

The Niles



**THE
CONSERVATION
ISSUE**

When there is something wrong in the forest, there is something wrong in society.

As this proverb suggests, the condition of the environment is a good barometer for the overall health of a community. A forest, for example, is a rich ecosystem that can only

exist when its elements are in balance. When one element takes over, this balance is threatened. Human ambition has gone unchecked for decades, with greed, power and

indifference plaguing societies and ultimately the environment. From the careless overuse of plastics to the illegal dumping of toxins into water sources, human behaviour has

proven detrimental to local and global ecological systems. As journalists from Nile Basin countries discovered while researching this issue of The Niles, healing

the forest starts with healing communities. This means taking a hard look at human actions that lead to degradation while shedding light on sustainable conservation efforts.

m'CT

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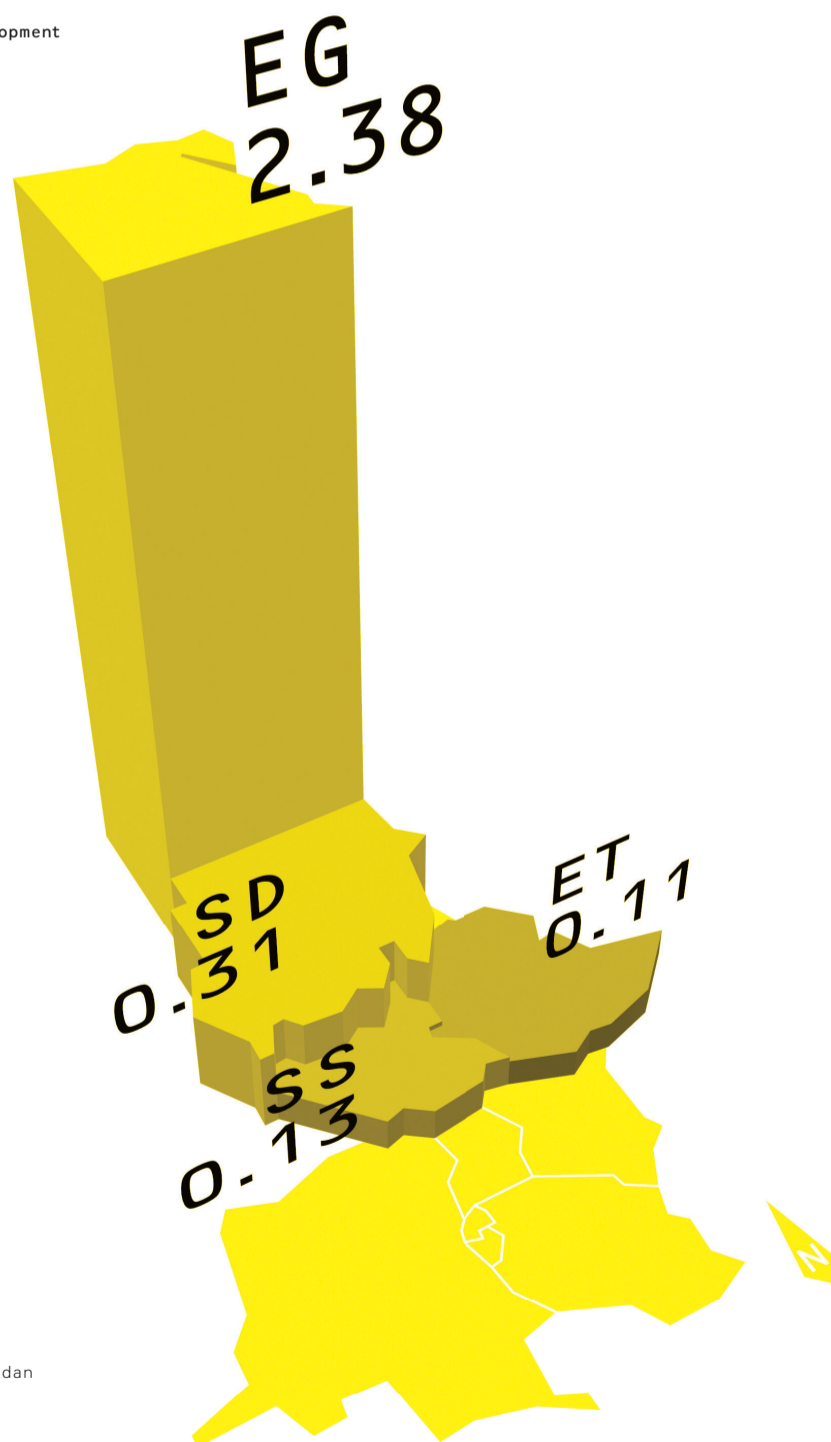


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CO2 emissions per capita

in metric tons, 2013

Source:
World Development
Indicators



EG Egypt
ET Ethiopia
SD Sudan
SS South Sudan

Nile Basin countries produce a fraction of the world's emissions yet bear the brunt of pollution and climate change. The Niles journalists took a closer look at the causes of this crisis as well as efforts to reverse some of the damage that has been done.

All African countries together emitted less CO₂ in 2016 than Russia alone, according to the Global Carbon Atlas, yet Russia was ranked fourth in a list of the top 20 countries with the highest

CO₂ emissions.

The top five polluters – China, the USA, India, Russia and Japan – together emitted over 57 percent of the world's total emissions. The top 20, which included only one African country (South Africa) accounted for over 77 percent of the world's emissions.

In contrast, all the Nile Basin countries in 2016 produced no more than 0,8 percent of the world's emissions. Within the debate of equitable sharing of responsibilities, this information is important. It is also crucial in building collaborations in order to start resolving global warming and environmental degradation for future generations.

Experts estimate that worldwide 600,000 children died in 2016 as a result of air pollution. In just over four decades, livestock populations around the world have decreased by 60 percent, according to World Wildlife Fund's (WWF) Living Planet Report. More than 4,000 mammal, bird, fish, reptile and amphibian species have shrunk dramatically between 1970 and 2014. Pollution, deforestation, climate change and other man-made factors have led to a crisis, according to WWF.

There is much to be discussed on the conservation front. Colonialism, exploitation, economic growth, the gender gap, health and education are all debates which affect and are affected by conservation. Perhaps the wheels of consumerism, capitalism and growth are too far in motion for the brakes to even be considered.

Many also forget the impact individual actions have on a global scale. It is no longer uncommon to fly half way around the planet for a work-related trip. The making of this very newspaper brought 25 people to Lake Tana, the threatened source of the Blue Nile.

Last year a group of journalists from the Eastern Nile Basin countries gathered in Bahir Dar, Ethiopia to map out this issue of The Niles.

During a three-day meeting, journalists delved into research, collaborated and had conversations that echoed the current worldwide debates about environmental degradation.

The cross-border stories that resulted from the meeting span pollution concerns, the destruction of ecosystems, the depletion of natural resources and the main drivers of environmental degradation in the Eastern Nile region.

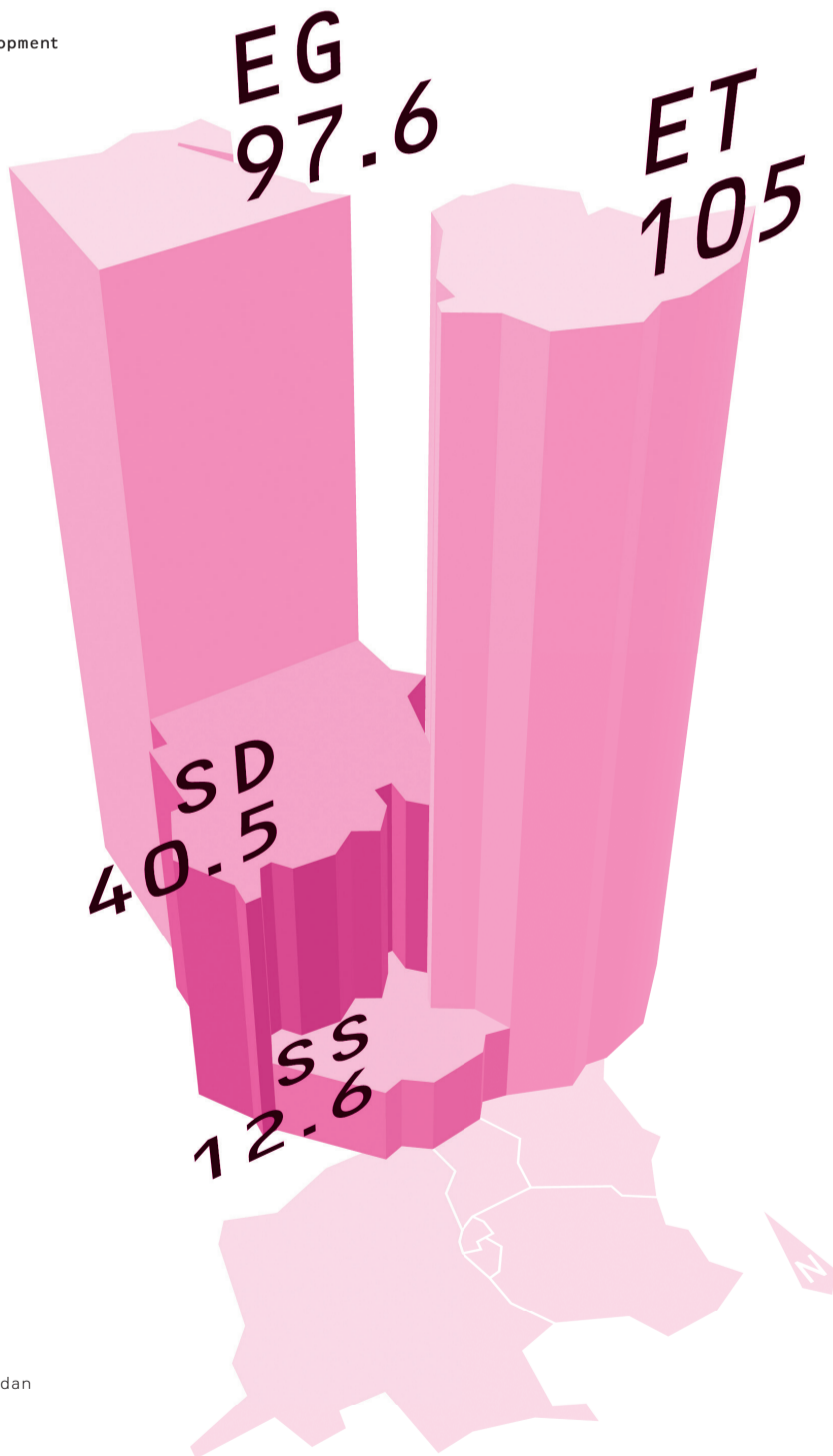
Nevertheless, the editorial department at The Niles decided that the CO₂ emissions of 25 people flying from six different countries, was worth the cost of producing this edition.

Degradation drivers

Population

in Mio, 2017

Source:
World Development
Indicators

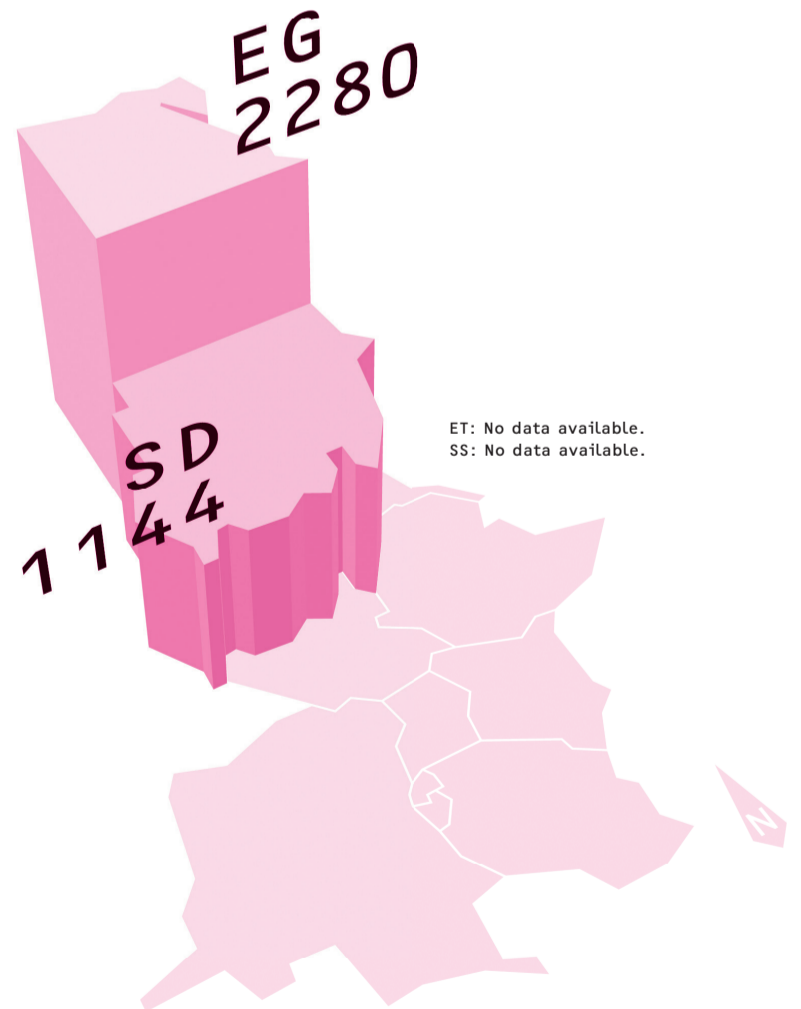


EG Egypt
ET Ethiopia
SD Sudan
SS South Sudan

Households final consumption expenditure per capita

constant 2010 US\$, 2017

Source:
World Development
Indicators



ET: No data available.
SS: No data available.

Could the Nile run dry?

Growing populations will increasingly rely on the Nile, yet water levels have not risen in 200 years – an unsustainable combination and one that the countries of the Nile Basin can only address together.

By Waakhe Simon Wudu
Juba, South Sudan



John Chol, 41, and Samuel Majur Machola, 51, both live in Bor, married, and have many children to provide for. Their most important connection, however, is that they both rely on the Nile to secure a regular income: Chol is a farmer, and Machola is a fisherman. Neither started out in these professions and yet, both are grateful to have changed their life paths to reap the benefits of the river.

“We are not fishermen, but the challenges of life have made us venture to fish in an effort to feed our children,” Machola says.

For Chol, the agricultural business is quite profitable, and he sees the Nile as a “blessing”, allowing him to feed, educate and provide for his family. “We had about ten acres, and now that we have the money, we are going to increase our acres,” says Chol.

For Machola his livelihood is far less predictable, as his nets sometimes come back empty. Even when he sells fish in the nearby market, the money hardly covers his family’s basic needs.

Chol and Machola’s stories mirror the fates of thousands of people who live and work along the banks of the Nile. The river’s water is a currency that is converted into food, clothing, and education for thousands of families in the Nile Basin countries. And although this reliance on the Nile gives hope to many families, if taken to an extreme, could also lead to its depletion.

Hydrologists say activities carried out by the likes of Chol and Machola that rely on the River Nile, are expected to double in 30 to 50 years, as national and regional populations grow.

However, the amount of water in the Nile River has not increased over time. In fact, the hydrology of the River Nile has not significantly changed for the past 200 years. These two factors combined forecast deterioration in quantity and the quality of the river. As population numbers increase, so will the overuse of the river, through agriculture, fishing and industry in Nile Basin countries like South Sudan, Ethiopia, Sudan and Egypt.

Competition for the same source

Currently, the population of the Nile Basin Initiative (NBI) member states is estimated to be around 505 million. Dr. Mohsen Alarabawy, Regional Policy Specialist at the NBI, says the population increases by 2.5 percent annually. The basin’s total population is on track to double by 2050. This will mean increasing usage of the Nile waters as the population increases.

“For each additional person that is born within the Nile Basin you need 1,000 cubic metres of water to fulfil all the demands and requirements for the livelihood of this person,” Alarabawy says.

This trend in population growth and its increasing demand on the waters is likely to increase competition on the usage of the Nile waters among the countries in the Nile Basin. The situation may worsen when underdeveloped countries like South Sudan start to industrialise their economies.

“As your standard of living improves you need sanitation, washing, etc.,” says Dr. Wubalem Fekade, a specialist who has been working for over ten years as Head of Social Development & Communication at the Eastern Nile Technical Regional Office or ENTRO, an arm of the NBI.

“Population growth is putting pressure on the water system, through the demand for food, energy, urban use, and industrial use. When you have to feed more mouths, you have to energise more houses, and there

is increased urbanisation. Governments and countries are pressured to supply for this growing population. So it is self-evident that a growing population will require a growing amount of water directly or indirectly.”

South Sudan is one of the NBI member states with the poorest infrastructure and with currently very little industrialisation. At least 90 percent of the population lives in the capital Juba and depends on the Nile for domestic use, this is just on a small scale, says Eng. Thomas Jang, a senior government official at the South Sudan Ministry of Water Resources and Irrigation.

Jang agrees with Fekade. He expects much more use of the Nile, should stability return to the nearly five-year conflict-stricken South Sudan. Jang says industrialisation, which will demand good use of the Nile waters is expected to pick up.

Unprepared for the future

There is still neither a clear strategy nor preventative measures put in place by the government to ensure economic activities carried out by fishermen and farmers like Majur and Chol do not lead to harmful environmental threats such as deforestation and lowering water supplies.

“If you don’t have any information you cannot calculate anything,” Jang says, referring to the lack of measures put in place by the South Sudan government to address the population factor. Jang’s response captures many often inadequate programmes set in place by other regional member states of the NBI to deal with the population factor.

Although Water Specialist Alarabawy says there’s a vision by the NBI member states on how to tackle challenges affecting the Nile waters, there’s no clear consensus or strategy on how to deal with the preventable challenge of population growth as an individual factor threatening the Nile waters.

“There is a vision. There is an overall policy and strategies for the entire Nile Basin on how to manage the Nile Basin water resources. But these policies and strategies assume that there is no control whatsoever on the population growth,” Alarabawy says.

Collective solution finding

“If countries cooperate more in 30 to 50 years we will have everything under control,” Alarabawy insists. “NBI member states need to try to limit the population growth to a manageable figure – that 2.5 percent [growth] is too much,” he continues.

“Compared to Europe, Australia, [and] many places around the world, this is double or triple the average. NBI member states should develop common principles, approaches and methodologies, applied collectively.”

Alarabawy points to European countries that share the River Rhine, which became polluted following the peak of industrialisation decades ago in Europe.

The countries sat down, agreed and developed laws and master plans including norms and standards to be followed by all the states sharing the river.

Fekade agrees with Alarabawy, adding no single country can address the growing threat of population pressure on the Nile water.

“The Nile will remain a shared resource forever,” says Fekade.

Author's take: As a journalist who had not previously reported on the environment, I came to learn that life is completely attached to water, without which, most living things on earth would vanish. I have become inspired to think about pioneering a project that will focus on climate, with the purpose of addressing problems such as ignorance amongst the society where I live and how to conserve and protect the environment.



“The Nile will remain a shared resource forever.”

Queuing up for water in Unity State / South Sudan.
© Waakhe Simon Wudu

The long route to a cup of coffee

The coffee plant was discovered in Ethiopia 1,000 years ago, so why does coffee-loving Egypt still import most of its coffee from Indonesia?

By Yosra EL-Zoghby
Cairo, Egypt

A single cup
of coffee requires
140 litres
of water.

Author's take: I am now more likely to use water with care, and I am more likely to talk about (water conservation) issues with others and raise their awareness. I now think about the relevance of every crop and every development initiative around water and environmental issues, and I am far more enthusiastic to write about such matters. Since this article, I have explored the relationship between coffee and the environment, and I am more likely to appreciate, and limit, my cups of coffee.



In the first half of 2018 alone, Egypt has imported 45,000 tonnes of coffee, according to Cairo's Chamber of Commerce. In 2017, Egypt's total coffee imports amounted to USD 101.7 million. And despite government action to decrease subsidies and increase taxes on various goods, coffee trade continues to record a double-digit increase in value and is only expected to grow as companies attract multiple sectors of the market.

Egypt imports most of its coffee from South East Asia, with 70 percent of its imports during 2017 coming from Indonesia. The rest came from Brazil, India, Guatemala and other countries.

Yet Ethiopia, the birthplace of the coffee plant and the largest producer of coffee in sub-Saharan Africa, and only a Nile-river away, exported a paltry USD 1.5 million to coffee-loving Egypt, according to the International Monetary Fund (IMF) Direction of Trade Statistics (DOTS) database, out of a total of USD 3.6 million of Ethiopian exports to Egypt.

Is flavour the only reason?

Islam Effat who works at the headquarters of one of Egypt's biggest coffee traders, Shahin Coffee, said that the Ethiopian Habashi variant was available at their shops, among other kinds.

But when asked why Egypt imports the more significant portion of its coffee from South East Asia Effat said: "It's a matter of flavour and preference." But the lack of intra-African trade likely has other root causes.

Most African economies export raw materials and import finished goods, which equally applies for coffee and other products. This goes back to colonial times when infrastructure was designed to export raw materials back to Europe easily, but not for trade within the continent.

Osita Oparaugo, Managing Director of Footprint to Africa told The Guardian this past summer: "Why should we export tomato and fruits and buy tomato puree and processed juice? The cost of production is so high in Africa because there is no infrastructure – no roads, no railways, no electricity. These are the things that drive manufacturing. If those things are not here, Africa will definitely keep exporting raw materials and importing finished goods."

Ethiopia earned USD 938 million by exporting 221,000 tonnes of coffee to 57 countries in 2017 – topped by Germany, Saudi Arabia and others, and achieving 92 percent of its target of coffee exports.

But the world's largest exporters of coffee last year were Europe, with 35 percent of exports, then Latin America, followed by the Caribbean. By country, Ethiopia only came in 11 out of 15 according to the World Fact Book. This shows the problematic trend in developing African countries exporting raw materials, just for developed countries to re-export them as finished goods and make a significant profit.

Intra-African trade has also been hampered by impediments including the marketing and marketability of such products.

In this aspect, the Ethiopian government and parliament have made efforts to reform and regulate the entire coffee value chain from farming to production, marketing and exports.

Advantages of trading within the continent

The Egyptian government has also been increasingly aware of the geopolitical importance of cooperation with other African countries and has since taken a number of measures to promote mutual trade and cooperation.

One measure involved a 50 percent subsidy on shipments to Africa, yet the main turning point was the establishment of COMESA (Common Market for Eastern and Southern Africa), which saw Egypt's trade deficit of nearly USD 100 million with member states turn into a surplus thanks to the signing of a number trade agreements, including the Tripartite Free Trade Agreement signed in June 2015.

However, as Nile Basin countries seek to improve relations and increase mutual trade, their vision of sustainable ties must involve a look into the implications of their trade, specifically for the very environment that binds them together.

Environmental considerations in check

Among a number of crucial concerns associated with coffee production and cultivation, the most critical is concerned with sustainability.

Green coffee beans grow naturally in Ethiopia's fertile soil and water resources. But, according to Victoria Brown, Research Assistant at Johns Hopkins Center for a Livable Future, who quotes a study by the Water Footprint Network - a single cup of coffee requires 140 litres of water from growth until its final processing.

Wildlife and ecosystem balance present another concern as producers use pesticides and seek to accelerate the process by cropping trees to ensure further exposure to sunlight. This contributes to deforestation, over exhaustion and disturbance to migratory birds, a challenge over which Lake Tana, for example, has already signalled alarms.

Luckily for all sides, unlike in other countries, in Ethiopia, coffee plants grow and are mostly produced naturally in the shade and among other plants in the country's naturally rich soil in the eastern and southern regions, with no need for the use of chemicals or any other human intervention.

It is not yet clear, however, if these ecologically friendly methods would withstand the pressure of increased production and more commercial harvests. Ecologically produced coffee would undoubtedly contribute to higher prices.

The choice falls back to governments and individuals alike as they push for further development and 'just' another cup of coffee.

Like this café in Cairo also no trade within the continent goes back to colonial times.

© Moises Saman / Magnum Photos / Agentur Focus

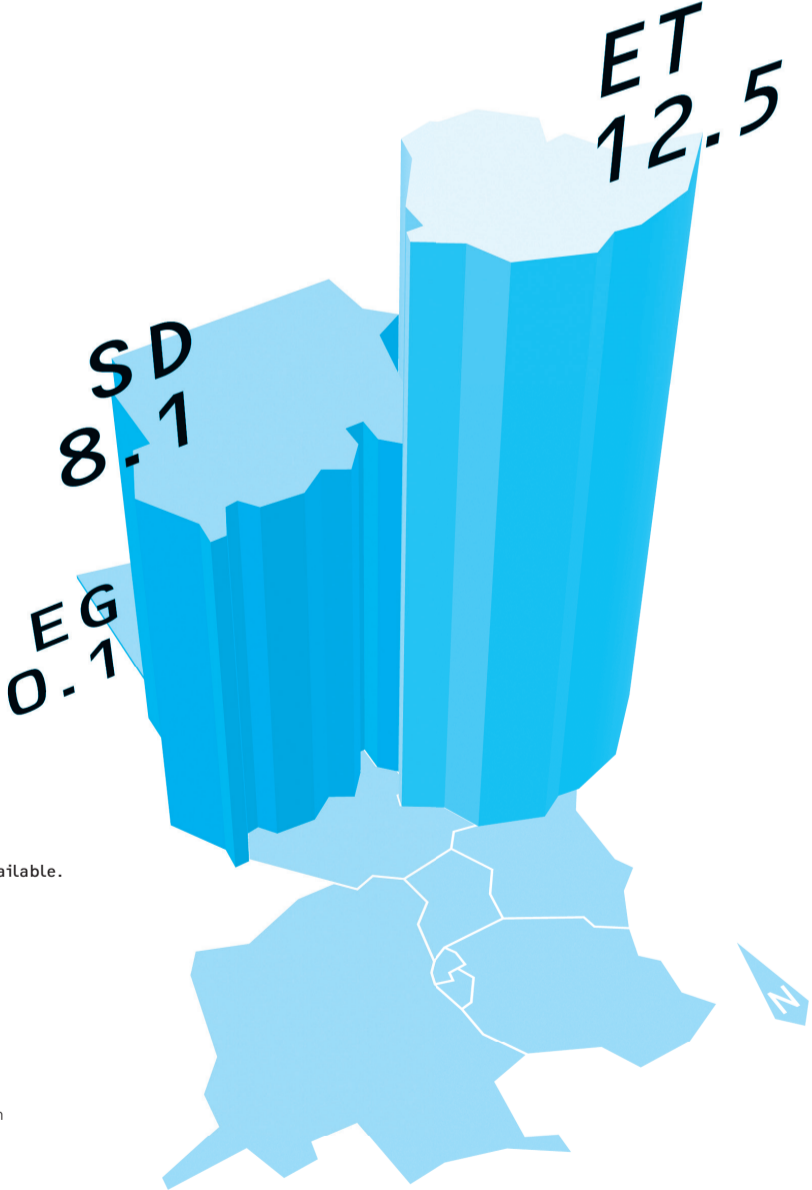
Resource depletion



Forest area

% of Land area, 2015

Source:
World Development
Indicators



A virtual solution to the water shortage

Once again, Egypt has cut down on rice cultivation to conserve water.

By Bassem Mahmoud
Cairo, Egypt



Author's take: One of my key takeaways from the workshop is how to pick an environment/water related topic and come up with an exciting story that is not too academic and yet sheds light on the facts. I also enjoyed all the side-talks during our gathering in Bahir Dar, brainstorming and discussing all sorts of environmental issues. By the way, a result of these conversations is that I now ask for paper instead of plastic bags and I ask other people to do the same.



A key ingredient in Egypt's most popular street food Koshari is facing uncertainty due to water shortage concerns in Egypt.

The Egyptian government decided last March to cut the area of land available for rice cultivation. Instead of 1.7 million feddans (one feddan is equal to 1.038 acres), only around 700,000 feddans were cultivated between May and September 2018.

The Egyptian Minister of Water Resources Mohamed Abdel-Aty said that the controversial decision aimed at saving water. According to the minister, an acre of rice consumes 8,000 cubic meters of water per season (four months), while an acre of wheat or maize on the other hand consumes only 5,000 cubic meters.

The production of rice, which is cultivated mostly in the Nile Delta Governorates in northern Egypt, currently exceeds consumption by one million tonnes annually. In 2017, production stood at four million tonnes, while consumption was three million tonnes.

Rice remains a more profitable crop

Hisham Rihaan, a young rice farmer in the Delta Governorate of Kafr el-Sheikh (around 130 km north of Cairo), told *The Niles*, "To be honest, there is much more water now since the decision."

Nevertheless, Rihaan, a university student, is still cultivating rice, despite being subject to a fine of EGP 10,000 (approx. USD 550) as a result of violating the rules.

"I agree, it saves water, but we don't know what to grow. Cotton and corn are not profitable like rice," Rihaan said.

Rihaan explains that the cost of an acre of rice is around EGP 3,000 (USD 160), and a tonne is sold for between EGP 6,000 or EGP 7,000 (approx. USD 390).

Cotton, on the other hand, costs more than EGP 10,000 per acre (USD 558), and the price is set at EGP 2,700 (approx. USD 150) per cantar (one cantar equals approximately 50 kilogrammes).

An acre of rice produces around 6.5 tonnes, while an acre of cotton produces approximately ten cantars (or 500 kilograms).

The government's decision to cut down on rice cultivation was not its first. In 2017 the total farmed rice area went down to 1.7 million feddans compared to two million a year before.

And in 2014, Egyptian authorities decided to control banana farming by creating banana farming licenses. Farmers who fail to get licenses will not be able to attain the necessary fertilisers or pesticides.

An acre of rice consumes 8,000 cubic meters of water per season.

GERD fears

As Egypt relies almost exclusively on the Nile River for irrigation and drinking water, there have been ongoing concerns that the Grand Ethiopian Renaissance Dam (GERD) could affect its share of the Nile water, estimated to be around 55.5 billion cubic metres (bcm) annually.

Meanwhile, some media and experts have tried to link the GERD's construction and Egypt's decision to cut rice production, especially since Egypt, Sudan and Ethiopia have yet to reach a compromise regarding negotiations over the filling of the GERD's reservoir in a way that will not harm the countries located downstream of the dam.

However, during an April visit to one of the Nile Delta Governorates, water minister Abdel-Aty denied any connections between the construction of the dam and the government's decision to cut rice production.

"We were considering the decision even before GERD, for the sake of saving Egypt's water, especially with a fast-growing population," Abdel-Aty said.

Egypt's total water quota per year stands at around 60 bcm, according to official figures. Meanwhile, the consumption reaches more than 100 bcm after recycling.

In 2011, Ethiopia started to build the USD 5 billion GERD on the Blue Nile, the main tributary to the Nile River.

When completed, it will be the largest dam in Africa, generating around 6,000 megawatts of electricity for both domestic use and export.

Virtual water

With the demand on water increasing, countries are currently embracing the concept of Virtual Water (VW) Trading, which sees countries importing its strategic crops and livestock, rather than bearing the cost of growing and watering its own.

Head of the irrigation sector at the water ministry, Abdel-Latif Khaled, says his ministry sees VW as a way to save more than 30 bcm of water per year through food imports like wheat, maize and recently rice.

"What I know is that the decision will help watering more crops with the amount used only to irrigate rice," Khaled told *The Niles*.

Egypt's plan to increase wheat and decrease rice planted areas opens up a potential door of co-operation between Egypt and its riparian neighbours, who have more water and land and would be close trading partners for food imports needed by Cairo to save water.

Planting life, one tree at a time

After decades of drought and famine, one region in Ethiopia has found a way to restore food security and fight erosion.

By Selam Mulugeta
Addis Ababa, Ethiopia

In Ethiopia
3.57 billion trees
were planted
in 2017/18.

In August 2017, the United Nations Convention to Combat Desertification (UNCCD) awarded Ethiopia's Tigray region the Gold Future Policy Award, for its role in fighting desertification and land degradation.

"With unique collective action, voluntary labour and the involvement of youth, the people of Tigray are restoring land on a massive scale. Erosion has decreased significantly, groundwater levels are recharged, and the uptake of sustainable agricultural practices made a significant contribution to food self-sufficiency and economic growth," the UN press release announced.

Eighty-five percent of Ethiopia's population lives in rural areas, and more than 90 percent of their energy comes from burning wood. The last five decades of rapid population growth has put more pressure on natural forests and increased the demands for timber, increased land grabbing and grazing and led to deforestation and land degradation. As a result, Ethiopia has repeatedly suffered from chronic drought and famine in the last 50 years.

To tackle the problem the Ethiopian government, in collaboration with non-governmental actors and local communities, has engaged in nationwide re-greening efforts in the past decade.

A massive tree-planting campaign has registered increment forest coverage and resilience to climate change. According to the 2017-18 annual report of the Ministry of Environment, Forest and Climate Change the total forest coverage in Ethiopia rose to 18.5 percent from less than 3 percent in the year 2000.

From September 2017 to August 2018, in different parts of Ethiopia 3.57 billion trees were planted, 72 percent of which have grown, according to the ministry's report.

The government's annual economy review report from 2017-18 illustrates that 6 percent of Ethiopia's annual gross domestic product (GDP) comes directly from the forest. In addition to this, the sector plays a vital role in the growth of construction, carbon trade and rural job creation.

The nationwide tree planting and environmental conservation initiatives have been crucially beneficial to farmers who have now access to more water, allowing them to ensure moisture and keep fertile soil from degradation.

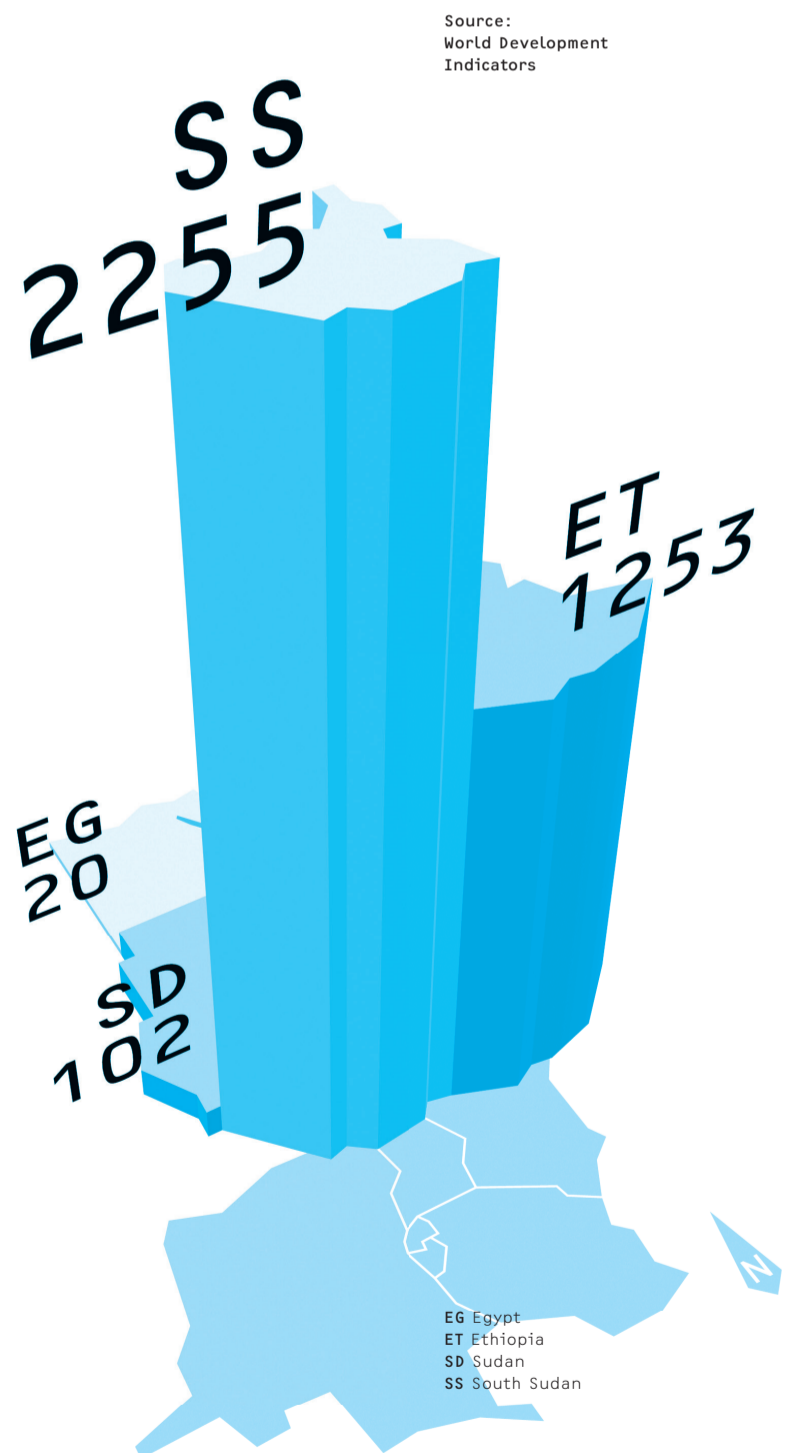


Author's take: The Bahir Dar training gave me great insight into how the on-going climate change and disintegrated conservational work critically threatens the Nile Basin. Personally, I am trying to properly manage pollutant products such as plastic bottles, which is a significant source of environmental pollution in my residential area. Together, with my neighbourhood, we have started collecting and supplying dry waste products to recycling rather than throwing garbage in open places as we did before.



Water availability: Renewable internal fresh- water resources per capita

in cubic metres, 2014

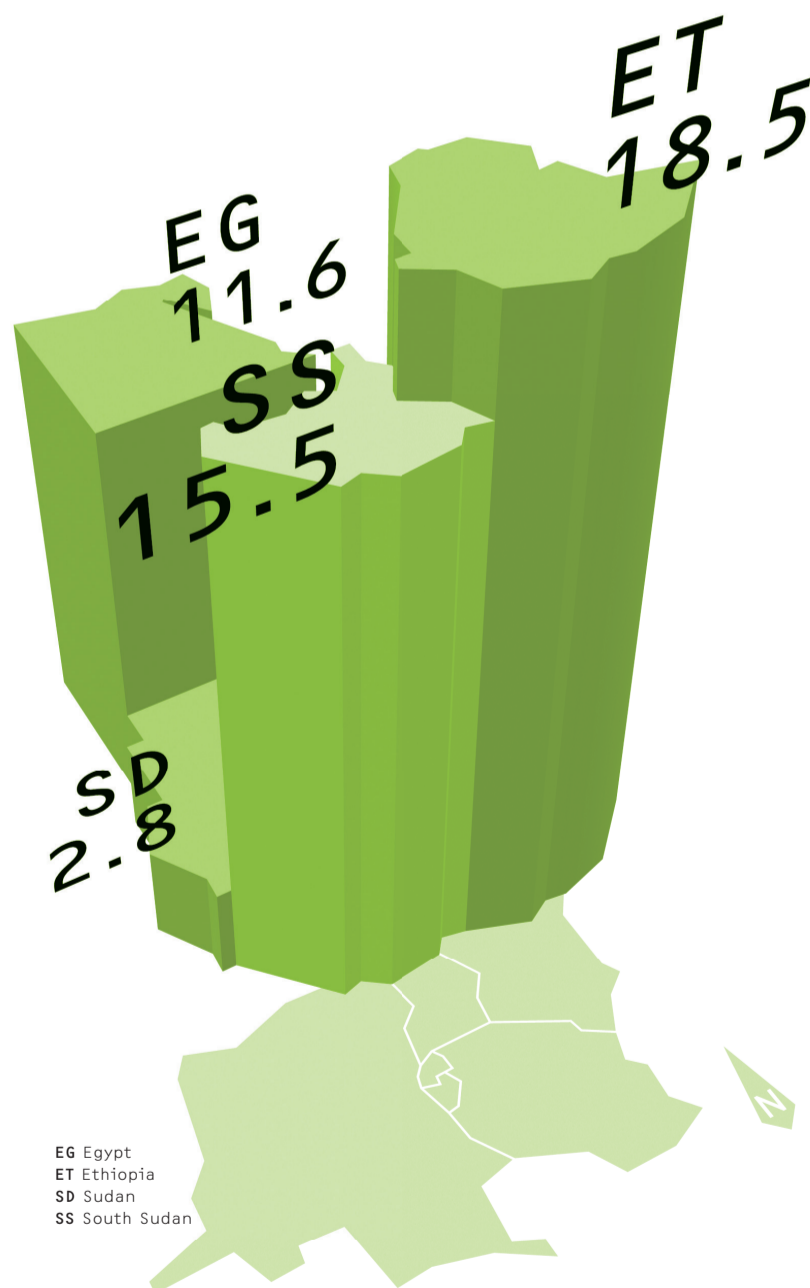


Farmers benefit from the nationwide tree planting.
© Selam Mulugeta

Terrestrial and marine protected areas

% of total territorial area, 2018

Source:
World Development
Indicators



Sudan is vibrant with hundreds of plant and animal species, but violence, pollution and climate change threaten to drive many life forms into extinction.

By Alaa Eliass
Khartoum, Sudan

Sudan was once the largest country in Africa before its separation from South Sudan in 2011. Although more than 90 percent of Sudan's area is classified as desert and semi-desert ecosystems, it is still rich in biodiversity, thanks to its forests – which make up 12 percent of its territory – and wildlife adjacent or connected to the Nile and its streams, as well as The Red Sea.

Sudan boasts a collection of 3,132 species of flowering plants, 409 of which are endemic to the country. Of 13 different flowering plants in Africa, 12 can be found in Sudan.

Sudan also has 12 orders of mammals out of 13 total orders found in Africa. At least 80 major reptile species have been observed in the country, including boas, snakes, pythons, lizards and crocodiles. There are also 931 species of birds 127 of which are common in Sennar, Gedarif and Blue Nile States in southeastern Sudan. Some 500,000 insect species can be found in the country.

Some of Sudan's unique ecosystems

Dinder National Park

Dinder Park hosts 27 species of mammals: warthog, reedbeek, oribi, African buffalo, roan antelope, red-fronted gazelle and different kinds of monkeys and baboons. The park also contains some of the most globally endangered mammals such as the African lion, wild dog and leopard. Additionally, there are more than 160 species of birds including significant and endangered species like the African white-backed, white-headed and rüppell's vulture and 32 species of fish, reptiles and amphibians. The park is rich with plant cover as well, with 58 species of shrubs and trees in the park.

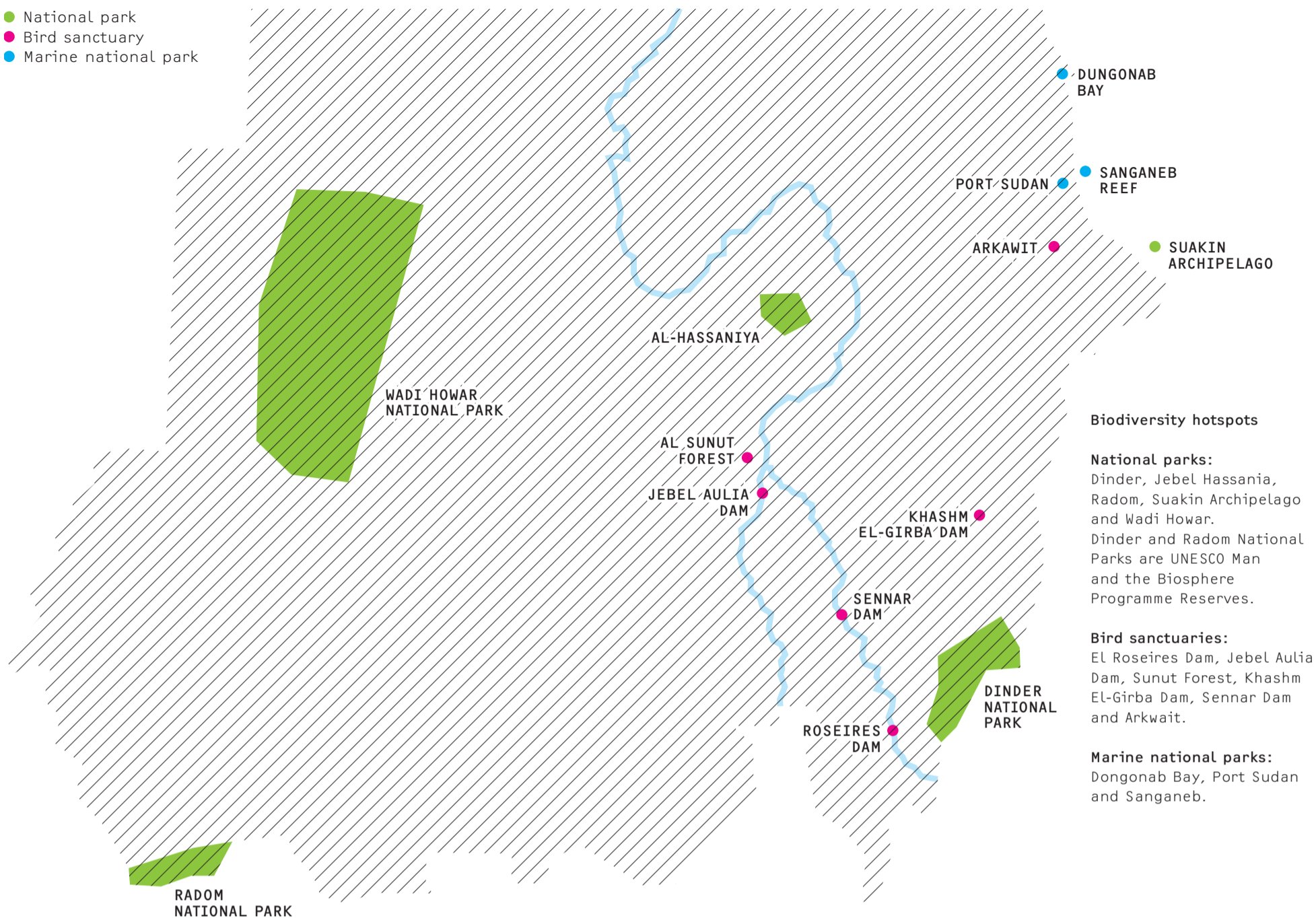
Sunut Forest

The unique location of the Sunut Forest, which borders the Nile make it a hot spot for migrant birds. One study found that there are at least 81 species of palearctic migrant birds, and 144 species of birds within the forest with six species nearly threatened (according to IUCN classification), including the black-winged pratincole, the Eurasian curlew and bar-tailed godwit; common pochard (classified as Vulnerable (VU)), Saker Falcon (Endangered (EN)), and Sociable Lapwing which is Critically Endangered (CR). This forest is not only crucial for biodiversity, but it is also a natural filter for all the toxic carbon dioxide emitted from industry and transport in the polluted capital Khartoum.

Radoom National Park

South Darfur State is rich with biodiversity and wildlife that is unfortunately now threatened with extinction due to violent conflicts,

- National park
- Bird sanctuary
- Marine national park



Biodiversity hotspots

National parks:

Dinder, Jebel Hassania, Radom, Suakin Archipelago and Wadi Howar.

Dinder and Radom National Parks are UNESCO Man and the Biosphere Programme Reserves.

Bird sanctuaries:

El Roseires Dam, Jebel Aulia Dam, Sunut Forest, Khashm El-Girba Dam, Sennar Dam and Arkwait.

Marine national parks:

Dugonab Bay, Port Sudan and Sanganeb.

drought and climate change. One of the richest wildlife parks in Sudan can be found here: Radom National Park, with different kinds of gazelles, cheetahs, wild dogs, warthogs, hyenas, tigers, ostriches, lions and other species including migratory birds.

Dugonab Bay Marine National Park

The East of Sudan is also rich with biodiversity – the coastal region of The Red Sea boasts unique coastal and marine environments. It extends for about 750 kilometres, famous for its Mangrove Forests, which is the main conspicuous coastal vegetation and creates the optimal habitat for plants. All five species of pantropical marine turtles occur in the Red Sea: the green turtle, the Hawksbill turtle and Olive Ridley turtles. There are 450 species of reef fish in the Red Sea, large numbers of seabirds, eight species of shrimp, wild mother-of-pearl shells, sea cucumber, sharks, lobster, and many other sea creatures. Unfortunately, there are many endangered species in The Red Sea as a result of overfishing, sea pollution from factories, oil ships, as well as global warming.

Drivers of ecosystem destruction

Violent conflict

Over half a century of violent conflict has burdened wildlife in Sudan, with many animals killed directly by shooting, or by overhunting of combatants who used them as a primary food source. A 2013 list of endangered species composed by the International Union for Conservation of Nature (IUCN) indicated the absence of information for 114 animal species (i.e. data deficit) and 127 species reported as threatened, including 19

plants and 108 animals (16 mammals, 18 birds, 3 reptiles, 21 fish and 50 invertebrates). Many ecologically important species went extinct since the 1980s or were driven away from their natural habitats in Blue Nile, South Darfur and the Nuba Mountains, which are the most unstable regions in the country. Among the endangered species are top predators such as the cheetah, African lion; birds such as the lappet-faced vulture, greater spotted eagle, imperial eagle and lesser kestrel; endangered herbivores included on the list are hippopotamus, barbary sheep, dorcas gazelle, red-fronted gazelle, African elephant, and African spurred tortoise, as well as several bats like Trevor's free-tailed bat and the horn-skinned bat.

Climate Change

Desertification and drought from climate change is another major threat to wildlife in Sudan and has been experienced by 70 percent of the country. The high rate of deforestation, from cutting down trees (for fuel-wood), soil erosion, forest fires (naturally or by militant forces), and drought, are the primary drivers of desertification. The Intergovernmental Panel on Climate Change (IPCC) 5th report classified Sudan as one of the spots in Africa most vulnerable to climatic change. International Fund for Agricultural Development (IFAD) reports indicate that the overall rainfall decline between 1970 until today, ranged between 10 to 20 percent across the western and the southwestern states. As most wildlife depends on seasonal streams, it was actually counted one of the main reasons for elephants disappearing in Dinder Park, and for wildlife declining in Radom Park.

Author's take: Unfortunately, I couldn't take part in the workshop, but since my graduation, I have been involved as a volunteer in the Sudanese Environment Conservation Society. Today I work as the Head of the Reforestation Committee at the society. We are spreading environmental awareness everywhere in Sudan. We also replant forests and look after endangered wildlife and desertification zones in Sudan.



Wetland vegetation, especially papyrus, has cultural values.



Keeping a wetland from turning into a wasteland

Author's take: The roles/benefits of natural resources in general and Lake Tana wetlands in particular become more visible when we face formidable challenges as a consequence of their destruction and seriously look for solutions. My everyday life is part of the larger environment, and I have always been thinking about what I can do for my environment. I am saving electric power, properly handling solid and liquid wastes and raising awareness regarding the ecosystems of wetlands.



Lake Tana provides wetlands that are advantageous for the environment and its residents. But waste dumping, over farming, construction and deforestation threaten to destroy these precious ecosystems.

Lake Tana, the source of the Blue Nile River, is the most substantial freshwater body, approximately 3,156 square-kilometres, and accounts for about half of all freshwater resources in Ethiopia, according to the Nature and Biodiversity Conservation Union (NABU). Located in the north-western highlands, the lake creates important wetlands – ecosystems comprised of water, soil and vegetation.

The different forms of wetlands in Lake Tana's basin are formed by seven large permanent and approximately 40 small seasonal rivers and lakes. These wetlands (circa 8,463 hectares) provide different benefits and functions to the local community and downstream riparian countries.

Lake Tana's wetlands also provide food, medicine and natural materials used by the locals for housing. Reed boat and baskets, for instance, are manufactured from papyrus, locally called 'dengel'. Wetland vegetation, especially papyrus, has cultural values and has been used during coffee, wedding ceremonies and holidays.

Environment and diversity

Lake Tana's wetlands filter pollutants and improve the surface and groundwater quality, and also contribute to flood control, especially in the eastern part of Lake Fogera and Dembia.

There are more than 25 fish species in Lake Tana, which directly or indirectly depend on the wetlands for feeding and breeding. The wetlands also provide feeding, breeding, resting and nesting grounds for several species of globally threatened wetland birds such as the Wattled Crane, Black-Crowned Crane and Rouget's Rail. The sub-basin provides a home to more than 100,000 migratory birds. Lake Tana is known internationally as an Important Bird Area (IBA).

By Goraw Goshu
Bahir Dar, Ethiopia

The wetlands also play a significant role in carbon sequestration and influence the microclimate around Lake Tana. Churches and monasteries have protected some patches of vegetation in the area, yet most of the forests in the catchment area of Lake Tana have been destroyed for farming purposes, according to NABU.

Human-made threats

About 9.81 million tonnes of sediment pours into Lake Tana from the basin every year, consequently reducing the lake's water storage capacity. This may ultimately affect the water security of downstream riparian countries. Human activities in the basin affect the characteristics of wetland ecosystem resources, and, in turn, affect the quality and quantity of the water that flows downstream from the lake.

According to a 2015 Blue Nile Water Institute report, wetland degradation is not only due to conversion to agricultural land but also due to sedimentation, overgrazing, infestation by invasive weed species like water hyacinth, water draining, channelisation and dis-connectivity, and encroachment of Eucalyptus plantations.

The primary driver of mismanagement of wetlands in the basin is the misconception of them as 'wastelands' by urban and riparian communities. This is evidenced by the construction of residential and commercial buildings, by filling and removing wetlands. Other traditional interventions are solid waste dumping, liquid waste disposal, filling, drainage, deforestation, recession agriculture and overgrazing.

Lake Chad, for example, has decreased in size by 90 percent in the last 60 years, due to overuse, extended drought and climate change, according to the United Nations Environment Programme. The same conditions led to the complete disappearance of Lake Haramaya in Ethiopia.



Famous tourist destination:
Waterfalls in Wadi El-Rayan /
Al Fayoum Governorate.
© Amr Dalsh / picture alliance /
REUTERS

Filtering
has made
Lake Qarun
40 percent
clearer.

Pollution threatens a historical lake

How irresponsible agriculture and pollution first kill the fish, then the livelihoods of the people who rely on them.

By Mohamed Wadie Ghozzy
Cairo, Egypt

Lake Qarun, Egypt's third largest, was once a vibrant tourist destination, and a freshwater source, that provided a livelihood to more than 500 families from the Youssef Al-Sediq and Abshway villages.

In the last decade, however, the lake has grown salty, and various fish species have disappeared as a result of increased pollution, and untreated sewage and agricultural wastewater.

According to fishermen, the number of boats operating in the lake has also declined from over 600 boats to a few dozens.

Dr. Dihoum Al-Bassel, professor of fish diseases at the Faculty of Science at Fayoum University and a member of the Fish Resources Development Committee of the General Authority for Fisheries, said that the problems of Lake Qarun are numerous: an increase of salinity to about 38 percent, causing a decline in the fisheries' output, the infestation of the parasitic crustacean Isopoda, which are associated with fish mortality, and biological pollution due to the inappropriate transport of fish.

Al-Bassel added that the increased use of nitrogen fertilisers in agricultural land in Al-Fayoum and the transfer of nutrients to the lake with agricultural drainage water resulted in high levels of toxic nitrates.

Cleaning up the lake

Engineer Ayman Ahmed, Director General of the Nile Valley Region for Fisheries said that eliminating the pollution in the lake will be implemented through the installation of a safety belt and filters on the lake's coast to oust solid substances, as well as the use of shrimp – the Isopoda's biological enemy.

Ahmed mentioned that the safe belt reduces the pollution coming through the sewage in the banks feeding the lake, as with the banks of Al-Bats, that pass water through a filtering process. This has made the lake 40 percent clearer, and an analysis conducted by the research department in the area before and after the filter showed a noticed decrease in the pollution rate.

Ahmed explained that after streaming the water for a distance of 4.5 kilometres, it would collide with the filters that will block solid waste from the banks entering the lake. Also, trenching operations are carried out to clear the lake bottom from the water contaminants, sludge and organic matters.

According to General Essam Saad, Al-Fayoum Governor, a meeting was held recently with fisheries and irrigation representatives and the Fishermen's Syndicate in the Governorate, to discuss the issue of pollution, constraints of fish wealth in the lake and the elimination of Isopoda.

After the approval of the House of Representatives, the expansion project of the safety belt will begin with the implementation of sewage treatment projects in Al-Fayoum.

The project will cost € 186 million and will be funded by the European Bank. It includes the construction of eight new sewage treatment plants, the expansion of nine other treatment station, the rehabilitation of 10 stations, extending approximately 3,000 kilometres of sewage pipes, purchasing 350 dump trucks, and the construction of 139 new pumping station.

Saad added that the project represents an essential step in purifying the lake after many years of pollution and extend fish farming areas. The plan is to improve the fishers' standard of living, flourish the tourism sector and attract investments.

Author's take: Through this process, I have learned that I should depend more on scientific resources in my writing about ecosystems, climate change and pollution management. In the future, I will concentrate on the urgent need for a clear vision and a bold policy towards environmental issues inside the Eastern Nile Basin.

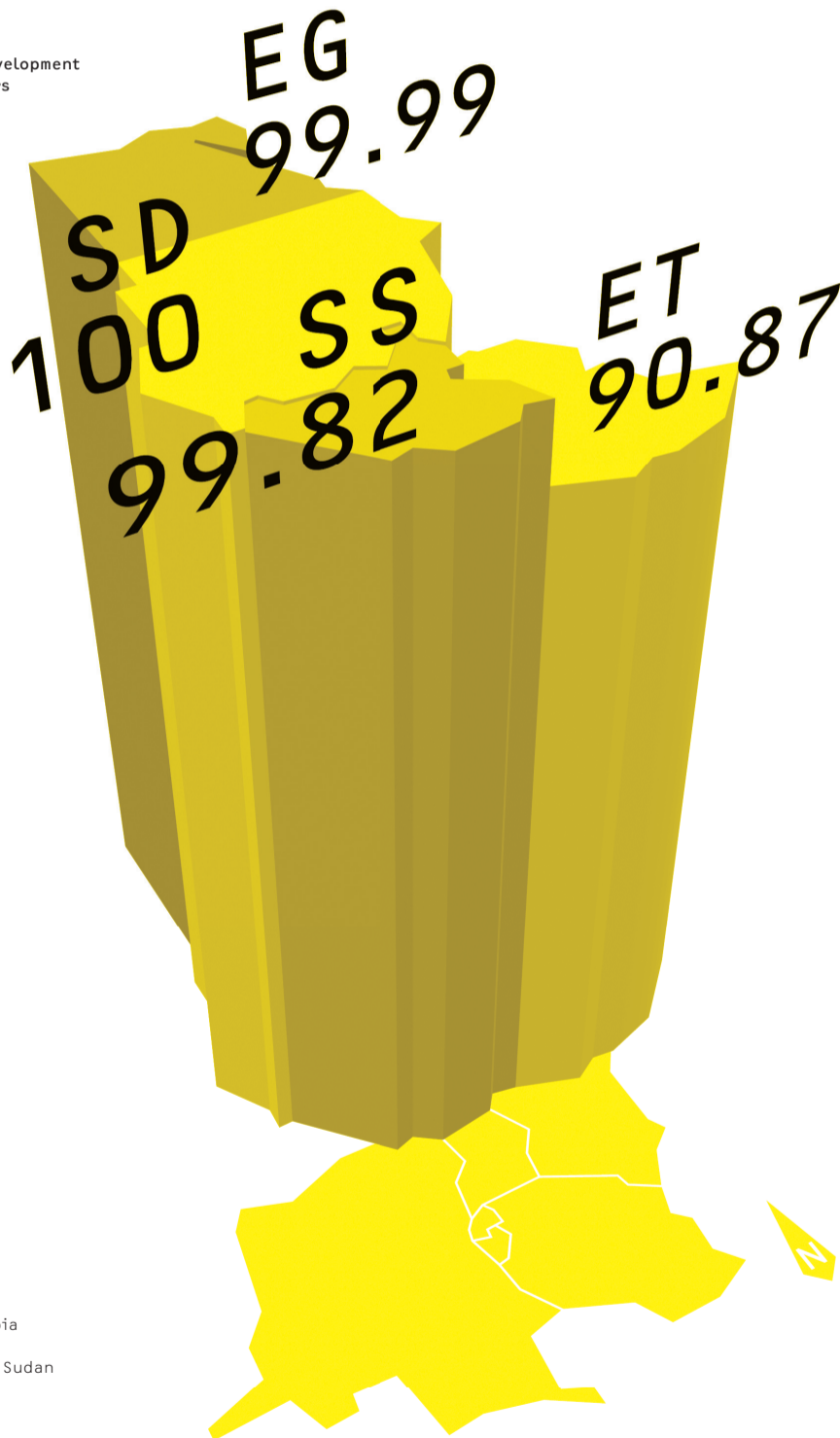


Pollution

Air pollution

population exposed to levels exceeding WHO Interim Target-1* value % of total, 2016

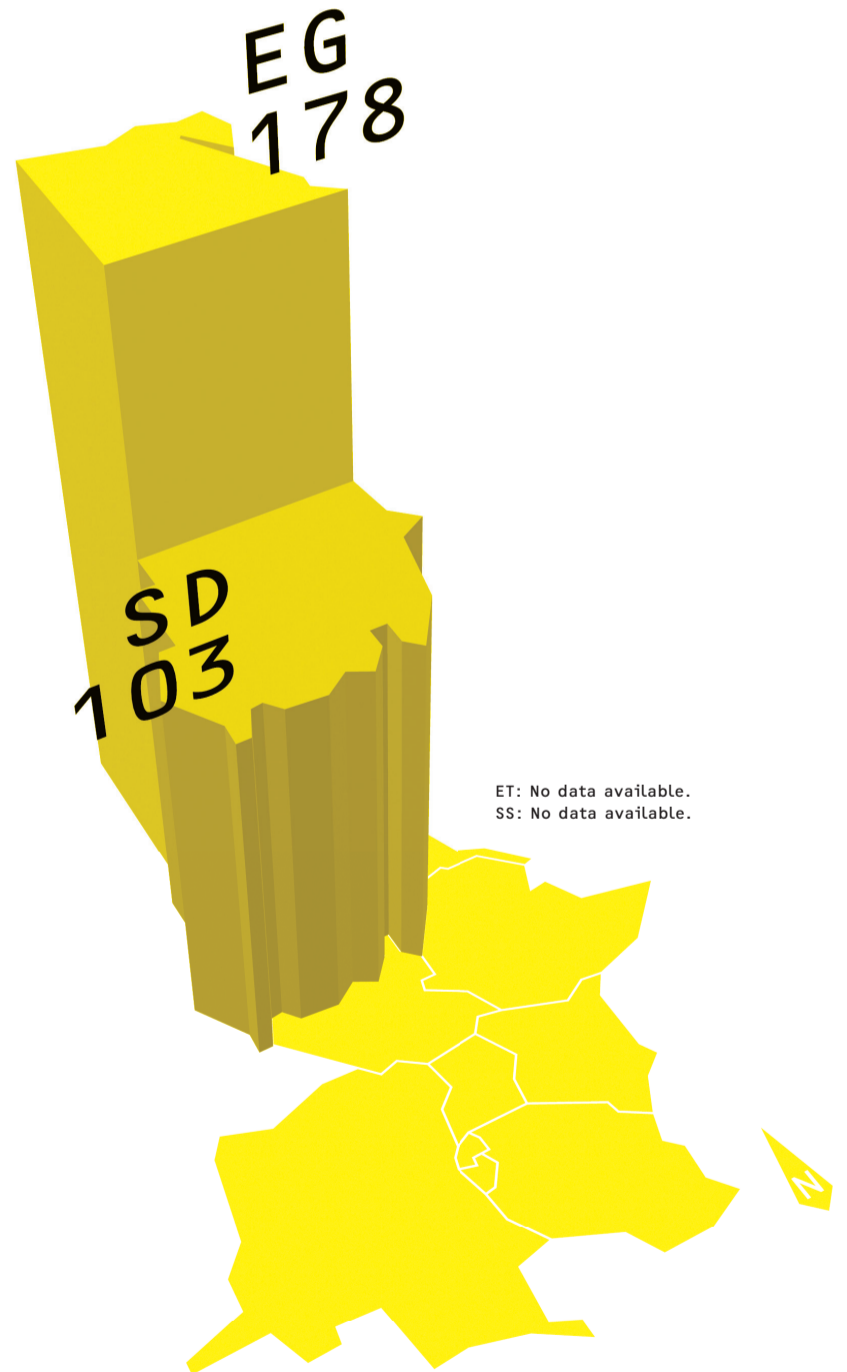
Source:
World Development
Indicators



Plastic waste per capita

kilograms per person per day, 2010

Source:
World Development
Indicators



* The World Health Organization (WHO) Interim Target 1 (IT-1) is defined as the portion of a country's population living in places where mean annual concentrations of PM2.5 are greater than 35 micrograms per cubic meter.

Drowning in plastic

Burning it pollutes the air, throwing it in the Nile poisons the food cycle – how a young nation is struggling with a pollutant that takes thousands of years to break down.

By Bullen Chol
Juba, South Sudan

Since South Sudan is a landlocked country, most of her consumable products come from neighbouring countries – all of it packed in plastic. And not a single recycling facility is equipped to deal with the amount of plastic waste pouring in.

According to analysts, South Sudan is at risk of plastic pollution due to poor environmental policies that ineffectively deal with littering, among other causes of pollution.

David Manyang, a Juba resident said plastics are destroying vegetation growth. “Plastics cover the soil, and the soil has no space to breathe. (As a result), the soil’s nutrients fade,” says Manyang.

Manyang also points out that plastic waste has long-term, harmful effects for bodies of water, wildlife habitation and humans. The chemicals released from plastics are highly toxic and carcinogenic.

Deng Akech Ajak, a lawyer and a researcher of environmental law, said government action to curb plastic pollution is urgently needed. He warned of devastating long-term effects if the situation is not addressed.

“One of the problems with plastic is that it cannot easily be decomposed once it is thrown all over the place. It can sometimes be what we call a ‘persistent organic pollutant’,” Ajak said.

“For the last few decades, environmental pollution has been an issue of concern at the international level,” Ajak stressed, noting plastic dumped into the Nile affects both the quality as well as the quantity of the water.

Educating the public about the environmental threat

Ajak has called for preventive measures to regulate the use of plastics, as well as an awareness campaign to educate the public about the dangers plastic has on the environment.

“There is a need for an institutional and legal framework that will regulate the use of plastic materials in South Sudan,” he said. He also addressed the severe problem of burning plastic, which causes a rise in atmospheric pollution.

“As plastics are burned, soot is released into the air as pollutants, which are very harmful to human health,” he said.

South Sudan’s Undersecretary in the Ministry of Environment, Joseph Afrikano, said the government banned the use and importation of plastic bags since 2015 through a ministerial order.

“We did this because at the moment we don’t have any good waste management system or recycling. All these plastics are littered and end up in our main streams in Juba.”

“During the rainy season all these plastic bottles wash up into the river, causing a lot of pollution of our river Nile,” said Afrikano. “You know the Nile is very important, as we have the largest wetland in Africa.”

The Nile Basin Initiative (NBI) Eastern Nile Technical Regional Office (ENTRO) Head of Social Development and Communication, Dr. Wubalem Fekade argues that plastics are often not even necessary and carry more disadvantages than advantages: “Plastic does not break down easily. If you put it (in the Nile), it may take hundreds or a thousand years, and even if it breaks down, fish might eat it, getting into the food cycle. We may end up eating it and poisoning ourselves.”

“Now, why do we have plastics?” questions Fekade. “We have lived without it for a million years.”



Author's take: The workshop prepared me with the skills and techniques to cover stories related to the environment. I now know that we are all linked to nature and that climate change is a global issue that we need to fight against together. It is my duty as a journalist to educate people on the importance of environmental conservation through my articles.



South Sudan has banned the use and importation of plastic bags.

Piles of problems

Waste in Khartoum, which is not being disposed of and recycled as fast as it is being produced, is heaping up around the capital and causing various environmental and health issues.

By Elzahraa Jadallah
Khartoum, Sudan



Author's take: I used to see people dumping waste on the streets or in the river, and I didn't say anything; now I speak to them about it, and of course, I tell my children about environmental protection. I occasionally write articles in the local newspaper about environmental topics, which don't get enough attention. Maybe I am not doing great things, but since last year I started to care; and I am planning to read and write more, and make small changes, starting in our home.



Ripped plastic bags, leftover food scraps, paper, plastic bottles and other objects mixed with mud and dirt litter the streets in Khartoum. Puddles left from rain mix with the waste of flies, mosquitos and other insects. Bad odours and unpleasant sites plague every neighbourhood in Khartoum during the rainy season. The drainage system is bad enough, but the waste problem in the capital has created a climate and health disaster.

Waste disposal was once the responsibility of the government-funded Municipalities Council. Later, as the population grew and lifestyles changed in Khartoum State, the current government began charging people and companies for trash disposal in the 1990s.

The privatisation of trash collecting companies, however, and the costs that come with them have come under fire: Sudan's Democracy First Group released a statement this past August accusing sanitation authorities in Khartoum of corruption and incompetence in handling the capital's daily waste.

According to its Director, Malik Bashir, the Khartoum Cleaning Corporation handles Khartoum's 7,000 tonnes of daily rubbish and works in cooperation with municipalities under the supervision of the High Council of Environment and supervises the dumps, vehicles and staff through contracted private companies.

Bashir admits that although the corporation is not 100 percent pleased with the work of private waste companies, he says, "for the most part, the cleaning corporation is doing a good job". He adds: "The trucks are in good shape, and so are the dumps." Bashir believes "there's no such thing as 'zero waste' anywhere in the world".

No regular service, despite fees

Yet, Khartoum residents like Intisar Mahjoub, who lives in Bahrykh does not think the municipalities are doing as great a job as Bashir claims: "There are fees taken from each household, yet the truck doesn't come regularly. Citizens take their trash to the assigned places, but since the trucks don't come for the pick-up on time, the trash piles up and causes all sorts of issues," she says.

Mahjoub believes that privatising waste management was a mistake and alleges that the money goes into the pockets of individuals, instead of the fees going to the municipalities that could improve the service.

Health hazards

Dumps are located close to residential areas, homeless people and illegal recyclers digging through the piles and medical waste adds to trash

pollution. Dumping waste directly into water sources, including the Nile, especially industrial liquid waste from factories, leak into groundwater, creating dangers to public health.

The head of environment protection in the Federal Ministry of Health, Abdulmajid Murdas, blames the waste crisis on bad management, not only in Khartoum State, but all across Sudan:

"Sudan produces around 24,000 tonnes of waste on a daily basis, and the treatment rate is only 18 percent. The rest is left to dissolve, forming a favourable environment for many insects in addition to reaching groundwater and polluting it. There was an official who said that most of the groundwater sources in the area are unfit to use. We bury most of our waste, and that's a huge mistake because we are leaving many pollution problems for the next generations. Burning waste worsens climate change, and industrial wastes also form a big hazard, which could be avoided by recycling. Worst of all is the electronic waste that we don't even have a specialised sector for."

Murdas identified four areas of focus in dealing with the waste issue: reduction of plastics, recycling, using organic materials for recycling and dedicating research for best practice, reuse of bottles and materials, and rejecting the use of hazardous materials and replacing them with environment-friendly materials.

Citizens or government not doing enough?

Bashir, from the Khartoum Cleaning Corporation, claims that there are many ongoing plans to enhance waste disposal in Khartoum. Seven new medium stations are being established, new trucks are to be exported to have two appointments a week for the collection of domestic and commercial trash from the streets, and more containers are to be distributed.

The changes and improvements are expected to be completed soon, says Bashir, with a major focus on societal awareness raising, which aims to regulate the garbage trucks by appointing particular pick-up points and dates. Currently, the Cleaning Corporation is implementing a plan in two neighbourhoods with hopes that it will work in the entire state.

Najla Hassan, a resident in Khartoum 3, says that apart from the government not providing enough bins and the lack of regular pick-ups, citizens are not educated properly about responsible behaviour.

"No materials are addressing these essential issues in our educational system. This culture and awareness should have been included in our education. I hold the government responsible for any neglect the people might have demonstrated because the government didn't raise their awareness or build their capacity regarding waste management and environmental protection."

Sudan produces around 24,000 tonnes of waste on a daily basis.

Addis Ababa choking on smog

Ethiopia's capital city has some of the highest carbon monoxide levels in the world – the primary driver are vehicle emissions.

By Dagim Terefe
Addis Ababa, Ethiopia



Addis Ababa is the capital of Ethiopia as well as the seat of the African Union's headquarters and a fast-growing urban area. Increased vehicle emissions, traffic road dust, industrial development, large construction activities, and overall land use practices have had a hazardous effect on the air in this busy city.

Although Addis Ababa is located along the foothills of the Entoto Mountain's vegetation cover, old vehicles release toxins into the micro-climatic atmosphere with severe health and social effects to those exposed to the pollutants.

"You cannot inhale clean air around my village," said Samirawit Yimer who lives near Autobus Tera in Addis Ababa. "My son recurrently gets colds. But no medical practitioner has confirmed that the reason is air pollution."

Compared to land and water pollution in the city, air pollution has evoked little concern. There is a common assumption among policymakers that the level of air pollution is below the danger zone, an assumption not backed by empirical evidence.

The Ministry of Environment, Forest and Climate Change (MEFCC) and the City Government of Addis Ababa Environmental Protection Authority (AAEPA) do not possess sufficient and updated documentation to prove otherwise.

Anecdotally, however, one will likely notice in other cities, like Bahir Dar, the capital of the northern Amhara Regional State, the pavement along the road is surrounded by palm trees and other ornamental vegetation.

There is minimal, improper or not enough vegetation cover along the pavement of Addis Ababa's roads, where vehicular emissions cause a rapid deterioration of ambient air quality and the environment, with consequent danger to human health.

Vehicular pollution

Saeid Abdela, Director of Climate Change Mitigation and Adaptation Directorate at the AAEPA said that the transport sector is a primary source of air pollution in the city.

"Importing a large number of used vehicles, a scarcity of road networks, vehicle engines operating with serious malfunctions and unsatisfactory or insufficient annual vehicles inspections are the major causes for severe vehicular air pollution in the city," according to Saeid.

He added: "We import lower quality oil at a cheap price, but it has been a significant contribution to air pollution. There is a quality standard variation between what European countries are importing and other African countries are importing."

Vehicular-Smogless Air for Ethiopia (V-SAFE) in collaboration with AAEPA, conducted a baseline study on the effect of motor vehicles on air pollution in Addis Ababa about six years ago.

The study found that carbon monoxide (CO) levels were two to six times higher than the World Health Organization (WHO) standard; seven to 19 times the Chinese Standard and two to five times the Brazilian Standard. Epidemiological studies have correlated high CO concentrations with heart disease, childhood developmental abnormalities and stillbirths.

Half of the vehicles tested produced about 90 percent of the hydrocarbons (HC) and CO emissions. Both ambient and vehicular HC, CO and particulate matter (PM) levels are well above worldwide standards for human and environmental health.

Taxing dirty cars?

The Vehicles Technical Assurance Directorate at the Federal Transport Authority, after conducting a study on vehicular emissions recommended the ministry of finance to impose high taxes on old, imported vehicles and keep taxes low on new vehicles. Yet, there has been little response from the government.

"Most old vehicles should be banned from Addis Ababa. However, there are economic issues which push the government to be silent in this regard, said Daniel Seifu, Control Core Process Head at the Federal Transport Authority. "Old vehicles are the source of income for most taxi drivers in the city," he said.

There has not been a significant measure taken by the government to avert the ongoing air pollution. AAEPA is expected to update the previous baseline study and the federal government has introduced a cycle transport system and electrified light rail transit transport service, according to Saeid.

However, there is still no action concerning old vehicles and banning importing used vehicles and low-quality standard oil.

"I have observed a lot of old cars and taxis," said Yimer, who lives near the bus station. "It means they are emitting huge amounts of greenhouse gases. The government should consider international practice: ban old cars from the city, use public transport instead of private cars, use electric cars, and avoid garages and parking lots from nearby schools."

Author's take: Even though I am an Ethiopian-based journalist and write so many articles on the spread of the water hyacinth, I got the invaluable chance to discuss the extent of the problem with colleagues at The Niles workshop in Bahir Dar. We also had an opportunity to witness the scope of the water hyacinth problem on Lake Tana and realised how the lake is at tremendous risk. We took the issue as a trans-boundary problem as Lake Tana is the source of the Blue Nile. The Niles workshop along with the field trip has inspired me to look at various environmental issues and write articles about them.



"Most old vehicles should be banned from Addis Ababa."

Sacrificing the environment for power

With renewable energy sources undeveloped, the widespread use of petrol and diesel generators pollute the air and exacerbate the effects of climate change.

By Martha Agama
Juba, South Sudan



Author's take: Before delving into writing and becoming aware of the critical aspects of environmental conservation, I did not know how my daily activities impacted the environment. Writing for the conservation issue piqued my interest in more ecological subjects. I am now keen on writing about energy generation, waste management and proper agricultural practices. I intend to advocate for environmental conservation practices through my writing.



Long after the city of Juba and its occupants have retired, one can still hear the sounds of generators roaring through the night.

In other parts of the world, generators are used as a backup source of power in cases of blackouts and power surges. In South Sudan however, generators are the principal source of electricity – for both industry and private residences.

A non-existent hydroelectric power industry leaves South Sudan in a severe energy access crisis. Continued civil strife has made efforts to put up energy infrastructure stall. Violent conflict has also resulted in the collapse of the already existing infrastructure. The South Sudan Electricity Corporation (SSEC) that provided power to parts of the country collapsed in 2013. The construction of the Norwegian supported 850 MW Fula Hydroelectric dam was suspended.

The Minister of Energy and Dams, Dhieu Mathok, estimates that up to 5,000 generators are operating day and night in Juba alone, consuming eight million litres of fossil fuel. While these fuels provide the much-needed electricity for day to day activities, like saving lives in hospitals, powering both aid and developmental efforts, it poses a significant risk to air quality and public health.

All the fuel used in South Sudan is imported, despite the country having natural reserves. Nevertheless, there is a lack of local refineries. This stresses an already struggling economy even further.

Dirty fuel

South Sudan's generator engines burn either petrol or diesel. Petroleum, which is the most widely used fossil fuel, is one of the most significant contributors to environmental pollution problems worldwide.

Several toxic contaminants are detected in the exhaust of generators which burn fossil fuels, especially diesel. Apart from benzene, which is a cancer-causing pollutant, carbon dioxide (CO₂) - a greenhouse gas and a significant contributor to climatic change is equally emitted.

The generators are a source of water, soil, air and sound pollution. Public health is also threatened by the emission of greenhouse gases combined with burnt oils from generators which, if not disposed of correctly, end up spilling into soils and water sources like rivers and boreholes.

Users of generators are mostly unaware of these threats. Ken Kamulete, a generator operator for one of Juba's high-end hotels, calls the generator shelter the "powerhouse".

"The existing challenges are just the high cost and irregularity of fuel,

the loud sound and the heat emitted. Other than that, these generators ensure the smooth flow of business."

According to South Sudan's first state of environment report in 2018, there has been an increase in incidents of droughts and floods, increased unpredictability of seasonal rains and increased intensity of rainfall events. These have broader negative impacts on people concerning food security, health and safety needs.

Tackling the climate crisis

The United Nations Environment Programme (UNEP) Country Programme Manager, Arshad Khan, linked climate change directly with the destruction of national economies.

"Climate change is having a direct bearing on food security, displacement of people, livelihoods, health, education and other social and economic issues," Arshad said.

In light of these dangers, South Sudan became a signatory to the United Nations Framework Convention on Climate Change (UNFCCC) in 2014, the Kyoto Protocol. Signatory countries are required to cooperate in reducing average global temperature increases.

"In the Ministry of Energy, we are giving priority to renewable energy, green energy," said Dhieu Mathok, the Minister of Energy.

Alternative and greener sources that could be exploited include solar power, wind, waterfalls and geothermal heat. Biomass resources in the country include forests, animal waste, and agricultural residues, which are put at a total energy content of about 32 million gigajoules. South Sudan's hydropower capacity is up to 5,883 megawatts, and the country has ample sunshine with strong solar power potential (high solar irradiance), estimated at 436 watts per square meter per year.

While solar energy is a cleaner and cheaper alternative source of energy, the initial purchase of solar panels is even more expensive than generators. The other challenge is that solar power might not be able to meet all energy needs and cannot be relied upon when the weather changes and there is no sun. As such, South Sudan cannot as yet transition to a completely generator-free state without putting in place a more reliable energy source such as hydropower.

Purchasing power from the region's surplus could also be viewed as a viable solution to the energy crisis facing South Sudan. With the construction and near completion of the Grand Ethiopian Renaissance Dam (GERD) project, South Sudan should be in a position to buy extra electricity made available to Ethiopia's neighbouring countries.

Up to 5,000
generators are
operating day
and night
in Juba alone.

Do you know

how to "go green"?

These ten questions will test how well you understand what it takes to live an environmentally friendly lifestyle.

1.

What type of shopping bag is eco-friendly, paper or plastic?

2.

Appliances that are turned off don't use any electricity – true or false?

3.

Approximately how much global electricity is produced from renewable sources?

4.

During a long trip, you conserve more fuel by driving fast and getting to your destination sooner than you do by going the speed limit – true or false?

5.

What is the most common type of debris that litters our oceans: plastic bags, plastic beverage bottles, cigarettes or food packing?

1. None of the above. Manufacturing and disposing of both paper and plastic bags harm the environment. Bring your own reusable bag instead.
2. False. Many appliances continue to use energy for features like clocks and remote control sensors even when they are turned off.
3. Only about 10 percent of global energy comes from renewables. The remaining 90 percent comes from non-renewable sources like oil, coal and natural gas.
4. False. You save about 15 percent on fuel by driving 90 kilometres rather than 105 kilometres per hour. Properly inflated tires and a well-tuned engine also improve fuel economy.
5. Cigarettes. The Ocean Conservancy said during its International Coastal Cleanup day in September 2017, 789,138 volunteers in more than 100 countries collected over 9,000 tonnes of trash. Topping the list of items found polluting our beaches and waterways were 2.4 million cigarette butts, which contain plastic filters.

6.

Which of the following sources of energy is not renewable: petroleum, hydropower, biomass or solar power?

7.

Which phrase is used to make sure you reduce the amount of waste that goes into a landfill?

8.

What is the biggest threat to animal populations worldwide?

9.

A large proportion of human emissions comes from food production. To reduce your carbon footprint, should you eat more or less meat?

10.

What is the mode of transport that has more impact on the climate than anything else?

6. Petroleum. Petroleum is a fossil fuel. Coal and natural gas are other examples of fossil fuels.
7. Reduce, reuse, recycle. Buy what you need, make the most of it, and think about where it goes when you're done. Simple!
8. Habitat loss and degradation is the most common threat to wildlife. Farming animals for meat and dairy, for example, requires space and large inputs of water and feed.
9. Meat is associated with much higher carbon emissions than plant-based food. The livestock industry is responsible for 14.5 percent of global emissions (the same as the whole transport sector).
10. Flying has more impact on the climate than anything else an individual can do. People who fly often justify their air-travel with the critical work they are doing, yet we have to halt any net growth in CO2 emissions from flights.

20 years

Nile Basin Initiative

The Niles multi-
media special:
28 contributions
by journalists from
10 countries

nbi20.org

10
fantastic ways how
you can recycle this Niles
conservation issue.*

1.
Cleaning windows:
Using an old newspaper
to clean windows works better
than a cloth for preventing
streaks. For even better
results, use a vinegar-and-
water solution instead of
a chemical cleaner.

2.
Weed killer:
If weeds are a problem in
your garden, cover the flower
beds with newspaper and
soak them with water. Then
cover the paper with compost
or mulch. Eventually the
paper will smother the
weeds, and the organic
matter will help your garden
flourish.

3.
Fire starter:
Fed up of The Niles? Use
crumpled up bits of this
newspaper to start a bonfire,
charcoal grill or camp fire.

4.
Ripen tomatoes:
Wrap green tomatoes in sheets
of old newsprint, layer them
in a box and put a lid on top –
they will eventually ripen up
to a lovely red colour.

5.
Shoe deodoriser:
Crumple up balls of newspaper
and stuff them into smelly
shoes. Leave overnight and
discard – and any odours will
have disappeared.

6.
Carpet underlining:
If you have a foam-backed
carpet, lay newspaper down
on the floor underneath it.
This will help protect the
carpet, and will stop it
sliding.

7.
Fireplace logs:
Roll up newspapers and tie
them tightly with string to
make makeshift logs. You can
then use them in your fire-
place, saving on wood.

8.
Storing fruit:
Wrapping apples in old news-
paper somewhere dry will keep
them from rotting.

9.
Clearing up broken glass:
First, pick up and dispose
of the larger pieces wrapped
in old newspaper. Then care-
fully blot the surrounding
area with a few sheets of wet
newspaper – the shards of
glass will stick to the damp
wad of paper.

10.
Barbecue cleaner:
Turn off the barbecue and
allow it to cool a little. Soak
newspaper in water, lay the
sheets over the warm barbe-
cue grill, close the lid and
leave for approximately an
hour. Then simply remove the
paper and wipe the grill
clean.

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Source: Friends of the Earth