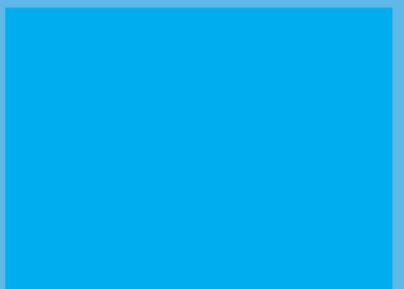
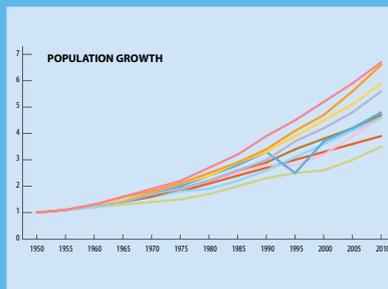
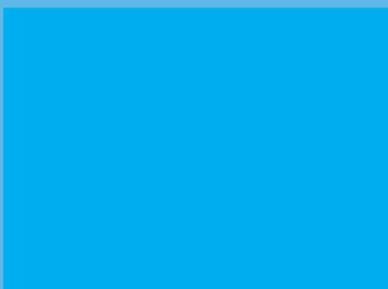
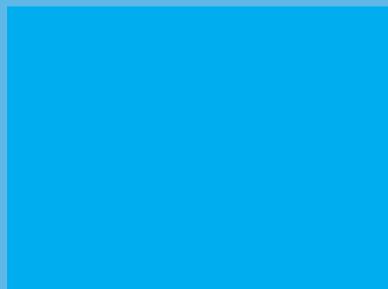


Summary: The State of the River Nile Basin 2012





A MAJOR TRANSBOUNDARY RIVER BASIN WITH LITTLE WATER

The Nile is generally regarded as the longest river in the world, and has a drainage area exceeding 3 million square kilometres, shared by 11 countries. From south to north, the river flows over 35 degrees of latitude, traversing highly diverse landscapes and climatic zones.

The river has two main tributaries: the White Nile and the Blue Nile (Abay). Both begin their journeys in relatively humid areas, with annual rainfall ranging from 1,200 to 2,000 mm, and meet at Khartoum. From this point onwards, the river flows northwards through the Sahara desert, where precipitation is less than 100 mm per year.

The two main tributaries have very distinct hydrologic regimes. The Blue Nile (Abay) and the other rivers coming from the Ethiopian Highlands contribute between 80 and 90 per cent of the Nile's flow, but are highly seasonal and carry high sediment loads. The White Nile, by contrast, has a steady flow, with low sediment content, and contributes some 10 to 20 per cent to the annual Nile discharge.

Distinguishing features of the Nile Basin include:

- climatic diversity
- uneven distribution of the water resources
- a relatively small volume of runoff compared to the size of the basin.

Annual renewable Nile flow is just over 80 cubic kilometres. Just how small this volume is becomes clear when comparing it to the annual discharge of the river Congo – estimated at some 1,300 cubic kilometres – which drains an area only 30 per cent larger. Large parts of the Nile Basin are situated in semi-arid and arid zones that do not generate runoff. Internal water losses are large, caused by evapotranspiration in the extensive wetland areas, by in-stream losses in the desert zone, and by evaporation in the large, constructed reservoirs, such as Lake Nasser/Nubia and Jebel el Aulia.

The quality of the Nile waters has generally deteriorated in recent decades because of increases in population, intensification of agricultural activities, industrial development, and accelerating soil erosion. Nevertheless, water quality in large parts of the Nile system – in particular in the sparsely populated areas – is still within the standards of the riparian countries and of the World Health Organization. Localized high pollution is experienced around the main urban areas, mainly as a result of untreated industrial and municipal waste. The Equatorial Lakes are subject to eutrophication as excessive amounts of nutrients reach the water bodies and create frequent algae blooms. High sediment yield is a major issue in the river reaches originating in the Ethiopian Highlands, where watersheds suffer severe land degradation due to the extended dry season followed by torrential rains, the nature of their geology, and current land-use practices.

Indicators

This chapter summarizes the contents of the preceding chapters. It is to be read together with the quantitative State of Basin Indicators presented in the Annex 1.

Images on previous page: The Nile as it flows past Malakal, South Sudan. The growth factor of the populations of Nile Basin countries since 1950. The intensively farmed slopes of the Virunga Mountains, Uganda.

The Nile flows are fully used for productive and environmental purposes. Most are used for irrigated agriculture in Egypt and The Sudan, while hydropower represents the main non-consumptive use. The potential for further supply increase is limited, while the water-demand curve continues its steady rise due to ongoing population growth and economic development. Further, the upper riparians – up to now barely using Nile waters are increasingly looking to the Nile as a source of water supply, thereby increasing competition over use of the Nile water resources. Applying integrated water resources management approaches to ensure that the resources are equitably shared and sustainably managed will be of critical importance in the coming years.

ENVIRONMENTAL RESOURCES UNDER INCREASING PRESSURE

The Nile has hugely diverse ecosystems, ranging from montane forests and moorlands, through humid lowlands forests and bushlands, to savannah grasslands and steppes. The aquatic and terrestrial ecosystems of the Nile Basin are home to a large number of plant and animal species, including some that are endemic to the basin. The faunal community, now mainly concentrated in game parks and other conservation areas, include large game, such as elephant, hippo, and lions. Two ecosystems within the basin feature spectacular annual mass migrations of large mammals.

A unique feature of the Nile Basin is the large swathe (42 per cent of basin area) of arid and hyper-arid land, with plant and animal communities that contrast strongly with those in the numerous massive wetlands systems. The wetlands and waterways of the Nile harbour large resident bird populations, and are visited by millions of migratory birds. Seventeen locations within the River Nile Basin have been designated as International Ramsar sites.

The riparian communities of the Nile Basin are very heavily dependent on exploitation of environmental resources for their livelihoods and general wellbeing. The environmental resources are used for various services such as climate and hydrologic regime regulation, and as a source of food, fuel wood, building materials, and industrial materials. The environment contributes between 40 and 60 per cent of the GDP of the member states.

Degradation mainly results from human pressures in diverse areas. The most notable of the pressures arise from agriculture, livestock production, bush fires, poaching, urbanization, industrial development, mining, domestic energy consumption, invasive species, and civil insecurity.

Partly as a consequence of human activities, the area of forest in the Nile countries shrank by proportions ranging from 4 to 39 percent between 1990 and 2008. Rwanda and Egypt are the only countries in

The demand for water continues to rise but there is limited potential for an increase in supply

The environment contributes up to 60 per cent of the GDP of basin states



the region that saw an increase in forest area over the same period. (See Chapter 3.)

As well as human pressures, there are a number of natural pressures contributing to the degradation of the environment in the basin, the main ones being climate change, desertification, and natural disasters.

The underlying causes of the mounting pressure on environmental resources are rapid population growth, high levels of poverty, and civil insecurity in many parts of the basin. A sustainable solution to the environmental degradation in the basin must include actions to tackle these issues.

Most of the countries have a comprehensive suite of policies, laws, and strategic plans in different fields related to environmental management. Except in a few countries, there is a clear national lead agency for the environment. National systems for environmental impact assessment are also in place, although the strength of the system varies from country to country.

Weaknesses are more numerous than strengths, and include inadequate human capacity, inadequate budgets, weak enforcement of environmental laws, and weak mechanisms for intersectoral collaboration.

In general, Burundi, DR Congo, and South Sudan have relatively weaker policy, legal, and institutional frameworks for environmental governance compared with the other Nile countries.

A LARGE AND RISING POPULATION

The basin is home to a large population that is growing rapidly. According to the United Nations Population Division (medium variant projection), the total population in the Nile Basin states will reach 647 million by 2030, which represents an increase of 52 per cent from the population in 2010. It is estimated that just over half of these people will be living within the basin boundaries.

Poverty is widespread, and socio-economic conditions are difficult for a large majority of the Nile citizens. In the *Human Development Report 2010*, six Nile Basin countries were ranked among the bottom 25 in terms of their HDI score, while Eritrea had no ranking. Food security is a critical concern. The average daily calorie intake in all Nile countries – except Egypt – is below the 3,000 kcal/person/day threshold that indicates the absence of undernourishment in a nation.

The socio-economic conditions in the Nile Basin are characterized by large inequalities, both among the basin states and within the individual countries. Per capita income in Egypt – the richest country in the basin – is 20 times higher than in the Democratic Republic of Congo – the basin's poorest nation. The Gini coefficient – which measures economic inequality – is above 40 in four out of eight Nile countries (no data are available for Eritrea, South Sudan, and The

The area of forest
in the basin
shrank by 18%
from 2005 to 2009

(MERIS)

The population
of the basin is
projected to increase
by 52% by 2030

(UNPD)

Sudan), indicating very substantial differences in income and wealth in the nation.

The annual growth rate of the urban population is estimated between 4 and 5 per cent, but a large majority of Nile citizens in 2030 will still be living in rural areas. Even by 2050, the rural population is expected to dominate in Burundi, Ethiopia, Kenya, Rwanda, and Uganda, and remain substantial in other riparian states. The large rural population – which intimately depends on the natural resource base for its food security and livelihood – is a factor that will be a major determinant of the focus and pace of socio-economic development in the Nile basin.

Developing the non-agricultural sector of the economy is critical to taking pressure off land in rural areas. In the headwater regions of the Nile, the inadequate transport system and insufficient power supply have been among the factors holding back economic growth. Furthermore, the business environment in the Nile region is generally not favourable. On the World Bank website ‘Doing Business’, in the ranking for ‘Ease of doing business’ for 2011, three Nile countries are among the lowest ranking 25, and only Rwanda (67) was in the top 100.

The growing population puts unprecedented pressure on the Nile system, both with regard to water use and pollution. Demand for food produce will almost double by 2030 because of higher per capita calorie intake associated with economic development and the larger population.

A large and rising population can be an engine for growth when the proper conditions for development – in terms of schooling, infrastructure, and business environments, for example – are in place. Given the resource limitations and the current socio-economic situation in the Nile Basin, however, it is likely that the challenges posed by a rising population will outweigh its benefits.

THE STRUGGLE TO MEET DOMESTIC NUTRITIONAL DEMAND

A key feature of the Nile basin is the large share of the population active in the agricultural sector. Only in Egypt – with 32 per cent of the labour force engaged in agricultural production – is this proportion below 75 per cent. However, despite its prominent role in the economy, and importance to the livelihood of the very large rural population, the agricultural production system is generally inefficient, and is characterized by very low yields. Notable exceptions are irrigated agriculture in Egypt and a number of large commercial operations – irrigated or rainfed – elsewhere.

More than 87 per cent of the cultivated land in the basin is under rainfed agriculture, the dominant farming system in the upper riparians being smallholder subsistence rainfed. Although annual rainfall is quite substantial in these areas, yields are generally low, leading to low agricultural water productivity.



Egypt and The Sudan rely almost exclusively on irrigated agriculture that depends on Nile waters. Their combined acreage exceeds 4.5 million hectares and represents the single largest consumptive use of the Nile waters. The total area in the upper Nile countries under formal irrigation is estimated at less than 50,000 hectares. While yields are generally high in Egypt, this is not the case for the large smallholder systems in The Sudan.

The potential of the agricultural sector in the Nile basin is large, but its performance is held back by many constraining factors. These are both related to the natural resource base, and to the economic and institutional environment. Poor soil fertility and highly variable rainfall in the planting season are prominent among the biophysical constraints. There are also non-biophysical constraining factors that include unstable land tenure, absence of profitable and predictable farm-gate prices, and weak extension services.

Improving agricultural productivity is central to rural development and to enhancing the prospects of attaining national and regional food security. While this is possible, it depends on simultaneously implementing a coordinated set of policy measures to tackle the multiple biophysical and non-biophysical constraints. Thus, besides improving water availability and agricultural extension services, national agricultural and economic development policies need, among other things, to concern themselves with making farming a profitable enterprise so as to provide the incentive for farmers to invest time, labour, and financial resources in soil and water conservation measures. Remedial measures implemented in isolation are likely to prove ineffective.

With the exception of Egypt, the agro-industrial sector in the Nile basin is characterized by low production volumes, mostly serving local and immediate neighbouring markets. The sector's potential to create employment, increase the monetary value of agricultural produce, and foster critical rural development is not captured. Inadequate rural infrastructure, frequent electricity shortages, high power tariffs, and a generally poor enabling environment all contribute to the poor performance of the agro-industrial sector.

With a rapidly rising population, the Nile countries are working hard to meet nutritional requirements, but none of them is currently generating a food surplus. Trade in agricultural commodities amongst the Nile riparian states has huge potential, and could promote rural development and regional integration. However, without surplus production of food products such as cereals in the countries with a potential food surplus such as Uganda, South Sudan, and The Sudan, intra-basin agricultural trade is currently very limited. The trade potential can only be realized when these countries can increase agricultural productivity so that production exceeds domestic demand.

Three Nile countries
are among lowest
ranked in terms of

ease of doing business

(World Bank)

Improving

agricultural productivity

is central to

development

and food security

THE NILE'S POTENTIAL FOR MEETING ENERGY NEEDS

Electricity production per capita in all Nile riparians except Egypt is very low, with six countries generating less than 100 kWh per person per year, compared to the world average in 2007 of 2,752. This low electricity production forms a real barrier to industrialization, the addition of value to agricultural products, and economic development in general. In rural areas in the upstream riparian states, only a small fraction of the population has access to grid electricity. This not only hinders development, but perpetuates the high dependency on biomass energy sources that adversely affects the environment. Urban electrification rates are higher, but only Egypt and Ethiopia have connected more than 80 per cent of the urban population to the grid (no data is available for South Sudan or The Sudan).

With large unmet demands, growing populations, and improving socio-economic conditions, power demand is huge and rising rapidly, requiring large investments in power generation in the coming years. The hydropower potential in the Nile Basin exceeds 28 GW, of which only 26 per cent is currently developed. This potential, if developed, can meet a considerable part of the future energy demand. In the longer term, however, energy demand will exceed hydropower potential, and alternative power sources are therefore needed. Furthermore, hydropower development involves very long lead times, and developing thermal capacity may be necessary to avoid power shortages in the short- and mid-term. Expanding power trade will assist in alleviating power shortages and reducing electricity costs, and will create a more robust electricity supply. Power trade in 2011 is very limited, but the regulatory infrastructure for a regional power pool has been put in place, while work is ongoing to build the regional transmission grid.

A WATERWAY OF GROWING SIGNIFICANCE

The transport system in the upper Nile region is generally inadequate and leads to high transport costs that reduce economic opportunities.

The railway lines connecting the harbours on the Red Sea and the Indian Ocean to the upper Nile region are inefficient and have limited capacity. Most cargo, therefore, is shipped by trailer truck to the hinterland over a small and inadequate road network. It leads to high transport costs and transit times. The cost of shipping from overseas to the Lake Victoria region is 70 to 100 per cent more than to the ports of Mombasa or Dar es Salaam, which constrains export potential and makes essential imports more expensive. A bulk cargo transport link between the upper and lower riparians is absent.

The ineffective transportation system reduces trade opportunities, prevents the upper Nile countries from enjoying the benefits of globalization, and slows down regional and Nile Basin integration.

Hydropower potential

in the basin is
28 GW, of which
 only **26%** is currently
 developed



New investments in infrastructure for bulk cargo transport are justified by good prospects in terms of mineral resources and agricultural potential, combined with population growth and general economic development.

Sections of the Nile river system are navigable and can serve as key links in the regional bulk cargo transport network. Inland navigation is cost effective for medium and longer distances, while less polluting than road transport. The section of the White Nile between Kosti and Juba – the Southern Reach – is navigable and could be used to link the Equatorial Lakes region to the lower Nile riparian countries. It has the potential to facilitate trade in agricultural produce between potential surplus countries – such as South Sudan and Uganda – and net food importers such as Egypt. Lake Victoria is equally important in the regional transport network, and provides a critical connection between the Northern Corridor (Kigali–Kampala–Mombasa) and the Central Corridor (Dar es Salaam–Tabora–Mwanza). Improving navigation on Lake Victoria also has the potential to strengthen economic integration amongst the lake basin countries.

Nile navigation is currently limited, and mostly occurs on the Nile in Egypt and between Aswan and Wadi Halfa on Lake Nasser/ Nubia. Shipping capacity on the Southern Reach is increasing but remains low. Lake Victoria wagon ferries are currently grounded because of maintenance and insurance issues. A number of operational constraints – which include weak regulatory capacity, absence of navigation aids, inadequate inland port infrastructure, lack of fleet, and outdated hydrographs and navigation charts – hinder expansion of the inland navigation sector and realization of the full potential of navigation in promoting regional integration and economic growth.

CLIMATE CHANGE IMPACT: NOW AND IN THE FUTURE

One of the distinguishing features of the Nile Basin is the spatial diversity and high temporal variability of its climate. Traditional livelihood systems were well adapted to the weather uncertainties, but changing lifestyles combined with a rapidly growing population have largely eliminated this ability. The high temporal variability of rainfall has a marked adverse impact on the productivity of rainfed agriculture, even in areas with significant average annual rainfall in the agricultural zones.



Tug boat and barges leave the quayside on a sugarcane processing plant situated on the Nile, Egypt.

Rural populations dominate in all countries, and constitute more than 75 per cent of the population in six riparians. The dominant rural population will persist in 2030 and even 2050. Most of these people depend on finite land and water resources for their livelihood and food security. Widespread poverty means that the rural population and urban poor cannot afford food imports and are reliant on local produce. These people are highly vulnerable to weather uncertainties and thus to climate change.

Rising temperatures – which are predicted to occur by all GCM runs – will raise agricultural water demand, increase irrigation requirements, lead to higher reservoir losses, increase drought risks, and accelerate land degradation. It is also widely assumed that extreme events will become more frequent. These factors will negatively impact the output of rainfed agriculture that is practised on 87 per cent of the cultivated land in the basin, while reducing the overall irrigation potential.

Even if rainfall were to increase – which is still highly uncertain – it is doubtful that this will translate into higher rainfed yields in the current socio-economic setting because of the many constraining factors in the agricultural production system, of which occasional moisture deficit is just one.

Nile flows are very sensitive to changing rainfall patterns. Some GCM runs indicate higher precipitation in East Africa and the Ethiopian Highlands, which would lead to higher runoff. This signal, however, is still highly uncertain, and whether runoff volumes of the Nile and its tributaries will increase or decrease cannot yet be established. Obviously, higher flows will boost hydropower and irrigation potential, while the opposite will occur if runoff declines. Each sub-basin will respond differently to a changing climate as a function of its distinct hydrographic, vegetation, and climatic parameters.

Climate change is also expected to increase flood risks in the basin's densely populated flood plains, threaten the productive Nile Delta through sea-level rise, and affect other sectors in the economy. It is evident that the risks associated with climate change for now outweigh possible benefits.

A number of climate change adaptation plans have been developed, but seem insufficient given the scale of the threat. A complicating factor is that the direction of change of the rainfall patterns has not yet been established. Before this is known, a sensible approach is to prepare for a more variable climate than historically recorded, and to implement a number of 'no-regret' measures that, among other advantages:

- strengthen the agricultural sector
- establish food reserves
- build resilience to current climate variability
- interconnect power systems
- strengthen managerial capacity
- increase reservoir capacity.

Small-scale irrigation in Tanzania.





The current hydro-meteorological monitoring efforts in the Nile basin are insufficient. This requires strengthening in order to assist member states to establish the direction, magnitude, and impacts of hydrological changes in the basin, brought about by global climate change.

RESPONDING TO CHALLENGES

The major water and environmental resources of the Nile Basin traverse the international boundaries of the member states and, therefore, call for coordinated, mutually reinforcing management interventions at national and regional levels. The Nile Basin Initiative (NBI) represents the most significant effort in the history of the basin to bring together the riparian states to cooperate in the management and development of the common Nile water and environmental resources for the benefit of all.

The NBI has, since 2004, been coordinating a number of basin-wide actions under the Shared Vision Program (SVP), designed to build confidence and trust amongst member states, address capacity issues, and lay a foundation for greater regional cooperation. Eight projects were implemented under the Shared Vision Program, focused on confidence building and stakeholder involvement, socio-economic development and benefit sharing, efficient water use in agriculture, transboundary environmental action, water resources planning and management, and applied training. The most significant of these projects (and the only one still running) is the Water Resources Planning and Management Project, which has developed a world-class decision-support system to facilitate knowledge-based water resources planning at basin-wide level.

The Shared Vision Program has been complemented by Subsidiary Action Programs (SAPs) in the Eastern Nile and Equatorial Lakes sub-basins, which have initiated investments and concrete actions on the ground to address the environmental and socio-economic development challenges in the basin. The investment portfolio of projects prepared under the two SAPs has passed the US\$2 billion mark. Financing for project preparation has largely been through grants from international development partners, supported by counterpart and in-kind contributions from NBI member states. The investment projects in the two SAPs, which are at different stages of preparation and implementation, are in the areas of agricultural irrigation and drainage, agricultural trade, power infrastructure development, regional power trade, flood warning and preparedness, integrated sub-basin management, and watershed restoration. A number of projects, such as the Power Interconnection Project between Ethiopia and The Sudan, have been completed.

While many of the NBI projects, especially those at basin-wide level, have been successfully completed and closed, their impacts have not been felt strongly across the basin due to the magnitude of the

Climate change
adaptation measures
targeting rural areas
are similar to ongoing
rural development

problems being addressed. An upscaling of effort is needed to bring about noticeable and lasting change. In this regard, the NBI has prepared a new Strategic Action Program for the period 2012–16 that aims to consolidate the gains of the past years, move the present investment projects from preparation to implementation, and deepening cooperation and joint actions in an environment of trust.

Within the basin there are other regional bodies whose interventions complement those of the NBI. These include the East African Community and its special institutions such as the Lake Victoria Basin Commission; and the Intergovernmental Authority on Development.

ENHANCING THE RESPONSE

Given the multiple and complex development and environmental challenges facing the riparian communities of the Nile Basin, many interventions are required to be taken concurrently at the various levels of governance, from regional, through national and provincial/district, to local community levels. The most critical of the interventions include:

- pursuing no-regret measures to mitigate impacts of climate change
- increasing the level of virtual water and intra-basin trade in agricultural products
- slowing down and reversing environmental degradation, especially soil loss from the Ethiopian Highlands
- increasing hydropower production and regional power trade.

As well as the measures above, it is of equal importance to strengthen and sustain institutional frameworks for regional integration (such as the EAC and IGAD), and for coordination of interventions at sub-basin and basin-wide levels (the NBI and its Subsidiary Action Programs – SAPs).



Visitors from upstream countries in discussion with local Egyptian farmers during a study tour in 2009 organized by the Applied Training Project.

Some members of Nile-COM (with raised hands) at the 2012 Regional Nile Day Celebrations in Jinja, Uganda. Cooperation amongst Nile riparians is essential to optimize benefits from the shared Nile water resources.





WATER HOTSPOTS AND HOPESPOTS

Integral to the analysis of prevailing conditions in the basin is the identification of ‘water hotspots’ and ‘water hopespots’. A water hotspot is an area within the basin where there is high pressure on water and environmental resources, resulting in acute water stress, destruction of aquatic biodiversity, or serious water pollution. A water hopespot is an area where innovative or remarkable steps are being taken to address the environmental and socio-economic challenges, or where significant opportunities or conducive conditions exist for addressing the challenges. The key water hotspots and hopespots in the Nile Basin that emerge from the previous chapters are summarized below.

THEMATIC AREA	HOTSPOTS	HOPESPOTS
Water resources & climate	<ul style="list-style-type: none"> The drylands on the margins of the Sahara in The Sudan, which have water scarcity, suffer from frequent droughts, encroaching desert and escalating conflicts over water, pasture, and other environmental resources The Nile valley in Egypt – another water stressed area – is very densely populated, has a rising water demand, and is heavily dependent on finite water generated in headwater lands. The Nile Delta in Egypt, which is eroding and sinking, and is vulnerable to sea-level rise. 	<ul style="list-style-type: none"> The Ethiopian Highlands where there are proposals to construct high-altitude reservoirs with potential to reduce evaporative losses and minimize flooding in downstream areas. These projects can only be true Nile hopespots if cooperatively implemented with other riparians, and if mechanisms can be established to share costs and benefits. The reservoirs on the Nile have a potential to become a hopespot if their operations can be coordinated (through tools such as the Nile-DSS) to maximize system-wide energy, irrigation, and flood control benefits; this too will require a high level of cooperation and clear mechanisms for cost and benefit sharing.
Water quality	<ul style="list-style-type: none"> The major cities in the Basin (Addis Ababa, Bukoba, Cairo, Entebbe, Jinja, Juba, Kampala, Khartoum, Kigali, Kisumu, Musoma, Mwanza, Nile Delta, Wad Medani) where there is water pollution from domestic and industrial effluents and solid wastes. 	<ul style="list-style-type: none"> The Nile Valley in Egypt, where regulatory efforts have halted the escalation of water pollution.
Environment	<ul style="list-style-type: none"> The Ethiopian Highlands and Nile Equatorial Lakes region, where there is increasing deforestation, wetlands drainage, serious soil erosion, and destruction of water towers such as the Mau Forests ecosystem, Mt. Elgon forests, Virunga volcanoes ecosystems, Mt. Rwenzori forests, and Ethiopian montane ecosystems. 	<ul style="list-style-type: none"> Rwanda, where there has been a marked increase in national tree cover. Ethiopia, where there is an increase in use of traditional water and soil conservation technologies and increasing efforts to restore degraded lands. Kenya, where considerable efforts are being made to reverse the destruction of the Mau Forests Complex.



Irrigated fields on the Kenana Estate, The Sudan.

THEMATIC AREA	HOTSPOTS	HOPESPOTS
Demography	<ul style="list-style-type: none"> Rwanda, Burundi, the areas around Lake Victoria, and the Ethiopian Highlands, where there are high population densities giving rise to unprecedented pressure on water and environmental resources. 	<ul style="list-style-type: none"> Egypt, Kenya, and Rwanda, where efforts to control population growth have produced significant reductions in fertility rate.
Agriculture & nutrition	<ul style="list-style-type: none"> Burundi, DR Congo, and Eritrea, where over 60% of the population is undernourished. 	<ul style="list-style-type: none"> Egypt, where there is very high agricultural productivity, efficient water use for agriculture, and externalization of water demand through food importation. The Gezira and other public irrigation schemes in The Sudan that have full water control and good soils, and the potential to substantially increase agricultural production; efforts are ongoing to increase water-use efficiency and agricultural production in these schemes. South Sudan and Uganda, where there is potential to produce food surpluses that could be sold in other parts of the region.
Hydropower	<ul style="list-style-type: none"> Burundi, Eritrea, Ethiopia, Rwanda, Tanzania, and Uganda, where there is very low per capita electricity consumption and low rural electrification. 	<ul style="list-style-type: none"> DR Congo and Ethiopia, where there is huge potential for hydroelectric power generation from the Nile and other African rivers. Considerable hydropower potential along the Victoria Nile in Uganda, and White Nile in South Sudan. Self-financing by Ethiopia of major hydropower dams, which reveals potential for raising substantial financing from domestic sources for infrastructure projects.
Transport	<ul style="list-style-type: none"> Burundi, Ethiopia, Rwanda, and Uganda, where cost of transportation is very high. 	<ul style="list-style-type: none"> Aswan to Delta in Egypt, where inland transport is well developed; Juba to Kosti, which has a potential to link the Nile Equatorial Lakes region to the rest of the basin. The new Lamu–Juba transport corridor, which has the potential to reduce transportation costs in the region. The revival of inland transport on Lake Victoria, which has the potential to link the main transport corridors in the Equatorial Lakes region.

