

# SWOT Analysis and Challenges of Nile Basin Initiative: An Integrated Water Resource Management Perspective

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**Abstract:** River Nile is one of the longest transboundary rivers and it is shared and used by Burundi, Democratic Republic of Congo, Egypt, Ethiopia, Eritrea, Kenya, Rwanda, Sudan, Tanzania and Uganda. As of today, the Nile is a crucial resource for the economic development of the Nile Basin countries and a vital source of livelihood for 160 million inhabitants as well as 300 million people living in the 10 riparian countries. The Nile Basin Initiative (NBI) is one of the international cooperative river basin management program and regional partnership where all the Nile Basin countries except Eritrea unite to pursue long-term sustainable development, improved land use practices and management. This review therefore focused on the challenges not faced on NBI in terms of integrated use of the river and conducted analysis of strengths, weaknesses, opportunities and threats (SWOT) based on secondary data. The result of the review revealed that for decades, the Nile Basin people have been facing many complex environmental, social, economic and political challenges that have made it difficult for the proper management and sustainability of Nile water. The initiative provides training to develop skills in government ministries, non-governmental organizations and local communities in each country. It is also working to raise awareness of critical environmental issues by strengthening networks of environmental education practitioners; developing curriculum in the education sector. The challenges of NBI include the involvement and funding of World Bank, lack of sufficient staff, procedural and policies conflicts, lack of coordination and linkage with other regional institutions and lack of recognition as river basin organization. Considering the complex nature of the project, it is recommended that the NBI should come up with a strong multi-disciplinary monitoring and evaluation team to follow up all implemented projects. The NBI should carry out participatory land use planning in communities along the river basin. Moreover, livelihood analysis should be carried out especially in communities along the Nile to come up with poverty eradication projects which are socially acceptable, applicable, economically viable and affordable.

**Key words:** river basin management, Nile Basin Initiative, SWOT analysis, integrated water management, River Nile

## 1 Introduction

It is on record that River Nile is one of the world's longest transboundary rivers flowing a distance of more than 6700 kilometres from its farthest source at the headwaters of the Kagera Basin in Rwanda and Burundi to the Mediterranean Sea in Egypt. Its catchment basin covers approximately 10% of the African continent and the river is shared by 10 riparian countries which include Burundi, Democratic Republic of Congo, Egypt, Ethiopia, Eritrea, Kenya, Rwanda, Sudan, Tanzania and Uganda.

The Basin contains an extraordinarily rich and varied range of ecosystems, with mountains, tropical forests, woodlands, savannas, high and low altitude wetlands, arid lands and deserts (World Bank, 2008). Since the Nile waters do not stop at administrative or political boundaries, the river basin has been of great importance as regards human settlement, development of a rich diversity of cultures, civilisation and development for centuries. As of today, the Nile is a crucial resource for the economic development of the Nile Basin countries and a vital source of livelihood for 160 million inhabitants as well as 300 million people living in the ten riparian countries (World Bank, 2008). It is estimated that in the next 25 years, the population in the Nile basin will be 600 million.

Nevertheless, for decades, the Nile Basin people have been facing many complex environmental, social, economic and political challenges that have made it difficult for the proper management and sustainability of Nile water. Such problems include among others, disputes and conflicts over the control and use of the Nile waters; extreme poverty, food insecurity; droughts; floods; environmental degradation exacerbated by high population

Received 15 December 2009; Accepted 25 December 2009

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growth; inadequate sanitary services; unreliable electricity, water scarcity; lack of cooperation on the shared resources of the Nile Basin (World Bank, 2008; World Bank, 2003a). The transboundary nature of the river also possess extra challenges.

Consequently, the Nile Basin countries jointly recognized that the best way to utilize, protect and manage the Nile Basin in an integrated sustainable way was through a close international co-operation between and among all the countries within the natural, geographical and hydrological unit of the river, whereby all interests of upstream and downstream countries are considered. However, this cooperative management of the Nile River Basin is one of the greatest challenges of the global international water agenda (World Bank, 2003a; World Bank, 2004a). Nevertheless, it is an important catalyst for greater regional, economic, political, knowledge integrations with benefits far exceeding those derived from the river itself.

## 2 Strategy for management of the Nile River with reference to the Nile Basin Initiative

The recognition of the cooperative management of the Nile by the Nile Basin countries has given birth to the Nile Basin Initiative (NBI) which reflects various aspects of integrated water resource management. The NBI is one of the recent international historic cooperative river basin management programs and regional partnership where all the Nile Basin States except Eritrea unite to pursue long-term sustainable development, improve land use practices and management of the Nile water resources for the benefit of all without discrimination (World Bank, 2008).

The history of the NBI dates back to 1992 when the Council of Ministers of Water Affairs of the Nile Basin countries recognized the need for regional cooperation and integration for regional growth, environmental conservation and the equitable sustainable development of the entire Nile Basin (Guvele, 2003). In that political atmosphere, the Technical Cooperation Committee for the Promotion of Development and Environmental Protection of the Nile Basin was formed which later created the Nile River Basin Action Plan in 1995 (ibid). In this Action Plan, the need to establish a Nile River Basin Cooperative Framework was at its centre stage and fortunately, this partially materialized in 1999 when the “transitional” NBI

was launched.

### 2.1 State of planning and implementation

Recognizing their common concerns and interests, the NBI embarked with a participatory process of dialogue among the Nile Basin countries that fashioned a shared vision “to achieve sustainable socioeconomic development through the equitable utilization of, and benefit from, the common Nile Basin water resources” (World Bank, 2008). The policy guideline which accompanies the agreed joint shared vision provides a basin-wide cooperative water resource management framework and also defines the primary objectives of NBI. These objectives include:

- 1) to develop the water resources of the Nile Basin in a sustainable and equitable way
- 2) to ensure prosperity, security, and peace for all its peoples;
- 3) to ensure efficient water management and the optimal use of the resources;
- 4) to ensure cooperation and joint action among the riparian countries, seeking win-win gains;
- 5) to target poverty eradication and promote economic integration; and
- 6) to ensure that the program results move from planning to action.

In order to implement and achieve the NBI objectives as well as translating the agreed shared vision into action and fostering co-operative development on the Nile, the riparian governments developed a Strategic Action Program composed of two complementary sub-programs which include Shared Vision Program (SVP) and Subsidiary Action Programs (SAPs) (World Bank, 2008; World Bank, 2003a). As of today, the NBI with its Strategic Action Program represents a deep commitment by the Nile riparian countries to foster cooperation, regional integration and sustainable development of the Nile River. It is composed of the Council of Ministers of Water of the member countries, and a Technical Advisory Committee, comprising technical representatives from the member countries.

However, the NBIs’ Strategic Action Program is a greatest fundamental turning point and landmark towards integrated water resource management of the Nile River. In its whole, the Strategic Action Program is trying to create a knowledge base and essential tools for integrated water

resource management through regional, economic, spatial sectoral and knowledge integration.

### 3 Analysis of the NBI's Strategic Action Programs

As already mentioned, the Strategic Action Program is composed of two components which include the SAPs having two branches one called the Eastern Nile Subsidiary Action Program (ENSAP) and the other called the Nile Equatorial Lakes Subsidiary Action Program (NELSAP). The second component of Strategic Action Program is the SVPs and is funded by the World Bank, African Development Bank, Global Environmental Facility and Nile Basin Trust Fund, United Nations Development Program, the German Agency for Technical Cooperation, Canadian International Development Agency (World Bank, 2003a; World Bank, 2004a; World Bank, 2008).

The analysis begins with SVPs which form the core of the NBI. It includes seven thematic projects as discussed and analysed below.

#### 3.1 Nile Transboundary Environmental Action Project

This project came into existence after the Nile Basin countries carried out a participatory Nile Basin Transboundary Environmental Analysis that identified various environmental concerns related to water resources (World Bank, 2003b). The environmental concerns identified included deforestation leading to losses of biologically important habitats, high rates of soil erosion leading to sedimentation of rivers, lakes and reservoirs; localized water pollution arising from agriculture, industry, mining and domestic effluent; proliferation of aquatic weeds, particularly water hyacinth and wetland reclamation (World Bank, 2003b). However, some of these problems like deforestation and erosion are just symptoms of big underlying root causes like poor government developmental policies, which the program never identified.

Poverty and population growth were also singled out to cause additional pressures on natural resources and this has been compounded by a lack of awareness of land-water interactions and the functioning of critical ecosystems. However, this project does not capture how the consumption patterns of the high population are leading to environmental problems and how poverty actually causes pressures on natural resources quantitatively. It should be noted that

poverty per se has nothing to do with environmental problems but it is the underlying mechanism that causes poverty which possess a big threat to the environment. The project also ignores the issues of climate change which is arousing serious threats to African continent.

Nevertheless, the Transboundary Environmental Action Project with its management unit located in Khartoum, Sudan was implemented in 2004. As of today, various stakeholders are involved in the project and are greatly supported by the project. The project provides training to develop skills in government ministries, non-governmental organizations (NGOs) and local communities in each country in such areas as environmental management and monitoring, water quality monitoring, and conservation of wetlands (World Bank, 2003b; World Bank, 2008). It is also working to raise awareness of critical environmental issues by strengthening networks of environmental education practitioners; developing curriculum for primary, secondary and university students; and supporting environmental awareness campaigns through nature clubs, schools, youth groups, scout troops, universities, churches and mosques (World Bank, 2003b; World Bank, 2008).

The project also promotes information sharing about issues affecting the environment among all stakeholders in the Nile Basin countries, including developing a decision-support system that is based on reliable and consistent environmental data from each country to enable better region-wide environmental planning and management (World Bank, 2003b; World Bank, 2008). The project also funds local NGOs and communities to promote community-based approaches to land and water conservation to reduce soil erosion, desertification, and pollution and to control invasive waterweeds.

The activities of this project on the one hand reflect an effort of spatial, landscape and territorial integration all of which geared to protect and manage the environment as well as the delicate ecosystem of the Nile River Basin. On the other hand, through these activities, the Nile Basin governments, NGOs, researchers, educators and private sector representatives can acquire integrated knowledge that could help them to work together both within their own countries and across borders. This is fundamental in building mutual understanding, solid relationships and collaborative partnerships that are essential building blocks for regional coopera-

tion, sustainable development, environmental conservation and broader regional integration.

### 3.2 Water Resources Planning and Management Project

This project is working to address problems of water management fragmentation within each Nile basin country, weak human and institutional capacity to manage the Nile waters in an integrated manner, uneven distribution of water professionals within the basin as well as the inadequate interaction among water professionals in the Nile Basin countries (World Bank, 2004b). The stakeholders involved in this project include government agencies in water-related sectors, civil society, NGOs, university networks, professionals in the field and the private sector. In order to address these problems, the project is supporting basin-wide dialogue on good practice in water policy formulation and implementation.

To achieve sectoral integration as regards resource management in the Nile Basin countries, the project is building skills in each country for effective formulation and implementation of successive national policies and strategies for integrated water resources management as well as planning and management of multi-country projects. The project has also come up with Nile Basin Decision Support System where NBI countries will be able to share data on river hydrology to better understand river system behaviour, evaluate alternative development and management schemes (World Bank, 2004b). This will facilitate knowledge integration which is important for making more informed decisions for sustainable water resource planning and management in the basin. However, this project is aiming at building a common technical foundation rather than a common local socio-cultural and environmental knowledge base or both for facilitating integrated water resource planning and management from basin-wide perspective. In that regard, the project's focus represents a biased and typical top-down approach for integrated water resource management which do not create a levelled ground for integrated and sustainable management of the river.

### 3.3 Social Economic Development and Benefit Sharing Project

To address the complexity and variability of the river basin's hydrology as well as the differences of Nile Basin

countries' economies, the Social Economic Development and Benefit Sharing Project is aiming at an integrated approach to water resources management, environmental conservation and regional development (World Bank, 2004a). This is a fundamental building block for integrated natural resource management since the project focuses on knowledge integration as well as economic integration for sustainable management of the basin. In that regard, the project is currently building a multidisciplinary network of professionals (stakeholders) from economic planning, research institutions, technical experts from public and private sectors, academics, and representatives from civic groups and NGOs from across the basin (ibid). The multidisciplinary network creation is a vital tool for solving complex environmental problems since it provides a broader platform to exchange views and solutions than a disciplinary network which provides no platform for exchange of knowledge thus leading to narrow views and solutions or no solutions at all.

Under this project, the multidisciplinary networks of professional are required to carry out joint research, explore alternative Nile development scenarios, identify benefit-sharing schemes, foster information sharing and exchange, as well as enhancing public awareness of the importance of water as a shared and precious resource. However, the project is only building capacity to explore alternative new development scenarios without much consideration on how the old development projects in the Nile Basin countries could be made more environmentally friendly. Again, as with other projects, the issue of local participation is still scanty in this project and the criteria for selecting professionals to form a multidisciplinary network as well as sharing benefits are not well defined.

### 3.4 Confidence-Building and Stakeholder Involvement Project

This project was created to address issues of disputes, conflicts, political tension and lack of cooperation in the management of the Nile basin resources and aims at building confidence, trust, collaborative relationships among everyone who has a stake in how water resources in their countries are developed, allocated and managed (World Bank, 2003c). This is an important mechanism for constructive dialogue, planning and development and this can provide a benchmark for hierarchical integration from local, national, regional and international levels which is



vital for the sustainable management of the Nile waters. The project is promoting broad-based stakeholder participation including dialogue, collective analysis, action, and monitoring for feedback and learning (World Bank, 2003c).

However, the extent to which stakeholders should be involved in the project, their roles and interests is not well defined. The project also has a public information component. This is geared towards increasing public awareness by providing accurate, timely, and understandable information about the NBI and its programs to people across the basin in languages and formats they understand through a variety of culturally appropriate channels (World Bank, 2003c). Such information dissemination creates a clear picture of the benefits of regional cooperation and integration among the inhabitants of the Nile Basin. As regard building confidence, trust and collaboration among countries, the project has various programs that encourage exchanges among parliamentarians, journalists, university professors, local leaders (including women leaders), schoolchildren and university students. The project also has activities that focus on forums and networks geared to discuss issues of poverty reduction and development among others (World Bank, 2003c). This is an important component of knowledge integration where various people are facilitated to share their views, experiences with others and this creates a sense of ownership of the projects being run by the NBI.

### 3.5 Nile Basin Regional Power Trade Project

This project is the first basin-wide effort to develop a regional power trading architecture for the Nile through the active participation of all basin countries. The project is responding to unreliable electricity in basin which has hindered economic growth and caused paramount environmental degradation. The project has come up with Nile Basin Power Forum where national power experts can exchange ideas on how to develop power supply facilities and ways of how to expand power trade in the Nile Basin (World Bank, 2005a). This reflects an emerging technical integration in the Nile Basin.

The creation of a regional electricity market is intended to play a key role in furthering cooperation among the basin countries, providing sustainable environmentally friendly energy and in ensuring that the hydropower resources of the Nile Basin are developed and managed in an integrated

and sustainable manner (World Bank, 2005a). In a long run, this project will create far reaching benefits as regards water conservation, land protection, and reduced emission of greenhouse gases. However, this project does not put into consideration other cheap power sources like, solar energy, wind energy, biogas and methane from wetlands which could be used by the people who can not afford electricity. If such energy potentials were recognized, it would have created an important aspect of integrated energy production.

### 3.6 Applied Training Project

This project is working to build capacity needed to promote integrated water resource management in the Nile Basin (World Bank, 2003d). This is done under various components. The first component deals with training decision makers and professionals in water resources management in the basin countries in aspects of water management policy at national level (World Bank, 2003d). The second component deals with offering post-graduate scholarships to applicants from the Nile Basin countries so as to undertake both master and doctoral training in water resource management. This is geared to build within each country a cadre of water resources management specialists able to reduce barriers for sectoral integration in natural resource management. As part of the effort to promote interaction and knowledge integration among water professionals in the NBI countries, the third component of the project deals with establishing the Nile Net, which is a network of training institutions that can engage in collaborative research, joint problem-solving and staff exchanges (World Bank, 2003d). This project will lead in the long-run to the introduction of common basin-wide guidelines and standards for Integrated Water Resource Management principles. However, the desire for integrated water resource management in the Nile Basin is too skewed to scientific approach where people are trained in various scientific methods only without having a dose of what local water resource management practices and systems can offer.

### 3.7 Efficient Use of Water for Agriculture Project

Due to the great importance of agriculture in the Nile Basin, this project is aiming at providing a sound conceptual and practical basis to increase the availability and efficient use of water for agricultural production. The project

is creating a framework that will enable stakeholders from the Nile Basin countries to work together to promote basin-wide cooperation and awareness, enhance understanding and build capacity on the common irrigation and water harvesting issues (World Bank, 2005b). This is hoped to be achieved through basin-wide consultations, workshops, and seminars that will create networks of key actors who will collectively work together on water harvesting, community managed irrigation, and public and private-managed irrigation (World Bank, 2005b). This reflects an aspect of knowledge integration where every stakeholder's views are recognized as important for efficient use of water for agriculture.

In parallel with the Shared Vision Programs, two Subsidiary Action Program (NELSAP and ENSAP) have been set up. As with the SVPs, institutional strengthening and capacity building which is an important aspect of hierarchical, sectoral and knowledge integration has also been provided to the two implementing institutions, Eastern Nile Technical Regional Office (ENTRO) and Nile Equatorial Lakes Subsidiary Action Program Coordination Unit (NELSAP-CU). Under the SAPs, great achievements have been realized. For example, in the Eastern Nile, Sub-regional Flood Preparedness and Early Warning Project, irrigation developments in Ethiopia and Egypt, and a Power Interconnection Project between Ethiopia and its neighbouring countries have been realized (World Bank, 2008). In the Equatorial Lakes region, Rusumo Falls Hydroelectric and Multipurpose Project have been constructed as well as the establishment of the Agriculture and Trade Project (World Bank, 2008). These SAPs provide a strong foundation for the Nile Basin countries to engage in concrete activities for long-term sustainable development, integrated water resource management, natural resource conservation, economic growth and regional integration.

## 4 Challenges facing the NBI

### 4.1 World Bank participation

Despite a remarkable progress attained by NBI, it is feared that the initiative has little hope of achieving its goals in large part because of the World Bank's involvement and funding. It is on record that the World Bank and International Monetary Fund have played a single role in the

impoverishment of the African continent (Foulds, 2002). It has been noted that because of World Bank's policies, half of its projects have been unsuccessful and the failure rate is even higher in the poorest countries (Foulds, 2002). Therefore, considering the fact that six of the world's 10 poorest countries are within the Nile Basin, the World Bank-NBI "inter-marriage" presents a doubtful scenario of achieving the initiative's objectives.

### 4.2 Nile Basin Water Treaty of 1929

Although the NBI tries to bring together all the Nile Basin countries to cooperate in the sustainable management of the Nile River, the 1929 Nile Basin Treaty still holds a lot of water. It is not yet known whether the NBI is done in good faith or as pretence to appease the international community especially the donors. It should be noted that the 79-year-old water sharing treaty has kept Nile Basin countries into vigorous conflict over the region's most precious resource (Tvedt, 2004). It regulates Nile water usage among the 10 countries that share the Nile River's watershed but giving much power to the Egyptians. In this sensitive political climate, any country in the Nile Basin which wishes to utilize the Nile water, has to seek permission from the Egypt. For example, the treaty requires Kenya, Tanzania and Uganda which are at the source of the Nile to seek permission from Cairo, 6000 kilometres away, before drawing water from Lake Victoria to cultivate their parched fields, yet the NBI advocates for all Nile Basin countries to be equal partners. This means that the NBI is in serious "hidden" contradiction with the 1929 Nile Basin Treaty and if this issue is not handled diplomatically, Nile water wars are abound to occur in the future.

### 4.3 Lack of sufficient staff for carrying out important activities

The NBI's ambitious goal of establishing regional cooperation and mutually beneficial relationships among all Nile Basin countries is limited by the small number of staff. The current staff at the NBI cannot respond to the increasing and emerging demands placed on the institution such as strategic planning, resource mobilization or responding to basin management issues like climate changes (World Bank, 2008). In addition to that, the NBI lacks the capacity to handle regional database as well as analysing water resource information (ibid). Nevertheless, it is assumed that under the Institutional Strengthening Project

(NBI-ISP), NBI will be equipped with a more robust institutional infrastructure and critical skills needed to deliver its current work program more effectively (World Bank, 2008).

#### 4.4 Procedural and policies conflicts

The SAP aim of creating the ENTRO in Ethiopia and NELSAP-CU in Rwanda has led to the emergence of procedural and policy conflict between the programs and other NBI Institutions (World Bank, 2008). This is because these programs have evolved independently of each other resulting into differing sets of policies and procedures and this has been due to the political differences between Rwanda and Ethiopia. This situation is thought to threaten future operation integrity of the NBI. However, it is thought that the NBI-ISP will enhance basin-wide institutional integration through a harmonization of NBI policies and procedures across the basin (World Bank, 2008). In addition, the NBI-ISP is mandated to strengthen and harmonize administrative systems and functions across all NBI institutions.

#### 4.5 Lack of coordination and linkage with other regional institutions

With the establishment of the NBI, other regional institutions have evolved like Lake Victoria Basin Commissions but NBI's coordination with such institutions is not clearly established. However, it is hoped that NBI-ISP will strengthen the Nile National Focal Point Offices and NBI regional linkages with other institutions and stakeholders.

#### 4.6 NBI is not recognized river basin organisation

As early noted, the NBI is just a "transitional institution" binding together the Nile Basin countries to move forward into a Cooperative Framework Agreement (CFA) which would create a permanent river basin organization (RBO). However, negotiations on the proposed CFA are well advanced but not yet concluded (World Bank, 2008).

### 5 Strengths, weaknesses, opportunities and threats (SWOT) analysis of the NBI

This section adapts a SWOT analysis technique to summarize the nitty gritty of the NBI. The criterion for evalua-

tion is based on the framework concept of integrated water resource management. The perspective we have adopted is the sustainable development of the water of the Nile for the benefit of all.

#### 5.1 Strengths

- NBI focuses on multi-country, multi-sectoral programs of collaborative actions, exchange of experience, and trust and capacity building designed to build a strong foundation for regional cooperation and sustainable management of the Nile water.
- NBI is intrinsically geared towards achieving the Millennium Development Goals and Sustainable Development.
- NBI is developing knowledge based and essential tools for integrated water resource management through capacity building in each Nile Basin country.
- It has led to the development of the decision-support system for information sharing.
- NBI aims at building confidence, trust, collaborative relationships among everyone who has a stake in how water resources in their countries are developed, allocated, managed and stakeholder involvement.
- The project is promoting broad-based stakeholder participation, including dialogue, collective analysis, action and monitoring for feedback and learning.
- NBI has managed to create a strong stakeholder commitment and ownership of its projects among all member countries by creating project management location units in each country.
- NBI has Strategy for Addressing Environmental and Social Safeguards through an Environmental Management Plan.
- NBI has strong donor support from giant institutions like the World Bank, Global Environmental Facility, German Agency for Technical Cooperation, African Development Bank and Canadian International Development Agency for implementing its projects.
- It has a framework for following up its projects through consolidated annual and quarterly interim financial reports.
- NBI promotes regional cooperation important for increasing a range of direct benefits to riparian

countries which include electricity production, environmental conservation and Water shed protection.

- The NBI has set up governance, institutional structures and processes to provide permanent mechanisms for constructive dialogue, planning and development among riparians, focused on the sharing of water and water's benefits.

## 5.2 Weakness

- Lack of institutional depth like thin staffing which is insufficient to respond to the increasing and emerging demands placed on the institution in the area of strategic planning, resource mobilization, or responding to basin management issues.
- Inadequate capacity to develop regional databases and to analyze water resource information.
- There is a lack of coordination and linkages with some NBI stakeholders like the Lake Victoria Basin Commission.
- The planning of NBI projects did not incorporate the local knowledge of the indigenous people in the Nile Basin countries.
- Despite the fact that the NBI is trying to develop and generate hydroelectric power along the Nile for the benefit of all people, the initiative is not part and partial of the World Commission on Dams which provides comprehensive guidelines for constructing dams on international transboundary rivers.
- Theoretically, NBI is bottom up but practically, is strongly top-down.
- NBI is the most complex and ambitious river basin project ever and this may result into misinterpretations and wrong analysis of the whole project.

## 5.3 Opportunities

- Continued support of the World Bank to the NBI projects present "hope" for achieving the NBI goals in future. Furthermore, financial and in kind contribution of member will help sustain NBI functions.
- Establishment of NBI-ISP is hoped to provide solutions to the challenges facing the NBI. For example, it will allow the NBI to undertake an institutional design processes to prepare the NBI for new chal-

lenges in absence or presence of CFA.

- Finalizing a CFA will help create a permanent RBO.
- More involvement of NGOs and civil society will involve the overall effectiveness and efficiency of the implementation of the NBI projects.
- Since the Nile Basin countries are part of the African Union, NBI project has an opportunity of benefiting from the New Partnership for Africa's Development (NEPAD) which aims at providing an overarching vision and policy framework for accelerating economic co-operation and integration among African countries.

## 5.4 Threats

- Long-term challenges for operational integration across the basin because of different sets of policies and procedures among NBI institutions like ENTRO and NELSAP-CU.
- Nile Basin Water Treaty of 1929, which limits effective utilization of the Nile-waters.
- History of tensions and instability in the region, both between countries and within countries. Thus, when one country refuses to cooperate, it can have significant consequences on the NBI goals.
- Increasing population coupled with poverty creates pressure on resources of the Nile.
- NBI countries are in different development stages with six out of the poorest 10 nations of the world and this threatens the initiative's path towards achieving its goals.
- If the CFA negotiations geared to transform the NBI into a fully-fledged RBO flops, the future status of the transitional NBI will be undefined.
- The World Bank polices possess future uncertainty of the NBI projects due to its historical bad record in achieving its goals in the countries under its funds.
- Corruption and aid money disappearing into private pockets can ruin all the planning.
- Climate change and water stress can force governments to act individually trying to exploit as much as possible for their people.

## 6 Conclusions and recommendations

In this article, we conclude that the NBI represents the most comprehensive and complex management plan



ever attempted for sustainable development of international transboundary rivers. The NBI tries to deal with all potential problems occurring at people-environment and development interface in the Nile basin through a multi-disciplinary, socio-cultural, economic, political and geographical environment which is an important attribute of achieving sustainable development as well as the Millennium Development Goals. On the same note, we also conclude that the various projects which are being implemented by the NBI, reflect a “joint commitment and obligation” of the Nile Basin countries to put into action the recommendations of Agenda 21 and the Johannesburg Plan of Implementation.

We also conclude that NBI is a paramount historical regional partnership in this new millennium as regards transboundary river basin management. This joint venture among the Nile Basin countries has created a “regional environmental-development interface think-tank” which is a vital mechanism for paving way to greater integrated water resource management that could result into mutual benefit of all without discrimination or favourism. This has been done through spatial, regional, economic and knowledge integrations.

Nevertheless, the NBI is not immune from the challenges, weaknesses and threats as it can be clearly noticed in the SWOT analysis. At this juncture, we recommend in general terms that the NBI should capitalize on its strengths and opportunities to work out the challenges it faces. However, more specifically, we suggest the following recommendations.

The NBI should actively collaborate with the African Union in general and NEPAD so as to get some support and vibrant recognition. It should be noted that the goals of NEPAD conquer well with those of the NBI. For example, NEPAD’s goals which are threefold include promoting accelerated growth and sustainable development, eradicating widespread and severe poverty, and halting the marginalisation of Africa in the globalisation process. These goals translate very well with the shared Vision of the NBI, therefore, the collaboration between the two initiatives could have a vibrant platform for promoting sustainable development in Africa in general, Nile Basin countries in particular.

Having realized the deficiency of local traditional knowledge in the overall planning of the NBI, we recommend that the initiative should consider incorporating issues of

indigenous knowledge which represent the long-standing traditions and practices of the Nile. It should be noted that the Nile basin has got a complex cultural diversity which could be useful for integrated water resource management in combination with the scientific approach being agitated by the NBI.

To achieve mutual benefit of the Nile water resources, we recommend that the NBI in conjunction with the international community should focus on serious amendment of the 1929 colonial Nile water treaty which possess significant challenges for realization of the initiative’s goals.

Since one of the projects of NBI is to build power plants, it can be feared that this project could have devastating impacts on the environment and the nearby societies. Therefore, we recommend that the NBI should be harmonized within the World Commission on Dams so that it can adopt proper guidelines for the construction of dams along the Nile. This will be vital in protecting dam-affected people and the environment, and to ensure that the benefits from dams are more equitably distributed.

Due to the fact that population pressure is one of the driving forces leading to environmental degradation in the Nile basin, we recommend that NBI should have a separate project focusing on population control within the basin countries.

To increase a sense of belonging, level of participation and ownership of the NBI projects, we recommend that “handouts” in terms of donations from the core funding institutions should be limited. Therefore, the Nile Basin countries should try to build the capacity for soliciting their own funds for the NBI. This money could be got *inter alia* by reducing public expenditure, and curbing corruptions.

Given the complex of the project, we recommend that the NBI should come up with a strong multi-disciplinary monitoring and evaluation team to follow up all implemented projects. This team should be well equipped with modern techniques ranging from the geographical information systems among others. We also recommend that the NBI should carry participatory land use planning in communities located near the river putting much consideration on land capability and suitability.

NBI should also carry out a livelihood analysis especially in communities along the Nile so as to come up with poverty eradication projects which are socially acceptable, applicable, economically viable and affordable. These will

improve the welfare of the majority of the people at household level and this will act as an incentive towards sustainable utilization of the Nile basin resources.

Rather than building capacity in only scientific skills with regards Nile water resource management, we also recommend that the local knowledge base and management skills of the same should also be upgraded so as to have a strong foundation for integrated water resource management.

Since the NBI promote efficient use of the Nile water through proper irrigation methods, we recommend that the NBI should take caution about the salinization problems that may arise thus leading to soil degradation and consequently poor agricultural yields. In addition, NBI should educate communities on how to use less agriculture inputs especially nitrogen and phosphate fertilizers that can cause water pollution (eutrophication).

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