extensively outside Egypt and Sudan, where there are around 3.2 million hectares of land under irrigation, and most farmers in the upper Nile rely on rain to water their crops. Rainfall can be erratic and unpredictable in timing and amount, with real risks for agricultural production and livelihoods. This unpredictability is increasing with climate change.

However, while irrigation is a key opportunity for improving food security for many farming communities across the whole region, extensive irrigation projects would place pressure on the Nile waters – hence the importance of a transboundary approach to irrigation.

The NBI has made significant inroads addressing the challenges of getting this right, at scale. Important foundations were laid by the SVP project on efficient water use for agricultural production. The project built capacity in agricultural water management in 9 of the 10 member countries. It brought together stakeholders in the Nile Basin to develop a common shared vision on the increased availability and efficient use of water for agricultural production. It enhanced the understanding of the relationship between water sources and agricultural development, thereby enabling best practice to receive greater support and wider application across the Basin. Key outputs included an overview of agricultural water management in the Nile Basin, and of best practices in small- and large-scale irrigation. This formed the starting point for all projects on agricultural water management and development prepared through the SAPs.

ENTRO facilitated ground-breaking collaborative regional efforts on the Eastern Nile Irrigation and Drainage (ENID) project. This was a study that resulted in the joint development by the three countries of the CRA for the sector, as well as the identification and preparation of fast-track projects – irrigation projects of 7,500 hectares each in Sudan and Ethiopia, currently being implemented. An important result of the cooperation platform created through consultation on the ENID project was that the three countries jointly agreed to work on preparation of a regional irrigation and drainage project. Carefully facilitated by ENTRO, using inputs from earlier SVP work, this was the first time such an agreement had been achieved. Financing was secured for a similar, national project in Ethiopia where 80,000 hectares have been prepared to feasibility level, and 7,000 hectares have now been irrigated.

NELSAP studies estimated the irrigation potential, as well as the Basin-wide impact of potential expansion of irrigation systems at country levels. It also carried out the following agricultural production and trade analyses:

- A 'water footprint' of agricultural production. This highlighted where there might be opportunities and costs in different scenarios of production and trade. It has informed agricultural trade policy and strategy, and proved a useful way to engage policy makers in informed decision making.
- Cross-border trade in agricultural products. Recognizing that trade offers opportunities for improving efficiency of water use (by growing crops where they use least water, then trading them to where people want them), this analyzed trade flows for grains, fruit, and vegetables, and livestock. It highlighted opportunities and constraints (for example, poor infrastructure or how well the product travels), and noted that cross-border trade is important to help food security (cereal supply is typically insufficient to meet demands).

Irrigation studies recognized the huge potential for irrigation in the upper Nile. Applying a regional Basin planning model, NELSAP showed that 510,000 hectares of land could be irrigated, without having a significant impact on either the environment or hydropower potential. Importantly, they noted that this could be further expanded up to 3,807,000 hectares. NELSAP also noted that for the level of growth in irrigation to become a reality, it must be demonstrated to be economically feasible to encourage private sector and public-private sector partnerships to play a major role.

NELSAP's work has identified irrigation-viable expansion opportunities in Kenya (the Gucha Migori and Yala basins), and in the border areas of Uganda and South Sudan (Aswa basin). These have been advanced by the national governments, with funding outside the NBI.

> **"ground-breaking collaborative regional efforts"**

> **tapping huge potential for irrigation in the Nile**

NELSAP is also facilitating irrigation through the transboundary watershed management projects it has prepared. As part of the preparation process, NELSAP includes environmental and social impact assessments, and a regional analysis of expected benefits. Impacts are also analyzed from a regional perspective through the Multi-Sectoral Investment Opportunities Analysis (MSIOA). The Kagera, Mara, Sio-Malaba-Malakisi, and Bugusera projects all propose to support irrigation.

Expansion of irrigation (around 54,000 hectares in total) is also planned within a range of new watershed management projects being prepared with funds through the NBI's NCORE program.These include feasibility studies for Ruvyironza, Burundi (14,000 hectares); Kabuyanda, Uganda (4,300 hectares); Mara Valley and Ngono, Tanzania (20,000 hectares); and Sio-Sango, Kenya (3,000 hectares). Collectively, these projects are expected to benefit over 1.2 million people in the NEL region.

Key outcomes from irrigation and agricultural productivity projects

In total, around 4 million people will directly benefit from transboundary irrigation projects covering nearly 150,000 hectares already facilitated by the NBI, and there will be US$90 million worth of increased agricultural production per year. In addition, a further 300,000 to 500,000 hectares of additional agricultural land will benefit from irrigation projects under preparation for the Nile Basin.

4.4 Power generation and transmission

NBI member states are endowed with substantial energy resources that include hydropower, natural gas, oil, geothermal energy, coal, peat, biomass, solar, and wind. Among the various energy options, hydropower facilities are the most attractive to the Nile countries because of their long economic life and low per-unit energy costs. Yet, these resources have not been fully tapped and several Nile countries have extremely low levels of access to electricity.

Demand for energy in the region is high, and increasing rapidly. Even with proposed investment, the demand will exceed supply for many years. Projections of energy demand for 2035 in the Nile countries indicate an increase of 300% or more over present demand. Indeed, growth in energy demand is fast outpacing the rise in population, and a 10-fold increase in demand is anticipated by 2045 (from 180,000 GWh in 2010 to 1,700,000 GWh).

Very large investments in power generation and transmission – in the range of tens of billions of dollars – are required for a sustained period to meet this demand.

This is where transboundary approaches to agree and develop projects, and to share costs and maximize benefits, can play a valuable role. They offer an opportunity to consider national demands in the context of a regional resource. Before the NBI, countries in the region typically planned and implemented power developments

in an isolated manner, with a view to satisfying national demand. The volume of power exchanged between countries was not significant, and was frequently unreliable due to power system failures. To tap into and sustainably use the vast hydropower potential of the region, the Nile countries must plan and develop their water resources cooperatively, and mainstream environmental and social considerations in all aspects of power development.

The NBI is contributing to the transformation of the region's energy sector by:

- Providing a forum for joint planning and cooperative development of hydropower generation and transmission options, and promoting power pooling among the Nile countries.
- Developing analytical tools, such as the DSS, that make it possible to quantify costs, benefits, and trade-offs in energy options, and allow harmful impacts to existing water users to be avoided.
- Building the trust and cooperation that has enabled national governments to come together to plan, invest in, and implement joint energy projects.

NBI-facilitated projects to date have focused on installing hydropower capacity and linking up power sources for energy security across the region.

Hydropower offers hope of change in the Nile countries – and is the most attractive energy to utilize because of the scale of potential supply, its long economic life, low per-unit energy costs, and its renewability. Currently, the Nile countries depend on hydropower to varying degrees, with Burundi, DRC, Ethiopia, and Uganda reliant on it for 80% or more of their supply.

The Nile Basin remains the only region on the African continent without a functional regional power grid to link up energy sources. The volumes of power traded among Nile countries are currently insignificant, despite regionally high, and rising, demand. However, through the NBI, the formulation and design of the regional power pool has been supported, while work to build a connected regional transmission grid is ongoing.

The NBI has played an important role in this shifting picture. A number of key processes have paved the way for development of the generation and interconnection projects currently being implemented or in the pipeline.

> **“transboundary approaches can play a valuable role”**

Nile Basin Regional Power Trade Project (RPTP)

This project was a key component of the SVP. It aimed to help the Nile Basin countries coordinate the development of regional power markets. Activities focused on building the confidence of countries when considering transboundary investments. This was through several complementary elements, including:

- Capacity building, including training more than 800 government and utility company technical specialists on ‘transboundary thinking’ in energy projects.
- Knowledge development, in the form of studies assessing the potential to expand energy generation reliably and sustainably, and increase transboundary investments to support water resource development, as well as to assess the best potential regulatory and institutional environment for supporting regional power trade.

The dialogue promoted through these activities was valuable to promote discussion on specific power investments.

Comprehensive Basin-Wide Study (CBWS) of power development options and trade opportunities

Knowledge development under the RPTP’s second phase included the influential 2011 CBWS of power development options and trade opportunities. This revealed the scale of power demand across the region, the wide range of power options available (including solar, wind, coal, and geothermal), as well as the potential for hydropower to provide 65% of the region’s power. The study identified more than 145,000 MW of hydropower potential across the Basin, less than 3% of which has been developed.

The outcome was a regional power development strategy – endorsed by the NBI member countries – which made recommendations on how investments across the Basin should be sequenced from a regional perspective, allowing rational prioritization of project preparations. It also developed the model for a ‘transmission backbone’ that would connect the Nile Basin country grids as part of a long-term interconnection strategy.

Importantly, the CBWS showed that by developing hydropower regionally, rather than nationally, NBI countries could save billions of dollars.

Strategic/Sectoral Social and Environmental Assessment (SSEA)

Responding to power poverty in the equatorial lakes countries, the 2007 SSEA of power development options for the NELSAP region offered sectoral guidance to decision making on power in the region. Its objective was to provide an analysis of the social and environmental issues surrounding possible power development options in the NEL region, and to rank the various options based on a combination of cost, social, environmental, and risk considerations. It has been highly influential in the project identification process, and has helped to integrate environmental and social considerations into the

project identification and preparation processes.

The SSEA recommendations included building additional 370 MW of capacity needed to meet expected loads in the region by 2020, committing to the construction of Rusumo Falls hydroelectric plant, investing in backbone transmission interconnectors within the region, and reviewing of the existing legal and regulatory frameworks in each country to facilitate regional electricity trade. The Nyabarongo power plant (28 MW) was commissioned in 2013 by the Government of Rwanda, while the Rusumo Falls (80 MW) project is now under implementation and the Ruzizi III dam on the border of Rwanda and DRC has reached financial closure.

The Eastern Nile Power Trade Program Study (ENPTPS)

The objective of this study was to promote regional power trade between Egypt, Ethiopia, and Sudan through the creation of an enabling environment, and coordinated regional investment planning of power generation and transmission interconnection projects. The study was divided into two phases:

Phase 1: A cooperative regional assessment (CRA) of power trade opportunities between Ethiopia, Egypt, and Sudan.

Phase 2: A feasibility study of the power interconnection between Egypt, Ethiopia, and Sudan to export power from Ethiopia to Egypt (2,000 MW) and Sudan (1,200 MW).

The study demonstrated the potential costs and benefits to each country in the eastern Nile region, building confidence at the national level in the value of working with other countries cooperatively, thereby stimulating investment project commitments.

The NBI's power trade preparatory and knowledge development work has significantly helped inform the preparation of investment projects in the region. These projects will increase energy access and security across the region, and will strengthen the case for strong mutual benefits from cooperative investments. For example, the Ethiopia–Sudan Transmission Interconnection project was implemented following the CRA and the feasibility work done as part of the ENPTPS.

Building on these studies, and with a focus on achieving transboundary cooperation, the NBI has been instrumental in preparing the following projects for investment and implementation by the countries:

Ethiopia–Sudan interconnection project

This NBI-initiated project was assumed by the Ethiopia Power Company and the National Electricity Company of Sudan. It was commissioned in 2013, erecting 296 km of line. The project provides Sudan with 100 MW of energy per hour, and is creating approximately US$8 million in revenues for the Government of Ethiopia. As a result, it is estimated that 1.4 million

> **"coordinated the development of regional power markets"**

households in rural eastern Sudan, where connection to the national grid would have been difficult, are now benefiting from better access to electricity.

Interconnection of the electric grids of NEL countries

This project in the NEL region (Burundi, DRC, Kenya, Rwanda, and Uganda) was identified by the SSEA and is underway. The region is characterized by isolated power networks, where demand exceeds existing supply, and many people do not have electricity. This NELSAP-prepared project is about improving access to electricity across the region by increasing the cross-border sharing of energy. Working with the East African Power Pool (EAPP), it is creating a power-exchange market among the countries. A total of over US$530 million has already been invested to support improved transmission of electricity (995 MW in total) to benefit the five equatorial lakes countries. Through four interconnections, it will cover over 1,000 km, transmitted via 220 kV and 400kV lines.

- Kenya–Uganda, 254 km
- Uganda–Rwanda, 172 km
- Rwanda–Burundi, 143 km
- Burundi–DRC-Rwanda, 545 km

Each of these is implemented by national coordination units, and coordinated and harmonized with support from NELSAP.

Backbone Zambia-Tanzania –Kenya project

Through several components, this project will link power transmission between north Tanzania, Kenya, Uganda, and Zambia, with a 400 kV backbone 352 km long. It will connect the EAPP countries to the Southern Africa Power Pool (SAPP), enabling power sharing not just between individual countries, but across the region. This will mean that an energy surplus in any one country could be made available to any connected country. Preparatory studies have been carried out for the following 400 kV interconnections:

- The Kenya–Tanzania interconnection project. This will allow cross-border exchange of power via a 260 km transmission line, also connecting more widely across the region by linking to the NEL regional interconnection project above.
- The Iringa–Mbeya transmission line (292 km) in Tanzania. This will further extend the Kenya-Tanzania line.
- The Tanzania (Mbeya)–Zambia (Kabwe) transmission line (1,000 km). This will complete the Kenya–Tanzania–Zambia connection, making the significant link between the EAPP and the SAPP.

Rusumo Falls hydroelectric project

Rusumo will generate new power in a region of significant power poverty, and add approximately 370 km of transmission infrastructure (strengthening the existing interconnection system in Burundi and Rwanda, and linking it with Tanzania). Over 1.24 million people are expected to benefit from increased availability of electricity across the three countries, which are implementing the project collaboratively with technical support from NELSAP.

The NBI has also carried out in-depth studies in relation to the following interconnection projects:

- Uganda–DRC transmission line study. Preparing to build a high-voltage transmission line in north-eastern DRC, to complete the NEL regional power grid. Once implemented, about 938,000 inhabitants in or near the three towns of Beni (100,000), Bunia (366,000), and Butembo (218,000) will directly benefit from the new

> **“project preparation fully considers social and environmental issues”**

power supply; 154,000 people will benefit from rural electrification. The study is complete, and mobilization of finances for full preparation is underway.

- The NCORE Project. Under this project, options are being assessed to integrate South Sudan into the regional grid through the Hydropower Expansion and Regional Integration Plan. The project is looking at power generation and connection options, with the intention to help South Sudan in decision making about power investments, and to plan its future cooperation with the region on power.

In addition, several power projects identified through cooperative, regional processes facilitated by the NBI have been taken forward, prepared, and resourced at the national level by individual countries. Just a few examples include: Bujagali (250 MW), Isimba (175 MW), and Karuma (700 MW). These offer the region highly significant levels of generation capacity, well above and beyond the projects prepared by the SAPs.

The Ethiopia–Sudan Interconnection

The Ethiopia–Sudan Interconnection, an NBI-initiated project which was assumed by the Ethiopia Power Company and the National Electricity Company of Sudan, was completed in 2013. The project provides Sudan with 100 MW of energy per hour, and is creating approximately US$8 million in revenues for the Government of Ethiopia. As a result, it is estimated that 1.4 million households are now benefiting from access to cheaper energy. Sudan benefits from lower tariffs (US$0.050 per kilowatt-hour for imported power, compared to US$0.096 per kilowatt-hour from energy generated domestically). The project was implemented through a project coordination unit, which worked closely with ENTRO and relevant government departments and utility companies in Ethiopia and Sudan.

This project has been so successful that the Government of Ethiopia plans to replicate it and export more power to neighboring countries. Earning revenue from power exports is crucial as it will help governments to invest in infrastructure.

"The Government has a plan of rural electrification of 1 billion Birr and these foreign exchange earnings will help with this." Tesfaye Batu, Ethiopia Power Company

Key outcomes from power generation and transmission projects

By 2020, NBI-facilitated transboundary projects are expected to result in significantly better access to electricity with over 8,500 MW of additional transmission capacity through 3,000 km of interconnection lines, and at least 167.5 MW of new generation capacity. In addition, countries have advanced many other regionally significant projects identified by the NBI's cooperative processes which (once implemented) will add thousands of MW of capacity to grids across the region. The NBI-prepared projects alone promise to benefit 22 million people through more reliable power supply and lower cost power generation.

Rusumo Falls Hydroelectric Project

"Electricity from the Rusumo Falls project will have a major impact on the economies of Rwanda, Burundi, and Tanzania, with more reliable and cheaper energy for thousands more people." William Katete, Regional Rusumo Falls Hydro-Electric Project

Economic development in Burundi, Rwanda, and Tanzania is constrained by very low rates of access to electricity – 4%, 13%, and 15% respectively. Sited on the border of these countries, the Rusumo Falls hydroelectric project is a flagship example of transboundary cooperation for economic development.

Conceived over 30 years ago, the project was then unable to get off the ground. This was due to a number of barriers, such as funding challenges, political instability, conflicts between countries, lack of security for investors, and the lack of a mechanism to coordinate a transboundary project of this scale.

The NBI has played a significant role in moving the Rusumo project forward, and it is now the biggest investment being implemented under the SAPs. By investing in power options studies and collaborative feasibility studies, the NBI has demonstrated how the risks related to some of the barriers can be mitigated.

This has contributed to a level of understanding and trust among the three countries that has enabled them to reconsider the viability of the Rusumo concept. In 2005, they committed to work together to develop the power plant and sustainably manage the water catchments that supply it.

Eight years later, a US$470 million loan was secured from investors including the World Bank, AfDB, and European bilateral development partners. Construction of the power plant started in early 2015.

The impacts expected are tremendous and life-changing for many people. In the long term, the Rusumo Falls project will generate and transmit 80MW of electricity a year, bringing electricity to 520,000 Burundians, 467,000 Rwandese, and 159,000 Tanzanians. This reliable and cheaper electricity will be transformative for national and local economies currently in a position of substantial power poverty.

The social and environmental policy guidance of the NBI has also helped minimize negative impacts at the local scale. For example, the countries cooperatively agreed to use a 'run-of-the-river' design instead of a large reservoir, so that fewer local people and less habitat area would be affected by the development. Meaningful participation of local people in the planning process meant that they understood and accepted what the implementation would mean in practice, recognizing the bigger picture and wider benefits.

4.5 Disaster and flood resilience

The eastern Nile region in particular is characterized by highly variable flows, making it prone to severe floods and droughts. Floods cause immense damage in terms of death and loss of livelihoods, as well as increased food insecurity through loss and damage of crops and livestock. For example, the 2006 floods in Ethiopia resulted in 700 deaths and displaced 242,000 people. It is estimated that the annual average damage is over US$25 million from floods in the rural areas of the Blue Nile, where poverty rates are very high.

Cooperation among the eastern Nile countries of Sudan, Ethiopia, and Egypt has helped to address this challenge effectively through a large-scale transboundary project. The Flood Preparedness and Early Warning (FPEW) project was designed by the eastern Nile SAP to respond to recurrent floods, helping to reduce deaths and destruction. The project has tackled the problem in several ways:

- **Coordination**. ENTRO has established the Regional Flood Coordination Unit, which has enhanced regional coordination. In addition, national flood coordination units have been created in each of the eastern Nile countries. These units share information and data, which has contributed to a decline in devastation from flooding. The units have also supported the preparation of community flood preparedness action plans and flood early-warning surveys. Flood-risk mapping studies have also been undertaken in pilot areas in Ethiopia and Sudan.
- **Capacity**. The project aimed to increase national capacity in flood risk management, including mitigation, forecasting, early warning systems, emergency preparedness, and response. The Regional Flood Coordination Unit has strengthened Egypt and Sudan's national flood forecasting centers, and resulted in the creation of a flood forecasting center in Ethiopia. It has also assisted with the development of forecasting models in Ethiopia and Sudan, and supported the upgrading of the Egyptian system. In addition, it has developed a Flood Embankment Design, Operation and Maintenance Manual, and trained engineers in its use in Ethiopia and Sudan, and facilitated exchange visits to India and Bangladesh.
- **Communication**. Several forums have been held. For example, ENTRO held a Regional Flood Forum in Sudan in 2013 to assess and analyze the causes of the 2013 flooding that was particularly severe in Sudan. The forum brought together nearly 70 participants from across governments, academia,

and civil society in the four countries. It discussed possible improvements to flood forecasting capabilities by integrating indigenous knowledge, making information more timely, introducing zoning, improving coordination, and exchanging data. As an outcome, the forum made recommendations about additional flood preparedness activities to manage future risks.

The FPEW project has been successful in its response to the frequent flooding of the Nile.

- The information it generates is sent to ministries of water affairs (and universities collaborating with ENTRO) who then use it to send early warning messages to at risk areas and to relief and disaster management agencies. Early flood warnings currently reach about 150,000 community members in Ethiopia and 200,000 in Sudan, through mass media (print and radio).
- The Nile governments work closely with their regional organizations, relief agencies, and local communities, enhancing ownership of the system and process. This has transformed flood response across the region.
- Local communities enjoy a greater sense of ownership and responsibility.

ENTRO's flood forecasting uses rainfall and hydrological data from the DSS, and is continually being improved. However, its daily forecasting bulletins and capacity building activities have already resulted in tangible benefits, with a decrease in the level of flood-related devastation, despite continued flooding. These benefits help to make the case for the continued scaling-up of FPEW activities. For example, the Ethiopian Ministry of Water and Irrigation is replicating the model for use in other Ethiopian river basins.

The results of this project have been impressive:

- In Ethiopia and Sudan, around 350,000 people benefit directly and 1.7 million indirectly in 305 flood-prone communities in major urban and rural centers.
- In the Awash valley (in Ethiopia and Sudan) replication of FPEW is benefiting about 4 million people at risk from flooding.

Other projects have also included components of disaster and flood resilience. For example, the Tana-Beles Watershed Management Project aims to protect 400,000 people from flooding and/or crop losses, and to increase the flood warning time.

NELSAP's projects have a role to play in building resilience too. Watershed management projects being prepared build in components of agricultural protection and flood risk reduction through their land-restoration and forest-protection activities. Water resource development as part of catchment management can address flooding issues.

For example, in the Lake Kyoga basin in Uganda there is a high flood risk in areas of high population densities, with heavily planted hillsides which exacerbate the threat of landslides. In other areas, drought is frequent. These problems have severe impacts on livelihoods and poverty. NELSAP devised a strategy to help reduce the impacts through structural interventions, for example, building water storage and hillside protection infrastructure, and catchment management planning. The work is ongoing through Uganda's water management and development project.

Key outcomes from disaster and flood resilience projects

At least 350,000 people receive early warning messages that enable a reduction in flood-related devastation for over 2 million vulnerable people. And replication of ENTRO's flood forecasting work by national governments is taking those benefits to millions more across the region, improving disaster and flood resilience.

Chapter sources and references
Interviews with LTS International (July–October 2014) Addis Ababa, Dar-es-Salaam, Entebbe, Kampala, Khartoum, Kigali, Nairobi.
NELSAP (2013) NELSAP Investments' Results and Beneficiaries Table (drawing on data from completed NELSAP projects/studies). NELSAP: Kigali, Rwanda.
Nile Basin Initiative (2012) State of the River Nile Basin. NBI: Entebbe, Uganda.
Nile Basin Initiative (http://nileis.nilebasin.org) Nile Information System. NBI: Entebbe, Uganda.
Nile Basin Initiative (mixed dates) A wide range of feasibility reports, and project/study reports. NBI: Entebbe, Uganda projects/studies).
World Bank (2014) Africa–Nile Cooperation for Results: additional financing. World Bank: Washington D.C.
World Bank (2014) Nile Basin Trust Fund Annual Report 2014. World Bank: Washington D.C.
World Bank (internal reports) Project Identification/Appraisal/Completion Documents. World Bank: Washington D.C.

Chapter 5: ENSURING EQUITY, SUSTAINABILITY, & TRANSBOUNDARY INTERESTS IN INVESTMENT PROJECTS

"Experiences gained in water resource management within the NBI are replicated in other water basins in Tanzania. NBI is providing evidence-based experiences in sustainable water management." Tumaini Mwamyalla, NBI Desk Officer, Tanzania

The two-pronged approach of the Shared Vision Program (SVP) and Subsidiary Action Programs (SAPs) has produced real results. With a shared institution in place, extensive new knowledge about potential project opportunities and benefits, and a much greater level of trust and cooperation among Nile countries, a suite of new investment projects is emerging that will drive development forward in the region. But what makes these projects notable? What makes them better than projects that might have emerged without the cooperative approach fostered through the NBI?

Reflecting the NBI vision, a focus on three overarching values makes NBI-facilitated projects unique:

Transboundary perspective

The transboundary perspective now adopted by Nile countries is promoting regional development benefits while maintaining national ownership.

Commitment to equity

Equitable sharing of benefits, risks, and costs is helping to ensure that, in the implementation of regional projects, the involved Nile countries share the benefit and none of them carry an unfair burden.

Focus on sustainability

A focus on long-term sustainability means that both investors and local communities are committed to the long-term viability of Nile Basin development.

This section looks at how these values have been achieved, and what they add to the projects of regional significance facilitated by the NBI.

5.1 Building a transboundary perspective

NBI-facilitated projects are more than just projects jointly prepared and implemented by multiple Nile countries. They are projects that take a completely regional approach, considering the project implications for neighboring countries.

Some NBI-facilitated projects are implemented in a single country, but with transboundary objectives. For example, the Tana-Beles project operates only in Ethiopia, but was specifically designed to deliver downstream benefits to Sudan.

The NBI has supported identification of projects through regional processes, many of which are now being implemented nationally – but with clear regional benefits, or at least causing 'no harm' to other countries in the region. For example, the Lake Kyoga multipurpose project, now being implemented by the Government of Uganda, has a strong catchment management approach that will, in the long term, reduce negative impacts on hydropower and navigation channels of sedimentation downstream in South Sudan.

> **"projects take a completely regional approach"**

> **“joint project preparation processes consider impacts outside the project area – which can be positive or negative”**

The strength is that the projects bring together both regional and national objectives, through shared decision making and agreement. This means that prioritization and sequencing of projects becomes regionalized, and linked to needs across borders. For example, the LEAF project has a focus on fisheries in the lakes, but also emphasizes upstream environment and livelihoods in other countries. The joint project preparation and notification processes offer ways to consider impacts outside the project area – which can be positive as well as negative (for example, enhanced agricultural trade and productivity benefits arising through watershed management). All of this influences decision making about, support for, and investment in the projects.

So what has it taken to achieve this shift in perspective?

Knowledge for decision making

Through the results of extensive regional and sectoral assessments and development of knowledge management tools, ENTRO and NELSAP have helped countries to:

- Understand and prioritize development options from a regional perspective.
- Understand potential costs and benefits, and how they can be shared.
- Consider options for how projects can be implemented most effectively.
- Have the basis for negotiated agreements on shared projects.

Examples of these assessments and tools include the Strategic Social and Environmental Assessment (SSEA) of power development options in the NEL region, the multisectoral investment opportunity analysis (MSIOA) framework, and the decision support system (DSS). These and other models are in use in national planning and investment project preparations. This work to improve knowledge bases, complemented by the efforts on cooperation and capacity, have prompted national governments, working closely with ENTRO and NELSAP, to take ownership of the project implementation, as demonstrated in the Rusumo Falls and Ethiopia–Sudan Interconnection projects among others.

Understanding shared benefits

Feasibility studies undertaken through the SAPs to prepare projects have helped national governments understand the value of a transboundary approach, and sealed their commitment to implementing these investment projects. For example, the Flood Preparedness and Early Warning (FPEW) in the eastern Nile resulted in all the countries cooperating and sharing weather data and early warning systems. The sharing of this information has resulted in Ethiopia, on several occasions, altering the operation of its upstream infrastructure to alleviate the effects of flooding on its downstream neighbors. And joint work on the design for the Rusumo Falls hydroelectric project resulted in the decision to use a ‘run-of-the-river’ approach to maximize shared benefits and reduce negative impacts of what would otherwise have been a large reservoir.

Keeping national ownership

For many reasons, declarations of national interest in a project may not always translate to delivery or uptake of policy recommendations. However, on the whole, national government staff value the fact that the NBI offers expertise and a steer on developing projects, but always ensures that they remain the country's projects, and not the NBI's. Many can confidently link NBI inputs (training, feasibility studies, support to implementation) to the success of projects on watershed management, flood preparation, power, and irrigation. There is a sense of trust in the NBI institutions, that NELSAP and ENTRO have the technical 'know-how', and they can deliver good, implementable project designs.

"The NBI has supported several of our government offices working on this kind of program". Semunesh Golla, Directorate Director, Hydrology and Water Quality, Ministry of Water Engineering and Irrigation, Ethiopia

Today, numerous NBI-identified projects are operating, or are about to come into operation, handed over from the NBI to be implemented by national governments. For example, the Government of Tanzania has committed to implementing several NBI-designed projects, including three small-scale irrigation projects. The NBI provided a facilitative role in identification and early preparation of these projects, while the Government of Tanzania is keen to implement them because of the clear benefits to be had from increased food security, reliable water supply, and community health improvements.

5.2 Making projects equitable

Equitability of NBI-facilitated projects is key to the NBI shared vision. To ensure cooperation and to secure regional economic development efficiently in the long term, the benefits and costs of projects must be shared fairly. This means that the risks and costs to other countries cannot be ignored during the development and implementation of Nile projects. For example, projects that address management and use of natural resources might bring benefits (for example, less sedimentation) downstream at a cost (for example, different land-use practices) to upstream areas. Project design and implementation deliberately and clearly ensure division of effort among the participating countries, and between regional and national institutions. For example, in the design of interconnections, NELSAP focuses on the design of regional investment options, while national utility companies focus on the practicalities of generation and trade at the national level, and the East Africa power pool will facilitate exchange of power between countries.

The NBI uses a number of approaches to ensure equity.

> **"Equitability is key to the NBI shared vision"**

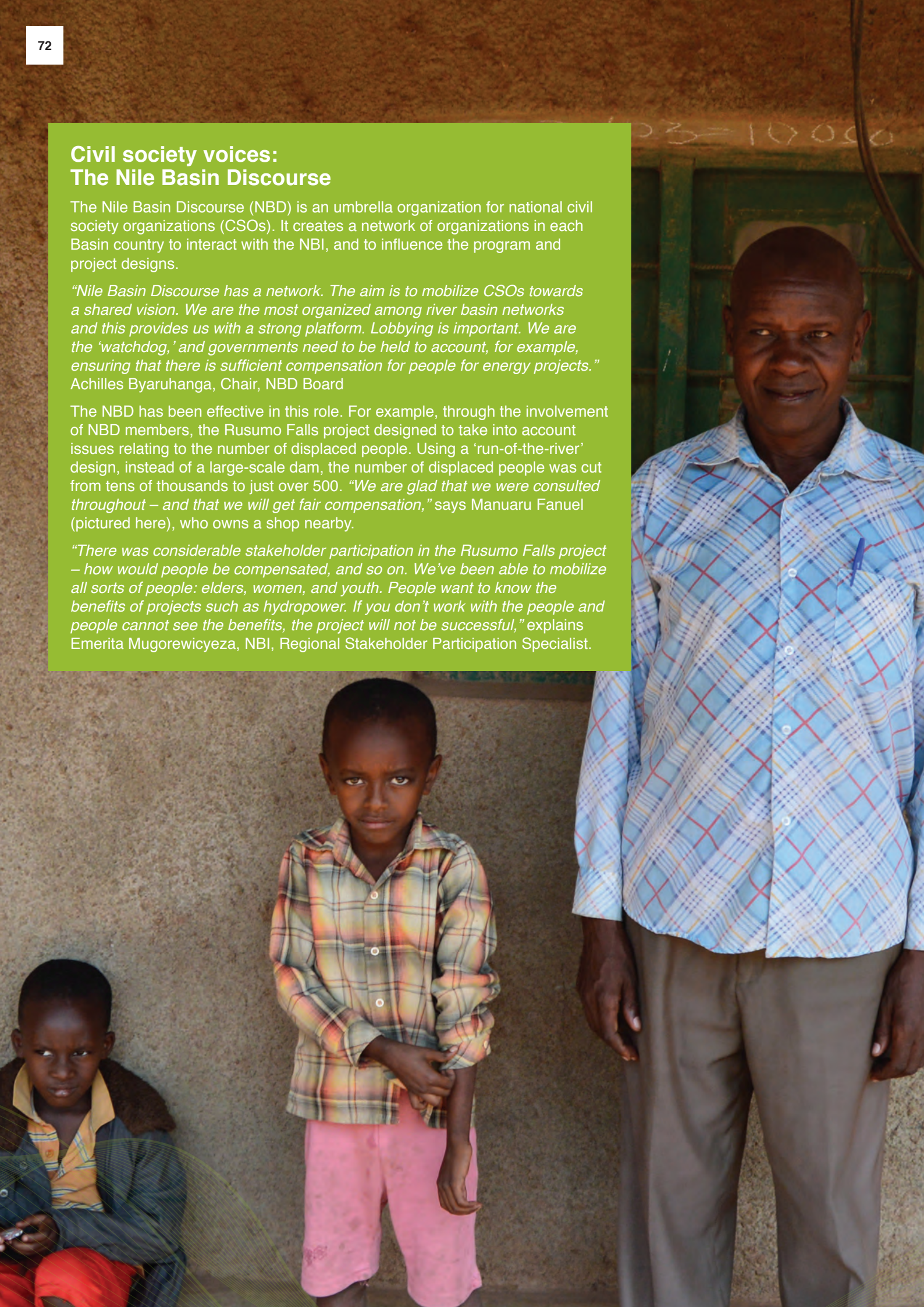
Civil society voices: The Nile Basin Discourse

The Nile Basin Discourse (NBD) is an umbrella organization for national civil society organizations (CSOs). It creates a network of organizations in each Basin country to interact with the NBI, and to influence the program and project designs.

"Nile Basin Discourse has a network. The aim is to mobilize CSOs towards a shared vision. We are the most organized among river basin networks and this provides us with a strong platform. Lobbying is important. We are the 'watchdog,' and governments need to be held to account, for example, ensuring that there is sufficient compensation for people for energy projects." Achilles Byaruhanga, Chair, NBD Board

The NBD has been effective in this role. For example, through the involvement of NBD members, the Rusumo Falls project designed to take into account issues relating to the number of displaced people. Using a 'run-of-the-river' design, instead of a large-scale dam, the number of displaced people was cut from tens of thousands to just over 500. *"We are glad that we were consulted throughout – and that we will get fair compensation,"* says Manuaru Fanuel (pictured here), who owns a shop nearby.

"There was considerable stakeholder participation in the Rusumo Falls project – how would people be compensated, and so on. We've been able to mobilize all sorts of people: elders, women, and youth. People want to know the benefits of projects such as hydropower. If you don't work with the people and people cannot see the benefits, the project will not be successful," explains Emerita Mugorewicyeza, NBI, Regional Stakeholder Participation Specialist.



Participation

Bringing people together to share and discuss their views builds trust, ownership, and a common understanding among stakeholders. It also enhances effectiveness, diminishes conflicts, and is essential for sustaining cooperative transboundary water management. The NBI stakeholder participation model, developed under the SVP's CBSI project, has been key to guiding stakeholder participation actions. Participation is structured directly into the NBI on two levels:

1. At the regional programmatic level, through the inclusion of a wide range of stakeholder groups – from policy and decision makers, to small-business men and women, to fishermen and farmers, to religious and youth groups. A number of different participation platforms are used, including Nile-COM and Nile-TAC for bringing government stakeholders together, Cooperative Regional Assessments (CRAs) for bringing sectoral technicians together, and the Nile Basin Discourse (NBD) for bringing wider civil society together.
2. At the project level, where relevant stakeholders participate in design and preparation activities through regular stakeholder consultations and public information processes.

Participation to generate knowledge. The NBI widely uses CRAs, which are regional assessments of sectors (for example, power or agriculture) or themes (for example, watershed management or capacity building) that are cooperative. They involve a process which brings riparian states together (potentially including government, the private sector, and civil society) to reach common understanding, and build cooperation. CRAs are tools for identifying potential regional investment programs, analyzing the distribution of costs and benefits associated with cooperative regional programs, and identifying benefit-sharing and institutional mechanisms for realizing these benefits. Several CRAs have been undertaken at ENTRO including:

1. The Eastern Nile Irrigation and Drainage Studies Cooperative Regional Assessment Guidelines for Identification and Assessment of Irrigation & Drainage Projects, 2010.
2. Eastern Nile Watershed Management Program, Cooperative Regional Assessment for Watershed Management, 2007.

Building in the livelihood approach

It is important that development projects do not proceed in a way that disadvantages the poorest in society. Building in livelihood approaches has therefore been key in NBI projects,

“equal voice and opportunity for women”

particularly in the watershed projects that require a change in upstream land-use behavior. A livelihoods approach takes a strong focus on ensuring the ability of the poorest and most vulnerable in society to maintain and improve their livelihoods.

For example, in the Tana-Beles watershed project in Ethiopia, ENTRO has gone beyond the traditional watershed approach of water and soil conservation to improve productivity. It has also applied a livelihood approach, which has significantly increased its appeal to the communities, and consequently its success in securing changed land-use behavior. In Tana-Beles, income-generating opportunities, such as livestock rearing or beekeeping, are supported to complement the watershed protection and management activities, which also improve local incomes. The project is so successful that the local Amhara district government is replicating the model elsewhere in the province.

Yale Lakew is a landless farmer, but he has managed to get employment on the Tana-Beles project, building stone walls for the gullies. Building stone walls is an added income-generating activity from the project, and therefore part of the livelihood approach. For Mr. Lakew, it has certainly brought in additional income, which he can spend on his children’s schooling.

“It is clear that watershed management programs should be people-centered – and be able to enhance livelihood options for the community, who are the real managers of the land. This ensures sustainability of the project. Community participation has been key to its success.” Mitiku Kebede, Tana-Beles Project Coordinator, Ethiopia

Another example is the Lakes Edward and Albert Fisheries (LEAF) pilot project. One of the main results of the pilot phase was the promotion of livelihood-based community development activities for fishing communities. The activities included sensitizing fishing communities, implementing community-based pilot micro-projects (through micro-grants to local governments), and formulating priority investment community development activities, which could be scaled up through the Integrated Lakes Management and Investment Plan. CSOs in Uganda and DRC supported the work to identify the most pressing development concerns, and to offer unique and valuable insights on the strategies used.

Phase II, now starting, will scale up the pilot phase actions, and place communities at the center of fisheries and ecosystem management. This will include the establishment of protected fishing zones, as a tool for rehabilitation of depleted fisheries and protection of the ecosystems upon which they depend, expansion of community-based co-management to new pilot sites, and strengthening the capacities of the lake-wide fishing communities to co-manage shared resources and infrastructure.

Mainstreaming gender

It is widely recognized that women's needs should be taken into account, and that women should be given an equal voice and equal opportunities (at decision making, planning, and implementation phases) to avoid their exclusion from the benefits of development projects.

"NBI studies provided field evidence that women play a central role in the provision, management, and safeguarding of water resources, hence the need to ensure gender equity in all water basin programs. The main result is that consideration of gender issues is now mandatory in all water programs." Eng. Mbogo Futakamba, Acting Permanent Secretary, Ministry of Water, Tanzania

The NBI has committed to mainstreaming gender at two levels. First, at the organizational level, the NBI adopts and implements gender-aware and sensitive internal policies, procedures, and practices in relation to its own employees. Second, there is integration of gender issues in the design, implementation, and monitoring of NBI programs and projects so that their respective impacts are more gender-sensitive.

This is implemented through:

- The 2012 Gender Mainstreaming Policy and Strategy to guide gender mainstreaming in all its programs of work.
- Training and capacity building of staff across the NBI centers on mainstreaming gender.
- Gender mainstreaming mechanisms such as the Gender Mainstreaming Working Group, the formulation and implementation of Gender Equality Action Plans, and appointment of a gender focal point in the NBI.
- Building gender action plans into all investment project preparation processes through the SAPs.

Guiding gender mainstreaming in NELSAP NELSAP projects are designed, prepared, and implemented based on an IWRM approach. IWRM's principles recognize the role that women play in the provision, management, and safeguarding of water. To cement this, it has guidelines that guide project management units, development practitioners, partners, and consultants on how to incorporate a gender approach into project actions and components of each type of NELSAP project. The guidelines specifically: (i) provide a 'how to' guide on identifying and integrating gender equality objectives in the project cycle for each project type, (ii) provide a step-by-step guide to identifying gender concerns and designing gender-inclusive projects, (iii) guide users through key entry points in addressing gender in the various stages of the project cycle, and (iv) suggest design features, strategies, approaches, and components to respond to gender concerns within project components.

> **"impacts are gender-sensitive"**

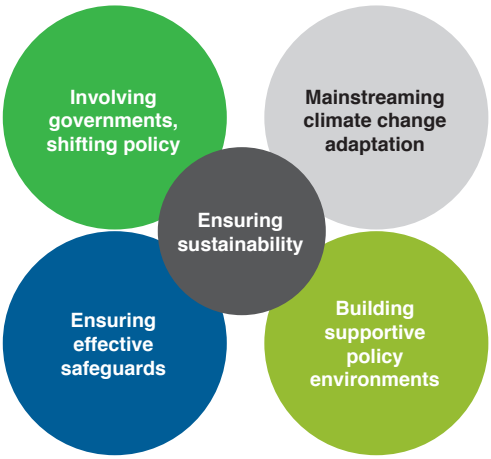
> **“projects grounded in technical and political realities”**

5.3 Ensuring sustainability

Sustainability is crucial to the long-term success of NBI-facilitated investment projects. This means that projects must be grounded in technical and political realities, they must consider environmental and social issues, and they must have the scope to deal with potential climate changes in the future.

Sustainability has been planned from the outset to establish how countries will assume responsibility for continued activities if the program succeeds, including collective responsibility for any continuation of regional-level activities. For instance, a Rusumo Power Company has been established to take over from NELSAP once the construction of the Rusumo Falls hydropower project is complete. A Lakes Edward and Albert Binational Authority will be formed during Phase II of LEAF, to take over operations from NELSAP, thus ensuring sustainability of the programs. Investment project planning also considers the changing roles of national and regional institutions over the different phases of program operations. This clear recognition of roles enhances uptake of program results upon completion.

For countries to take on financial responsibility for regional-level activities in the long term, there needs to be substantial political or economic interest. This has been a key consideration in the development of SAP programs. The projects aim to achieve economies of scale that would not be possible for countries operating individually, especially for countries with small economies and limited human resources.



Considering these factors, the NBI secures the sustainability that is attractive to investors, country partners, and local communities alike through interlinked channels.

Involving governments, shifting policy

All projects are prepared jointly with national governments, so that they are implemented as national projects with national commitments to support them in the long term.

“Participation of government and communities is crucial to how a project is identified and delivered,” notes Dr. Wubalem Fekade, Head of Social Development and Communication at ENTRO.

Therefore, work to strengthen national capacity is important for building sustainability. In addition to implementation of extensive capacity building at government level across the region, a national NBI desk officer role was established in each country. This role has a number of important functions:

- Enabling in-country coordination of all NBI-related activities, for more efficient implementation.

- Coordinating, monitoring, and facilitating liaisons between the country and the wider, regional NBI entities.
- Contributing to embedding NBI work into national processes and vice-versa.

Building supportive policy environments

A key achievement of the NBI was the agreement by Nile-COM in 2011 on a joint roadmap in the form of the NBSF. This provided a mechanism for expert support to help policy reviews and harmonization processes in member states. In particular, the roadmap helped to create consistency between transboundary policy provisions in national policies aimed at promoting national policy environments that would more naturally support transboundary water projects.

"Using the Nile Basin Sustainability Framework, most member countries have mapped out what they need to address in their water policies," explains Malte Grossman, GIZ.

The NBSF has helped the Nile countries to draft their water policies, and promote the consideration of transboundary dimensions in their approach to water resource management. This, in turn, supports the NBI's mandate to inform and support national policy developments towards transboundary cooperation. Member countries have been able to frame the changes needed in their water policies using the NBSF as a reference. For example, as noted in chapter three, most countries have new water policies, some now have transboundary policies, and the eastern Nile countries have 'transboundary units' in place in their water ministries.

About the Nile Basin Sustainability Framework

The NBSF was approved by Nile-COM in 2011, and lays down the NBI's approach to developing guiding principles for water resource management and development across the Nile countries. The NBSF is not a legal framework. Instead it seeks to build consensus. The NBSF – which is a suite of policies, strategies, and guidance documents – functions as a guide to national policy and planning process development, and is not a legally-binding treaty. It is intended that it will contribute to the gradual alignment of the Basin's body of (national) water policies to meet international good practice, and help to demonstrate to national governments and international financiers of water infrastructure that the NBI has a systematic approach for dealing with issues of sustainable development within the Basin.

The NBSF is therefore supporting the enabling environment for transboundary investment projects, and will promote integration of shared benefits, participation, and environmental concerns that ensure investment projects have long-term benefits.

Ensuring effective safeguards

The numerous policies, strategies, and guidance documents developed by the NBI, in particular by the SAPs (chapter two), were developed to ensure sustainability in investment projects. They offer safeguards so that the projects prepared have minimal negative social or environmental impacts.

> **"consistency between national policies to support transboundary water projects"**

> **building resilience to climatic shocks and stresses**

Mainstreaming climate change adaptation

Ninety percent of people who live in the Nile Basin depend on rain-fed agriculture for their livelihood, which is highly sensitive to a changing climate, with variability in rains, and increasing frequency and intensity of droughts and floods. With increased variability and unpredictability of rainfall, farmers cannot plan effectively, and are more likely to have water-stressed or failed crops, or run out of fodder for livestock.

The NBI offers significant support for building resilience to these climatic shocks and stresses across the region, both inherently through its portfolio of activities, and through targeted strategies. Understanding variability of weather and river flows is at the heart of the NBI's technical work and this directly supports resilience building.

For example, NBI studies have helped countries analyze strategic options for better coping with variability in river flows, and joint investment projects have a real role to play in climate adaptation. Planning and information tools such as the DSS, information sharing through the Nile-IS, and hydro-meteorological monitoring networks are practical applications that have increased land-use planning capacity. Improved data availability has helped to support weather forecasting better with information key to agricultural planning, and drought and flood preparedness. Integrated water resource management has proven to be an effective adaptation mechanism, and the many watershed projects now take into account soil degradation and erosion, as well as water flow.

Behind all of this work is the NBI's strategic direction on climate change, which has evolved quickly. ENTRO now has a climate change strategy, and an action plan for climate-proofing all its projects. NELSAP has developed criteria, tools, and guidelines for mainstreaming climate adaptation in all its investment planning and projects, and has built national capacities to use the tools and guidelines. And the NBI as a whole has climate change at the heart of its approach. As well as having a climate change strategy, climate change adaptation and mitigation is one of the four key strategic directions in the NBSF, which guides all of the NBI's work. NBI studies have enabled the preparation of best-practice guidelines (e.g. on efficient water use for agriculture and watershed management), which have been widely disseminated to users in the Nile region.

"NBI studies and workshops increased stakeholders' awareness on how climate change is going to negatively impact water resources due to deforestation and unwise land uses for agriculture and other related activities. The main change is that sustainable conservation of water catchment areas through multi-sector efforts is now a priority in the water sector development programs, which enhance harmonization of policies and inclusion of safeguards. Climate mitigation and adaptation aspects are now considered in all water development projects in Tanzania."
Eng. Mbogo Futakamba, Acting Permanent Secretary, Ministry of Water, Tanzania

The results are investment projects that can improve the region's adaptive capacity to climate change impacts. By preparing investments in water storage infrastructure, and in flood forecasting, projects offer ways to cope with future climate variability. Watershed management and irrigation projects are being used to ensure there is adequate water for farming and for hydropower when it is needed.

For example, the Kagera River Basin Management Project supports the installation and refurbishment of hydrology centers across the Kagera basin to improve reporting of hydrological data, and to better support weather forecasting with information for agricultural planning, and drought and flood preparedness. Meanwhile, the DSS helps countries in climate modeling to work out their own responses to climate change, and a landmark, strategic Basin-wide water resource monitoring network is under design. This will link up information to help prepare for, and respond to, weather events across the Basin. These are all examples of important measures for responding to the longer trends of climate change impacts.

5.4 Mobilizing investment

Governments also appreciate that the NBI helps to mobilize investments, making project preparation meaningful and giving countries a real opportunity (not just an idea or project design) to work together.

The SAPs prepare 'bankable' projects through feasibility studies, design, and investment documents, working closely with the countries involved. The projects are designed with the attraction of both public and private finance in mind.

NBI manuals guide investment finance mobilization. These include the NBI resource mobilization strategy (2012), the NELSAP resource mobilization framework (2011), and the NELSAP project finance manual (2014). Training in the use of the project finance manual has enhanced the understanding on project finance structuring for projects which are under preparation.

These investment documents are then presented to Nile-COM, which will discuss, and agree or reject, project proposals. The NBI can then promote the projects to financing agencies and help countries to access and negotiate with them. Accepted projects usually take two routes:

- They are made available, through Nile-COM, to the respective national ministries and planning authorities for inclusion in their public investment plans, to secure national financial commitments.
- The prepared and agreed projects are put to the NBI donor's forum (mainly through the NBTF) so that development partners can consider which potential projects fit their objectives and priorities for investment.

Arsene Mukubwa, Water Resources Engineer for NELSAP, notes: *"What is unique about NELSAP, when it comes to mobilizing funds, is it's easier through NELSAP. And technical expertise is high. Whatever NELSAP does, the government comes and takes the projects for implementation and scaling up."*

> **"mobilized investment gives countries real opportunity to work together"**

Chapter sources and references
Interviews with LTS International (July–October 2014) Addis Ababa, Dar-es-Salaam, Entebbe, Kampala, Khartoum, Kigali, Nairobi.
Nile Basin Initiative (mixed dates) A wide range of feasibility reports, and project/study reports.
World Bank (2014) Nile Basin Trust Fund Annual Report 2014. World Bank: Washington D.C.
World Bank (internal reports) Project Identification/Appraisal/Completion Documents. World Bank: Washington D.C.

Chapter 6: MAKING AN IMPACT

The program of Nile cooperation that was started by Nile-COM in 1999, and has been largely implemented by the NBI, set out to face significant development challenges. Extreme poverty is common across the Basin, and economic growth has been constrained despite the huge potential – studies have shown potential economic benefits of US$7 billion to US$11 billion from irrigation and hydropower alone.

The NBI has come a long way, and has achieved a series of, transformational changes towards changing this picture and taking advantage of the potential for growth and development. It has built effective institutions, inspired and motivated cooperation between diverse and sometimes conflicting countries, and brought them together to create the necessary conditions for ambitious investment projects.

The NBI's shared vision has economic growth as its driver. The NBI is working towards growth in everything it does: improving agricultural production through irrigation and land restoration, enhancing agricultural trade and employment, boosting local income-generating opportunities through watershed management activities, reducing the risks and costs of natural and climate-related disasters, and addressing energy constraints for local enterprise, social services, and wider energy security.

Importantly, the Nile cooperation program is now at a catalytic point. The investment projects emerging from this process are worth over US$6 billion, and are gearing up to bring significant, positive development impacts to the region.

6.1 Helping people face development challenges

Nile cooperation projects have successfully addressed, and will continue to address, the key developmental challenges to enhance regional economic growth.

Water security

Water is a fundamental issue. To sustain economic development, people need access to regular flows of clean water for everyday needs and agriculture. Watershed projects facilitated by the NBI are intended to address problems of water quality, storage, pollution, and siltation. Along with regional irrigation projects, they are important to agriculture and food production, supporting improvements to food security. Over 3 million people could have better access to clean water as a result of NBI-prepared projects. Over 7 million people could benefit from irrigation projects of transboundary significance. Once implemented, the projects could result in US$90 million per year in increased agricultural production and significant food security benefits.

Food security

The NBI-facilitated projects on irrigation, water storage, and watershed management could offer significant food security benefits. Watershed management projects ensure sustainable development, being designed to reduce soil degradation and improve soil quality, and thereby enhance food production. Sixteen watershed and water resource

> **“nearly 22 million people have a better chance of a food-secure future”**

> **more reliable power supply and lower cost power generation for 22 million people**

> **over 7 million people will benefit from irrigation**

> **over 2 million people protected from flood devastation**

management projects of regional significance are underway or in preparation. They cover watershed planning, land restoration, soil protection, and livelihood activities, as well as irrigation, water storage, and flood and early warning systems. These projects give millions of poor people a better chance of a food-secure future, with consequent opportunities for economic growth. In total, 17 million people in 10 countries could benefit from the NBI-facilitated watershed and water resource management management projects currently implemented or in the pipeline, once they are implemented.

Regional energy security

NBI studies have enabled Nile countries to see the advantages of joint power development (considering strategic, social, and environmental issues) and to maximize usage of their shared water resource. This has resulted in five major power projects now being implemented, and four more under development. In addition, regionally significant projects identified through NBI studies have been prepared and taken forward by countries themselves, increasing the impact significantly. New power generation facilities, especially in upstream countries, will bring significant power generation capacity to national grids across the region. The NBI has prepared projects that will deliver approximately 170 MW of this additional generation capacity, and the numerous regionally significant projects that are being prepared and implemented nationally promise to add thousands more megawatts of capacity in coming years.

Complementing this, NBI projects will create approximately 8,500 MW of additional transmission capacity, helping to ensure power can be moved around more effectively from where it is generated to where it is needed, and to link up regional power pools. These power projects are expected to bring people benefits both directly and indirectly through rural electrification projects resulting in trade benefits from improved transmission. 22 million people will benefit from more reliable power supply and lower cost power generation.

Improving resilience

Flood management and early warning systems are crucial for building resilience in a region that suffers from frequent flooding. The flood periods are times of tremendous hardship, often resulting in loss of lives and livestock, and the destruction of homes and property. Minimizing the impact of floods is crucial to avoid these shocks, particularly as they tend to hit the poorest hardest. Flood warnings are also important for food security as they help people to protect their livestock and crops.

More than 2 million people benefit from the Flood Preparedness and Early Warning (FPEW) project in the eastern Nile, and millions more will benefit from its expansion by the countries. Through flood forecasting, it has reduced both loss of lives, and the level of devastation of property, crops, and livestock.

Many NBI-facilitated projects are addressing the region's critical lack of water storage capacity, so that the Nile countries will be better able to cope

with droughts and floods in future, and to use the shared water resource more effectively.. Guidance for project preparation ensures that the resource that sustains people's livelihoods is not adversely affected, and that future climate change impacts are taken into account.

Increasing participation of the poorest

Participation of stakeholders is at the heart of Nile cooperation projects. Clear social and gender guidelines for all projects ensure that project design and implementation will build in participation, promote equity and local benefits, and minimize negative impacts of large-scale investment projects.

The creation of the Nile Basin Discourse (NBD) has been a major achievement, and has provided the opportunity for thousands of voices to be heard, including farmers, fishermen, women, youth, academics, NGOs, CSOs, and government. Many have been given the opportunity to form local committees, which was the case for example with the Rusumo Falls hydroelectric project on the Kagera river, and with the Tana-Beles watershed project in Ethiopia.

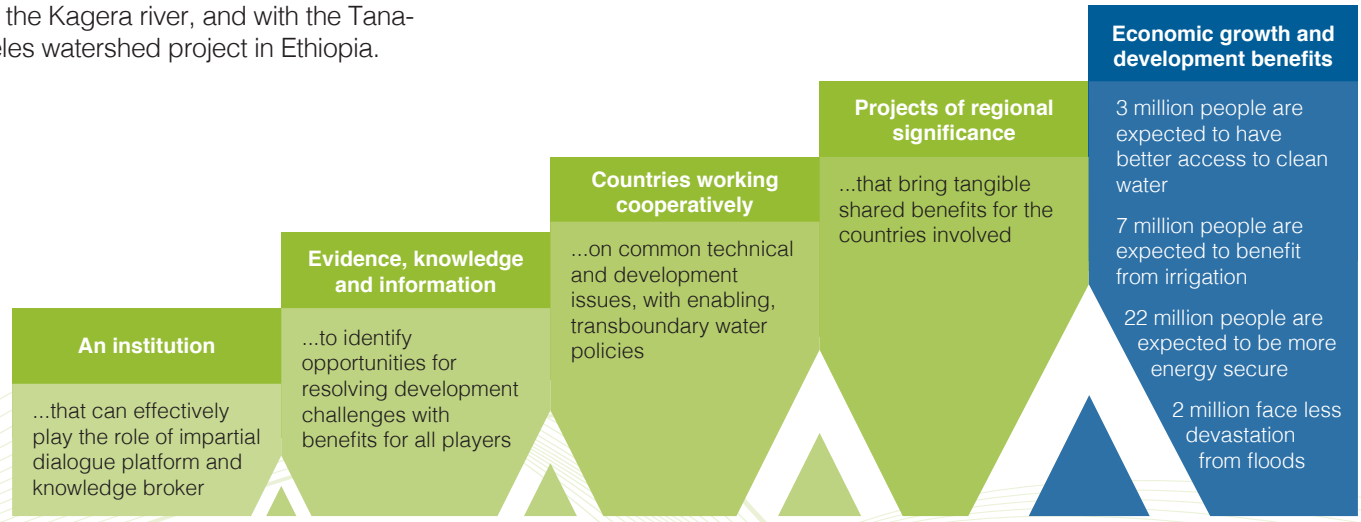
6.2 Ensuring one, common direction

By pooling funding, the development partners to the Nile Basin Trust Fund (NBTF) have been able to be strategic in their support of these transformational changes. Working through the NBTF means development partners have all worked towards a common goal, using a harmonized approach. The NBTF has been a platform through which other donors could coordinate support too. The NBI has been able to focus on key priorities for the region, without being pushed and pulled in different directions by different funders. It has also resulted in real efficiencies for the development partners, which is good news for their taxpayers.

NBI stakeholders appreciate the fact that the NBTF has stayed constant, patient, and supportive throughout the process of setting up the NBI and implementing its programs. The NBTF has supported the new institutions,

> "significant shared regional benefits"

The building blocks for better use of the Nile resource for economic growth and development in the region



“The NBI has played a critical role in achieving change, and has a valuable role to play in the future”

associated capacity building efforts, and investment projects, as well as encouraged the sustainable development of these projects through the adoption of environmental, gender, and dam-safety guidelines. It has provided a foundation for transboundary investment projects that can bring equitable and sustainable regional economic development.

6.3. Inspiring future cooperation and investment

Despite being relatively young compared to many international river basin organizations, the NBI has made many gains in fewer than 15 years, in the face of real challenges. It has added value in the way that it:

- Brings countries together for dialogue and cooperation, through Nile-COM and Nile-TAC, and through project identification processes.
- Ensures that projects using or affecting the water resource consider the whole Basin, bringing a transboundary and integrated water resource management approach to the heart of projects.
- Leverages investment for projects prepared. The NBTF resources of just over US$200 have helped the NBI mobilize commitments of over US$1.5 billion already.
- Offers a long-term future for projects by making them more attractive to investors, by considering equity and sustainability in their design, and by promoting more supportive national policy environments.

However, this journey is not yet at an end. The emerging successes of the investment projects are expected to demonstrate significant shared regional benefits that will inspire further cooperative projects, strengthening the economic impacts for the Basin. And with foundations in place, the NBI is now well-placed to help the countries of the Nile Basin to achieve this.

“This kind of cooperation takes time. We have to be patient and there will always be challenges. Potential benefits are enormous. There is still investment money in the pipeline – and the benefits from this cooperation are still to be realized. In 10 years’ time, the NBI will be seen as a real step forward. In 10 years, we will see a lot of small and medium projects – for example, multipurpose dams for energy and irrigation. And the key ingredient for success is sharing information and knowledge, building trust, and focusing on benefits of cooperation.” Maria Vink, Sida, Embassy of Sweden, Nairobi.

6.4 Benefits beyond water

The experience from the NBI suggests that cooperation focused on the management and development of this international river can also promote further cross-border cooperation.

The NBI believes that, in future, the direct economic value of cooperation could catalyze other economic development in the region, such as increased trade of agricultural products and livestock, based on economic links, and better communication and relationships. The NBI now has

knowledge, skills and partnerships to help tackle these wider development challenges.

"We're now trying to show countries that we can cooperate on more than just water. We're trying to include agriculture in this as well as trade," explains Peter Kanyi, Chief Economist and Head of Monitoring and Evaluation with NELSAP.

Through cooperation in transboundary water resource management, there are opportunities to think beyond water and address complex, common issues such as climate change. The NBI is not alone in the region in doing this. The Economic Community of the Great Lakes Countries (CEPGL) and the Lake Victoria Basin Commission (LVBC) are also demonstrating political and socioeconomic benefits beyond water. It is clear that, for many countries in the region, cooperation on the shared waters could mean economic growth and development. Amb. Stanislas Kamanzi, Minister of Natural Resources in Rwanda, notes: *"Rwanda's unique position as an upstream country in the Nile and Congo basins not only provides us opportunities to manage complex borderless issues like climate change, but also a launch pad to strengthen cooperation in other development areas."*

6.5 The way forward

What next for the Nile cooperation journey? Much has been achieved through the NBTF and NBI, and the NBI is well placed to build on the knowledge, skills and experience developed to address the challenges that remain.

The NBI has a sustainability plan, and an overarching strategic plan for 2012-2016. The strategic plan includes a two-track path:

Track 1 involves water resources management activities, and the identification and preparation of investment projects, mainly through grant financing.

Track 2 focuses on investment design and implementation.

The strategic plan was developed in collaboration with the Nile riparian countries, and supports their ambitious development agendas. The NBI strategy reflects some of the plans, activities, and collaborations beyond the water sector which are bringing opportunities for further cooperation between the countries.

Some of the priorities for the NBI going forward include:

- Maintaining institutional strength. The NBI plays a key role in project preparation that is valued by the countries. The framework for project preparation and implementation needs to be strengthened, as do regional relationships and partnerships, so that there is even great ownership of the NBI by the member countries, and a higher profile of the NBI's role. This will enhance scale-up of the impacts.

- Expanding knowledge bases. A higher level of river basin monitoring, river gauging stations, and water quality monitoring will help to track climate change, and to consider the related threats and opportunities.
- Enhancing regionalization. Strengthening regional partnerships, looking at partnerships beyond the river, and reducing fragmentation of markets and planning frameworks, could significantly improve the impact of achievements so far. A regional approach to infrastructure development (for energy, inland waterway transport, watershed management, and irrigation) would make these sectors more competitive and efficient, and with lower production costs, which is important for stimulating growth.
- Mobilizing resources for investment. There is a strong demand for infrastructure, and projects worth US$4.5 billion are already prepared but as yet unfinanced. The countries need to consider what they can invest in themselves, and what needs to be sought externally, including from the private sector, and improve the mobilization process. There is real opportunity in enhanced cooperation between the countries on this, much as post-war Europe came together on the coal and steel industries, providing the impetus for the emergence of the EU.
- Improving political commitment. The NBI needs to secure high-level political commitment, beyond the water sector, from all member governments across the Basin. Strategic communication regarding the economic growth opportunities of investments on the Nile, as well as maintaining political neutrality, are key to getting everyone on board, and ensuring regional peace and security.

The NBTF, which has been the main source of funding for the NBI, closed at the end of 2014. Recognizing the role that the NBI can play in their development, the countries have committed to covering the core costs of the NBI by 2017. The World Bank remains a committed partner to riparian countries seeking cooperative development of river basins, and the Cooperation in International Waters in Africa (CIWA) Program is currently supporting the preparation of new and more transformative Nile investments.

The NBI is well-placed to support the regional development agenda, and its technical advice and support to countries is clearly valued. Some observers have noted that the NBI also faces constraints in its mandate, which mean that countries are not obliged to act in accordance with its work. A great deal of development still occurs outside of the NBI. Nevertheless, while the countries work at the political level

Cooperation in International Waters in Africa

CIWA was established in 2011. It supports riparian countries across sub-Saharan Africa with sustainable development and cooperative management, through improving the quality and accessibility of information, strengthening institutions, and providing support for preparing investments with regional benefits. It seeks to build on the successes of, and lessons from, the joint partner engagement around the NBTF.

CIWA offers strong technical expertise in international waters, as well as continuing to ensure safeguards are in place with regard to investment projects, which it proposes to place at the center of its ethos. And by supporting communications and knowledge dissemination, CIWA believes it important to promote the engagement of civil society in consensus building for regional cooperation on transboundary waters.

towards a legally-binding agreement and institution, the NBI remains flexible enough to keep technical progress moving, and to build the evidence base to inform the political discussions.

6.6. The new scenery for the Nile Basin

From a picture 15 years ago of limited interaction and lack of cooperation between many of the Nile countries, we now see regular dialogue and discussion, focused around projects with shared benefits emerging. With consensus around new investment projects and funding, the scene is set for transformational change in the scale of those benefits, and for economic development for the Nile Basin countries.

The NBI has played a critical role in making this happen. It has become has become an established institution. Governments rely on it for information, knowledge, and capacity in relation to water, and for support on transboundary development projects. Investors can count on it to help ensure that projects are equitable and sustainable. It has much to offer the shared vision of a better future for all countries of the Nile Basin.

Chapter sources and references

Interviews with LTS International (July-October 2014) Addis Ababa, Dar-es-Salaam, Entebbe, Kampala, Khartoum, Kigali, Nairobi.
Nile Basin Initiative (2011) Strategic Plan 2012-2016. NBI: Entebbe, Uganda
Sadoff, C., Greiber, T., Smith, M. and Bergkamp, G. (eds) (2008) Share – Managing water across boundaries. IUCN: Gland, Switzerland
World Bank (2014) Nile Basin Trust Fund Annual Report 2014. World Bank: Washington D.C.

CIWA is a multi-donor trust fund established in 2011 and represents a partnership between the World Bank and the governments of Denmark, Norway, Sweden, the Netherlands, and the United Kingdom.

NBI Member States

Burundi
DR Congo
Egypt
Ethiopia
Kenya
Rwanda
South Sudan
Sudan
Tanzania
Uganda

Nile Basin Trust Fund Partners

Administered by: WORLD BANK GROUP

Co-financed by:

For more information

Nile Basin Initiative Secretariat
P.O. Box 192 Entebbe, Uganda

Tel. +256 414 321 424
Email nbisec@nilebasin.org
Web www.nilebasin.org
Facebook Nile Basin Initiative
Twitter @nbiweb

#NileCooperation;
#NileBasin
#OneNile

Want to know more about NBI? Scan this QR code to find out.

May 2015

The Nile Story
15 Years of Nile Cooperation: Making An Impact