

## BRIEFING NOTE 8

# Restoring the Nile Basin

Watershed management has come to be recognized as a critical issue in the Nile Basin. Upstream land use can cause degradation and soil erosion, resulting in lower agricultural yields locally and causing sedimentation downstream. The increased sediment load causes economic problems by reducing water quality, and irrigation and hydropower potential, as well as increasing flooding. This note shows how, through Basin-wide cooperation, the Nile Basin Initiative (NBI) has led efforts to address these problems, developing successful projects to deliver real results to restore the Nile.

**Cooperation between countries on management of the Nile Basin's watersheds and water resources is achieving real results:**

**16** watershed management and water resource development projects of regional significance are being prepared or are already underway.

Almost **1.7 MILLION** hectares of the Nile Basin are expected to come under improved management for agricultural and environmental benefits once these projects are implemented.

Over **17 MILLION** people are expected to directly and indirectly benefit from these projects once they are implemented.

People are experiencing better farm yields (often double), higher incomes, and better access to markets.

There is significantly reduced (examples of 50%) downstream sedimentation in some areas of the eastern Nile region.

This demonstrates the potential for the Nile Basin to be extensively and effectively restored and better used for agriculture. Recognizing this, national governments are now replicating these successes in other areas.

## Pressures on the Nile – degrading the future



Many factors place pressure on the Nile Basin. The region is characterized by poverty, a dependence on natural resources for livelihoods, and rapidly growing rural and urban populations. Unchecked human activities exert pressure on and degrade the Basin's natural resources, which natural disasters and weak regulatory capacities exacerbate. For example, poor farming methods cause increased soil erosion, resulting in degraded lands upstream and high sediment loads in the rivers downstream, clogging dams and irrigation canals, and increasing flooding. Meanwhile, 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.

**Cost of degradation.** The annual economic cost of watershed degradation originating in the Ethiopian highlands is currently estimated at a staggering US\$670 million. This is expected to reach around US\$4.5 billion over the next 25 years if affected countries continue 'business as usual'. Studies show that between 157 million and 207 million tons of sediment are transported annually by the river from the Ethiopian highlands. Sedimentation impacts Sudan and Egypt through a reduction in hydropower performance and an increase in hydropower infrastructure maintenance costs. In addition, there are significant investment costs related to clogged irrigation canals. For example, sedimentation removal costs the Roseires Reservoir in Sudan US\$7.5 million annually. It has been estimated that a significant reduction of sedimentation load in Ethiopia would result in Sudan gaining an additional US\$88 million worth of hydroelectric power.

## A regional response to shared challenges

The NBI was established in 1999 by the Nile Basin Council of Ministers (Nile-COM), comprised of ministers in charge of water affairs from each Nile Basin country. Nile-COM is a 10-country partnership guided by a shared vision "to achieve sustainable socio-economic development through the equitable utilization of, and benefit from, the common Nile Basin water resources".

The shared vision in practice took a two-pronged approach, working through a Shared Vision Program (SVP) to build trust, capacity, and an enabling environment for shared investments, as well as through Subsidiary Action Programs (SAPs) that would identify and prepare projects ready for investment.

The NBI provides a regional platform for the joint, Basin-wide efforts towards this vision. Its secretariat (Nile-SEC) has focused on cooperation through capacity building and sharing information. Meanwhile, efforts on the SAP objectives to "get projects off the ground" have been led by the Eastern Nile Technical Regional Office (ENTRO), based in Addis Ababa, Ethiopia, and the Nile Equatorial Lakes Subsidiary Action Program Coordination Unit (NELSAP-CU), based in Kigali, Rwanda.

At an early stage, the NBI identified water and watershed management – through an integrated approach – as being foundational to securing livelihoods and promoting development for the Nile countries. One early NBI regional response to environmental challenges was through the SVP project on transboundary environmental action (NTEAP), which included the creation of an inventory of environmental assets across the basin, and identified basin-specific initiatives that the SAPs implemented.



**Integrated watershed management** is a system-oriented concept that recognizes that many different uses of a finite water resource are interconnected. It takes a holistic approach to watershed problems and potentials, considering water, land, and related resources. This enables the implementation of complementary interventions that support and enhance each other. The NBI approach to watershed management involves:

- Taking a 'whole-of-river' approach.
- A thorough understanding of the needs and aspirations of the communities who are the local land users.
- An appropriate mix of biological (e.g. tree planting and restoration of ground cover) and physical (e.g. construction of terraces and gully protection) measures.
- Integration of supportive livelihood options.
- Incorporation of different stakeholders' views, including communities.
- Implementation of projects that protect the environment and reduce land degradation.

## Key features of the NBI approach

Both ENTRO and NELSAP have dedicated programs for water resource development, which support the identification and preparation of watershed projects to an investment-ready level. Some key features of these preparation processes are important.

**Cooperation – bringing countries together.** ENTRO spearheaded efforts on watershed management through the Eastern Nile Watershed Management Project. It used the approach of a Cooperative Regional Assessment

(CRA) as a tool to identify potential regional investments, analyzing the distribution of associated costs and benefits. The CRA process was special because, for the first time, it brought together the three countries – Egypt, Ethiopia, and Sudan – helping them to recognize that they all faced a common challenge, to reach a common understanding about the potentials of their shared water resource, and to agree a cooperative action program to tap into it.

**The CRA – pulling it all together.** The watershed management CRA carried out extensive transboundary analysis of the eastern Nile to identify institutional requirements and implications for Basin-wide watershed interventions. Identifying particularly critical 'hotspots' (the most fragile areas of the Basin) that the countries could address together, the CRA focused on four sub-basins: the Abbay-Blue Nile, Tekeze-Setit-Atbara, the Baro-Akobo-Sobat-White Nile, and the main Nile from Khartoum to the Aswan High Dam. This enabled the development of a sustainable framework for management of the four sub-basins, and guidelines for appropriate implementation.

The CRA includes comprehensive watershed relevant information, including a GIS-linked database, and mapping capability that informs other development planning and project preparation activities in the eastern Nile.

**Integration - considering upstream and downstream concerns.** The NBI's regional watershed management approach focuses on both downstream and upstream impacts, taking the whole watershed as a unit. Extensive technical studies have helped to inform this. To maintain a transboundary 'watershed perspective', both upstream and downstream considerations are incorporated into project preparations to ensure equitable sharing of (or compensation for) 'public good' benefits from the Nile.

**People-focused – integrating real needs.** The NBI approach places the livelihoods of local communities at its center, considering their needs for productive agriculture, and applies a wide range of social and environmental safeguards to its project preparations, including gender guidelines and action plans. It has a policy of stakeholder consultation with all affected parties on all project preparations. Long-term watershed management plans are only implemented after careful, comprehensive stakeholder consultations.

**Evidence-based – building on impartial technical knowledge.** The processes of preparing projects are

informed not only by consultation, but by the extensive technical studies carried out by the NBI, under both the SVP and the SAPs. The SVP has focused on wider knowledge generation, promoting a consideration of shared costs and benefits. The SAPs – after sectoral studies to identify potential project opportunities - have focused on detailed feasibility study work for each project under consideration. The strength of the NBI in leading this work is its neutrality. Decisions are based on evidence rather than favoring one country or another. Consequently, it is taken seriously.

*"As a country, we took all the programs prepared by ENTRO. Within the Ministry, we have the Transboundary Directorate. The institution's work is to mainstream NBI preferred projects. These projects are prepared in consultation with the relevant Government departments. Some of the projects have benefits not just to Ethiopia, but the downstream countries as well. The Government recognizes ENTRO – it believes that ENTRO is working for it."* Fekahmed Negash, Ministry of Water, Irrigation, and Energy, Ethiopia

## Watershed projects – restoration in action

Intervention efforts differ in the two regions, reflecting different concerns and objectives. ENTRO focuses on erosion control to reduce siltation and sedimentation in downstream rivers and reservoirs, while NELSAP responds to land degradation and livelihood concerns, prioritizing watershed restoration, agroforestry, biodiversity conservation, wetlands management, and conservation agriculture.

The Tana Beles watershed management project in Ethiopia is a flagship for the NBI, and its implementation is demonstrating real success. It is being implemented in only one country, but its benefits are intended – and are being felt – in downstream Sudan, as well as in the watersheds where the interventions are taking place.

The regional, eastern Nile watershed management project began in 2009 and has already achieved significant impacts. Through training and planning, it has brought 36,000 hectares of agricultural and range lands under sustainable land and water management, and a further 4,000 hectares are being rehabilitated. Management activities, such as improved agriculture, rangeland improvement, and irrigation, have resulted in benefits including improvements on soil fertility and cow milk yield, with a near-doubling of yields reported. The sub-component focused on Lake Nasser-Nubia has collated hydrographic data to inform development of a framework for transboundary, integrated and sustainable management of the lake, which is to be jointly implemented by Egypt and Sudan.

Building on these successes, ENTRO has used a regional watershed management study to identify and agree with countries a further eight watershed projects for preparation. They include: Chemoga (Ethiopia), which is projected to benefit 205,000 people; Fincha (Ethiopia), which will benefit 160,000 people; Tilkuk (Sudan), which will benefit 185,000 people; and Upper Atbara (Sudan), which will benefit 120,000 people. Once implemented, these projects will manage and protect at least 600,000 hectares of critical watersheds in the eastern Nile, reducing siltation and downstream problems while supporting the upstream communities.

**Institutionalizing capacity.** In support of watershed management work, ENTRO has also trained over 500 government technicians, project officers, extension workers, and community members in watershed management concepts and practices. Training workshops have focused on watershed management, climate change adaptation, and strategic water resource planning. The extension workers in turn trained 960 people at the community level. The training has now become a national program in Ethiopia with field manuals translated into local languages.

## Tana Beles project - piloting a community-centered approach to watershed management



**Project description:** The Lake Tana and Beles River sub-basin in Ethiopia is part of what has come to be known as the Ethiopian growth corridor because of its substantial potential for irrigation and hydropower development. However, this potential was facing a severe constraint in the form of siltation of the river caused by upstream soil erosion due to prevailing land-use practices. The CRA recognized that this severe upstream land degradation was related to livelihood challenges that would need to be addressed. As long as the upstream community struggled for income and livelihoods, they would continue to degrade their forests and deplete the land resources.

**Implementation:** The Tana Beles project started in 2011, with ENTRO supporting and augmenting Ethiopia's own watershed management programs to ensure that transboundary impacts were considered. Its aim is to pilot natural resource conservation and rehabilitation of degraded lands through water and land conservation in three severely degraded sub-watersheds: Rib, Jema, and Gumera. The project piloted approaches to watershed management on more than 70,000 hectares of land, spread over six districts. It is expected to have benefited about 400,000 people directly. The preparation included trainings and workshops for the watershed management experts from Ethiopia, Sudan and Egypt, as well as exposure visits both regionally and with other water basins internationally (China and India).

**Components:** The project was about changing land-use behaviors, so it needed to gain the confidence of the community and offer alternatives. It did this by offering livelihood benefits, such as providing access to clean drinking water and providing farming inputs, as well as supporting income-generating activities such as beekeeping and livestock keeping.

To deal with the fundamental erosion problems, it also implemented physical (e.g. soil bunds and trenches) and biological (e.g. increasing soil cover by planting trees and fodder crops) treatments to slow and reverse degradation.

Community members were also involved in a unique monitoring and evaluation process, bringing together micro watershed sediment/hydrological monitoring, natural resource land (vegetation), and socio-economic (livelihoods) monitoring. Eleni Tesfaye, the Ethiopian Government focal person at the Tana Beles project, notes that: "The project's modern software allows the team to transmit daily [hydrological] reports via the internet." This involvement enhances the community commitment and motivation to care for their environment.

**Results:** The restoration work has brought benefits upstream and downstream. Upstream, it has reversed the impact of severe soil erosion. Today, through improved soil management, soil fertility has increased, and flood damage reduced. The local communities are harvesting larger crops and have more feed for their livestock. And downstream, sedimentation levels have reduced by more than 50% since the project started.

The participatory monitoring approach allows everyone to see for themselves and understand the impacts of land management practices. Additionally, the livelihoods approach has yielded positive results. Combined with increased soil fertility and productivity, there is improved income generation through farm activities, and the local communities are enjoying improved social services. ENTRO supported and strengthened Ethiopia's own watershed improvement program, yet gave attention to downstream effects.

According to Desalgne Gelaw, a community facilitator at the Tana Beles Project: "We learnt that it is important to start conservation efforts at the hilltops and work our way down. Conservation work at the top progressively reduces the volume and velocity of the floods ... At first, the farmers did not understand why they had to put so much effort far from their farm plots, but after witnessing the results they now participate with enthusiasm." Mitiku, the project coordinator, adds: "It is clear that watershed management programs should be people-centered. They should enhance livelihood options for the community who are the real managers of the land. This ensures sustainability of the project."

NELSAP has also carried out sectoral analysis and identified 'hotspots' – priority watershed management projects with significant potential for benefits to water supplies, livelihoods, and food security. It also works closely with regional organizations, such as on the preparation of the Lake Victoria Environmental Management Project. This 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 contribute to reducing environmental stresses on the lake, ensuring it is better able to support regional economic growth in the future.

## Lake Victoria Environmental Management project – 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 successful work in Kenya, Tanzania and Uganda (which leveraged US\$82 million in investments and US\$13.5 million annual cost-savings), and on other watershed management project preparation work being done for the Kagera sub-basin. Investment finance was mobilized (by NELSAP together with the Lake Victoria Basin Commission (LVBC) and the EAC member states) mobilization from the World Bank, Sweden and the Global Environment Facility. Implementation is underway nationally with supervision from the LVBC.

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. This is due to increased sedimentation caused by upstream activities (such as deforestation and forest degradation), which exacerbates soil erosion, pollution from increasing urbanization and industrialization, and water hyacinth growth.
- Declining lake levels and river flows. This is due to increasing extractions of water for irrigation and hydropower.

- Resurgence of water hyacinth growth. This is due to pollution, and it clogs up waterways and contributes to reduced water flows and reduced oxygen levels in the water. It consequently affects aquatic biodiversity.
- Reduced fish stocks. This is due to pollution, sedimentation, hyacinth, 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, resulting from upstream soil erosion, and an estimated two hectares coverage of water hyacinth every day.

The project therefore has a strong focus on watershed management (alongside institutional capacity building, improving productivity and marketing, and pollution control measures). Over 6,000 hectares of rangelands and wetlands are being restored for production and conservation, and community-driven livelihoods activities which 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.

Through memoranda of understanding with the countries involved, NELSAP has also prepared integrated watershed management projects for the following sub-basins of the upper Nile:

- **Kagera:** Deforestation, poor farming practices, and the resulting severe land degradation means low yields for the rural farming communities in the project countries (Burundi, Rwanda, Uganda, and Tanzania). NELSAP has employed a Basin-wide approach that is focused on agroforestry, watershed restoration, wetland management, water quality monitoring, and community-driven development activities including water supply, carbon sequestration, and conservation agriculture. Parts of the project have been piloted and planning has begun. With the participation of member states, watershed management and restoration plans have been developed for four priority sub-catchments. These plans address land degradation, low agricultural productivity, sedimentation, and livelihoods. Once implemented by the countries, these plans will reduce soil erosion and improve land fertility, leading to improved food security and more resilient communities. The pilot project for the Kagera watershed is now fully prepared and investment-ready, and investment finance for implementation is being mobilized. Around 200,000 people in the pilot areas are expected to benefit once it is operational, with 2 million people across the catchment area expected to benefit when the full project is implemented.
- **Mara** (Kenya, Tanzania): Natural resources here are threatened by the degradation of upland forests, while poor farming practices and climate change have affected the river flow. The result has been flooding downstream, and increased soil erosion and heavy sedimentation loads. A framework for transboundary development and management of the Mara basin was developed by NELSAP, in collaboration with the governments of Kenya and Tanzania, along with investment proposals. The proposed interventions are diverse and interconnected, reflecting the complex nature of the problem.

## The Mara sub-basin integrated watershed management project – embracing the complexity of ecosystems

With degradation of upland forests, poor farming practices, and climate change, the Mara river flows have been badly affected by flooding downstream, increased soil erosion, proliferation of invasive species, and heavy sedimentation loads and pollution which reduce the quality of the water and fisheries in Lake Victoria. The proposed interventions reflect the complex nature of the ecosystem and include:

- Restoration of the heavily degraded Mau forest complex. This includes forest management, restoration and rehabilitation, securing of buffer zones around tea estates, improved farm management, livelihood improvement activities, and institutional capacity development for stakeholders in the water, forestry, and environment sectors.
- Rehabilitation of critically degraded watersheds. This includes preparing a project for rehabilitating watershed and wetlands in the mid and lower Mara, and preparing sub-catchment management plans for priority areas, with a focus on reversing physical disturbances, reducing sedimentation, and protecting future infrastructure. The interventions are very much welcomed locally. According to Joseph Kones,

Bomet County, Kenya: "Our watershed governance has improved following training of our Water Resources Users Association in integrated water resource management. We are excited to now have support to implement conservation, livelihood, and income generating activities."

- Sustainable management plan for the Mara wetland. Where the Mara River empties into Lake Victoria, the wetlands flood perennially, and interventions planned include land-use planning and biodiversity conservation to create buffers to protect against the floods.
- Water storage through the 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 multiyear storage, so that the irrigation will be reliable, and discharges will support downstream river and wetland ecosystems.

- **Sio-Malaba-Malakisi** (Kenya): Poor farming practices have resulted in extensive catchment degradation and significantly increased sediment loads in the rivers. The feasibility study for the project has recommended five small-scale investment projects that include agroforestry, watershed restoration, biodiversity and wetland conservation, carbon sequestration, and water quality monitoring and pollution control. Already, some parts of the project have been implemented, including the Sio-Siteko community wetlands management and several sub-catchment management plans. Pilot watershed management plans have been prepared and will benefit 600,00 people once implemented. Once watershed management is implemented across the whole catchment, 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:** 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, implement community-based catchment, irrigation and wetland management plans for over 30,000 hectares of productive land, protect 765 hectares of lakeshore, and plant agroforestry, fruit, bamboo, and indigenous tree species and fodder grass along the Akanyaru riverbanks. Once funding is mobilized and the project is implemented, around 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.

The ongoing Nile Cooperation for Results (NCORE) project is carrying out feasibility studies of further investments of regional significance. These include projects with watershed components. For example, the Kabuyanda, Ruvyironza, Ngono, and Mara Valley water resource development projects are expected to benefit over 1.2 million people in Tanzania, Uganda, and Burundi.

**Community-level benefits.** Amsanu Wondnagenehu is a wheat farmer in the Tana Beles project area. On land degradation, he says: "Before the structures like soil bunds and trees to hold soil in place were introduced, floods used to wash off the topsoil and productivity decreased every year." Better soil management has meant greater farm productivity for Amsanu. His wheat production has increased from 400kg to 1,000kg per harvest. He now manages to save some money in the bank and spends some on fattening sheep, which he sells in the market.

In addition, seeing the results of the project, the youth in the community have become increasingly engaged in improved farming activities. They were so inspired by the project that they went on to form an association that now provides a platform to raise credit for creating income-generating activities.

## 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

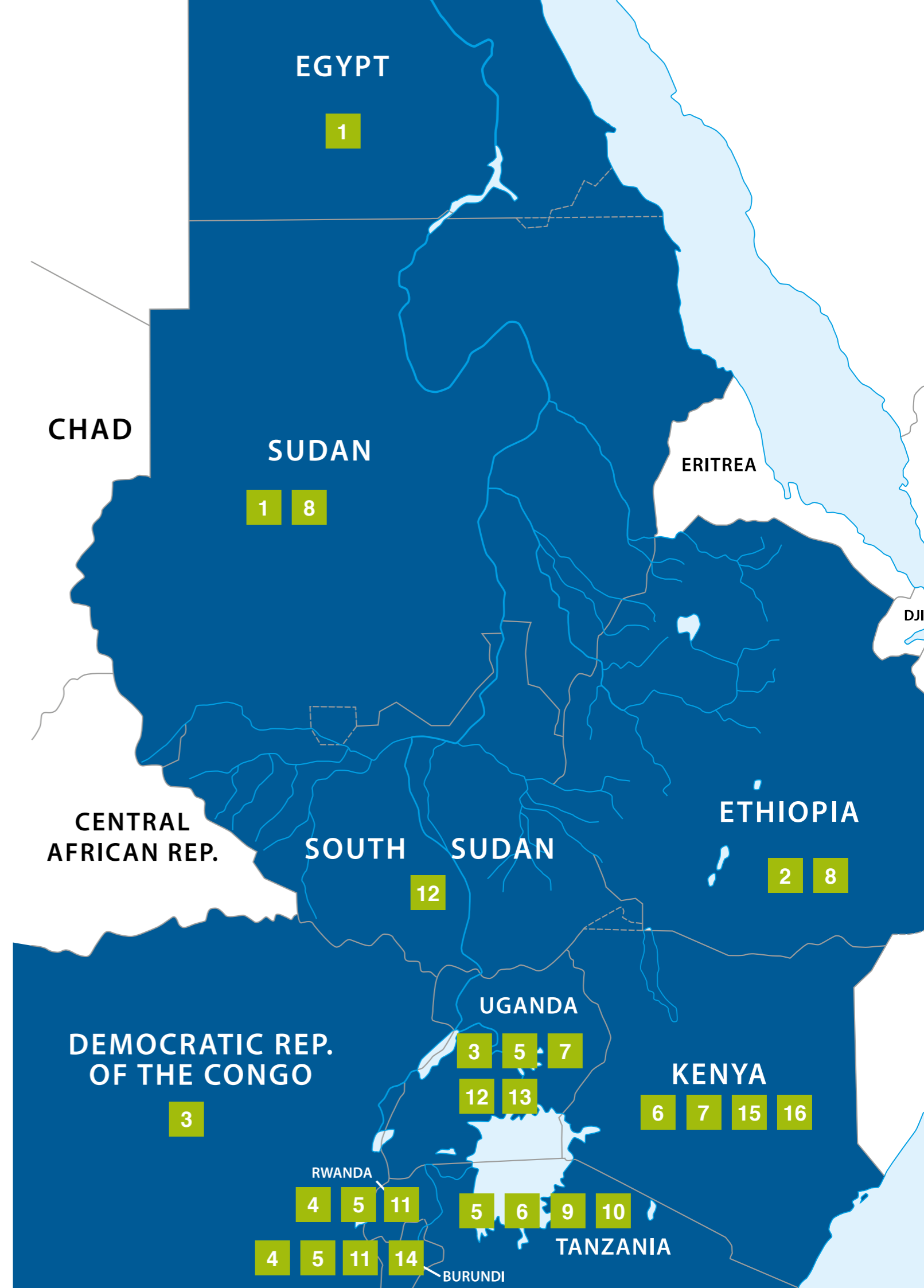
**5** **Project:** Kagera Sub-Basin Integrated Watershed Management Project  
**Country/ies:** Burundi, Rwanda, Tanzania, Uganda  
**Status:** Pilot projects prepared, resource mobilization ongoing  
**Prepared by:** NELSAP-CU  
**Hectares of watershed:** 2,024 ha (irrigation)  
**Projected beneficiaries:** 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)

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





## Towards restoration of the basin – evidence of benefits

Since its inception, the NBI has come a long way towards the restoration of the Nile Basin and resolving the linked upstream degradation and downstream siltation problems. Work through the NBI has:

- Enhanced cooperation, by bringing countries together to reach common agreement on upstream/downstream issues and how to work together to resolve them.
- Put watershed management into practice, by implementing and preparing 16 integrated, transboundary projects for agricultural and environmental benefits, covering at least 17.4 million people directly and indirectly.
- Ensured that all of these projects include significant environmental and social benefits, with real opportunities for economic growth through better livelihoods and reduced downstream siltation.
- Significantly decreased the pressure on natural resources by intensifying farming practices, thereby limiting increases in farm area and agricultural water use.
- Generated evidence of increased land productivity and income generation, including better access to markets and diversified employment, in the areas under watershed management programs.
- Generated evidence of significant reduction of the critical problem of downstream siltation in some micro-watershed in the eastern Nile (for example 50% through the Tana Beles project).
- Promoted sustainability and replication by national governments, working towards scaling up the benefits across the Basin. By involving national and local government, and facilitating the development of local institutions for catchment management, the NBI approach ensures sustainability. This also means that good practice gets replicated in other regions. The Government of Uganda has replicated the NELSAP approaches across the upper Nile, and the district government has now replicated the Tana Beles approach in other parts of Amhara Province.



NBI's strategy and action on watershed restoration has also been integral to the success of other NBI intervention areas. In particular, by improving downstream water flows and quality, it has helped to protect and maximize the potential of development benefits from irrigation and hydropower.

## Lessons and success factors to inform scale up





## Opportunities to scale up the benefits

There are now real opportunities for scaling up these achievements, and the NBI is well placed to help the countries further prepare projects and advise on implementation. National governments have the opportunity to extend the impact from sub-basins to the whole Nile Basin by:

- Mainstreaming the 'ready-made' projects prepared by the NBI in their national development plans, confident that these are projects that offer meaningful and equitable benefits and sustainability.
- Engaging with and integrating NBI experiences and lessons into policies and regulations, ensuring best practice nationally, and avoiding future transboundary conflicts.

Increasing the reach of the benefits in this way would further help to significantly address environment sustainability and transboundary issues associated with poor watershed management and development, including, including degraded livelihoods and issues of sedimentation and flooding that have real economic impacts across the Nile Basin. It is an opportunity for real change and development for the region.

This note forms one of a series of briefing notes prepared to mark the completion of the Nile Basin Trust Fund (NBTF). The Nile Basin Trust Fund was opened in 2003 at the request of Ministers responsible for water affairs in the Nile countries, and was administered by the World Bank on behalf of ten donors.

The series of briefing notes highlight the achievements of the Nile Program, a set of projects and sub-programs that have been supported by Nile riparian countries, the Nile Basin Trust Fund and other donors in parallel to the NBTF, largely implemented by the Nile Basin Initiative (NBI).

### NBI Member States



### For more information



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