When deeds speak, words are nothing

Speaking about sustainable development is easy. Acting sustainably is another matter. And now the evidence is unequivocal: Mankind's impact on nature is causing the climate to change rapidly and drastically, threatening the environment and the very resources we need to survive. Aware that humanity is careening close to the edge, The Niles correspondents set out to explore where and how people in the Nile Basin region rethink. So much of their findings for now: We are an endlessly innovative species. Cooperation is our superpower. When deeds speak, words are nothing.

The Niles

Issue #17
Entebbe, Uganda
February 2022

The Niles is a publication of Media in Cooperation and Transition gGmbH.

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Infographics: The Niles / Gunnar Bauer (p. 5, 41, 43)

This issue of The Niles is produced by Media in Cooperation and Transition (MiCT) in collaboration with the Nile Basin Initiative (NBI), and with support from the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, commissioned by the German Federal Foreign Office (AA). The views expressed in this publication do not necessarily reflect the opinions of NBI, AA, GIZ or MiCT.

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Cover:
Arabuko Sokoke is a board game commonly played in Kenya's coastal region.
Photo: The Niles / Anthony Ochieng

Contents

The board is bigger than we think

A student swims across a flooded path on his way home from school in Walawalang, South Sudan.
Photo: UNICEF South Sudan / Bullen Chol

The triple crisis of climate change, biodiversity loss, and pollution makes it ever more challenging to meet everyone's basic human needs. It is like playing a complex board game – a collaborative game that needs us to rethink our approach to win.

A board game commonly played in Kenya's coastal region, depicted on the cover of this The Niles issue, is Arabuko Sokoke. Its name derives from words used by the Waata people that lived in the forest: arbi (elephant), huk'o (thin) and sokoke (short trees), meaning the "forest of the thin elephant".

Arabuko Sokoke is what remains of the largest coastal indigenous dry forest block on the continent, which once stretched from southern Somalia to northern Mozambique. The forest, which covers 420 square kilometres, is near Malindi, 110 kilometres north of Mombasa. Today it is home to many endangered species and the forest is among the globe's 25 biodiversity hotspots.

Already proclaimed a Crown Forest in 1932 and turned into a strict nature reserve in the late 1960s, the Arabuko-Sokoke forest highlights how foresight and decisive precautions can help avert looming problems – an approach we have sadly failed to adopt when it comes to climate change.

It's 2022 and the era of climate denial is over. 'Finally', the pioneering climate modellers Syukuro Manabe and Klaus Hasselman might think, whose work dates back to the 1970s and only in 2021 shared the Nobel Prize for Physics with theoretical physicist Giorgio Parisi. The award is a recognition "for the physical modelling of Earth's climate, quantifying variability and reliably predicting global warming".

Climate change is widespread, rapid and intensifying, according to the Intergovernmental Panel on Climate Change (IPCC) report, released in August 2021. The United Nations Secretary-General António Guterres said the report was nothing less than "a code red for humanity. The alarm bells are deafening, and the evidence is irrefutable".

And indeed, the situation is more than pressing. For many millions of people on the African continent, the climate crisis poses an acute existential threat. The World Meteorological Organisation (WMO), together with the African Union and other partners, presented a report on this in Geneva. Titled "The State of the Climate in Africa 2020", it shows that climate change is exacerbating the hunger crisis in Africa with rising temperatures, more extreme weather and changes in rainfall, and is driving people from their homes.

Global warming and its consequences are being felt more acutely in Africa than the global average, the report says. The continent is disproportionately affected by floods, droughts and landslides. The year 2020, the report's focus, was among the ten warmest years since records began.

The Nile Basin is highly vulnerable to climate change. The basin communities have limited possibilities to cope with climate variability which can afflict socio-economic conditions, the environment and the bid to create a mutually agreed mechanism to manage the shared Nile water resources.

The world has now grasped that climate change is real. That's good news, but there are many challenges ahead, most importantly overcoming our sometimes limited views about how to address the climate crisis.

On a personal level, helping the environment as individuals can entail buying the right products or adhering to the mantra: "Reduce, Reuse, Recycle". On the societal level, sustainability, so far viewed as an altruistic gesture, must be declared the default way of operating.

To pull off this transformation, we must overcome resistance from vested interests. Existing environmental regulations need to be better implemented and enforced; harmful

policies must be reformed; cultures and structures entangled in colonial history and economic models that perpetuate discrimination, inequality, and environmental destruction must be abolished.

After all, low-income communities everywhere suffer the consequences of bad policies and climate change the most, while having contributed little to the crisis themselves. Therefore, it is critical to give more space to marginalised voices beyond individual sustainability – because the resulting policies primarily affect the homes of the very people who have the least say in our society.

Let's face it, we humans are massively interfering with the earth's ecosystems. The destruction of the environment has triggered a global climate crisis and has caused species extinction at an unprecedented rate. But it is not too late to save the ecological diversity of our planet, including our very own species.

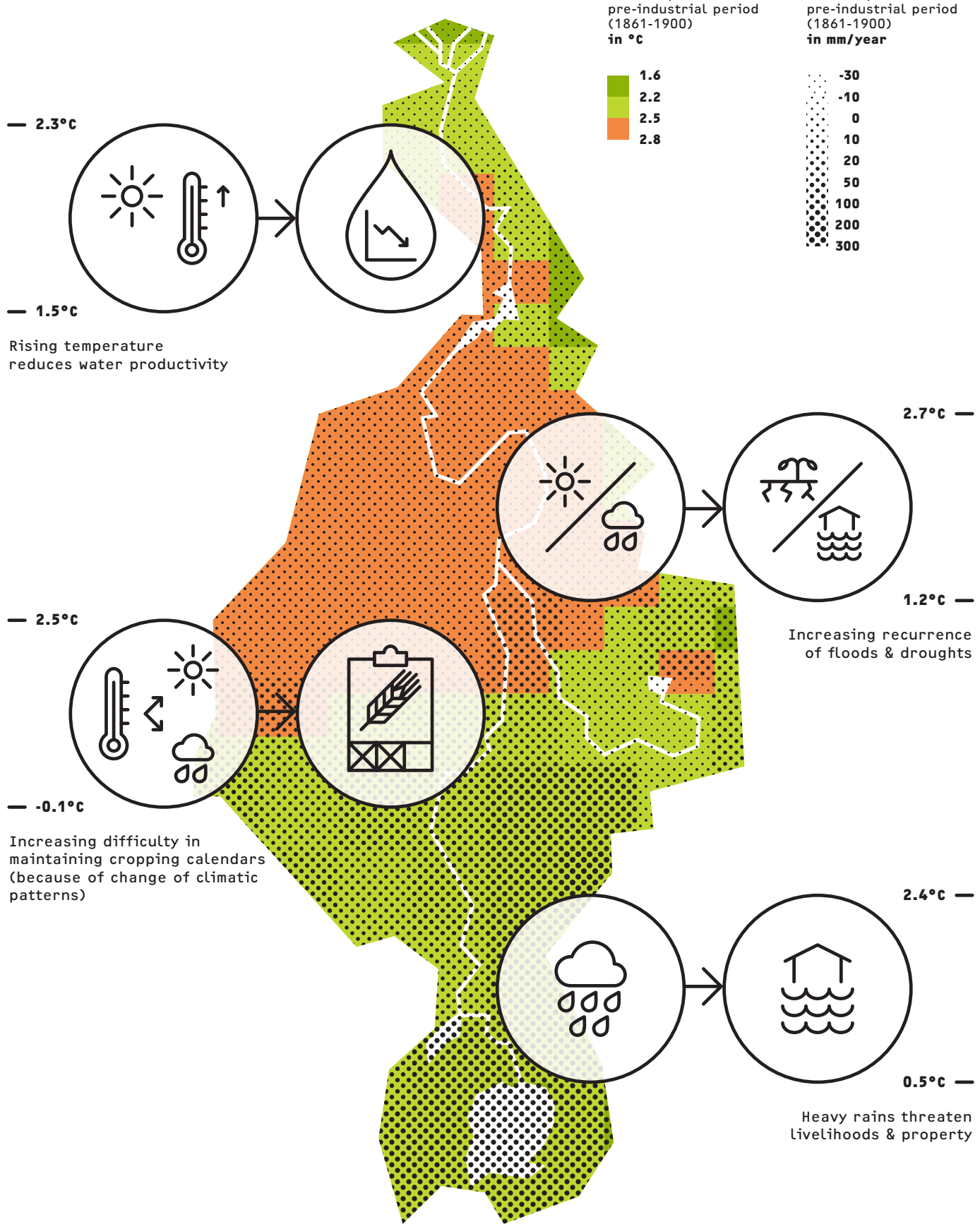
The science is clear on what we need to do: cut greenhouse gases to zero and protect the wetlands, soils, forests rivers and oceans that absorb our impacts.

Back to the board game analogy, we need to understand the overarching goal and use all the pieces to achieve it. This means trying out multiple strategies, and, above all, grasping that the board is bigger than we think.

Reversing the progressive decline of nature while combating social inequality requires a fundamental rethink of the policies that govern us and the way we invest, use resources, live and work, eat, use land and communicate.

And no one can be left to lose. We have to play this game collaboratively to win!

Preparing for climate change impacts in the Nile Basin



rethink policies & the way we invest

Rethinking regional investments

Henry Lutaaya
Kampala, Uganda

The sixth Nile Basin Development Forum (NBDF) was successfully held between February and May 2021, despite the travel restrictions amid the COVID-19 pandemic.

The largely virtual event held in the form of online webinars attracted 824 participants from 55 countries around the world under the theme: "Rethinking regional investments in the Nile Basin: Water, Energy, Food, Environment and Climate Change."

Dr. Michael Kizza, the newly appointed NBI Deputy Executive Director, which convenes the tri-annual science dialogue, spoke with The Nile's Henry Lutaaya about the forum.

The Niles: Why did NBI choose the theme "Rethinking regional investments in the Nile Basin"?

Michael Kizza: NBI is an inter-governmental organisation set up by ten member countries that share the Nile Basin to promote equitable utilisation of water resources.

When NBI was set up way back in 1999, one of the main objectives was to promote cooperation on the Nile Basin water issues.

Secondly, it was established to support water resources management and, thirdly, to support water resources development.

Countries take the issue of development very seriously. As you know, the Nile Basin is composed of countries that are still in their developmental stage and therefore have many challenges that border around high poverty levels and growing demand for social services.

The basin is also a very complicated area to the extent that only a part of it receives heavy rainfall. The other half receives very little rainfall, yet those who receive little rainfall sometimes suffer from flooding.

Even among those that receive a lot of rainfall, all the water goes away during the rainy season and experience water shortages during the dry spell.

These natural challenges have been complicated by two key general problems to the Nile Basin; very high population growth rates coupled with economic growth. The combination of high population growth and economic

With more pressure on resources from growing populations, plus the looming threat of climate change, the Nile Basin Initiative (NBI) is rethinking its investments to ensure they are as effective as possible against the mounting challenges.

Dr. Michael Kizza, Deputy Executive Director, Nile Basin Initiative. Photo: The Niles / Henry Lutaaya

growth means that the demand for water, food, energy is growing much faster. Yet, the water resources that are needed to meet this growing demand are not expanding.

Secondly, the challenges are regional in nature. The challenges you have in Uganda do not stop at the border – they are transboundary in nature. If each country tries to solve its own problems, it will not result in the best solutions.

If, for example, Uganda tried to reclaim wetlands to settle or feed its growing population, it would not only negatively affect the regional climate but it will also undermine the quality of the water reaching downstream countries since wetlands play a critical role in water purification.

Out of the recognition of the need to promote cooperation and collaboration, NBI was tasked by its governing organs – the Nile Council of Ministers and the Nile Technical Advisory Committee – to promote investments in water resources infrastructure and promote the understanding of the importance of transboundary investments.

NBI has done a very good job over the years in ushering in transboundary cooperation by creating an environment where countries can talk to each other rather than quarrel.

The next step is to ensure that you use the resources equitably and sustainably. You want to ensure that everyone is happy without compromising the needs of future generations.

Therefore, the primary role of NBDF has been to bring together all the people who are dealing with water resources to talk about them.

A reporting opportunity

Because the NBDF brings updated information, it provides policymakers and the scientific community with a vital platform to share information on what is happening.

We, therefore, wanted to use the 6th NBDF to know what is happening in the different member states regarding investments, but also for us to report on what we have been doing regarding the area of investments since the last NBDF.

In this regard, the theme of rethinking investments was meant to ensure that we remain focused on the urgent challenges facing the region and evaluate our performance against the ideas for which NBI was established.

A growing challenge

There was a feeling that we have been carrying out investments ever since NBI was established 22 years ago. But while we have achieved many things over the years, if anything, the problem has grown bigger.

For example, the water demand is rising as the population is expanding. The economies are expanding and therefore need more and more water, energy, and construction materials, some of which depend on the river's life.

We wanted to find solutions to some of these challenges.

TN: Why are some of the investments not moving very fast?

MK: Why are the problems growing bigger despite the efforts of the countries and all other regional players? How can we become more efficient and leverage resources to ensure that we invest in more sectors that benefit the people?

The rethinking part was not to say that what we have been doing is not good but rather that we can find more efficient ways of using our investments.

TN: Following the dialogue, what are the critical areas of investments that emerged?

MK: The critical areas of investment are very many, but for me, they are founded on a number of realities or facts. Fortunately, these have been captured in NBI's six strategic goals, which are:

1. Water Security – meeting rising water demand;
2. Energy security – unlocking and optimising hydropower potential;
3. Food Security – increasing Agricultural productivity;
4. Environmental Sustainability – protecting and restoring degraded ecosystems;
5. Climate change – preparing for climate change impacts;
6. Strengthen transboundary water governance – bringing people together to build a common ground for win-win benefits.

The challenge posed by rapid population growth and economic growth is causing exponential growth in demand for water. With economic growth, water usage and energy per person is higher for richer people than for poor people.

For example, when you're planning for a water system in the face of a rising population and rising incomes, you have to consider the fact that richer people use more water.

You also have to prepare for ways to clean up the environment. As you may, know rivers that pass through urban areas or highly populated areas tend to be more polluted because they are usually dumping grounds for the people who live along those rivers.

So, some of the discussions were, for example, about what does science say about the impact of different economic activities in wetlands.

How can we produce more food to feed a bigger, richer population more efficiently by using the same amount or even less water than we're using today?

On food security, some of the emerging proposals include, for example, how can countries collaborate to invest in the production of more food more efficiently?

Studies indicate that if everyone developed their irrigation plans without due consideration of available water, we would have a very big water shortage before 2050. This justifies why we need to plan together, but also it means that we have to look for more efficient ways of producing more food with less water.

Energy security is one of the strategic goals of the NBI. We had numerous discussions about how we could advance the region's hydropower agenda.

Can countries come together to finance joint projects in their energy sector? This is actually what we mean by sharing benefits as opposed to sharing the resources.

Sharing benefits speaks to the need to focus on getting the best from the resources instead of sharing the resource.

It speaks to the need to exploit the resources considering the needs of others as opposed to competing over the same resource when each country undertakes individual projects.

TN: How have new challenges such as climate change impacted the NBI agenda on investments?

MK: Climate change is making the existing problems much worse, causing recurrent droughts and floods. An increase in temperature is compounding the already serious challenge of decreasing water levels or the worsening quality of the water in the rivers and lakes.

But when you work together, because you're dealing with problems beyond each and everyone, you can manage it and ensure that it's handled better. Otherwise, working alone will likely worsen the problem as everyone tries to compete for the same resource.

TN: What sorts of investments or changes are needed to address the increasingly complex challenges on the governance front?

MK: Governance requires political will and the need to invest time in appreciating the challenges of other countries. By design, cooperation involves a process of giving and taking.

Green investments to battle climate change

The vital ecosystem of the Nile Basin is already in the firm grip of climate change. Can green investments throw a lifeline to the region?

Ethiopia, Egypt and Sudan are caught in an enormous geopolitical cold war over the usage of the Blue Nile and the operation of the Grand Ethiopian Renaissance Dam (GERD). The United Nations Security Council (UNSC) has convened, with others criticising and commenting upon the mounting tension. Meanwhile, the greatest threat in the Nile Basin, climate change, is being ignored.

The world's climate is already, on average, one degree Celsius warmer than in preindustrial times due to rising global greenhouse gas concentrations. The Intergovernmental Panel on Climate Change (IPCC) predicts that increases in global mean temperature by one to three degrees Celsius above 1990 levels will benefit some regions and harm others.

The Nile Basin, Africa's most significant ecosystem, since it hosts over 40 percent of Africa's population (about 490 million people), is already in the firm grip of climate change.

According to United Nations Environment Programme (UNEP), the challenges emanating from climate change in the Nile Basin include uncertainty regarding precipitation and river flow, land degradation, reduced river flow, flooding, droughts, deforestation, and loss of species and ecosystems and increased incidences of disease.

Massive infrastructure damages, loss of human lives, and Internally Displaced Peoples (IDPs) have been observed, especially in the last three years due to torrential rains that led to flooding amid intense GERD debates.

Just last August 2020, Sudan suffered from massive flooding that displaced more than 600.000 people, collapsed several houses and damaged agricultural lands and infrastructures, according to the United Nations Office for the Coordination of Humanitarian Affairs (OCHA). If the GERD reservoir had not held 4.5 million cubic metres of water in that rainy season, the damages would have been even worse.

Rethinking investments in agriculture

According to the Global Investment Bank of Credit Suisse, investing with climate change and a low-carbon economy in mind is part of managing the material risk to the company's portfolio. Investors who acquire lands and seek to decarbonise their portfolio may likely find low-carbon investments in the Nile Basins' new energy and agro-processing industries, even though some citizens oppose the Gulf investors' growing interest in grabbing the Nile Basin's agricultural wetlands.

Even though climate change further exacerbates the water stress, already up to 10.3 million hectares of land have been acquired by investors across the 11 Nile Basin countries since 2000. According to the Pulitzer Centre, most of these lands were allocated in 28 transnational deals. Companies from mainly Middle Eastern states acquired vast land areas to produce food crops, animal feed such as alfalfa and biofuels.

The water chain of food production and climate change impacts need a rethink: Water experts have been suggesting that a coordinated water management system should be in place to address water risks or stress.

The biggest challenge is at the private-sector level. Most players believe that the water crisis is the governments' responsibility.

Interestingly, within the six years since the launch of the United Nations Sustainable Development Goals (SDGs), some global savvy and responsible investors have started to measure their operations and output with these objectives to demonstrate how their investments can better align with the UN's framework. So, there are likely to be signs of such commitments from investors in the Nile Basin and mechanisms for the management and monitoring from the state actors.

Although developed nations are historically responsible for the changing climate and thus have an obligation to finance climate adaptation projects in developing countries, the debate around the Common But Differentiated Responsibilities (CBDR), formalised in the United Nations Framework Convention on Climate Change of Earth Summit in Rio de Janeiro, 1992, has not yet been resolved. So the Nile Basin nations must generate finances from private and public sectors by implementing ecosystem services to adapt to climate effects and ensure a sustainable flow of Nile waters.

In consideration of developing models of how ecosystems produce services at the scale necessary to examine regional, national, and global outcomes and the quantitative benefits of the ecosystem and habitat restoration, the Nile Basin Initiative (NBI) and the Regional Wetlands Expert Working Group have developed a wetland atlas with the support of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ).

"Including ecosystem services can improve how decisions are made."

The management plans have been developed for three transboundary wetland landscapes Sio-Siteko (Kenya - Uganda), Semliki (Uganda - DR Congo) and Sango/Minziro Forest (Uganda - Tanzania), which the member countries adopted in 2020. However, Lake Tana wetland, registered by UNESCO as World Biosphere Reserve, and the Blue Nile's source is missing.

According to National Ecosystem Services Partnership (NESP), an initiative at Duke University's Nicholas Institute for Environmental Policy Solutions, including ecosystem services in decision making, can improve how decisions are made and communicated to the public. Failure to include ecosystem services in decision making can shrink the benefits ecosystems provide.

Climate change investments in agriculture and implementing ecosystem services contribute directly to several of the SDGs: 2 (zero hunger); 12 (responsible consumption and production); 13 (climate action); and potentially 15 (life on land) – as the Nile riparian states will need less land for agriculture if they can establish a mechanism to administer investors jointly under a river basin organisation.

Installing a proper water management system within the supply chains of listed agricultural companies in the basin is key to achieving water and food security.

Dagim Terefe
Addis Ababa, Ethiopia

Wind turbines in Adama, Ethiopia.
Photo: CIFOR / Ollivier Girard

Rethinking investments in energy

Climate change is a severe threat that is impacting energy-hungry poor economies. However, the idea of integrating sustainability considerations into investment processes could contribute to the UN's Deep Decarbonisation Pathways Project (DDPP) goal of achieving a net-zero emission by 2050.

Technologies that address climate change, like green energy and sustainable transport, are likely to profit as investors look for options that remove carbon from the world. For instance, Ethiopia is generating green power from the GERD. In the meantime, the reservoir could be used for floating solar photovoltaic systems that would boost the energy generating capacity.

According to a World Bank report investing in floating solar photovoltaic is effective, especially in countries with high population density and competing uses for available land. The advantages of floating over land-based solar systems include higher energy yield, reduced evaporation, and improved water quality.

On the other hand, investors need to consider climate-related mitigation and adaptation strategies in an active way to develop climate resilience and manage climate risks in their portfolios. Policymakers need to create a mechanism to make it effective and thus benefit all Nile riparian states. And, the urgently needed effective action on climate change investments requires a coordinated mechanism by all Nile Basin nations.

"Climate services enable decision-makers to manage risks."

What the NBI has worked on so far

As the one and only existing Nile Basin organisation, the NBI has commissioned many studies at sub-basin and basin-wide levels to improve the understanding of the water resources and socio-economic situation, vulnerability to climate change, appropriate coping measures and development options. It has also supported science-policy dialogue, strengthening basin monitoring and planning tools, and facilitating the expansion of water and power infrastructures.

NBI's Climate Services feature collected information and data from all Nile Basin countries, except Egypt and Tanzania, on various water-related sectors like energy, agriculture and infrastructure (dams, irrigation schemes, etc.). The aim is to "make decision-makers and their technical support structures use Climate Services in planning and climate risk assessment in infrastructure investment".

According to the NBI's Climate Services for Infrastructure Baseline Assessment report, climate services enable public and private decision-makers to manage climate risks and opportunities and raise the resilience of national infrastructures. Many countries within the Nile Basin region so far lack the institutional, technical and service-related capacity they need to set up and mainstream climate services in their planning procedures and regulations, the report commends.

NBI is also working on drought monitoring with the Nile Basin River Flow Forecasting System (NB-RFFS). The report is automatically generated by the Flood and Drought Data Portal, which contains the latest satellite imagery used to monitor precipitation, soil moisture, and vegetation health to support the drought early warning system.

Lake Edward: My fish, your fish, our fish

Congolese fishermen's canoes seized in Uganda.
Photo: The Niles / Tuver Wundi

Cooperation policies and coordinated patrols on Lake Edward, between the Democratic Republic of Congo and Uganda, give hope for sustainable fisheries to enable current and future generations to share the water resource.

"A natural bank for present and future generations."

Across the Nile Basin, population growth and, in many areas, the high population density are piling pressure onto land and water resources. Climate change, the overuse of resources, declining fish stocks, invasive species, habitat degradation, and pollution are the region's scourge, and the Lake Edward basin is a case in point.

Lake Edward is the smallest among the African Great Lakes (AGL), with a surface area of 2,325 square kilometres. Its basin includes the smaller (250 square kilometres) but highly productive Lake George, connected by the Kazinga channel. The lake is shared between Uganda (29 percent) and the Democratic Republic of Congo (71 percent).

On the DRC side, Lake Edward is an integral part of the Virunga National Park, a UNESCO World Heritage Site and RAMSAR Convention site, with many spawning grounds, and is managed by the Institut Congolais pour la Conservation de la Nature (ICCN).

The Ugandan part of Lake Edward, part of the Queen Elizabeth National Park, has fewer spawning areas. The exploitation area, which is not part of the park, is managed by the Ministry of Agriculture, Animal Industry and Fisheries (Uganda).

In the Lake Edward Basin, small-scale agriculture provides an income for many, but fishing remains the leading economic activity among these communities. This intensive fishing effort has depleted fish stocks significantly, requiring interventions to reach sustainable levels again.

Rebuilding stocks in the long term is vital for future generations. "Lake Edward, well managed while protecting the spawning grounds for fish reproduction, remains a natural bank for present and future generations," says Kambasu Katsuva Mukura Josué, Secretary-General of the Federation of Individual Fishermen Committees of Lake Edward. "Fishermen's production will increase in quality and quantity to meet their needs and the needs of the riparian communities."

Alongside environmental degradation, especially on the DRC side, the leading causes of the depletion of fish stocks are the weak application of regulations and the lack of harmonisation of fishery laws.

With ongoing wars and rebellions in the eastern part of the DRC and in particular in the province of North Kivu, Lake Edward has also been impacted by the violence, which speeds up the destruction of the aquatic ecosystem, influencing the decrease of the halieutic stock following the practice of the various illicit fisheries.

A range of illegal practices is destroying the spawning grounds or maternity areas of fish for reproduction as well as the opening of illicit fisheries with several landing points, increasing from three to more than ten (Vitshumbi, Nyakakoma, Kiavinyonge, Kamandi, Kiserera, Talihya, Lunyasenge, Katundu, Musenda, Kisaka, Kasindi Port). These activities are supported by a range of people, including armed groups and politicians, certain traditional chiefs or landowners, and certain state services.

Tuver Wundi
Goma, Democratic Republic of Congo

"Fish are vulnerable to overfishing, especially when it occurs in spawning areas."

The increase of the pirogues from 700 to more than 3,000 currently, and taking into account the demographic rate around the Lake Edward, the Congolese government, by means of the ICCN, in collaboration with its partners and other stakeholders in this sector of fishing, recognises 1,187 pirogues in six fisheries.

The destruction of the spawning grounds of species including Muramba, Taliha, Kamandi, and Magiso by the illegal fishermen has shrunk the yields for those fishing, sparking the trend of people violating the liquid borders within the lake.

The Ugandan navy often arrests Congolese fishers from Kiavinyonge, Kasindi Port, Kisaka and Nyakakoma in Katwe and Rwashama, and outboard motors, canoes, nets and other fishing equipment are seized. At the end of July 2021, 126 fishermen, including 54 from Kiavinyonge, 32 from Kasindi Port and 40 from Nyakakoma, were arrested and detained in Uganda in Katwe with more than 253 canoes, 223 outboard motors from Kiavinyonge, 81 canoes and 71 outboard motors and other fishing materials.

The lack of fish in the Congolese part is due to the weak regulation of fishing. An excess of pirogues is the root cause of overfishing, leading to a low production yield per pirogue.

Given the falling fish stocks in the Lake Edward and Albert Basin, the governments of the DRC and Uganda have recognised that the two states share a common interest in the conservation, utilisation and equitable management of shared natural resources. Back in 2018, they committed to ensuring the long-term conservation, management and sustainable use of the fisheries resources of Lake Edward and Lake Albert.

In this agreement, the governments of DRC and Uganda have recognised the need to establish a sustainable legal and institutional framework for managing the two lakes. The countries expressed their determination to cooperate to eliminate threats to fisheries resources and ecosystems.

The sustainable use of the fisheries and other natural resources of Lake Edward and Lake Albert is the goal of the Lake Edward and Albert Integrated Fisheries and Water Resources Management Project (LEAF II), a transboundary project that brings together Ugandan and Congolese actors. In part, it coordinated the joint patrols between DRC and Uganda in March 2021.

These patrols aimed at ensuring the protection of the spawning grounds, clearing fishing equipment not respecting the norms in the fishing enclaves of Lake Edward and dealing with illegal fishers caught fishing on the lake.

These patrols concerned the whole lake but not the river Rwindi up to the river Ntumbwe due to the presence of Mai-Mai rebels in these places.

Director Rodrigue Mugaruka, Deputy Head of Site in charge of the anti-poaching programme for Virunga National Park, explained: "We spotted illegal fishermen in the middle of their fishing. Our elements engaged in coordinated patrols and carried out 35 patrols to fight against illegal fishing on the whole of Lake Edward, Congolese part," he said, adding that 163 canals have been closed, and 27 illegal fishermen were arrested.

Joseph Matungulu Masirika, the National Coordinator of the LEAF II project in the DRC, said, "fish are vulnerable to overfishing, especially when it occurs in spawning areas. For the well-being of the fish, it is advisable to clear the illegal villages and the men and women carrying weapons illegally at the edge of the park, from the mouth of the Rwindi river to Muramba," and added that it was essential to extending the series of meetings and coordinated patrols.

Such ongoing cooperation among leading actors in the region will help implement and enforce national environmental policy, legislation and procedures related to the aquatic ecosystem, securing valuable resources for future generations. Meanwhile, environmental education and public awareness should be among the strategies for maintaining community integration.

Left:
Fishers on Lake Edward.
Photo: Flickr / Travel Aficionado

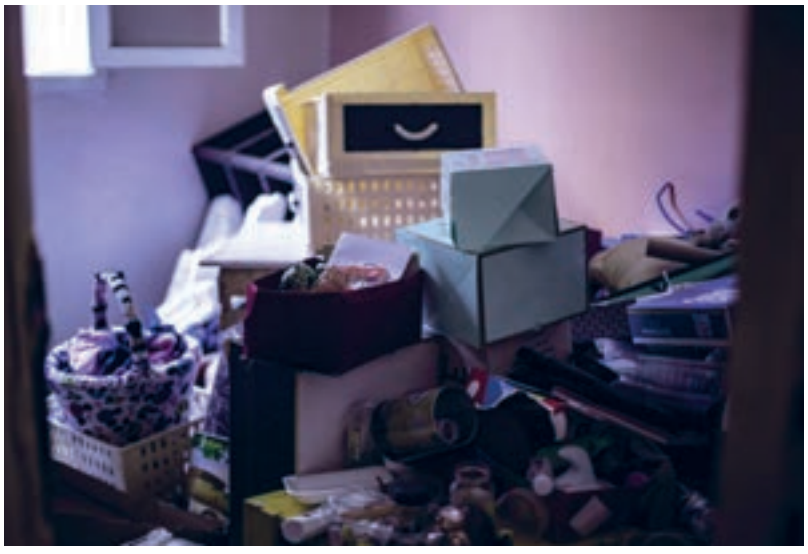
Right:
Dugouts used in the illegal fishery on the west coast of Lake Edward.
Photo: The Niles / Tuver Wundi

re<think
the way we use
resources

Recycling began in our mothers' kitchens

Cairo's Zabbaleen have been gathering and recycling the city's rubbish for more than 70 years. Yet, their pivotal role in the city's circular economy has gone largely unacknowledged.

Asmaa Gamal
Cairo, Egypt



"I felt that I could do something important."

Egyptian mothers used to recycle garbage and leftover products in the past, especially during the two world wars. Warfare left little material resources for the civilian population, and it became necessary for most homes to recycle their waste.

Although the wars are long ago, a new generation earns a living from recycling, spreading awareness about recycling to safeguard the environment.

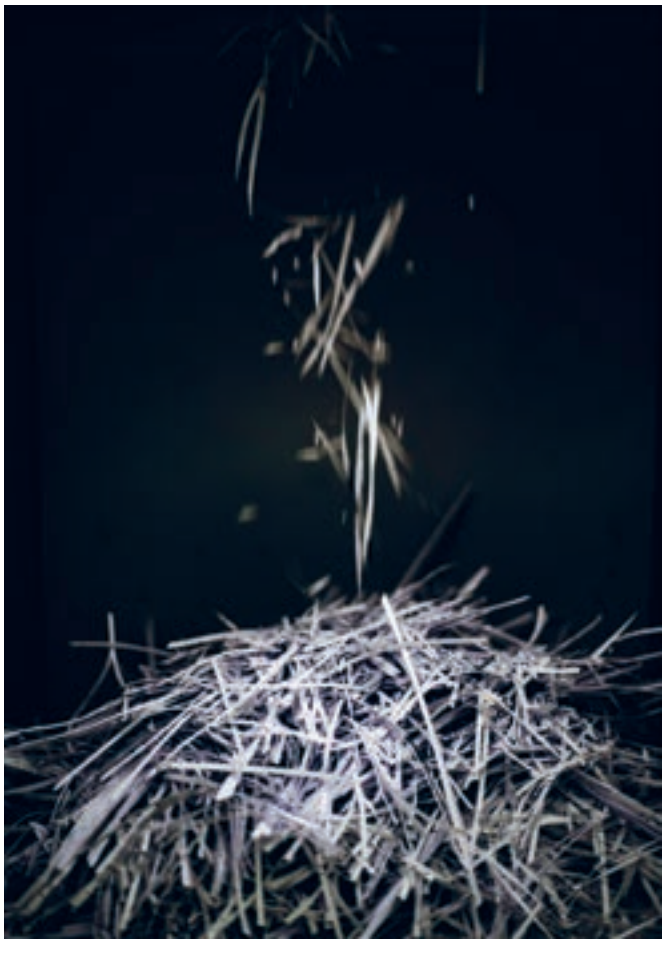
One of them is a housewife, Basma, who is 28 years old. She never studied art, but she observed how her mother would reuse the thrown away items. Following her lead, Basma collected anything she was able to decorate. "When I finished my first product, I felt that I could do something important. This makes me happy, and I have the courage to teach my child how to make things before throwing them in the garbage," she says.

Continued on page 14

For years, waste, which has been a problem for contemporary Egyptian society, has become the focus of many investors, who have woken up to the economic and environmental importance of recycling and converting waste into raw materials. These are used in many industries and are even exported. It is estimated that the volume of waste in Egypt amounts to around 22 million tonnes annually, and less than 20 percent of this is appropriately disposed of or recycled.

Greater Cairo (Cairo, Giza, Qalyubia), and Alexandria generate almost half of the country's municipal solid waste created per year.

re<think
the way
we use
resources



“Papers can produce hundreds of things that we never even imagined.”

Nour Ataya, 44 years old, holds a wall frame that she made from recycled paper. When she was young, she worked with her father, a rubbish collector. She was one of many Zabbaleen, which means “garbage people” in Egyptian Arabic. “I didn’t continue my education in school because I had to help my father. Now I hope my children will go to school. That is the difference between two generations: We are thinking more about our children’s future,” says Nour.

Most Zabbaleen children lack access to formal education. Schools, until relatively recently, were not a feature of the garbage settlements, and even young children worked with their parents, either sorting waste or helping on the collection routes.

Historically, the Zabaleen were farmers from Assiut in Upper Egypt who migrated to Cairo in the 1940s to escape poor harvests. The Wahiya, people from Egypt's Western Desert, asked the Zabaleen to join them in Cairo's garbage-collection trade, who have successfully carved out a niche for themselves.

Since the 1940s, hundreds of women have been raised in the Zabbaleen community and helped their families collect garbage.

Over 20 years, the Association for the Protection of the Environment (APE) has worked with Egypt's Zabaleen. They run workshops supporting and teaching women how to recycle different materials.

Hyena Abide is 36 years old and works as a carpet maker at APE, recycling fabric leftovers. "I've worked here for 20 years, and I hope to take a break because my work is very difficult. Although, I like the part where I arrange different colours of fabric," she says.

Continued on page 16

re<think
the way
we use
resources

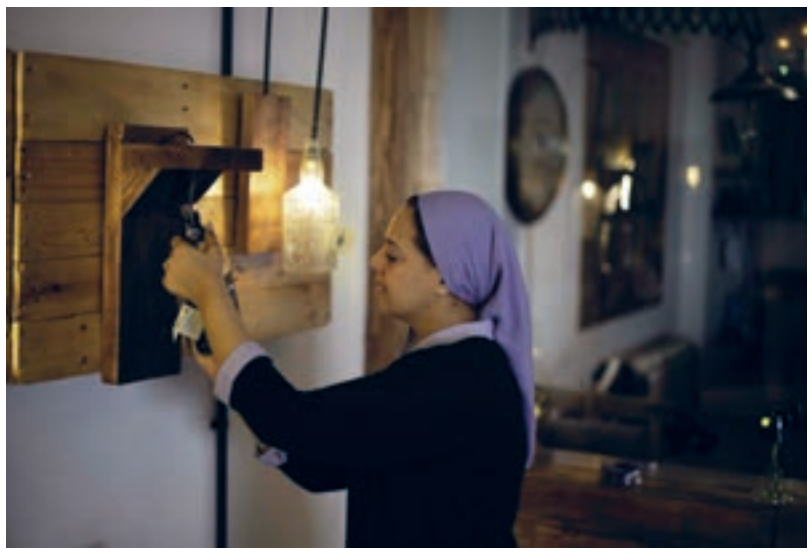
“It is possible to turn anything that has no value into something beautiful.”

Sanya Saliebis is 55 years old and has four children. She has worked in recycling for 20 years. “I make handmade products from recycled materials. For instance, I use the soft drink cap to make belts and bags,” she says.

Today, the centre teaches more than 250 young women how to sort, design, cut, sew, weave, iron, and recycle these fabrics into patch-work quilts, bedspreads, rugs, bags, and other marketable items. After the women finish the workshop, they can work from home.

“People can use their creative skills to find ways to craft beautiful objects from waste and earn some extra cash.”

Inside the Gezazy gallery, Asmaa Farouk started a recycling project with her husband as a family business. “When my husband Mohamed worked in Marsa Allam, he witnessed the considerable waste consisting of glass bottles. In this period, he wanted to arrange workshops for Bedouin people, but he couldn’t. At the beginning of our project, my family worried about the new project because we had left our jobs. Now though, we have three workshops, all working on different concepts,” she says.



Lake Victoria: Plastic on the water we drink

“A problem that needs to be addressed now, not tomorrow.”

Plastic waste is clogging up the ecosystem around Lake Victoria. As residents respond with creative upcycling ideas, many urge swift political action to halt the inflow of rubbish.

Sylivester Domasa
Dodoma, Tanzania

Plastic containers or bags can take hundreds of years to decompose. Their presence, however, taints the entire ecosystem. Experts and residents around Lake Victoria call for action, including new laws to protect Africa’s largest freshwater lake and its local communities.

Here, people from all walks of life, mostly women and young men, come to fish, make canoes, mend fishing nets, sell and prepare fish, cook and do other casual work. Their livelihood is threatened by dumped plastic waste.

Empty water plastic bottles, empty juice containers, polythene bags, plastic cups, plates, and, more recently, face masks are all discarded. Most of the waste is then blown by the wind or carried by running water into the lake, inspiring some to develop creative solutions.

“Plastic waste collected in the lake such as sandals, plastic bags, and bottles can be used to make products such as decorative, chairs, boats, and a pavilion that can be used for restaurant services,” says Editrith Lukungu, the Executive Director of a private environmental conservation organisation in Tanzania.

The organisation built a tent-like pavilion in Kamanga, Mwanza, from waste dumped in Lake Victoria. It also provides product development training to groups of women and youth in communities living along the shores of the lake.

Editrith acknowledges that dumping waste into the lake proliferates due to increased access to plastics, packaging, or shopping bags. Environmentalists rejoiced when authorities banned the use of plastic bags in Tanzania. It was an approach that has also been adopted in Kenya, Rwanda, and Uganda. But sadly, the new measures introduced in 2019 have not saved the lake from excessive plastic pollution.

Leticia Mahenyeka, a resident of Chifunfu village on the shores of Lake Victoria, laments that plastics are everywhere. Not knowing how to face the crisis, she says authorities must change direction to protect the lake and the community. “This is a problem and needs to be addressed now, not tomorrow, not later,” she says. “Above all, it affects the water we drink.”

Figures show that Lake Victoria Basin is among the areas with the highest growth rates globally at 3.5 percent each year. In 2017, it was home to about 40 million people with an average population density of 250 people per square kilometre. Unfortunately, more than 80 percent of communities living in the lake’s basin lack a common litter bin. Plastic recycling plants are also limited in Kenya, Uganda, Tanzania, Rwanda and Burundi – the five Lake Victoria Basin countries.

Initially, there were debates over a growing trend of restricting and banning plastic bag use. Elion Swai, an Industrial expert in Arusha, Tanzania, says an outright prohibition to the production, importation, sale and use of all single-use plastic bags in the country is an essential step towards shifting away from a linear economy in which resources are often used once and then discarded. But he cautions that both state and non-state actors must work together to raise environmental consciousness among consumers.

“Plastic bag bans are problematic as they are not the largest source of plastic pollution,” he says. “We have to consider any other sources of plastic waste and limit manufacturing or usage.”

Reports have also suggested that plastic bag restrictions reduce their use but sometimes lead to environmental harm if customers switch to other materials with larger resource footprints.

"Lake Victoria is under tremendous pressure."

Paper bags, for instance, can require 400 percent more energy to make, not to mention the harvesting of trees and the use of harmful chemicals in production. Growing cotton "requires land, huge quantities of water, chemical fertilisers and pesticides", says Swai.

Biodegradable bags, perhaps surprisingly, could be "the worst option" in terms of their impact on climate, harm to soil, water pollution, and toxic emissions.

Eco Ways Uganda announced it had found a novel way to reduce plastic waste by collecting discarded bags and bottles and upcycling them into new products, such as tables and fence poles.

Like Editrith, Eco Ways is an emerging environmental entrepreneur setting up collection points in the area. Observers argue that such approaches should be intensified to help shrink the number of ugly landfill spots on the landscape which teem with plastic waste.

Nearly 18 months after the Flipflopi made its first historical journey from Lamu, Kenya, to Zanzibar, Tanzania, the world's first percent recycled plastic sailing boat (dhow) made another historic voyage, this time on Lake Victoria.

Over four weeks in early 2021, the Flipflopi sailed around Lake Victoria, highlighting the impact of pollution on this vital ecosystem and engaging governments, business leaders, community leaders, conservationists, and students on viable solutions for the pollution menace.

"There is clear evidence that the ecology of Lake Victoria is under tremendous pressure. The lake plays a key role in facilitating community life in the East African region. I call on the governments of Kenya, Tanzania, and Uganda to strengthen their cooperation to enhance the improvement of this important raw material. UNEP and its partners are ready to provide the necessary support to achieve this," says Juliette Biao Koudenoukpo, UNEP Director and Representative for the African Region.

In July, Kenya Coast Guard Service (KCGS) described the dumping of plastic waste in Lake Victoria as alarming. Meanwhile, experts have suggested that Kenya and Tanzania set up plants or nets on all the major drainage channels to trap litter before it reaches the lake. In San Francisco, California, authorities have used such traps to prevent plastic waste from reaching the sea.

The Flipflopi is the world's very first 100 percent recycled plastic dhow (sailing boat), covered in 30,000 multicoloured flip flops. Photo: Redningsselskapet / Sofi Lundin

Dealing with the scourge of waste

Waakhe Simon Wudu
Juba, South Sudan

A nonprofit organisation is burning plastic to create new building materials – and new jobs for the unemployed. While it deals with the scourge of plastic waste, questions remain about the process and the toxic byproducts it produces.

In South Sudan's capital Juba, a local organisation tries to address the city's widespread pollution problem.

Help Food Security and Livelihoods Africa (HF-Africa), a local nonprofit organisation in South Sudan converts biodegradable and non-biodegradable waste into building materials and fertilisers, a move that could save the environment from the negative impacts of plastics.

The organisation started its work in 2019 to address environmental issues. "We are targeting climatic change and global warming. Suppose we don't care about rubbish, especially plastic, and make use of it. In that case, our life will be in danger," says Godi Swalleh Safi, Executive Director of Help Food Security and Livelihoods Africa.

The process

At one of its sites, Kor William, a suburb south of the capital Juba, the organisation gathers enormous quantities of garbage, mostly plastic bottles. The plastic waste is collected from many other dumping sites in Juba, then burnt in a metallic container. The waste is then decomposed into a liquid substance.

The substance is scooped into a moulder of 20 by 15 centimetres using a spade. Some dried sand soil is added into the substance in the moulder and then mixed up using a trowel. The mixed-up substance is then moulded to various building materials such as interlocking bricks, tiles and pavers.

The process of turning the plastics into a liquid substance "takes much waste," Godi Swalleh Safi, the Executive Director of HF-Africa, says. "For one interlock brick, you need one full tipper lorry. We don't only use plastic bottles. We use old chairs and anything that can melt we burn," Safi says.

HF-Africa uses firewood, paraffin and diesel to create recycled building materials. He says the biodegradable waste materials such as food – one of the most prominent types of garbage littered across the capital – is converted into fertilisers for kitchen gardens.

The opportunities

Safi says measures such as plastic recycling could create employment opportunities for youth by encouraging locals to collect the plastic waste that HF-Africa buys from them.

So far, HF-Africa has recruited seven volunteers engaged in various activities such as weighing the plastic rubbish, taking records, and monitoring the whole process, Safi says.

Amna Hafis, 26 years old, was redundant since finishing secondary school a few years ago. She is a volunteer with HF-Africa, where she has worked as a secretary for the last two years. "Being a volunteer is better than when one is staying at home doing nothing. Now I'm gaining experience and learning," she says.

The challenge

One big challenge is the smoke emitted from the burning of plastics, which is another form of dangerous pollution.

"When we are burning the plastics, we act in an organised way. We burn the plastics and all other materials in one metallic container, and we cover it. A pipe of three meters long is connected to the metallic container and takes smoke from the metallic container into a drum of water. While the burning takes place, the smoke is absorbed into the water. You would see the water boiling, but there is nothing like smoke coming out," Safi explains, adding, "if there is smoke coming out, it's in small quantity at a time when we are scooping out the melted plastic from the metallic container into the moulder".

"We use old chairs and anything that can melt we burn."

The water is then used to clean the streets, says Safi.

Environmental policy analyst Gizam Moses, a Project Officer of Civil Society Coalition on Natural Resources in South Sudan, describes the HF-Africa undertaking as a "good initiative". He says the initiative deserves both private and public partnership to widen its operations and help address key environmental issues and societal issues like unemployment.

He says despite the challenge of managing the final bi-product – toxic water from the process, "innovation is a continuous process", and HF-Africa would need to devise other best ways of managing the toxic water. "Even when you dispose it on the ground or you

dig another well for disposing it, it could penetrate the underground water that we drink," Moses warns.

The waste problem

Plastic waste, especially bottles and bags, constitute most of Juba's litter. In the absence of organised waste disposal, trash is dumped across roads, markets, residential areas and many undesignated dumping sites.

While Juba's authorities make an effort to collect some of the garbage daily, it is then dumped along some major roads just a few miles away from the capital. Many poor and vulnerable people – children and women mostly – are often seen at the dumping sites to collect items, including plastic bottles. Besides polluting the environment, the waste is causing health problems to residents.

"This waste is a problem to us, for example, causing diseases. When it is burnt, it makes a bad smell, and when it is not burnt, it attracts a lot of flies," 56-year-old Hafis Lazim Sadig, a resident of Kor William. He says waste has been dumped in his area since 2006, adding, "when it rains, or there is wind, the smell is awful".

Attempts by Juba City Council to collect the rubbish are not helping to address the problem, Sadig said.

"Our area is a bit far away, it is near a river, and the official vehicles cannot reach us, and our rubbish is not being collected," he says.

According to policy analysts like Moses, the improper management of plastic waste afflicts the entire Nile Basin region. For example, the River Nile, which nearly 600 million people use, is one of the most plastic-polluted resources. This reality threatens aquatic life and tourism, both essential to local livelihoods along the Nile.

"There is no initiative of collecting these plastic bags."

"Toxic chemicals in the plastic materials in the water are harmful. Among humans, there is a high probability of heart diseases. Children can be born with deformities as a result of mothers drinking contaminated water," Moses says.

Moses says many countries in the Nile Basin, including South Sudan, have not invested in protecting the Nile from being polluted with plastic. There are no statistics in South Sudan on how many plastic bottles are sold and thrown away every day.

Elsewhere, according to Gopure, a US-based distribution and marketing company, humans globally purchase one million plastic water bottles per minute, 91 percent of which are not recycled. This means that plastic water bottle consumption currently stands at nearly 1.5 billion per day.

Health hazards of plastics

Plastic water bottles contain a sizeable amount of Bisphenol A (BPA), a high production volume chemical with adverse endocrine and reproductive health effects. Plastic water bottles also contain plastic softeners known as phthalates. Phthalates are everywhere, and a tidal wave of research has documented their wide-ranging negative health impacts.

Plastic water bottles are made from petroleum products such as polyethylene terephthalate, which require a substantial amount of fossil fuels to create and transport. This means that recycling plastic bottles is complex, meaning that plastic bottles often end up discarded in landfills, where they ultimately make their way to parks, rivers and oceans.

In South Sudan, little is being done to combat this environmental pollutant. Recent attempts to address the issue of plastic waste centred on banning the use of plastic bags.

The Mayor of the capital Juba, banned plastic bags and directed the public and companies to use carton paper bags for packaging goods and services. While it was a good step towards addressing the issue of polluting the environment with plastic wastes, Moses says "that initiative disappeared", adding that "there is no initiative of collecting these plastic bags back from us for recycling or reuse".

There is no law currently addressing environmental pollution in general across the country. The South Sudan environmental bill that should have offered a legal basis for governing the environment and penalising abuses of the environment is still a bill and yet to be enacted into law by parliament.

Left:
Amna Hafis, 26, volunteering as Secretary at Help Food Security and Livelihoods Africa (HF-Africa).
Photo: The Niles / Waakhe Simon Wudu

Centre:
Godi Swalleh Safi, Executive Director of Help Food Security and Livelihoods Africa (HF-Africa), burning thousands of plastic bottles.
Photo: The Niles / Waakhe Simon Wood

Right:
Interlocking bricks moulded from plastic bottles.
Photo: The Niles / Waakhe Simon Wudu

rethink the way we live and work

Climate change: ‘To whom does it belong to’?

Fighting climate change is all our responsibility, argues Florence Nzambuli, who composed a song as part of her bid to safeguard her community and local environment.

Pius Sawa
Kisumu, Kenya

The 74-year old Florence Nzambuli comes from Mutomo in Kitui County, a semi-arid region in Kenya, and has been in the frontline of trying to find lasting solutions to help her community to mitigate the effects of climate change.

Since 2005, Florence has helped create awareness amongst farmers in her community, encouraging them to plant and conserve trees, harvest and store water and plant drought-resistant crops. Beyond that, she wrote a climate change song that urges every human to take individual responsibility to protect the environment.

Her efforts have improved life in her community and gained her recognition. Pius Sawa travelled to Mutomo to speak with Florence about her climate change journey and her bid to protect the River Nile:

The Niles: Florence, when did you become a climate activist?

Florence Nzambuli: When I noticed climate change, I started conserving the land and planting more trees and telling the community not to destroy the land or the indigenous trees, and resume planting trees.

TN: What convinced you to take action?

FN: We used to have a rainy season. People were planting, and they were not left without harvests. But nowadays, it‘s different. I asked myself, what is wrong with the clouds? Then I heard from the media about climate change. I asked myself, what is climate change? And I learned that people should not cut the trees and should protect the land.

Florence Nzambuli.
Photo: The Niles / Pius Sawa

Rethinking water security

The multiple vulnerabilities in the Nile Basin, including water, food, and energy insecurities, are amplified and intensified by climate change, population rise, and growing urbanisation.

Ronald Musoke
Kampala, Uganda

TN: Do you think we can all do something to mitigate the effects of climate change?

FN: We can slow climate change: I've asked myself, 'to whom does it belong to'? To this, I answer: 'It belongs to me. If it belongs to me, what am I going to do then? These are the lyrics of one of my songs. It just goes like this.

TN: So you are saying it belongs to all of us, and therefore, we all can do something to mitigate its effects?

FN: It doesn't matter how old you are. You have to protect the land. You have to continue until the last day. There is no time you should stop unless you are sick. I will continue to plant more trees and protect the indigenous ones.

TN: The Nile stretches across many countries and therefore belongs to a lot of people. How can we protect this valuable resource?

FN: The River Nile is our main source of water because it serves so many countries. If we abuse it by polluting it, cutting the trees near the banks and misusing the water, that vital river will be destroyed.

TN: So the river needs to be protected. Who should do that?

FN: All the countries through which the Nile passes should ask themselves that question. If this is the river – the one which gives us food, gives us water - but are destroying it. Then we should ask, where are we going? What are we going to eat in future?

On July 5, 2021, Sogea-Satom, a French firm, which has been building a brand new water treatment plant over the last 30 months, handed it over to the National Water and Sewerage Corporation (NWSC) – Uganda's water utility company.

Sprawled on 25 acres near the shores of Lake Victoria in a quiet village, 50 kilometres east of Kampala, the Katosi water treatment plant is now pumping about 160 million litres of water per day. When added to the 240 million litres that the old plant at Ggaba was already pumping daily, Kampala's daily water supply has suddenly shot up to 400 million litres.

Senior government officials told The Niles during a recent visit to the plant that rapid urbanisation and industrial activities have attracted millions of people to Kampala city and its surrounding districts.

Funded by the European Union Africa Infrastructure Trust Fund, the European Investment Bank, the Agence Française de Development (AFD) and Kreditanstalt für Wiederaufbau (KfW) at the cost of EUR 82.2 million, the Katosi Drinking Water Treatment Plant and Katosi-Kampala Transmission Main Project are part of the more comprehensive KW-LCWATSAN Project, whose objective is to improve living conditions of the residents in the Greater Kampala Metropolitan area through the provision of safe and reliable water.

The proposal to build the Katosi plant was mooted at the beginning of the millennium when it was discovered that the deteriorating water quality in the Inner Murchison Bay at Ggaba posed a significant challenge to the National Water and Sewerage Corporation's task of supplying water at a cheaper cost. The eastern suburbs of the metropolis were suffering from an intermittent water supply. Now that challenge has suddenly evaporated.

"We lack enough distribution systems."

"The project was like a dream that has now come true. With it, we are going to resolve all the water supply challenges in Kampala city," Eng. Badru Kiggundu, the Board Chairman of the NWSC, said.

"With the additional water from Katosi, the combined water production from Ggaba and Katosi will help us address all 'dry zones' in the city," added Eng. Silver Mugisha, the head of the NWSC.

"We have excess capacity. We lack enough distribution systems to make sure that everybody gets water. NWSC engineers have embarked on laying distribution mains to send the water to the entire Kampala Metropolitan area," he added.

Like many big cities and towns in upstream countries of the Nile Basin, Kampala sits on the northern shores of Lake Victoria. According to UN-Habitat, the city has expanded from 189 to a sprawling metropolis of about 1,000 square kilometres and hosts a day population of about 3.5 million people.

"We urgently need to change the way we do things."

Mugisha said the current water supply is sufficient to meet the Greater Kampala Metropolitan Area needs over the next 10-15 years. But with the ever-growing population of Kampala city, which also serves as Uganda's commercial and industrial hub, it remains to be seen whether this will remain the case.

For many urban planners in all Nile Basin countries, the population explosion is a big challenge for residents. As of September 1, the real-time global data tracking website, Worldmeter, puts Ethiopia's current population at 118 million, making it the most populous country among the 11 Nile Basin countries.

Ethiopia is followed by Egypt (104.5 million), DR Congo (93 million), Tanzania (60 million), Kenya (53.7 million), Uganda (45.7 million), Sudan (45 million). Rwanda (13.3 million), Burundi (12.2 million), South Sudan (11 million) and Eritrea (3.6 million).

Many of the people in these countries live within the Nile Basin, with Egypt leading at (85.5 million), followed by Ethiopia (37.6 million), Uganda (33.6 million), and Sudan (31.4 million). Eritrea (2.2 million) and DR Congo (2.9 million) have the smallest populations within the Nile Basin.

Even more worrisome is the prediction that the urban population in these countries will shoot up in the coming decades. By 2050, the urban population is expected to reach above 50 percent of the total population in four Nile Basin riparian states. In seven countries, the urban population will make up more than 40 percent of the total population. According to the Nile Basin Water Resources Atlas, the rural population is expected to shrink in all countries rapidly.

Several experts The Niles has spoken to say the complexity of the large number of countries sharing the Nile Basin, combined with the uneven distribution of the water resources among these countries, population pressure and urbanisation, pose significant challenges for the sustainable management and development of the shared resource.

Henry Bazira, the Executive Director of the Water Governance Institute, a Kampala-based non-profit, told The Niles that the rapid population growth in all countries is putting a lot of stress on the Nile waters.

Dr. Callist Tindimugaya, the Commissioner for Water Resources Planning and Regulations in Uganda's Ministry of Water and Environment, added that rising populations in countries like Uganda, Burundi, Rwanda, Kenya and Tanzania makes it harder to cover people's basic needs.

"Take, for example, the issue of food. For a long time, the upstream Nile Basin countries have been depending on rain-fed agriculture to grow food, but climate change means they cannot depend on rainfall anymore. You now need irrigation," he said.

In addition, water was already in high demand for people's everyday needs at home and for industrial uses. "That is why we are saying we urgently need to change the way we do things," he told The Niles. "Without having a rethink, conflicts will escalate."

Climate change could intensify such conflict. Ethan Coffel and Justin Mankin have written about the potential risk that water scarcity in the Nile Basin poses over the coming decades.

In their paper entitled "Future Hot and Dry Years Worsen Nile Basin Water Scarcity despite Projected Precipitation Increases", Mankin, an Assistant Professor at Dartmouth College and Coffel, a Neukom Institute Postdoctoral Fellow at the same college, noted that although there is going to be more rain in the upstream countries, there will be less water in the Nile.

That sounds like bad news for over 250 million people who are directly reliant on the Nile waters in Ethiopia, Uganda, South Sudan, Sudan and Egypt. At the moment, around 10 percent of the basin's population faces chronic water scarcity due to the region's seasonal aridity and the highly unequal distribution of water resources.

By 2040, the researchers say a hot and dry year could imply water scarcity for 45 percent of people in the Nile Basin – nearly 110 million people. But even without these developments, the researchers say, population growth would drive water scarcity in the upper Nile. But more significant deficits in the amount of water into streams and rivers during future hot and dry years will amplify this effect.
The researchers' findings agree with the 2020 Nile Basin Initiative (NBI) corporate report, which notes that water availability per capita in the Nile Basin declines. The report says the Nile Basin countries need to explore new water and use less water more efficiently.

Rethinking the Nile Basin's water security

The reality of the ever-dwindling water volumes in the Nile is becoming more real every passing day. Many experts are exploring several ways of sharing the available water in the Nile, among other avenues.

Egypt, a country that suffers perennial water deficits, has explored the desalination of Red Sea and the Mediterranean Sea water. Another audacious alternative recently suggested is to re-channel about 95 billion cubic metres of fresh water from the Congo River to the Nile Basin.

Meanwhile, the NBI says it is embarking on several projects and activities to increase storage capacity.

"We lose a staggering amount of water."

The Katosi water treatment plant.
Photos: The Niles / Ronald Musoke

For instance, it supports the improvement of water use efficiency in major water-use sectors, strengthening river basin monitoring and data analysis. It also promotes conjunctive use of surface and groundwater resources and improves the preparedness for flood and drought risks in the Nile sub-basins.

"There are huge information gaps in the basin, which need to be plugged urgently to improve the basis for decision-making on critical water resource management issues," says Mwasiti Ally Rashid, Programme Officer for Water Resources Management and Development, NBI Nile Equatorial Lakes Subsidiary Programme Coordination Unit (NELSAP-CU).

Following the conclusion of the first phase of the study on strategic water resources assessment in 2017, the second phase of the study, which started in 2018, focused on updating the baseline condition from the first phase, developing refined projections of water demands for the years 2030 and 2050 and carrying out a detailed study of the options identified in the first phase.

The strategic options include water-saving and other measures for enhancing water supply, including desalination and reuse of drainage water from irrigation and municipal uses. The options are of strategic importance in ensuring that the growing demand for water in the Nile Basin is addressed more sustainably.

Another groundbreaking project in the works is the Nile Basin Regional Hydromet project, which will inform national planning and evidence-based decision making by enabling Burundi, DR Congo, Ethiopia, Kenya, Rwanda, South Sudan, Sudan, Tanzania and Uganda to share reliable data and knowledge for better monitoring of the Nile's water resources.

"Water resources data and information are needed to ensure that investment planning is well-informed. Through the Nile Regional Hydromet System, the countries will put in place real-time information and data sharing protocols, mechanisms, and agreements, as well as data processing and analytical models and toolkits to be used for strategic water resources analysis for identification of sustainable development and feasible investments," said Rashid.

A recent USD 5.3 million groundwater project commenced in June 2020 and aims to improve the understanding of available groundwater resources and demonstrate how to optimise surface and groundwater joint use.

A study on groundwater availability in the Eastern Nile Basin has already been completed to make a preliminary assessment of groundwater resources (mapping, recharge and safe yield) and the potential use of groundwater for irrigation and domestic use.

The five-year project funded by the Global Environment Facility (GEF) covers three shared aquifers involving seven NBI countries, including those which share the Kagera aquifer (Burundi, Rwanda and Tanzania); Mt. Elgon aquifer (Kenya and Uganda) and the Gedaref-Adigrat aquifer shared by Ethiopia and Sudan.

Cooperation will be crucial in the future with millions of more people and less water in the Nile Basin. Dr. Solomon Asiimwe, a senior lecturer of governance at Uganda Martyrs University, told The Niles that the Nile River is the lifeblood for all countries that share it. For Egypt and Sudan, the reality is even more glaring. Asiimwe said that there is no alternative other than cooperation for all the countries that make up the Nile Basin.

Mekdelawit Messay Deribe, an Ethiopian civil engineer and environmental scientist currently a PhD student at Florida International University's Institute of Environment, said the focus is on catering to existing needs without denting the needs and rights of others is upon all the Nile Basin countries.

In her article, "The Grand Nile Basin Renaissance Plan", which appeared in the June 2020 issue of Ethiopia Insight, she noted that it is high time Nile Basin countries explored the concept of water trade. She said by pricing water on a regional basis, the Nile Basin could have countries with water surplus sell their excess to those countries in need.

"This can be seen in the current situation of Sudan and Egypt. While Egypt uses more than its "allocated share" of 55.5 billion cubic metres, Sudan does not use its share of 18.5 billion cubic metres, and the unused water goes to supplement Egypt."

She added that the Nile Basin countries need to foster a basin-wide integrated use approach to maximise individual benefits. Hence, many water-related investments in the Nile basin are not water "smart."

"We lose a staggering amount of water because of choices which are not water-smart, such as growing water-intensive crops or building a large reservoir in the desert. Such projects result in immense losses because they are not water-smart decisions and only serve narrow national agendas."

Deribe added that the current water use in the Nile Basin is highly inefficient. Seepage from watercourses and dams is significant, especially in Egypt and Sudan, where open irrigation canals are common.

"By investing in increasing the efficiency and reducing waste, we save so much water which can be used for other purposes," she says. "Concerned environmental conservation endeavours by all riparian countries – to increase the water stored in the basin and to reduce pollution and enhance the ecosystem – is necessary for sustainable use."

For Deribe, the Nile Basin countries must also foster water-conscious populations that understand the water's value and use the resource judiciously. This should start with all the Nile Basin children, she said.

Water hostilities

Climate change raises tensions over food, water and other resources among a growing population in South Western Uganda.

Henry Lutaaya
Kampala, Uganda

Erosion at the Mpanga River. Photo: The Niles / Henry Lutaaya

"The volume of water in the Mpanga River used to be much higher."

In the South Western Uganda region surrounding Fort Portal city, relations have become strained between three groups of people that use the Mpanga River for different purposes such as irrigation, domestic use and hydropower generation. The tensions have arisen even among people who consider themselves brothers and sisters.

The operators of the Mpanga Hydroelectric Power Station, located on the Mpanga in Kamwenge district just before it flows into Lake George, say power output has recently fallen from the dam's capacity output of 18 megawatts to as low as three megawatts during the dry spell and only increase during the wet season.

The dam's operators have particularly accused farmers and stone and sand miners of degrading the river basin and its catchment, reducing the volume of water and hence hydropower generated.

Charles Mugisha, the Manager of Mpanga Hydro Power, told Uganda's Daily Monitor newspaper a few months ago that the Rwengaju Irrigation Project was to blame for the fall in water volume reaching the dam, especially during the dry season.

On the other hand, in Fort Portal city, the Mpanga has come under increased water pressure for domestic and industrial use by the national water utility to meet the city's growing demand for water.

Residents have been complaining of declining volume and quality of the water in the river to the extent that the water utility is sometimes forced to switch off the water treatment plant due to the muddy nature of the water.

Some blame has been directed at the government-sponsored Rwengaju model irrigation village located upstream of the Mpanga. But beneficiaries of the irrigation project deny their activities are harming the river.

Engineer David Baguma, the Chairman of the Water Users Association in Rwengaju Irrigation Scheme, a UGX 27 billion (USD 7.6 million) government-funded model irrigation project, denies that irrigation activities in the scheme are having an adverse effect on the volume and quality of water that goes through Fort Portal and eventually to the Mpanga Hydroelectric Power Station.

He told The Niles: "As far as we are concerned, our water comes from Karangura, which is far away from the dam. We do not have an impact on water quality, nor are we affected by scarcity."

The Uganda government established the irrigation scheme after the National Environment Management Authority (NEMA) approved its Environmental and Social Impact Assessment survey.

But some observers have questioned the decision to establish the irrigation scheme given Fort Portal's rapidly rising demand for water and the hydropower dam downstream.

Richard Rwabuhinja, the Chairman of Kabarole District, who doubles as the Chairman of the River Mpanga Catchment Management Committee, that was established with guidance from the Ministry of Water and Environment, says the irrigation scheme and the hydropower dam were sticky issues that bothered the committee since it embarked on the subject of addressing the challenges of the Mpanga River.

He said: "The feasibility of these two projects was of concern initially. Because the volume of water in the Mpanga River used to be much higher before they were established." He notes, however, that they "chose to shift attention towards the more significant issues of restoring the catchment".

Rwabuhinja says he is proud of his committee's work, especially in raising awareness among the different stakeholders.

"Working with local leaders, the media, cultural leaders and the technical people in all the six districts that share river Mpanga, we have engaged the different stakeholders along the river and sensitised them on the importance of protecting the catchment of the river," says Rwabuhinja. "Working with NGOs like the Dutch-based SNV, we have planted trees along the banks of the river to firm it and stop erosion."

He added that they supported people to turn to fish farming as an alternative income from generating activity to replace sand mining.

But Baguma says the committee's efforts are not yet being felt on the ground. "Enforcement of the rules governing the river remains very weak. Sometimes they are violated by the very people who are supposed to enforce the rules," he says. "Lack of awareness, especially among the farmers, is a major challenge. People don't know the dangers of cultivating on river banks."

Climate change impact

Less acknowledged perhaps by many in the area is the contribution of climate change, whose devastating impact has already been documented in nearby districts like Kasese.

According to Stephen Ogwete, a Director in the Ministry of Water and Environment, the Rwenzori mountain ranges face the impact of climate change.

Using the frequency of flooding events recorded since the 1910s, Ogwete said the Nyamwamba, one of the big rivers that start from the snow-peaked Rwenzoris, has been experiencing annual flooding for the past six years.

"Climate change is a relatively new phenomenon. The first major flooding event on the Nyamwamba River happened in the 1910s. The next flooding event was in the 1950s. As we moved, the frequency increased. Since 2014 to date, the river has experienced many flooding events that left people dead and lots of property destroyed," says Ogwete.

The timing of the Nyamwamba River flooding is around April and May, and the highest water levels in the Mpanga River perhaps suggest a link to a common cause since both rivers start in the same mountain ranges.

Ogwete explains that due to high temperatures, snow on the peak of the Rwenzoris melts and combines with heavy rains that have been experienced in recent years. These twin impacts have resulted in floods during a short spell but more prolonged episodes of reduced river flow for the greater part of the year.

As temperatures rise, the snow in the Rwenzori mountains melts faster, releasing a tremendous amount of water, especially around May every year, he explains. The river's flow is significantly increased by the rains that come around the same time, resulting in floods.

Population pressure

The rising population in the area, fanned by the influx of Congolese refugees, is another pressure point for the river.

As Baguma observes, the increase in the number of refugees in areas like Rwengoma has added to the pressure for firewood, house construction materials, land for cultivation, all of which are putting pressure on the catchment of the Mpanga River.

The Nile Basin, in general, is experiencing one of the fastest population growth rates in the world. According to the World Population Prospect (UN 2013), the Nile Basin population is likely to almost double by 2050, with the most significant increases happening in urban areas.

As more people move into urban areas, the demand for water, food, and construction materials will grow exponentially.

Studies indicate that if nothing is done to find more efficient ways of producing food, for example, by 2050, the population of the Nile Basin will require 1.5 times the amount of water currently available in the basin.

Cooperation among member countries of the Nile Basin is urgently needed. For example, for the catchment management of rivers, joint investment projects geared towards generating hydropower or to replace biomass as the source of cooking energy.

"Collectively engaging all the stakeholders."

Ogwete attests to the need for community engagement in addressing such pressing issues. "We realised that the only way we could address the challenge of degradation is by collectively engaging all the stakeholders through their representatives," he says.

Rethinking collaboration

The challenges facing the community that depend on the Mpanga River are certainly not unique to this part of the world where climate change, rapid population growth and demands imposed by growing economies push natural resources to the brink.

The crisis faced by the community around the Mpanga River illustrates the difficult conundrum that afflicts people when they choose to compete rather than cooperate over water resources.

So far, steps taken include establishing a broad-based community-focused river catchment management committee, indicating that people have realised that cooperation over water resources is a transboundary matter and the responsibility of all.

Left:
The Mpanga riverbed, altered by human activity.
Photo: The Niles / Henry Lutaaya

Right:
The water from an inlet to the Mpanga River.
Photo: The Niles / Henry Lutaaya

Rusinga Island's climate-smart fishers

Climate-smart fishers save time and money on Lake Victoria's Rusinga Island in Kenya when powering up a nightly 'ghost town' to attract their haul.

Anthony Ochieng / TonyWild
Rusinga Island, Kenya

Odongo Eric recently switched to fishing with solar lamps.

Growing up in Rusinga Island, Kenya, my family and I enjoyed the majestic views of the enormous Lake Victoria, called "Nam Lolwe" in our language, Luo. When the sun set, the lake came to life in a whole new form, with small yellow lights popping up across the water.

The glowing bulbs appear to represent a town in the distance for a first-time visitor to the island. But in the morning, this town is nowhere to be seen. This is why we call it the 'ghost town'.

Rusinga Island is one of the many scattered islands along the Kenyan shores of Lake Victoria, Africa's largest lake, which Kenya, Uganda and Tanzania share. The fishing sector is critical for people's livelihoods on the island. Most households in the communities depend on fishing for their income.

The so-called 'ghost town' appears at night because people fish the silver cyprinid (Rastrineobola argentea), locally known as 'Omena'. This fish, also called the Lake Victoria sardine, grows only about nine centimetres long. They stay close to the bottom in the daytime and rise toward the surface at night. They are caught at night, attracted by the lights, then sun-dried, sold and distributed through the southern East Africa region for human consumption and chicken feed.

As I grew into an adult, I gradually saw the yellow lights turn white, but I never took note of this seriously. But two years ago, when going for a walk on the shores, I met one of the fishers tying a light on one of the floating frames. I noticed the light being used was different from the kerosene-powered lamps. He was using a solar-powered lamp for fishing. Being a conservation storyteller, this lit a light bulb in my mind. Clearly, my community was mitigating climate change in its own way. This was humbling and inspiring.

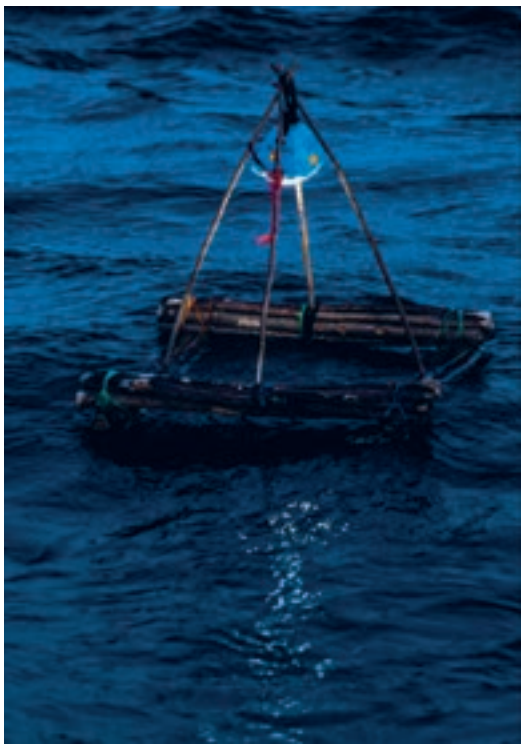
The solar lights are powered by a battery that is charged during the day for use at night. The fishermen buy these solar lamps from energy stations or hubs, sometimes through a loan programme. The lamps cost USD 20,

A kerosene lamp floating on a fishing stand, Lake Victoria.

"My community was mitigating climate change in its own way."

Michael Kepha, the former Beach Management Unit Chair, lights up a kerosene lamp to show the time and effort required.

A solar-powered light is floating on a fishing stand.



An aerial view of fishers fixing the lamps on the stands before getting ready to go fishing.

Continued on page 31

The floating solar-powered lamp is in position to attract the Lake Victoria sardines.

“Now we only switch a button, and we are ready to go.”

A fishing squad sets out to the lake, the boat powered by a petrol engine. However, the fishermen are moving to use electric-powered engines to go completely green.

Above:
At around 5–6 p.m., Odongo puts together all the solar lamps before heading out fishing all night.

A local fisherman poses with an electric engine currently tested by the fishers.

Otieno Ngare, a member of the same fishing squad with Odongo, watches his colleagues setting out for the night. Four to five fishermen generally share a boat. About ten teams go out at a time, mainly on the darkest nights of the moon cycle.

Two solar-powered lights are floating on the lake as the fishermen cast their nets to catch the Lake Victoria sardine.

At around 11 p.m., Otieno Ngare retrieves his casted net containing some fish. He will revisit the lamps every hour to check for his catch.

as compared to USD 30 for a kerosene lamp. Not all fishermen can afford solar panels, so they recharge from the energy stations at the cost of about 70-100 Kenya Shillings (USD 1) per lamp. This is much cheaper than when they used kerosene. The amount of kerosene consumed in 12 hours costs approximately USD 10.

Once fully charged, the solar light can run for the whole night, convenient as the fishermen can spend up to 12 hours on their boats. “Before, we used to take hours just to light one kerosene lamp, but now we only switch a button, and we are ready to go. It has saved us a lot of time, and [we are] now able to do other businesses such as tomato farming,” said Michael Kepha, former Beach Management Unit Chair and a fisherman on the island.

Besides serving fishers, solar lamps are also being adopted in island homes, seeing that many households do not have access to electricity. The solar lamps were introduced on the island about six years ago, and today, almost all fishermen use them.

Fish stocks under threat

An increase in global temperatures, rising sea levels, changing precipitation patterns, and a rise in extreme weather conditions are threatening human health, safety, food security, water security, and socioeconomic development in Africa, according to the World Meteorological Association.

The fishing sector in Kenya has undergone a tremendous transformation, from a local-based subsistence fishery to a commercialised industry today. But this sector is significantly impacted by climate change.

Kenya is highly vulnerable to climatic changes, with projections suggesting that its temperature will rise by 2.5 degrees Celsius between 2000 and 2050. Even the slightest increase in droughts and floods will present major challenges to food security and water availability, according to a Christian Aid report released in May 2021.

Continued on page 33

re<think
the way
we live
and work

The fishermen sell the Lake Victoria sardine in basins. This amount would cost approximately KES 1,500 (USD 15).

A fisherman presents his catch to a potential buyer.

A fisherman sells his catch after a whole night of fishing.

Fishermen and market women meet in the morning to sell their catch to buyers at the lakeshore on Rusinga Island.

"Seeing them adopt reliable and sustainable solutions is genuinely awe-inspiring."

At around 7-8 a.m., women from the village dry the Lake Victoria sardines before taking the fish to the market.

Nyakandito, a fishmonger from the island, carries the fresh Lake Victoria sardines to be dried before taking them to the market.

It is the end of the fishing night, and the fishermen are ready to go home and rest.

The communities living in Rusinga Island have always depended on fishing and will continue to rely on it in the future. But impacts of climate change, such as increased water levels of the lake, increases in temperature and changes in rainfall patterns – combined with overfishing and ongoing pollution of the lake – significantly affect the fish populations. Most of the freshwater fish species native to Lake Victoria are endangered, critically endangered, or extinct, according to the International Union for Conservation of Nature (IUCN).

Climate change also impacts the health of the communities, as warmer temperatures and higher rainfall increase habitat suitability for insects and the transmission of vector-borne diseases such as malaria.

Taking climate action

One of the objectives of climate-smart fisheries and aquaculture, suggested in the United Nations Food and Agriculture Organisation (FAO) Climate Smart Agriculture sourcebook, is to enable the sector, where possible, to contribute to the mitigation of greenhouse gas emissions during the harvest and production stages and throughout the entire value chain.

The fishermen on Rusinga Island are taking climate action and being part of the greater efforts in driving the global climate agenda in Africa. More than 90 percent of African countries have ratified the Paris Agreement, with many committing to transitioning to green energy within a relatively short time frame.

Our communities face the brunt of climate change, and seeing them adopt reliable and sustainable solutions is genuinely awe-inspiring. What is your community doing to mitigate climate change? Look around, and you might find an answer in the most unusual of ways.

[This is an abridged version of an in-depth report published by InfoNile.]

Tuti Island farming: Survival of the wealthiest

Beneath the beauty of Tuti Island lurks a harsh reality for local farmers, who are seeing their harvests deteriorate.

In the centre of Khartoum State, tourists flock to Tuti Island, known for its sandy beaches, natural landscapes, and impressive sunrises. However, despite its idyllic location, its fertile lands and an endless supply of water, many farmers on the island are struggling to survive. Lacking knowledge of modern techniques while facing governmental neglect and a temperamental river, the odds are stacked against the less fortunate who try to cultivate crops on the island.

"We still do traditional farming, same as always, and no experts or representatives from the ministry of agriculture come to direct us. We want to learn new ways of cultivation, what type of crops are best for our land and other information that could help us maximise our production," says Mahmoud Yasin, an old farmer living and working on the Tuti Island.

Another farmer, Elhadi Abdul Wahab, says that he has cultivated the same crops every season for years with very little profit. "We have many questions that remained unanswered, like the late timing of the rains, the huge amount of sand that came with the floods, and the unexpectedly low production. No official addressed those issues."

Agricultural engineer Abeer Ali also pointed the finger at the government. "The governmental entity responsible is Agricultural Guidance, but they are not doing their job. They don't even keep up with the latest agricultural tech. Only the big-scale private sector projects are using modern technology, starting from choosing the right type of crops to the methods of irrigation and cultivation."

Mahmoud Yasin, a Tuti Island farmer.
Photo: The Niles / Elzahraa Jadallah

Elzahraa Jadallah
Khartoum, Sudan

Mahmoud Yasin on his Tuti Island farm.
Photo: The Niles / Elzahraa Jadallah

"On Tuti, a model needs to be implemented."

"On Tuti, production is very low. They face many challenges starting from preparing the soil. Farmers don't examine the soil of their farms. In Khartoum State alone, there are various soil types with different properties, some with higher salt levels than others. And farmers should do these tests to determine what type of crops to cultivate," she explains.

The Ministry of Agriculture does have a soil samples database, yet it has remained outdated for decades, and it is expensive for farmers to do the testing. Private sector investors are the only ones that do this, for both the soil and the irrigation water. In addition, the types of seeds available are not the best, outdated and in poor shape.

Ali says that modern cultivation methods are essential, from preparing the soil to the irrigation method. "It's possible for small farmers to develop their methods with the resources they have if they know how to use the same traditional tools. Then grow suitable crops, place seeds the right way and maximise the use of water for irrigation. On Tuti, a model needs to be implemented so that farmers will be encouraged to follow its example."

Negligence of duties

Abdul Wahab explains an unknown disease outbreak last year killed large amounts of livestock, and there was no governmental reaction. "Even the veterans and agriculture experts on the island ignored this. This year [2021], agricultural production has decreased significantly. Big and small-scale farmers are wondering about the reason. And the same, no care or response."

"In fact, the governmental bodies have gotten worse after the revolution. The managers changed, but the same neglecting staff members remained. The corruption and lack of supervision are worse now. In the same way, the laws and regulations were not amended or changed. Farmers have no legal protection nor an active entity that supports them and addresses their problems," an official source that prefers to stay anonymous told The Niles.

Ali says that it is difficult for farmers and engineers to organise themselves. They can't form committees, for example, to lobby the government to do its duties, change the laws, actively supervise the activities and support the farmers, "Sudan needs to adopt new methods of agriculture, import modern seeds, machines and so forth."

In the past months, there were dozens of deaths and other health issues related to the unregulated use of pesticides by farmers unfamiliar with the products, she says, adding that these issues are neither reported by the media nor addressed by the authorities.

Adding to the challenges facing farmers, climate change has shifted the agricultural calendar. "For example, in Khartoum State, the seasonal cultivation period used to start around October. Now it comes months earlier, and preparations and cultivation procedures must be made accordingly starting from June and July. Unfortunately, farmers plant late, meaning that crops are unlikely to thrive," Ali says.

Where is the government?

In addition to its neglect, the government is raising electricity fees for farms. When it provided designated gas supplies, it only did so for big farming projects, exposing small-scale farm owners to the greed of black-market traders.

Those with limited resources must now buy from the market, adding to expenses and decreasing the scarce profits. "We formed

"We want equality, to be treated the same way they treat big-scale farmers."

a group and tried going to the ministry to get fertilisers and discuss other issues we face. Someone gave us a warehouse to keep gas, and the ministry arranged for us to access a reasonable amount to be made available regularly. However, they stopped the process in less than two months and ordered us to get it from the gas stations. We had to resort to the black market due to the gas crisis, which adds even more expenses," explains Yasin.

He added that due to all these challenges, he had to let go of labourers. These days he manages the farm primarily by himself and one worker. Yasin tells The Niles that he doesn't seek financial aid from the government – he just wants them to do their duties by providing fertilisers and gas.

"We want equality, to be treated the same way they treat big-scale farmers. My farm needs half a barrel for one round of irrigation (with subsidised gas, this costs around SDG 40,000 SDG (USD 90) or twice as much on the black market). Crops need to be irrigated around four times on average. We also have problems regarding spare parts and general price increases," he says.

As problematic as it may be, cultivating the crops is followed by the process of distribution and sales. And this part is more challenging than it seems. "Market brokers are a big problem for us. They monopolise sales and distribution, buying from us at low prices and selling at much higher prices. We can't make direct-selling points as they will fight us every step of the way", says Abdul Wahab.

To address this issue, Ali explains that in some of the projects handled by the company she works for, they tried to establish centres for direct selling to the consumers. However, they were discouraged by the obstacles from governmental institutions.

"Middlemen are a major issue, and due to the severe lack of supervision, they have thrived and keep pressuring the farmers on prices and increasing it for consumers to gain the maximum profit," she adds.

The way out of the woods

The complicated issues affecting Tuti Island farmers cannot be solved without governmental intervention, and the same applies to the nationwide agricultural challenges. Yet, more sustainable agricultural schemes, where farmers achieve self-sufficiency and combine farming with other activities, might be a step in the right direction.

"One of the issues in farming is labourers. Most agricultural lands are far from urban areas, so farmers would need to provide food and accommodation. They would need to develop other small projects, raising chickens, sheep, cows and planting various vegetables and fruits if possible. This way, labourers would be properly fed and increase their production in terms of quantity and quality. We implemented such modules and achieved great success. We also added fish farms to some of the projects," Ali says.

She further says that cultivating more than one type of crop or vegetable enhances the farmer's economic viability. Knowing what variety to grow and when, starting with those with short grow times, will help farmers stay productive around the year. Meanwhile, having several types of products helps them improve sales, meaning they are not dependent on one commercial product that is susceptible to the whims of the market. In a way, they could also weaken brokers' grip on the market.

This, of course, doesn't come without challenges, such as the expense of animal feed. However, these issues can be addressed in small steps such as planting and preparing fodder within the farms, selling other products such as milk, eggs and meat, and using the livestock waste as organic fertilisers. On Tuti Island, some people are slowly starting to consider making small changes, such as Yasin, who recently introduced cows and sheep to his farm.

"This module of sustainable farming is part of the solution to Sudan's agricultural issues, and it can encourage people to practice farming. They will increase their productivity and become self-sufficient along with their families. And that means they will be better nurtured and will cut their expenses, besides running a successful and sustainable business," Ali says.

A worker on Mahmoud Yasin farm.
Photo: The Niles / Elzahraa Jadallah

How to unlock opportunities and lower emissions

While East Africa is a negligible contributor to the globe's total emissions of climate gases, experts are asking how it can mitigate its environmental impact while also becoming more effective at producing food and livelihoods for its population.

Pius Sawa
Kakamega, Kenya

A cattle farmer in Kenya.
Photo: The Niles / Pius Sawa

In Ahero, a wetland area near Lake Victoria's Kisumu city, Vincent Odhiambo, a rice grower, floods the field by directing water channels into different blocks after preparing the fields.

"I have been growing rice for more than 15 years. This is what I depend on for ensuring that my family has food and money. I sell most rice, and the rest is food for the family," says Odhiambo.

Odhiambo is, however, not aware that his rice farming could be having any negative impact on the climate. "I know that smoke from cars, factories, and chemicals can damage the air we breathe, but rice is good."

He is one of more than a million farming households depending directly on rice for food and income security in East Africa. However, a white paper prepared by the Environment De fence Fund (EDF) shows that global rice production releases significant amounts of greenhouse gases into the atmosphere – as much as 1,200 average-sized coal power stations.

Flooding of rice fields isn't necessary for rice to grow but instead serves as an efficient way of preventing the spread of invasive weeds. The microbes that feed off the decaying matter in these fields produce methane, which takes up 12 percent of global annual gas emissions.

Methane is more than 25 times more potent as a greenhouse gas than C02, although, in the atmosphere, it reacts with other chemicals in the air and breaks after just a few years.

Many other forms of farming also take their toll on the climate. According to the United Nations Food and Agricultural Organisation (FAO), meat and dairy are major contributors, accounting for around 14.5 percent of global greenhouse gas emissions.

"Ruminant animals tend to have greater greenhouse gas effects."

A report published by Carbon Brief quotes Prof. Sir Charles Godfray, a population biologist and head of the Oxford Martin School at the University of Oxford, saying: "In a very broad-brush approach, the products from ruminant animals –sheep, cows and their relative animals with four stomachs – tend to have greater greenhouse gas effects. Part of this is because digestion by ruminants produces a lot of methane."

The stomachs of ruminants contain specialised bacteria capable of digesting tough and fibrous material, like grass. The digestive process causes the animals to emit methane.

Top right:
A cattle farmer in Kenya.
Photo: The Niles / Pius Sawa

Above:
Goats on a slaughterhouse compound in Kenya.
Photo: The Niles / Pius Sawa

"Emissions reduction must align with actions that accelerate the realisation of socio-economic priorities."

In comparison, plant-based foods have much smaller carbon footprints. On average, emissions from plant-based foods are 10-50 times smaller than those from animal products.

Ethiopia has the largest livestock population of any other country in Africa, making it an East African powerhouse in leather and meat factories.

However, internationally, Africa is far from a significant culprit in emissions of climate gases. Dr. David Munang, the United Nations Environment Programme (UNEP) Regional Climate Coordinator, says Africa is responsible for only 2-3 percent of global emissions. Of this amount, up to 56 percent are land-based, driven by land degradation and the destruction of ecosystems. Agriculture is often to blame for destroying ecosystems to gain more farmlands.

"If you were to go down to country levels, you will realise that most countries in Africa emit less than 1 percent, in fact, a fraction of 1 percent (of global emissions). Logically speaking, it follows that Africa does not have any significant emissions to cut," says Munang.

However, while climate change is global, he says, the poor are disproportionately vulnerable to its effects because they cannot afford the goods and services they need to buffer themselves against the worst of the changing climate impacts.

He says the continent loses up to USD 48 billion worth of food each year on its food systems due to reduced harvests.

"Considering that the continent has committed to emission cuts in its Nationally Determined Contributions (NDCs), including in land-based actions like agriculture which are the leading sources of emissions through degradation, the key, therefore, is that these emissions reduction must align with actions that accelerate the realisation of socio-economic priorities – food security, creation of income and enterprise opportunities, expansion of macroeconomic growth."

Munang further says it is time to seek lasting solutions, like solar dryers, which dehydrate rice up to 48 times faster than regular drying. "This is minimising losses while maintaining quality to increase earnings of farmers."

Solar dryers, on average, enable farmers to achieve up to 30 times income increases. They have been proven to lower emissions by over 200,000 tonnes relative to an alternative fossil-fuel-driven value addition solution.

Still another example is waste recovery. Rice husks, a byproduct of rice, can be added-value. Converted to fuel briquettes, the husks offer an alternative to charcoal use which drives deforestation and degradation, which, in turn, triggers emissions.

"Rice husks can also be converted to bio-fertiliser, lowering emissions resulting from the chemical fertiliser supply chain."

Munang describes the approach as "mitigation powering adaptation" – where efforts to lower emissions in agriculture are tied to value-addition to unlock essential income and socio-economic opportunities. "This is how we ought to approach agriculture emissions in Africa, a negligible emitter."

Improving food security: One drip at a time

It is a daunting challenge to produce enough food for the growing Nile Basin population, and climate change makes farming even tougher.

Sarah Natoolo
Kampala, Uganda

“Help farmers acquire irrigation systems by subsidising it.”

According to the World Bank, agriculture is the backbone of Uganda’s economy, employing 70 percent of the population and contributing half of Uganda’s export earnings and a quarter of the country’s gross domestic product (GDP).

The sector so far relies heavily on rain-fed agriculture. But changing weather patterns amid climate change means that areas where rainfall used to be average now face unpredictable precipitation throughout the year, making it harder for farmers to meet food demand.

The challenge across the region is to provide an environment that enables farmers to draw on the water where needed and use it in the most effective and sustainable way possible. Where water supplies are already under pressure, improving the productivity of water use in agriculture would free up water for other uses.

Irrigation, applying controlled amounts of water to plants, is an effective method to ensure food production all year round whilst minimising the pressure on water sources, provided that efficient irrigation technologies, like drip and sprinkler irrigation, are used.

Hellen Machika, a small-scale farmer in Kasongo, a Kampala city suburb, is among the Ugandan farmers who have benefited from switching to irrigation in the face of climate change. “I’m able to grow crops, whether it’s dry season or not,” she says, adding that it helps her “to maximise the prices of crops when they are out of season”.

Machika started farming high commercial vegetables in 2013 using drip irrigation. “With drip irrigation, water utilisation is very efficient. I only give water where my plant is, right at the root of the plant. You find that even weeds don’t grow where there’s no water and fertilisers,” she says, adding that she has never regretted the move away from rain-fed agriculture.

However, many farmers don’t use the available irrigation technologies due to their high investment costs. “An irrigation system is very expensive,” says Machika. “The government can help farmers acquire irrigation systems by subsidising it,” she suggests, for example, by “taking away taxes”, therefore “making it affordable to every farmer”.

The Government of Uganda has highlighted irrigation in all national development plans as one of the strategies that will propel the country to middle-income status.

“The irrigation potential for Uganda alone is about three million hectares. But currently, when you look at what our irrigation is, we are reaching 200,000 hectares,” says Sowedi Sewagudde, the Assistant Commissioner, International and Transboundary Water Affairs in the Ministry of Water and Environment in Uganda.

Besides, says Sewagudde, “Uganda needs to utilise the vast natural resources to boost the country’s food production”.

A Ministry of Water and Environment engineer, Godfrey Hashakimana, confirms that the aim is to promote irrigation on a large scale by using the Nile.

“In terms of Uganda utilising the Nile to ensure that we will increase food production, as a ministry, we are looking at having bulk water transfers to farmers. The Nile is a very good asset and, of course, as a country, we need to protect it,” says Hashakimana.

Sewagudde, meanwhile, believes Uganda can “easily irrigate and grow food which they can export to other basin countries”.

The potential benefits of modern irrigation technologies are immense, offering a method of boosting the food yield per unit of water used, a critical factor in agricultural adaptation. “A productive and climate-smart agriculture sector requires an effective enabling environment. Providing that environment is the role of the government,” says Holger Kray, Practice Manager, Agriculture and Food Security at The World Bank.

However, Uganda’s strategy to increase the use of modern irrigation technologies should first and foremost follow a farmer-centred approach that provides financial support as suggested by Machika and a knowledge transfer on how to use the technology and maximise its benefits.

With access to more finance, more efficient farming and climate-smart practices, Uganda will reach its potential in agricultural returns, making farming more productive and profitable for Ugandan farmers.

Top:
A drip irrigation line.
Photo: Flickr / Joby Elliott

Above:
Hellen Machika on her farm in Kasongo.
Photo: The Niles / Sarah Natoolo

Wetlands: A vital tool to mitigate climate change

Wetlands can put the brakes on the impacts of climate change. The case of the Rweru-Bugesera wetland shows why it's high time we do more to protect them.

Fabien Niyonizigiye
Bujumbura, Burundi

Most of Burundi's internally displaced people were not displaced by conflict but by climate change. In the East African country, the consequences of climate change have forced more than 100,000 people to flee, according to Save the Children.

In East Africa, there has been an increase in frequent extreme weather conditions, such as persistent heavy rainfall. Therefore, there has been a spike in flood disasters in recent years, and Burundi is particularly affected.

The sharp difference in sea surface temperatures between the western and eastern areas of the Indian Ocean is to blame. The waters around East Africa are now about two degrees Celsius warmer than those of the eastern Indian Ocean near Australia.

In an unpublished report by the Intergovernmental Panel on Climate Change (IPCC), obtained by the AFP news agency, UN climate experts predict that floods in Africa will displace 2.7 million people a year in the future. By 2050, 85 million people are likely to become climate refugees.

As a result of climate change, the Nile Basin can expect changes beyond anything previously experienced. Healthy ecosystems, like wetlands, offer many opportunities to help adapt and manage some of these changes.

The ecosystem services provided by wetlands

Wetlands are valuable environmental assets and play a vital role in controlling floodwaters, reducing erosion, improving water quality and serving as habitats for diverse plants, animals and microorganisms.

Wetlands around the shores of rivers and lakes provide, for example, essential areas for

floodwaters to inundate. This capacity to store and slow the flow of water during floods can help to steady flow rates, reduce flood peaks and lower the risk of flooding for towns and important infrastructure.

The flooded nature of our wetlands also allows many of them to accumulate peat, a process taking place over thousands of years. Wetlands that have been damaged by drainage, overgrazing and other pressures emit carbon and therefore contribute to climate change.

Restoring and properly managing wetlands not only stops this emission of carbon, but it also allows wetlands to capture and store carbon, as well as absorb floodwaters and therefore averting flooding that regularly displaces people and destroys property.

Well-managed wetlands can therefore play an important role in helping society adapt to climate change.

But despite their potential contribution to the fight to rein back climate change, wetlands across the Nile Basin suffer from substantial degradation, both due to human action and the effects of climate change.

One crucial way of comprehending the significant losses caused by this degradation is to put a price tag on the ecosystem's services.

Rethinking the value of the Rweru-Bugesera wetland

The Rweru-Bugesera wetlands complex is a chain of lakes, marshlands and a river, and their basins, at the headwaters of the Nile River. "This wetland complex is shared between Rwanda and Burundi," explains Herman Musahara, Associate Professor in the School of Economics College of Business and Economics at the University of Rwanda.

Rweru-Bugesera is one of the sub-basins in Rwanda. It involves the lake Rweru, the lake Cyohoha, Musahara explains, adding that its water drains into the Nile after feeding water into Akagera and Lake Victoria.

It is a relatively small wetland compared to others. But, he says, many people use the wetland, and it provides important ecosystem services.

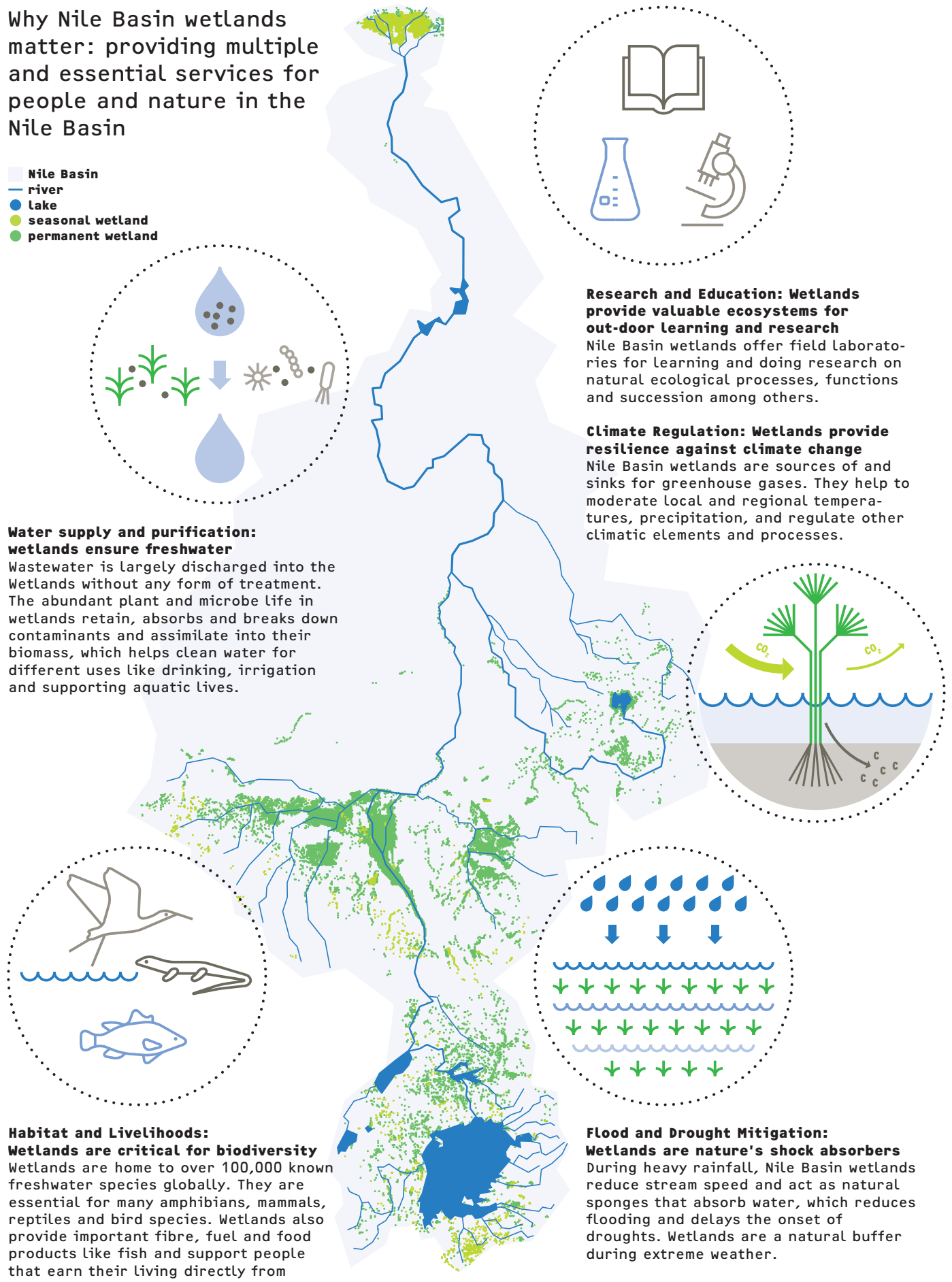
According to a 2020 Nile Basin Initiative (NBI) technical report, entitled "Wetlands and Biodiversity series Rweru-Bugesera Transboundary Wetlands Complex (Rwanda-Burundi)", the total economic value of the RweruMugesera wetland is estimated at USD 124,098,826.

The cost of degradation is estimated above USD 27.6 million, which is about 1.6 percent of the GDP of the two countries. The failure to rehabilitate and conserve wetlands that have been degraded, experts say, will lead to their inability to filter, store and supply freshwater and may ultimately lead to a water crisis.

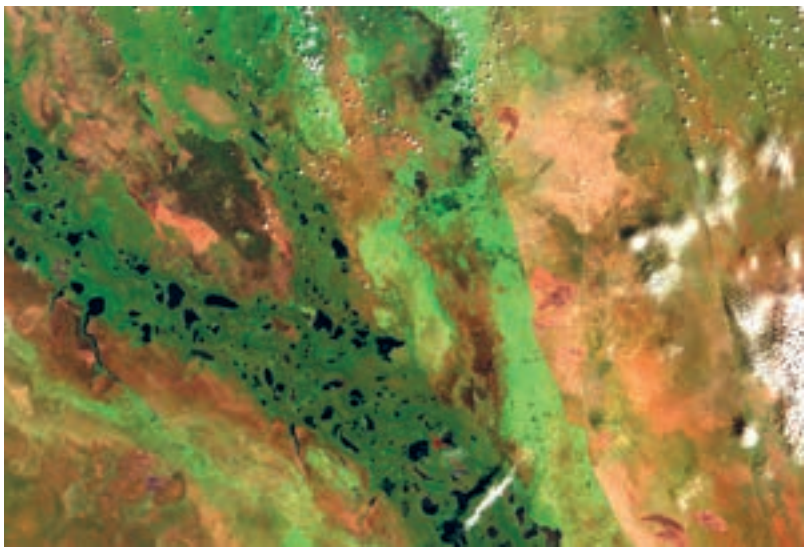
According to Musahara, robust regulatory instruments are in place when it comes to the Rweru-Bugesera wetlands complex. However, he says, they are often not used: "There is a gap, which is reflected by the fact that implementing these policies and strategies is not on average more than 35 percent".

Given the significant human and economic toll associated with degrading wetlands, urgent action is required – and soon.

Why Nile Basin wetlands matter: providing multiple and essential services for people and nature in the Nile Basin



South Sudan's struggle for its wetlands



Top:
A satellite image taken from the China-Brazil Earth Resources Satellite 4.
Photo: DSR/OBT/INPE / Oton Barros

Joseph Africano Bartel, the Undersecretary at the Ministry of Environment of the Republic of South Sudan, during an interview with The Niles in his office in Juba on June 14, 2021.
Photo: The Niles / Waakhe Simon Wudu

Toothless laws and a lack of neutral oversight are thwarting South Sudan's efforts to safeguard its nature.

Waakhe Simon Wudu
Juba, South Sudan

The fight to protect wetlands in South Sudan is hampered by the lack of a governing law in the country, meaning that people who harm the environment go unpunished, a chief technocrat at the country's Ministry of Environment told The Niles.

Across the country, environmentally damaging human socio-economic activities, including oil exploitation, are on the rise. But at the same time, there are scant efforts to protect wetlands – a natural resource that could help protect the nation from impacts of climate change.

"With the increase in population and the haphazard settlement of people, wetlands are being encroached on. One example is this residential area of Tomping and Juba Nabari," said Joseph Africano Bartel, the Undersecretary of the Ministry of Environment.

"These areas have been a wetland. It stretched to the airport. Usually, during the rainy season, you can see flooding. Even the airport itself is a wetland. But now people are encroaching on it and building residential areas in those areas," he said.

Tomping is currently part of Juba City Council, an area that is now becoming a first-class residential area not far from the State House – J-One. The example cited by Bartel is just one among many wetland areas experiencing similar problems across the country.

Many wetlands have been endangered in recent years, according to Bartel. He said one of the problems is a lack of town planning by authorities. Authorities in national and state institutions responsible for urban planning seem to be doing little to protect wetlands.

Before allocating an area for human settlement, or any economic activity, authorities should first conduct an environmental assessment impact – a practice that is not happening, he said.

The Sudd wetland's value

Meanwhile, the Sudd region, a vast swamp in South Sudan, formed by the White Nile's Bahr al-Jabal section, is "endangered" by oil exploitation, said Bartel.

A 2015 United Nations Environment Program (UNEP) report on the Sudd ecosystem and its unique cultures, states they are threatened by various development pressures, including a plan to almost completely drain the wetland to divert water for agriculture downstream.

Such pressures illustrate how unrestrained economic and political forces can threaten the degradation of a valuable and irreplaceable ecosystem and disrupt cultures that have thrived for centuries.

The report argued that the Sudd could be a great contributor to South Sudan's economy, which depends on oil revenues, adding the wetland is potentially the nation's most significant economic asset.

"Unlike the country's rapidly depleting petroleum resources, the wetland, if properly managed, could provide income, jobs and irreplaceable ecosystem services indefinitely," the report highlights, adding the potential economic contributions of the Sudd wetland has been estimated at an "almost USD 1 billion per year".

Estimated to cover an area nearly the size of the United Kingdom, as much as 90,000 square kilometres in the wet season, the Sudd wetland's importance was recognised in 2006 when it was officially designated a Ramsar site – a wetland area of international importance – by the United Nations.

An aerial survey of the wetland conducted by the Wild Conservation Society (WCS) in 2007 confirmed the existence of more than

“You cannot be a player and a referee at the same time.”

1.2 million white-eared Kob antelopes and an abundance of Tiang antelopes and Mongalla gazelle. An estimated 8,000 elephants were also observed.

Legal vacuum

But so far, South Sudan is protecting the environment with too weak policies and cannot penalise abusers of the environment, Bartel said. “At the moment, we are using ministerial orders, but ministerial orders cannot be used in a court of law.”

The South Sudanese environmental act has remained a draft bill for nearly a decade. Bartel said the bill is at the Ministry of Justice awaiting tabling by the Justice Minister to the Council of Ministers before parliament ratifies it into law.

Bartel said the Ministry of Environment seeks to hold a consultative workshop with all the environment ministers across the states and enact the country’s environmental bill. He added that coordination between the national government and the states has been weak on ecological matters.

“We are going to give them an orientation on issues of environment, issues of say infra-structure development in their particular areas. The most important thing is to stop the haphazard grabbing of lands for settlement, and before even land is given to people, those areas have to be assessed whether they are fit for residential uses,” he said.

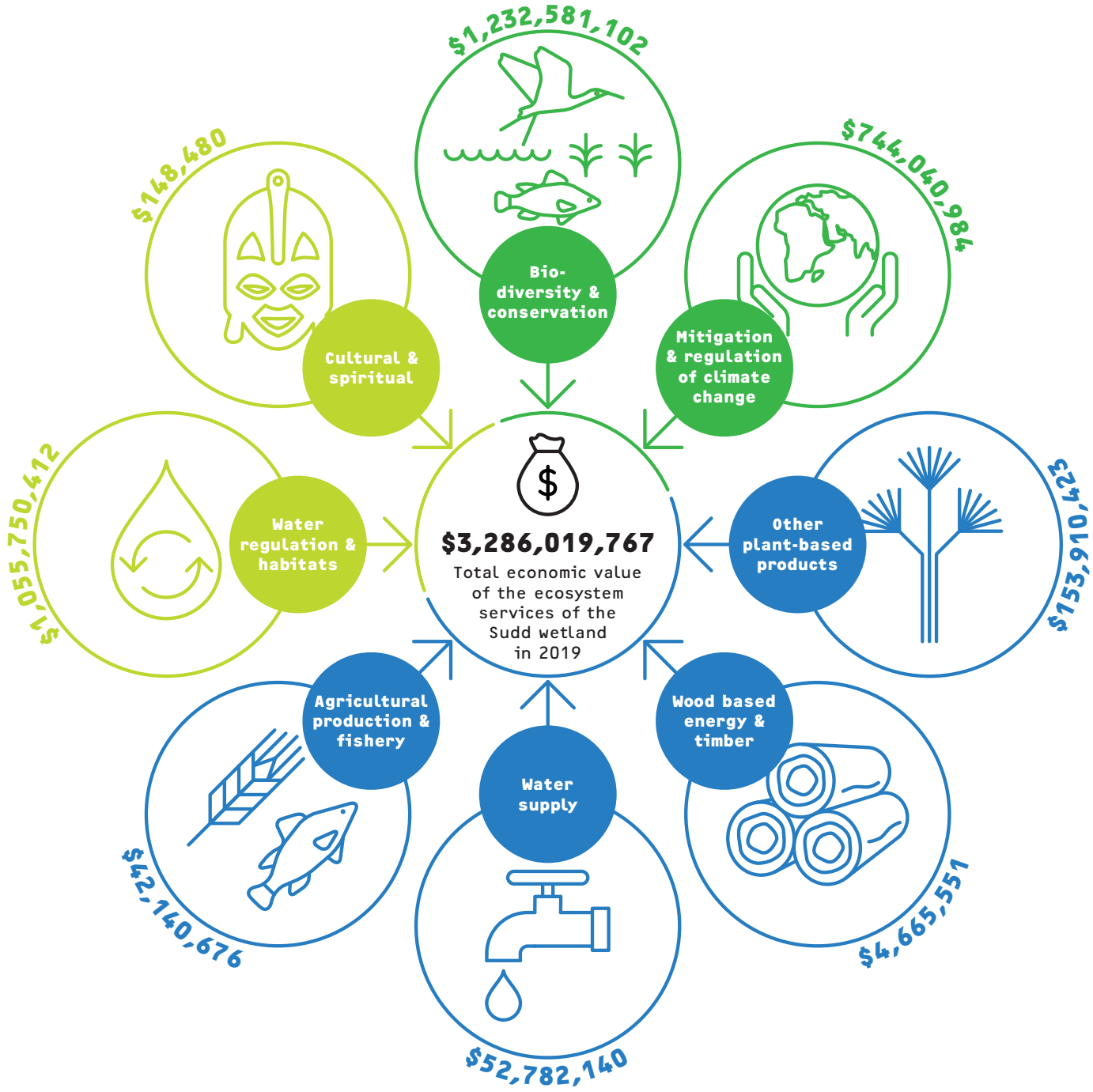
Meetings with the state ministers shall focus on a one-decade plan for water bodies, forests, soil, wildlife, fisheries, and others and planting 100 million trees. He said that they would also widen efforts for the government to invest in clean energy, including solar, geothermal and natural gas, to avoid depending on the country’s forest.

So far, the country’s Ministry of Petroleum has environmental audits using its Petroleum Act 2012 – the only law that can penalise those abusing the environment.

Many, however, say it was a mistake for the Petroleum Ministry to have been given the responsibility to conduct environmental audits, arguing it needs neutral external oversight.

“You cannot be a player and a referee at the same time,” Bartel said, adding, “we are going to look into it that – the petroleum act will be amended”. He said the Ministry of Environment should have oversight of the environment and environmental audits.

The real value of Nile Basin wetlands using the example of the Sudd wetland



rethink the way we communicate

Comment:
Cease nationalistic reporting, embrace diverse sources

At the start of a recent journalism training with participants from various Nile Basin countries, the facilitator asked participants to name the source of the River Nile. The answers were almost as diverse as the nationalities of the participants. Many argued pretty passionately that the Nile started somewhere in their home country.

Claims on the origin of the Nile and broadly the river's water resources have been symbols of nationalism for many years. It is far from the cooperative framework that many experts argue would enable sustainable management and utilisation of the river's resources.

Fortunately, scientists have moved away from narrow definitions or references to the Nile as purely national assets. As Stephen Ogwete, a Director in Uganda's Ministry of Water, observed, the experts now take a holistic approach to the river as an indivisible and complex ecosystem that comprises numerous lakes, rivers and wetlands all working together.

Nationalistic sentiments, which are taught either in schools or promoted through government policies and pronouncements or promoted in the media, are among the obstacles to achieving cooperation in the utilisation of the water resources of the Nile.

Emmanuel Fantini, a researcher at the Netherlands-based IHE Delft Water Institute, speaking during the 6th Nile Basin Development Forum (NBDF), argued that nationalistic sentiments have triggered divisions and conflict among Nile Basin countries.

For Fantini, escaping the national trap requires a holistic view of the river that considers its diverse geographical, climatic and cultural aspects to generate consensus and understanding.

As media and as individuals, embracing and promoting the shared perspective of the Nile, as opposed to viewing the river purely through national lenses, is essential in building consensus and forging more sustainable projects.

Journalists and individual citizens of the Nile Basin, especially those in positions of influence, need to catch up with the fact that the Nile is more of a regional than a national asset.

The media needs to air more perspectives and tighten its links to scientists to protect valuable natural resources, comments Henry Lutaaya.

Henry Lutaaya
Kampala, Uganda

"Reflect the complexity of the river basin and its ecosystem."

#NileCooperation
#NileBasin
#OneNile
#UnityInDiversity

"Nationalistic sentiments have triggered divisions and conflict."

For example, under the Cooperative Framework Agreement (CFA), which seeks to establish a permanent body to oversee the shared water resources, there is a deliberate effort to replace such absolute rights and notions as 'equitable rights' or water use allocations, with the more inclusive terms such as "promoting integrated management, sustainable development, and harmonious utilisation of the water resources of the Nile Basin".

Sharing resources, sharing benefits

Since the Nile is a shared resource and a fragile one, its utilisation requires joint efforts towards sustainability. Researchers and governments technocrats have moved the debate from sharing the resource to sharing the benefits in recent years.

As Michael Kizza, the Deputy Executive Director of the Nile Basin Initiative (NBI), points out, the basin is characterised by considerable variabilities in rainfall, climate and geography, causing flooding and erosion.

"Most of the water in the Nile comes from upstream countries, while downstream countries receive very little rainfall. Even the upstream countries that receive a lot of rain experience shortages of water during the dry season. Many of the challenges that face the member countries of the Nile, such as flooding, high population growth, and economic growth, are transboundary in nature. So for each country to operate on its own to solve its problems will not result in the best solutions."

Approaches like sharing the resource in absolute terms have created competition over the river and undermined its ability to keep up with the ever-growing pressure of meeting the demands of the bulging population.

For countries to sustainably manage the resource, Kizza argues, governments have shifted focus on supporting projects that seek to extend the benefits of the river beyond national boundaries.

Projects such as the power interconnection lines between Uganda, Rwanda and the Democratic Republic of Congo (DRC), or the joint fisheries protection patrols conducted between Uganda and DRC on Lake Albert and George, are better alternatives. They save resources that would have been invested if each country had established its own projects and because sharing benefits promotes peace.

Sowedi Ssewagudde, the Commissioner for Transboundary Affairs in Uganda's Ministry of Water and Environment, says: "We note that different countries have different comparative advantages. For example, you may find that a country upstream may have more fertile land, that even if you applied a small amount of water, it might be more productive than irrigation in the desert. Of course, we understand the different sentiments among our partners in terms of being self-reliant. But we are also promoting the idea that a given country can, for example, invest in the production of food in another country, export it, and only pay taxes in the country where you're growing."

Therefore, in rethinking investments, media practitioners may need to understand these concepts, appreciate the benefits, and promote debate among the population on the best way to share benefits and costs of cooperation.

Rethinking voices

Studies on how media outlets report events about the Nile Basin suggest that the media have not done an excellent job of balancing the voices of stakeholders.

While presenting a recent study on how media captured the voices in reporting the Nile issues during the 6th NBDF, Fantini noted that overwhelmingly, the press had given government officials and technocrats more space than other stakeholders. "Voices count. But very often, the voices of the ordinary people are either silenced, or they are categorised as having grievances, not solutions."

Fredrick Mugira, the co-founder of the investigative multimedia online platform InfoNile, goes a step further when he says that reliance on the official government statements is often the source of nationalistic sentiments and speculation, as opposed to professional balanced and objective reports.

Embracing knowledge

Meanwhile, many journalists in most media outlets across the Nile Basin overwhelmingly depend on official statements for news, which many say propagates nationalistic sentiments and state propaganda while obscuring the knowledge and experiences of the experts and people on the ground.

For Fantini, the media need to start interviewing people based on their background. "Instead of inviting people based on their passport, why not interview people based on their background? Every time we talk about the Nile, we should have an anthropologist, a hydrologist or a social scientist to reflect the complexity of the river basin and its ecosystem."

InfoNile's Fredrick Mugira says that close ties between journalists and scientists enrich stories and conversations. "It is from scientists that you can get objective findings of events. Journalists need to cultivate tighter relationships with scientists who are generators of this knowledge."

Comment:
Stick to the facts, avoid sparking conflict

Taking a closer look at the news coverage of the Grand Ethiopian Renaissance Dam in Sudan, Ethiopia and Egypt, media outlets across the basin urgently need to rethink their polarising reporting, comments Elzahraa Jadallah.

Elzahraa Jadallah
Khartoum, Sudan

"On this occasion, therefore, we, the peoples of Ethiopia, call upon all the peoples of the Nile Basin to turn over to a new page of co-operation and solidarity. As we in Ethiopia build this Millennium Dam with the aim of eradicating poverty, let it be known to all that it will also stand as an expression of our commitment to the benefit of all the countries of the Nile Basin."

These were the words of the late Ethiopian Prime Minister Meles Zenawi in April 2011 announcing the construction of the Grand Ethiopian Renaissance Dam (GERD), also known as the Millennium Dam.

After that speech, the eastern Nile Basin region was never the same. Contrasting perceptions and narratives about the dam were fed to the Sudanese, Ethiopian and Egyptian public during the last decade, and many aimed to widen the gap instead of seeking unity.

Governments and politicians played a significant role in creating the mess, but journalists and media outlets perpetuated it. Although the countries' media is directed mainly by the state and often leans towards nationalism, some news coverage was inexcusable.

"Many aimed to widen the gap instead of seeking unity."

Irresponsible coverage

When we look at local news from Egypt, for example, we see that it portrays Ethiopia's desire to utilise water resources as foreign intervention or a deliberate attack on Egypt's national safety and water security. Some of the reports were alarmist or even promoted the spectre of violence. Words like "war" were repeatedly mentioned, while overall, they painted a dark image of the water security situation in their country.

This, at times, reckless reporting of false information created misunderstanding among the people. During a regional training in 2017, I spoke to local farmers. They had water issues that they related to the GERD even though it was still under construction by then, and the reservoir filling hadn't commenced. I asked the farmer for the source of his information, and he said it was in the news. To those farmers, informed by local sources, the GERD was the cause of their suffering.

Ethiopian media narratives have also been adverse. National news had been charging people with feelings of rage towards their neighbours using every tool possible, such as convincing the public that some of Ethiopia's droughts were caused by their inability to use what "God" has given them. Sometimes Ethiopian media outlets used provocative narratives, such as mentioning the Ethiopian-Eritrean war and linking it to the Egyptian intervention to rally people against Egypt.

Another worrying example is the coverage of the military cooperation between Sudan and Egypt as a proactive preparation for war over the GERD, raising fears and mistrust amongst the Ethiopian public and widening the gap between the historically close nations.

Going with the flow

In Sudan, media narratives long supported Ethiopia in its attempts to utilise "their" water resources. They listed all the benefits of the GERD for Sudan, such as regulating the flow

"It ceased to be a hydropower development project."

#Nile
#Ethiopia
#Egypt
#Sudan
#GrandEthiopianRenaissanceDam

of water – therefore the floods – increasing the power supply – through electricity from Ethiopia.

Recently, however, this has changed to instilling fears and worries regarding Sudan's water security portraying Ethiopia as acting selfishly regarding the "shared" water source. News reports focused on the expected decrease in sediment that will impact farmers along the river, for example.

Telling people suffering from a severe electricity crisis that they will be experiencing more power blackouts can spark very intense feelings. In fact, according to an official Sudanese source, power generation from Sudanese dams could increase if the GERD, once fully operational, would be operated cooperatively.

Another example of the media zooming in on the potential negative impacts of the GERD is announcing that 50 percent of the seasonal farms on the banks of the river will be lost and covered with water – which might be true – but without clarifying that the remaining 50 percent can be cultivated regularly instead of seasonally. There would be fewer chances of flooding disasters like before.

I asked one of the high-ranking Sudanese officials regarding the second filling and why there were more worries and fears this time. "The negotiation was going better then, and we didn't want to impact it negatively," he said. "But lately, that tone has changed. It is ok to magnify the fears."

Currently, the narrative is being altered again, with Egypt's surprising statement that the second filling will not cause significant harm. Sudanese officials once again highlight the benefits of the dam in their public briefings. These alterations show how politicised this issue is.

The need to alter our approach

The media narratives in the three countries built up and stirred resentments among the people towards their neighbours. The spread of mis- and disinformation also created the mistrust that is apparent when you talk to people in these countries about the GERD, maintained by some wild theories, all different and mostly wrong.

Another observation is that most of this coverage is rarely supported by scientific data or information from reliable sources. It lacks accurate figures and focuses on provoking emotions. Sometimes journalists would even interview some so-called "experts" who are well-known for their fanatic statements to get more reads. Balanced and fact-driven stories often "have no market", some Sudanese editors say.

For accuracy, some of the issues reported in the media and the worries they raise are well-grounded and should be discussed. But the way concerns are covered in the news so far creates more problems, making it harder to find amicable solutions.

While concerns were raised regarding the impact of the GERD on the water security of Sudan and Egypt, a study highlighted a cooperative method to operate the dam by additionally utilising solar and wind power to generate electricity along with hydropower to mitigate the dam's impact on the downstream countries. But apart from some science-focused publishers, the study wasn't picked up by significant media outlets in the three countries.

If the idea is feasible or not is best determined by scientists. But to keep the public GERD discourses solution-oriented, the study would have provided an excellent hook for news editors across the basin. And this is just one example of many leads that could have been reported on instead of recycling negative news again and again.

Towards productive reporting

All matters regarding the GERD are political now. Soon after the establishment of the dam was announced, it ceased to be a hydropower development project and became a national security issue. We have seen that media played a significant role in supporting this transition and even influencing the political negotiations regarding the dam.

Positive progress, such as the signing of the Declaration of Principles in 2015 and its outcomes, did not generate the same attention as the fears and worries. The media helped turn the GERD from a development structure that can be discussed technically, legally and from a perspective of unity and cooperation to a political mess approached with nationalism and adversity.

Media outlets need to increase their reach is understandable, but that can also be achieved by creating conversations around solutions rather than problems. Instead of recycling reports regarding the absence of an agreement, we can produce scientific supported reports that show cooperation scenarios and their benefits, for example.

Using credible information, reliable sources and fact-based data also requires journalists' consideration of all the technical and legal aspects of the issue. Some regional and international institutions realised this need and held events bringing journalists from different countries together and even linking them with experts. This reflected positively on the media coverage and the journalists' understanding of the different narratives and the importance of science in covering water-related news.

Still, more change is needed. We need more balanced, well-sourced, responsible, and objective reporting aiming towards cooperation and togetherness in the region, coverage that creates constructive conversations rather than exacerbating conflicts and reflects the problematic aspects in a solution-oriented way, not as inflammatory statements.

We need to rethink how we report transboundary issues of mutual interest and regional importance, such as the GERD. Focusing on cooperative approaches that seek mutual benefit, unity, and togetherness creates a win-win situation. It is high time we stop fuelling geopolitical tension and boosting public fear.

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That's a wrap for our The Niles "re<think" issue and an impressive number of words about how to safeguard the shared Nile Basin, its resources and ultimately us, its people. But remember, when deeds speak, words are nothing. Right now, it is high time for deeds.

The Niles is a shared resource: Resource persons, citizens, and contributors from across the basin exchanged ideas and knowledge to then share their collaborative work with you, our readers.

For the publication to become a truly shared resource, please feel free to republish The Niles articles and share any thoughts it has provoked. In that way, we can all work towards a social and political consensus and towards safeguarding just and peaceful communities.

To make it easier for you to share our content and engage with others, our website contains all of our magazines and supplementary multimedia content and profiles of our contributors.

The most recent issue published can always be found on the landing page in both English and Arabic. Previous The Niles issues can be explored on our 'In Focus' page.

By providing this contextual information, we hope to spark an inclusive and informed exchange about Nile Basin affairs, inspire audiences to act and drive the basin's population to thrive.

We hope you thoroughly enjoyed this issue of The Niles, and we look forward to hearing your ideas and reactions. As ever, do reach out to us through our website or our social media channels.

Read The Niles online and join the #NileCooperation conversations:

theniles.org