

WHERE A WOMAN RULES, STREAMS RUN UPHILL.

Imagine a world where streams defy gravity, flowing uphill against all odds. An Ethiopian proverb uses this rare image to explore the intricate dynamics between gender and leadership. Some see it as a metaphor for women's extraordinary ability to achieve what seems impossible—like making a stream run uphill. Others may interpret it as a reflection of societal scepticism, where both women's leadership and uphill streams are seen as impossible.

However, natural phenomena like at Kenya's Kituluni Hill show that streams can indeed appear to flow uphill, challenging our perceptions of what is possible. But is this incredible defiance of gravity real? Or is it a trick of the eye?

In the dual world of impossibility and illusion, choices are limited: women either achieve the unimaginable, or their leadership remains fantasy. True progress means moving beyond duality. Let's explore the proverb from a fresh perspective, by flipping it on its head. What if streams must run uphill for women to lead? This suggests that significant obstacles must be overcome for women to hold their power. The real question is: Do we want to create a world where women can live fully without having to defy gravity? If so, why? The Niles journalists delve into what we collectively stand to gain when the limitations and barriers surrounding women are removed so that their—and our—basic human needs are fulfilled, not only to survive and live well but also to live free and belong.

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WHAT DO YOU NEED?

When asked with care, attention, and a readiness to listen, the question “What do you need?” opens the door to connection and understanding.

Women are often expected to take on caretaking roles, profoundly connecting them to nature and the resources that sustain their communities. This responsibility extends beyond their immediate families, positioning them as stewards of the land entrusted with managing and protecting vital natural resources.

The same systems that oppress women often exploit and degrade nature, reflecting a broader disregard for nurturing and care. These systems elevate qualities like aggression, dominance, and control — usually labelled as masculine — while undervaluing traits traditionally associated with femininity, such as empathy, collaboration, and care. The result is a culture of competition, exploitation, and a relentless drive for dominance. This system is known as patriarchy.

In this edition, The Niles journalists delve into the roots of the constraints imposed by patriarchal systems and cultures. They offer solutions drawn from diverse experiences, traditional knowledge, and modern innovations. While these solutions provide a path forward, their success depends on recognising that both men and women are participants in the patriarchal system — and both can be part of the solution. At the core of all human existence lies the answer to the same question: What do we need? The answer encompasses four basic needs: survival, well-being, freedom, and identity.

As we explore what it means to be well, free, and belong, it becomes clear that these concepts are inextricably linked with our identities. In many Nile Basin cultures, womanhood and manhood are often confined to traditional definitions. But what happens when these roles are challenged? When individuals step outside the boundaries of these expectations and assert their need to live fully?

The journey that follows is not merely about personal survival or well-being; it is a broader pursuit of the freedom to redefine what it means to be a woman or a man in these societies. It is a continuous effort towards belonging to a community that recognises and

values individuals for who they are rather than confining them to predetermined roles based on gender.

When women and men alike begin to question and push against these traditional confines, they are not just seeking to expand their own horizons — they are also paving the way for a more inclusive and equitable society — a society where caregiving, nurturing, and maintaining the social fabric are seen as valuable contributions from all members and where qualities like empathy and collaboration are valued alongside strength and leadership.

This same spirit of redefinition and challenge is essential in Nile Basin cooperation. As countries within the region navigate complex water management, resource sharing, and environmental sustainability issues, women’s leadership — grounded in empathy, collaboration, and a deep connection to the land — becomes crucial. Women leaders are not just advocating for equitable resource distribution; they are also reshaping the framework of cooperation to include voices and perspectives that have traditionally been marginalised.

If more women were to take on leadership roles within this context, a leadership style rooted in collaboration, empathy, and care could emerge as the dominant approach. This shift would encourage others to adopt these values, creating a ripple effect that could strengthen cooperative efforts across the Nile Basin. In this way, women’s leadership would not only influence the outcomes of cooperation but also transform the very nature of leadership itself, paving the way for a more inclusive and sustainable future for the entire region.

Through these acts of defiance and redefinition, we see the emergence of a new narrative — one where men and women are not bound by the limitations of patriarchal structures but are free to build identities and communities that reflect the diverse and dynamic nature of human existence. This is the story that unfolds in the pages of this edition, offering us all a glimpse of what is possible when we dare to ask: What do you need? And how can we work together to remove the obstacles in our path? **LVN**

SURVIVAL 101: STOP THE WAR, PROTECT THE FUTURE

INTERVIEW BY Esther Muwombi, THE NETHERLANDS / SUDAN

Nisreen Elsaim, a Sudanese environmental activist and co-founder of the Youth and Environment Society (YES), discusses the dire environmental impacts of war in Sudan and highlights the decisive role of women in fostering climate resilience amid ongoing violence.

Q: What sparked your journey into environmental activism, and how do you maintain your motivation despite the challenges you face?

A: As a first-year physics student, I believed science could change the world. A violent incident at my university, where regime loyalists attacked students, affirmed my belief. They came to our school and threw two students from a balcony, with one tragically passing away. This made me realise that reason and science must be part of all decision-making. During the following months, I researched science diplomacy, leading to topics like water and climate change. I then volunteered with a local organisation focused on these issues. I've been committed ever since.

Q: Can you share a success story highlighting the positive impact of women's leadership in environmental conservation?

A: My success story started with a big failure. Our initial project plan, in a suburb of Khartoum, called Mayo, aimed to plant trees and create wall art. However, we discovered that our target area lacked water, and because of the water shortage, there were several school dropouts. Children spent hours searching for water and had little time to be in school. So another question arose: "How can we ask someone to irrigate a tree if they cannot easily find water to drink themselves?" We made calls here and there to talk about the problem. We eventually formed partnerships, and different organisations came to visit. Our initial project budget was USD 5,000. This small project grew into a USD 5 million initiative that addressed water and sanitation needs, built more schools, and significantly improved the community. Though the war halted our work, the partnerships and resources we gathered were a great success.

Q: How can women in Sudan contribute to building climate resilience in their communities, especially in areas affected by war and violence?

A: We conducted a study on the impact of the war on Sudan's climate. The study revealed that the only way to avoid a famine

during this conflict is by building community resilience and continue agriculture in relatively safe areas. Women, often responsible for agriculture, are key to this resilience, and they possess the indigenous knowledge necessary to sustain farming activities. This is crucial for preventing famine, where millions could die from hunger rather than bullets. Despite facing systematic rape and slavery during this war, women are still making significant contributions to their communities through agriculture and other activities.

Q: What are the main barriers preventing women from participating in environmental activism and climate change mitigation efforts in Sudan, and how can these barriers be addressed?

A: Women in Sudan often lead the way in activism, yet bureaucracy prevents them from holding higher positions. Few women head organisations despite the higher numbers of female volunteers. Cultural customs, lack of education, and inadequate women's rights further hinder their participation. Addressing these issues requires profound changes in both cultural attitudes and organisational structures. There needs to be greater awareness among households and communities about global environmental problems because these issues transcend borders. What happens in the USA can affect people in Sudan. Raising awareness will help women become active on a larger scale. Additionally, financially empowering women is crucial. If women cannot earn, they cannot make decisions. It's that simple.

Q: How do you engage with local communities to raise awareness about environmental issues, and what strategies have proven most effective?

A: I start with a needs assessment to gauge the community's knowledge. Local communities, especially in rural areas, often understand environmental problems intuitively and have their adaptation methods. Focusing on these local solutions and scaling them up has proven effective.

“Stop this war right now because the cost of it on the environment is unbearable for everyone involved!”

Q: What unique perspectives and skills do women bring to climate change activism and environmental conservation in Sudan?

Women in Sudan are deeply connected to nature through their daily responsibilities, such as fetching water, gathering wood, and managing household needs. Their strong connection to nature enables them to find practical solutions to environmental problems. For decades, they have excelled at inventing new methods for drying meat, preserving food, baking, and cooking more economically and efficiently to reduce the amount of wood and water needed. These innovative and efficient methods for food preservation and resource use are crucial for sustainability.

Q: How has the conflict impacted your efforts to advocate for environmental conservation?

A: It has added complications and increased the workload but has not stopped our work.

Q: What are the current environmental initiatives or projects you are involved in?

A: At the national level, we are focusing on addressing the impact of the war, such as widespread tree-cutting for military operations and energy production. We are conducting needs assessments and research to identify safe areas for intervention. Globally, I am working to create a network for climate action in conflict-affected countries, providing resources and training to help these communities function better despite instability.

Q: You have expressed confidence that the global climate movement will succeed and yield positive results.

What do you consider to be a successful outcome for this movement, particularly for Sudan?

A: The most significant success is the existence of the movement itself. For a long time, climate change was seen as an issue for elites or developed countries, but now there is a robust climate movement in Sudan. Even under dire circumstances like displacement and loss,

people are still researching and working on climate issues. They are communicating with the international community and each other, keeping climate change at the top of their agenda. This persistence, despite their hardships, is the most significant success.

Q: What is your long-term vision for Sudan's environment, and what steps are necessary to achieve it?

A: Sudan is rich in natural resources, and managing these resources effectively requires a holistic approach. This is my vision. This is my vision, but due to the ongoing conflict, it feels more like a dream. I pray for peace daily so we can implement the strategies my fellow activists and I have envisioned for Sudan.

Q: What message do you have for the warring parties in Sudan?

A: The impact of this war on our people and the environment is devastating. Stop this war right now. The environmental cost is unbearable for everyone involved. The people and the government cannot afford it. [UNV](#)

Nisreen Elsaïm, at the 2023 Young Activists Summit in Geneva, was one of five laureates who shared their solutions for fostering harmony among humans, nature, and within oneself, under the theme Peace and Reconciliation. (cc) Personal photo



VIRUNGA: HOW VIOLENCE DESTROYS CHOICE

BY **Daniel Buuma**, DEMOCRATIC REPUBLIC OF CONGO





Displaced women from the Kanyaruchinya camp, North Kivu, Democratic Republic of Congo, walk towards Virunga National Park in the morning to harvest potatoes. The Virunga National Park, a UNESCO World Heritage Site, is Africa's oldest national park. Established in 1925, it encompasses diverse landscapes from snow-capped mountains to volcanic plains and rainforests. The park is known for its exceptional biodiversity, including critically endangered mountain gorillas. However, Virunga faces violence, poaching, habitat loss, and resource extraction threats. Conservation efforts are underway, but park rangers protecting the park's wildlife and resources often face danger.

At the Kanyarutshinya camp in eastern Congo, mornings start early. Women and children from this displaced community head into Virunga National Park, not for leisure but for survival. They make a three-hour trek through the park, a UNESCO World Heritage Site better known for its endangered gorillas than the risky farmland it has become.

Over 7.2 million people, mainly women and children, are forced to live in camps like Kanyarutshinya due to conflict and a lack of government aid. With limited options, they cultivate potatoes within the park, despite the dangers that come with this decision. Violence is a constant threat, with clashes between rebels and the national army disrupting the area. The women pass through three checkpoints, paying 1,000 Congolese Francs (about USD 0.35) each time, to access this forbidden land.

This farming provides a temporary relief from hunger but has a significant impact on Virunga's fragile ecosystem. Over 300 hectares of the park have been damaged. The park, already a battleground, now faces added pressure from this encroachment.

These women's stories reveal the human cost of ongoing violence. Their only option is survival, even if it means damaging the environment that surrounds them.

"I am a mother to four children and a farmer. I come from Kibumba village. It was night when we heard gunfire and bombs exploding. In the morning, we fled our home to the Mugegwa displacement camp, about 15 kilometres from Goma. I cultivate potatoes in Virunga National Park to feed my family and keep us from starving. The government and NGOs aren't providing food for us. As a mother, I must take care of my children. All we want is to return home and live our lives safely. Sometimes, there are shootings at night in the displacement camp by local armed groups, which makes us very stressed. We suffer from hunger and unclean water, and we lack necessities. We've been here for over a year and feel hopeless." Mariam, 32 years old

Women from the Kanyaruchinya camp, North Kivu, Democratic Republic of Congo, drink rainwater after a trek of more than three hours through Virunga National Park. They are on their way to harvest potatoes.



Displaced women in North Kivu, Democratic Republic of Congo, find shelter under a tarp in the Virunga National Park during rain.



A man collects money from displaced people harvesting potatoes inside Virunga National Park. The park's resources are a lifeline for displaced communities, but armed groups often contest their access.



"I come from Buhumba village, near the Rwandan border. Since 2022, I've lived in a displacement camp with my one child. To survive hunger, I cultivate potatoes in the Virunga National Park, risking my life and facing the threat of sexual violence every day. The lack of clean water in the camp makes us constant victims of urinary infections. We just want a safe and secure life."
Eliane, 22 years old





Current page and left image on the previous page: Displaced girls and women carry potatoes through Virunga National Park.





The Mugunga displacement camp, Goma, North Kivu province, Democratic Republic of Congo.

"I work as a manager at a water bladder tank, helping others get clean water in the Mugunga displacement camp. On 3 May 2024, I was injured by bomb fragments while working at the camp. I don't remember exactly what happened that day." Ndoole, 18 years old. Ndoole comforted by her mother at CBCA Ndosho Hospital in Goma, Democratic Republic of Congo.





A man stands at the Mugunga displacement camp in Goma, Democratic Republic of Congo. His child was reportedly injured in the camp during a bombing which occurred on 3 May 2024.

Displaced women who lost relatives in recent violence mourn during a ceremony at the Stade de l'Unité in Goma. The women live in the Mugunga displacement camp.



Coffins of victims of the 3 May 2024 bombing at the Mugunga displacement camp. The bombing killed at least 35 people.



WOMEN LEADING WATER CONSERVATION IN KAJIADO COUNTY

BY **Soila Arasha**, KENYA

In Kenya's Kajiado County's arid landscape, women spearhead water conservation efforts, using traditional techniques to ensure a sustainable water supply and improve community resilience against drought.

In Kajiado Central, Olgos village endures an arid landscape with sparse rainfall and frequent droughts. Vegetation is scarce, and the sun beats down relentlessly, making water a precious and often elusive resource. This scarcity significantly impacts residents, especially women, who are the primary caregivers.

Despite these hardships, the indigenous women of Olgos have become custodians of water, using age-old techniques to sustain their families and livestock through droughts.

Founded in 2018 in response to the increasing challenges posed by climate change, the Engape Group focuses on local water management. This collective of 23 women employs traditional water conservation methods, such as sand pits, sand dams, earth pans, and shallow wells, to ensure a consistent and reliable water supply throughout the year.

“Sandpits provide a reliable water source during dry seasons.”

Naomi Moitaso

Peninah Moitaso, an Engape Group member, highlights the cultural heritage of these techniques. “These water conservation methods have been a part of our culture for generations,” she says. “Our grandmothers and mothers taught us how to build and maintain them. They are deeply embedded in our traditions and are more than just survival strategies.”

The Engape Group has implemented several projects that have significantly impacted the community. One such project is the construction of earth pans, which collect and store rainwater. “An earth pan is constructed where water naturally accumulates, such as in a low-lying area. Rainwater and surface runoff fill the pan during the rainy season, providing a vital water source throughout the dry season,” explains Moitaso.

Another technique is the sand pit, which harvests and stores rainwater in sandy soils. “Sandpits provide a reliable water source



Above: A woman fetches water at a traditional earth pan in Kajiado County, Kenya.

Below: Cattle drinking at a traditional earth pan in Kajiado County, Kenya.

during dry seasons, ensuring access even when surface water dries up. They recharge local groundwater tables and improve overall water availability,” says Naomi Moitaso, another member of the Engape Group. “These methods ensure we have clean water for drinking and other uses, reducing the burden of fetching water from distant sources.”

“Reliable water has significantly improved our hygiene and health.”

Agnes Bene

Statistics back the success of these traditional methods. According to a 2019 report by the Ministry of Water and Sanitation, water access in Kajiado County has increased by 15 percent since implementing community-driven water projects, highlighting the effectiveness of local initiatives in addressing water scarcity.

Agnes Bene, one of the group’s founders, notes the cultural and environmental challenges women face in her community. “Men often do not participate in water conservation efforts and contribute to the problem by harvesting sand, which dries up rivers and exacerbates water scarcity,” she explains. “The rivers, once pristine water sources, have been destroyed by sand harvesters. Men take livestock to water sources first, which culturally means that the livestock must drink before women can fetch water. This practice forces women to wait, further exacerbating their struggle for water access.”

The situation in Kajiado County mirrors broader trends in the Nile Basin, where water scarcity is a growing concern. According to the World Bank, over 250 million people rely on the River Nile for their daily water supply. With the population expected to double by 2050, the pressure on water resources is set to intensify, making sustainable water management practices more critical than ever.

Engage Group’s water conservation efforts provide practical solutions and foster economic and social empowerment among women. “Our projects have transformed our lives by providing a constant water source when surface water is scarce. Reliable water has significantly improved our hygiene and health, reducing waterborne illnesses,” says Bene.

“These water conservation methods have been a part of our culture for generations.”

Peninah Moitaso

The group’s initiatives have received support from the Neighbours Initiative Alliance (NIA), an NGO that has provided training and resources for effective water management. “Through capacity strengthening and knowledge transfer, NIA has equipped us to implement sustainable water projects. This support ensures the longevity of our efforts and empowers community members, especially women, in water security and management,” adds Bene.

The Engape Group envisions a future where water becomes more accessible to women in their community. They aim to construct more shallow wells and boreholes, reducing the burdensome distances women currently travel in search of water. The group is also working to halt sand harvesting, which depletes the water table and exacerbates water scarcity.

The women of Olgos are not just surviving, they are leading the way in sustainable community water management. Their efforts highlight the power of traditional knowledge and community-driven solutions in tackling modern challenges and women’s critical role in addressing water scarcity and climate change, providing a blueprint for similar initiatives across the Nile Basin. **WV**



Above: Women working at a sand pit in Kajiado County, Kenya
Below: A sand pit in Kajiado County, Kenya.



Above: A sand dam is under construction in Kajiado County, Kenya.
Below: A completed sand dam in Kajiado County, Kenya.

WOMEN NAVIGATING THE NILE: SURVIVAL CHARTS A PATH TOWARDS CHANGE

BY **Rita Opani James**, SOUTH SUDAN

In South Sudan, women from Gondokoro Island use canoes to transport fresh vegetables to Juba, addressing food security amidst economic hardship. All the while, their commitment challenges traditional gender roles and paves the way for transformation.

In South Sudan, survival is a daily struggle, particularly for the women of Gondokoro Island. Amidst soaring inflation and economic challenges, these women are navigating the Nile, using canoes to bring fresh produce to the markets of Juba. Their efforts provide sustenance for their families and challenge the notion that canoe transportation is solely a man's job.

Jackline Gune, who had to leave school early, has paddled canoes since childhood. "Paddling canoes is what I grew up doing," she says. "I dropped out of school in primary four to support my family. This work is crucial because it helps us transport our fresh vegetables to the market."

During the rainy season, women cultivate kudura, gwedegwede (local vegetables), okra, and maize. Once harvested, these crops are transported to Juba using canoes. Gune emphasises the importance of this method: "We need the canoes to bring our produce to the city to sell," Gune explains.

"By the age of nine, you should be able to paddle a canoe."

Willima Kiden

Gondokoro, an island near Juba in Central Equatoria, has a rich history as a trading station on the White Nile. Today, Gondokoro is home to approximately 14,700 people, many of whom rely on agriculture and canoe transportation for their livelihoods.

To maintain their canoes, the women pool their resources. "We collect money so that when the canoe has a problem, we can repair it or buy a new one," Gune explains. "This ensures we can continue our work without interruptions."

The income generated from her work has enabled Gune and her family to make significant purchases. "We have a big farm, and the money we make from our produce has allowed us to buy a grinding mill, a local canoe, and a car. Cultivation helps a lot. The money you get from it can be more than government money," she says.

Gune's efforts have also fostered a sense of mutual support within her family. "I cultivate in the village, and my husband works in Juba," she explains. "After selling our produce, we give the money to our husbands, making them very happy," Gune adds, highlighting the traditional family structure where the husband is in charge of finances.

Questions may arise about the extent to which Gondokoro's women are free to use their money. However, this does not diminish the fact that their quest to survive has set them on a path that both challenges gender norms and carves out an essential role for them in family and local economics.

Left: One of the canoes departing towards Juba.
Right: Women at the shore of the Nile with their
produce, Gondokoro Island.
(cc) Adam Ibrahim



Building community strength

Willima Kiden also had to leave school early due to the harsh economic realities in Juba. She moved to the village to cultivate crops and support her family. Kiden highlights the importance of canoeing skills from a young age. “In our village, by the age of nine, you should be able to paddle a canoe. It is crucial for our work.”

She requests for more resources to enhance their efforts. “Government and NGOs should help us by providing more canoes and agricultural tools. This will ease our work and improve our ability to supply vegetables to the market.”

Stella Cley, a social worker at Juba Teaching Hospital, emphasises the need to support these women. “These women are working hard to feed their families. Some are widows or school dropouts, and their responsibility is immense,” she says. “They need more support, even though our ministry does not have the budget to help them.”

The Women Advancement Organisation (WAO) is one such organisation that has been supporting the women of Gondokoro since 2017. WAO’s Executive Director Suzan Pasquale details this support: “We train women to produce various crops, manage pests and diseases, and water the garden. We provide generators, fuel, and trainers to help them improve their agricultural practices.”

Securing a future

Pasquale also notes efforts to secure additional resources for the island women. “We have contacted different donors to buy speed boats to help women transport their products to the market. To ease their work, we want to buy speed boats for women in remote areas.”

The women of Gondokoro are addressing their immediate survival needs and laying the groundwork for a more secure future. Their determination demonstrates women’s crucial role in the economic and social of their community. By providing a vital lifeline for their families and communities, these women have proved that a path to survival can also be a path to opportunity and change.

In challenging gender norms and proving their indispensability in their country’s journey towards food security and economic stability, the women of Gondokoro are linked to many more women across the Nile Basin. Together, they embody a powerful movement towards a more inclusive and prosperous future for the entire region. Recognising and supporting these efforts is essential for fostering a more inclusive and prosperous future for South Sudan and the Nile Basin. [IN](#)



Phoebe Kefa in her maize farm.

AMUA: A JOURNEY TOWARDS SELF-DETERMINATION IN MIGORI

Migori County's vibrant exterior hides the silent struggles of its women who face and survive daily violence, abuse, and economic hardship. In the heart of this community, the Amua Mama Initiative supports women to rebuild and reclaim their futures. Stories of hope drive this inspiring movement.

By Curity Ogada, KENYA

In Migori County, located in southwest Kenya near Lake Victoria, many women endure hidden struggles. The region, reliant on the Migori River for much of its water, faces challenges that extend beyond scarcity. For some, like Ruth Atieno, the river and its surroundings have been sites of profound trauma and violence.

Atieno recounts her harrowing journey with painful clarity. "I was raped while fetching water one evening," she begins, a chilling echo of familiar stories from the Migori River and distant boreholes in Oruba. This violent attack left her bruised, traumatised, and HIV-positive.

Atieno's early life was marked by adversity. After losing her mother at 14, her education was cut short, and she was coerced into marriage by her father and stepsisters. Still a child herself, she became pregnant within a year. Her husband, unemployed and alcoholic, squandered their meagre resources and was abusive to Atieno. In the midst of this suffering, she remained the breadwinner, always taking on odd jobs. When she pleaded with her family to help, she was met with typical dismissive advice: "Stay, be patient, pray, build your home; there are no greener pastures; beating is part of any marriage."

Fearing for her safety and that of her unborn child, Atieno fled to Migori. There, she earned a living as a housemaid, finding brief respite with a compassionate employer until her daughter was born. Life in the Oruba slums followed, where she juggled jobs washing clothes, fetching water, and cleaning homes. Her situation briefly seemed to improve with a new relationship and two more children, but it crumbled when she discovered the man was already married, and his wife threatened her life. Fearing further violence, she escaped with her children to hide.

With no education or job and three daughters depending on her, Atieno found hope with the Amua Mama Initiative, which supports abused women. Amua, means decide in Swahili. The name reflects the initiative's work towards women's self-determination and autonomy, encouraging them to make vital choices about their health, education, careers, and relationships. Under Phoebe Kefa's mentorship, Atieno began to see a path forward. "Phoebe was my solace," Atieno shares. "She helped me realise that I have daughters to care for and living with HIV wasn't the end." This newfound support offered her a chance to rebuild and foster a safer future for herself and her children despite the shadows of her past.

Phoebe Kefa, a 58-year-old volunteer, is a catalyst for change in her community, supporting women and children affected by assault, rape, or domestic abuse while helping them seek justice. Alongside the Amua Mama Initiative, she teaches vocational skills like tailoring.

Kefa's memories of youth starkly contrast with her mission: she recalls oppressive mantras that women should be subservient and endure violence to learn. Despite her struggles with infertility and societal scorn, and with the support of her husband, she created a refuge of women facing abuse. Facing backlash for allegedly "poisoning their women," Kefa and her husband relocated to Migori's Oruba Centre. Here, her work expanded, aiding hundreds and continuing her advocacy against deep-rooted gender biases.

Since 2019, Jane Auma, lawyer and CEO of Amua Mama Initiative, has transformed the lives of 65 women in Migori, especially at Oruba Centre. Initially believing only uneducated women suffered

abuse due to lack of choice, Jane's perspective changed after her own harrowing experience. When she tried to leave their toxic relationship, her then-husband conspired to have acid poured on her face. She spent two years in the hospital and faced a justice system that failed to prosecute her case. "The justice system has failed women," Jane states. "If cases were handled without corruption, we could eliminate repeat offences and reduce assaults."

According to UNICEF, one in three women globally faces physical or sexual violence in their lifetime — gender-based violence spikes during crises, driven by lack of education and poverty. Many women endure in silence, often blamed for their plight. Gender norms assign women tasks like fetching water, cleaning, cooking, and nurturing, exposing them to violence due to the uneven distribution of resources like water, sanitation, and hygiene (WASH). The 2014 journal article *Violence, gender and WASH* highlights the rising reports of WASH-related violence, yet documentation remains insufficient globally.

"There is no effective policy on water and sanitation," Jane stresses. "Policymakers must listen to communities, and larger organisations need to collaborate with local initiatives to pass relevant bills." She also highlights the lack of funding for initiatives like Amua Mama, noting that WASH budgets do not reach the community level and that most funded organisations fail to address women's and girls' issues intimately.

These problems are compounded for women living with a disability. Mary Atieno, a 43-year-old woman who developed a disability while young, faces daily challenges with the sanitation facilities in her community. The shared toilets in the slum are difficult to access and urgently need repairs. Mary explains: "As a woman with a disability, I use a portable iron seat for the toilet, which is in a dire state." Her vulnerability is heightened at night when she must be highly cautious to avoid predators. "Anything can happen to me in my vulnerable state," she adds, wishing for cleaner and safer sanitation.

Mary Atieno is soft-spoken, kind, and always smiling despite her struggles. Her inspiring demeanour and unwavering positivity captivate those around her. After escaping an emotionally abusive relationship, Mary found solace and support through the Amua Mama Initiative. With their training, she now sews from her home in Oruba while raising her 16-year-old son.

Women like Mary, Jane, Kefa and Ruth demonstrate vulnerability, compassion, love, care, and a nurturing spirit, qualities that empower them as they raise the next generation. In stark contrast, many men feel compelled to exert power, authority, and violence. What if men embraced women's nurturing qualities? Could this be the key to reducing violence against women?

Gender-based violence must be stopped. The women of the Amua Mama initiative inspire each other, support one another, and undergo a rebirth with each new chapter of their lives. They cultivate positivity and hope for a kinder world. Their next goal is to extend their counselling to boys in schools and men in the community, fostering empathy and enabling better care for their mothers, sisters, children, and wives. "I think it all narrows down to how we raise our boys," says Phoebe Kefa. For example, "Mary has raised such a wonderful son — caring, compassionate, and so loving. Not only does he respect his mother, but everyone he interacts with."

“I think it all narrows down to how we raise our boys.”

Phoebe Kefa



Mary Atieno (right), who lives with a disability and is a survivor of violence, makes a living through sewing at her home in Oruba. Atieno also raises her 16-year-old son.

“The justice system has failed women.”

Jane Auma



Jane Auma, scarred by violence, has helped 65 women find a safe space.

“I was raped while fetching water one evening.”

Ruth Atieno



Left: Ruth Atieno values the safe space she has created for her girls and hopes for a kinder world.
Right: Phoebe Kefa has spent her life helping women leave abusive environments and start their lives anew.



“Larger organisations need to collaborate with local initiatives to pass relevant bills.”

Jane Auma



Left: Jane Auma, Phoebe Kefa, and Ruth Atieno. Right: Phoebe Kefa shows her niece how to sort bananas from her shamba (farm).



A tale of two rivers

BY **Pius Sawa**, UGANDA



(1)



(2)



(3)

“We wash the sand with clean river water to find some gold.”

Hellen Sambaya

(4)



“The floods have swallowed most of the land near the river.”

Phanice Mmbone



(5)

- (1) An older woman collecting shelled rice into sacks for drying and milling.
- (2) Sixteen-year-old Consolata Atieno in her family rice farm in Busuna village. She misses school to tend the farm.
- (3) Mature rice ready for harvest in Busuna village, Eastern Uganda.
- (4) An elderly widow cultivating her rice farm in Busuna village, near River Malaba.
- (5) River Yala in Western Kenya, suffers from the impacts of livestock and sand mining.

Two rivers, two countries, connected by shared challenges—a snapshot of the entire Nile Basin. Amidst climate change and environmental degradation, women along the Malaba and Yala rivers fight daily to secure food for their families. Their struggles form a mosaic of determination and survival.

It is early on a sunny Monday morning in Busuna village in Uganda's Tororo District, through which the Malaba River flows. Sixteen-year-old Consolata Atieno uses a slasher to cut tall grasses, separating her family's rice blocks. "The teacher sent me home for school fees, but my mother was not there. She has taken my elder sister to the hospital, so I came here to help on the farm," says Consolata. One block of their rice farm is ready for harvesting, while the other two are a few weeks from maturity.

Nearby, an older woman in her late seventies weeds her young rice farm, months away from harvesting. Down the path, three women work on Joseph Okello's farm, uprooting weeds and cultivating with small hoes. Further along, two older women shell rice while two young men load sacks onto their shoulders for transport.

In Kenya, Hellen Sambaya, a mother of six, works along the River Yala with other women to search for gold. "We collect sand from the gold harvesters here in Litambiza village, Kakamega County," Hellen explains. These women recycle the leftover sand after men have extracted gold.

Stories of determination

Hellen has been earning a living from River Yala for over ten years, discovering gold deposits around the river. "We find the remains of the sand that the miners have already processed, then we wash the sand with clean river water to find some gold," she explains. On a good day, she earns up to 2,000 Kenyan shillings (around 15 USD). "Gold mining is better than working on someone's farm, where I am paid only 250 shillings (2 USD) for a whole day's work," Hellen adds. With her earnings, she has managed to buy a dairy cow, chickens, and goats. Hellen used to grow vegetables and sugarcane along the riverbanks until floods started swallowing up the farms.

Meanwhile, in Uganda, Scovia Awori has earned 5,000 Ugandan shillings (about 1.5 USD) for working on someone's rice farm for a few hours, either weeding or harvesting. The rice farms are owned mainly by men who rely on cheap female labour. "Women use their earnings to feed their children, pay school fees, and buy livestock like goats and cows, which are good investments," says Richard Obbo, Busuna 'B' rice farm supervisor.

Betty Awor, a mother of 12, has leased three acres of rice fields to support her family. "Rice farming is good because when the harvest is good, I can get ten bags of 90 kilos from one acre, and we sell one kilo at 2,500 Ugandan shillings (0.7 USD). This has enabled me to look after my children and husband," Betty explains. She pays the landowner one sack of rice after harvesting and is allowed to use the land for a whole year.

These stories are of tremendous difficulty, yet they are not unique. They reflect the challenges hundreds of women face in Kenya, Uganda, and the Nile Basin, compounded by environmental risks that ultimately threaten their livelihoods.

The threats to survival

In its 2016 Hazard, Risk, and Vulnerability Profile, the Tororo District identified sand mining, conversion of wetlands into cropland, and riverbank encroachment as common forms of environmental degradation. These issues extend beyond Tororo District, affecting the entire Nile Basin. According to the United Nations Environment Programme (UNEP) report *Sand and Sustainability: 10 Strategic Recommendations to Avert a Crisis*, sand mining

accelerates the erosion of riverbanks, causing rivers to change course and destroying nearby farmland.

Activities like gold mining can be environmentally taxing. However, women are more likely to engage in sustainable practices due to their roles as primary caregivers. The UN Women report *Turning Promises into Action: Gender Equality in the 2030 Agenda for Sustainable Development* highlights that conservation efforts are more successful when women are involved in environmental management.

On the agricultural side, climate change has caused floods that have reduced arable land. "The floods have swallowed most of the land near the river. You cannot grow any vegetables when the rains begin," says Kakamega farmer Phanice Mmbone.

In Busuna village, farmers have abandoned rice farms close to River Malaba due to flooding. "We are now three miles away from the river," says Richard Obbo. "The water is too much; it can cover a tall person. That is a disaster for farmers around here."

Faced with these challenges, communities are seeking solutions to mitigate the impact of climate change. Joseph Okello proposes digging trenches to manage the flooding. "If the government could dig two big trenches down there, the water wouldn't reach our rice fields," he suggests. Obbo supports this, explaining that the confluence of River Malaba with another river causes severe flooding during the rainy season, blocking the flow of water and inundating farms.

Wetlands and swamps naturally mitigate floods by absorbing excess water. However, increased population and urbanisation have led to encroachment on these crucial water retention areas. According to the *Daily Monitor*, governments have started addressing these issues by evicting people from wetlands and swamps to mitigate flooding. Yet, evicting people without providing alternative livelihoods can lead to further socio-economic challenges, necessitating comprehensive solutions that balance environmental restoration with community welfare.

Supporting sustainable alternatives

To address these issues sustainably, Dr Stella Wanjala, co-founder of Women in Water and Natural Resource Conservation, suggests providing alternative livelihoods to allow riverbanks and wetlands to regenerate.

"We know that some women are always farming on the riverbanks. They earn their livelihoods but in a destructive way," Dr Stella warns.

"Governments and donor agents should provide alternatives like poultry farming or beekeeping. They can sell honey, eggs, and poultry to generate money that can help them."

The intertwined stories of the Malaba and Yala rivers and Consolata, Hellen, and Betty illustrate the critical intersection of climate change, environmental degradation, and food security. As they strive to secure food for their families, these women highlight the importance of supporting community-driven and female-led environmental initiatives, ensuring a sustainable and equitable future for the people of the broader Nile Basin.

If this support continues to be lacking, the women of the rivers will continue to struggle and provide, to the detriment of the river and, in the long term, their own. As Dr. Wanjala cautions: "Yes, they earn a living, but for how long?" **TN**

TOGETHER STRONG: THE FIRST FEMALE FARMERS' UNION IN UPPER EGYPT ADVANCES FAIRNESS AND EQUALITY

BY **Sara Gamal, EGYPT**

The stories of Fawzia, Mona, and Hanaa offer a glimpse into the struggles of Egyptian female farmers: invisible work, wage discrimination, lack of land ownership, harassment and violence. Yet, their stories also embody the determination of women across the Nile Basin: They create structures that bring justice, fairness, and dignity.

Around 100 kilometres north of Cairo, Fawzia F., 55, sits near a canal in Egypt's Gharbia Governorate, calling out "Honey-sweet apples." Since dawn, she has balanced a large aluminium container on her head while gathering apples and carrying vegetables for her family's lunch — a snapshot of her unacknowledged daily labour.

Since childhood, Fawzia has worked in her family's fields and home, planting, harvesting, selling produce, raising poultry, and making cheese and butter to sell. Yet, her identity card lists her only as a housewife. This invisible work — the unpaid labour of household chores, caregiving, and other essential tasks performed by women like Fawzia—receives no financial compensation, social recognition, or access to protections like health insurance, retirement benefits, or paid leave. This perpetuates economic dependence and limits opportunities for education, professional development, and personal growth. The physical and emotional toll of this continuously unacknowledged labour can lead to long-term health issues and decreased quality of life despite its critical role in the economy.

After her father's death, Fawzia learned he had divided his land among her male siblings. This did not provoke anger in the woman who spent her life working on land that was not hers. "Awayedna,"



Hanaa Abdel Hakim, founder and head of the first union for female farmers in Upper Egypt. (cc) Personal picture

she says, meaning, "these are our traditions." These customs result in only 1.8 percent of rural women owning land, half of whom co-own it with others. According to the Food and Agriculture Organisation (FAO) 1999 data, women in Egypt own only 5.2 percent of all agricultural land. More recent research published in *Feminist Economics* in 2020 highlights significant disparities, with women owning 20 percent of land titles in the reclaimed desert areas compared to just two to six percent percent in Egypt's traditional lands. In addition to these low ownership rates, women often lack control over their land, deferring decisions to male relatives. Another striking disadvantage, according to the 2021 Egypt Family Health Survey (FHS), 33 percent of women working in the agricultural field did not get paid for their work, in comparison with 2.9 percent of women working in non-agricultural fields.

On 3 December 2017, Egypt amended the law to protect women from having their inheritance rights usurped. Article 49 of the Egyptian Inheritance Law allows imprisonment and fines for those denying heirs their lawful share. Despite these legal advances, women's inheritance is often still usurped through legal manoeuvres and waivers favouring males, as was the case with Fawzia.

"I hope the day will come my village is free from violence and discrimination against women."

Hanaa Abdel Hakim

Be it in Lower or Upper Egypt, women's struggle for fair treatment extends to daily wages and working conditions, as seen in Mona's story. Mona S., 34 years old, gathers grape crops in the desert hinterland of Minya Governorate, 250 kilometres south of Cairo. She and other women meet before dawn to be transported in an open cargo truck to the farm, earning 60 Egyptian Pounds per day (USD 1.2)—half the wage of their male counterparts.

When Mona protested the wage gap, the labour contractor dismissed her concerns, claiming men deserved double the pay because they received double the inheritance under Islamic law and were the household providers. He told Mona she should be grateful for the job as she was easily replaceable. Facing the threat of losing her livelihood, Mona, who supports her children alongside her husband, had no choice but to accept the reality.

Taha Al-Amida, groundbreaking change

In Taha Al-Amida, a village in Minya Governorate, female farmers start their day early. Before dawn, they wait to be selected by a labour contractor, who then transports them to distant farms. After a three-hour journey, the women work from sunrise to sunset for half the wage of their male counterparts, with the contractor pocketing a quarter of their already meagre pay.

Hanaa Abdel Hakim, a farmer and activist from Taha Al-Amida, knows these systemic issues well. “I know well what female farmers endure,” she says. For example, women in her village are denied land inheritance under the guise of preserving family property, with ownership transferred to males. After her father’s death, she faced the same challenge. Abdel Hakim legally fought to secure her inheritance and succeeded—a fortune not shared by most female farmers in Egypt.

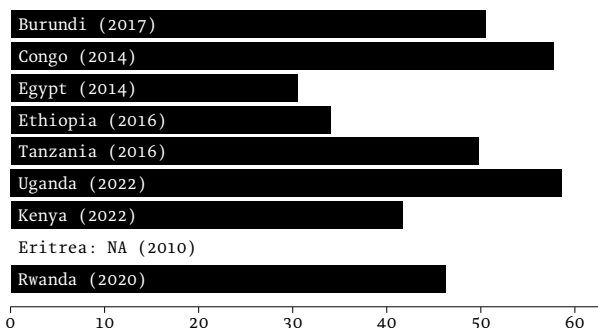
This is why and where Abdel Hakim decided to start a union for female farmers despite cultural resistance in her village. She faced opposition from male leaders and farmers who saw her advocacy for women’s rights as a threat. Abdel Hakim’s determination to continue fighting for women’s rights stems from personal experience and the continuous tragedies she’s witnessed. She recalls the murder of a 13-year-old girl by her brother, who claimed to be “avenging the family honour” after the girl was raped while working on a farm. Such harassment and assault against female farmers are common, with perpetrators often acquitted or given lenient sentences.

Violence against women manifests in many forms. In Egypt, three out of ten women aged 15-49 have experienced abuse from their husbands, yet only 37 percent of them reported being injured, according to the 2021 Egypt Family Health Survey. In Abdel Hakim’s village, harmful practices like female genital mutilation (FGM) and early marriage remain prevalent, both strongly linked to education levels. The same survey reveals that 86 percent of ever-married Egyptian women aged 15-49 have undergone FGM. The data indicates a clear trend: higher education correlates with lower rates of FGM. Mothers with access to education and stable income are significantly less likely to subject their daughters to FGM. The likelihood of daughters being circumcised drops from over 45 percent to 18 percent when a mother progresses from having no education to completing secondary school or higher.

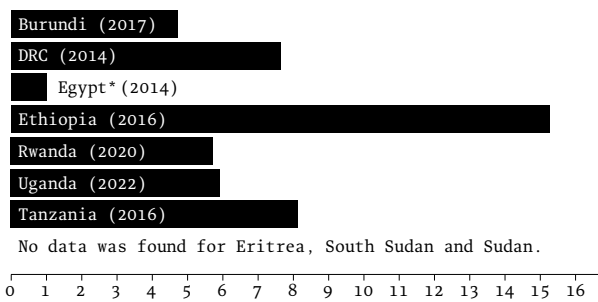
This correlation extends to child marriages as well. In Egypt, 7.1 million girls were married before the age of 18, representing 16 percent of all women aged 20 to 24, according to The Child Marriage Monitoring Mechanism. The incidence of child marriage decreases from 31 percent among women with no schooling to just under 14 percent among those who have completed secondary education or higher.

Female farmer-mothers face additional hardships, particularly in finding safe childcare. Legal discrimination exacerbates these challenges. Female farmers are excluded from Article 97 of the Labour Law No. 12 of 2003, which denies them maternity leave, breastfeeding hours, and nursery access. Abdel Hakim recounts tragic stories of mothers who lost their children due to the lack of safe and accessible childcare. In response, Abdel Hakim’s Small Farmers’ Union of Taha Al-Amida established a nursery for the children of female farmers in Taha Al-Amida, providing a safe place for a nominal fee.

Percentage of women aged 15-49 who have experienced any form of emotional and/or physical and/or sexual violence by their spouse/partner in the Nile Basin:



Percentage of women aged 15-49 with sole land ownership in the Nile Basin:



No data was found for Eritrea, South Sudan and Sudan.

* (sample of women focused on ever-married women only)
Source: Nile Basin countries Demographic and Health Surveys

Although the union’s activities are limited by the low wages earned by its members, who barely make enough to feed their families, Abdel Hakim tirelessly campaigns against harmful customs, raising awareness and gaining the trust and membership of 700 women, primarily farmers.

Part of these efforts is the union’s facilitating the issuance of new identity cards for female farmers, granting them the right to social insurance. “The cost of the ID card is high, and with a daily income of 60 pounds, I can’t afford to pay 300 pounds to get one,” says Nadia Khalaf, a union member. Through the support of the union, she was able to “obtain a personal ID card that lists my occupation as an agricultural worker.”

The union also supports women by developing their skills and training them to start small projects to improve their income, such as sewing and making cleaning products. “I have attended different workshops offered by the union, such as on making laundry detergents, making sweets, sewing, and poultry farming,” says Rasha Mohamed, a union member. “I want to learn about all of them to see which one suits me best. I want to start my own project and improve my income.”

Abdel Hakim remains hopeful. Her journey, which started over 30 years ago as a literacy teacher, led her to establish the first female farmer union in Upper Egypt. She wishes to secure the necessary funding for the union to increase services and provide support to women, helping them overcome the difficulties they face.

“I hope women in Egypt, especially female farmers, will enjoy a better life and fair working conditions,” says Abdel Hakim. “I hope the day will come when I can proudly say that my village is free from violence and discrimination against women.” **TN**

ZURI: A JOURNEY TO GIVE BACK BLOSSOMS IN SUPPORT AND WELLBEING

Just 50 kilometres from Uganda's capital, Margaret Kigozi's 300-acre Zuri Model Farm stands as a beacon of sustainable agriculture and community progress, transforming inherited land into a thriving enterprise that benefits both the environment and local residents.

Left: Margaret Kigozi at Zuri Model Farm.

Right: The "mother garden" at Zuri Model Farm, with a replanted forest in the background, restored through the efforts of the community and Margaret Kigozi.



When Margaret Kigozi inherited 300 acres of land following her husband's passing, she saw a rare opportunity to build something enduring. She established Zuri Model Farm, a pioneering agricultural venture 50 kilometres outside Kampala. Spanning nearly 230 football fields, the farm is aptly named Zuri, meaning beautiful in Swahili, as it embodies the beauty of sharing: Sharing knowledge, skill, and support.

Kigozi's life story is deeply intertwined with the land she now nurtures. She was born into a Ugandan family with strong agricultural roots, with her father being a coffee farmer. Educated at Makerere University, one of Africa's most prestigious institutions, Margaret initially pursued a career in medicine. As a physician, she served in Zambia, Kenya, and Uganda and later took on influential public roles, including a decade-long tenure at the Uganda Investment Authority. These experiences equipped her with invaluable leadership and business skills that would later become instrumental in her agricultural pursuits.

“It's a real shame that people lack food in a country with fertile soils and conducive weather.”

Margaret Kigozi

In 2012, Kigozi began her agricultural journey with maize and soybeans, but the results were disappointing. Undeterred, she recognised the growing need for food during the COVID-19 lockdowns and expanded her farm to include crops like cassava and sweet potatoes. This early perseverance laid the foundation for her broader vision of sustainable agriculture.

A commitment to regenerate

At the heart of Zuri Model Farm lies a commitment to sustainable and regenerative agriculture. Kigozi employs intercropping — a method where multiple crops are grown together on the same plot of land. This technique maximises land efficiency, enhances soil health, boosts biodiversity, and improves crop yields.

Kigozi has carefully chosen crop combinations that benefit from each other's growth cycles and nutrient needs. For instance, she pairs legumes with cereals to naturally increase soil nitrogen levels, reducing the need for chemical fertilisers. Fast-growing cover crops are also planted to protect the soil from erosion and out-compete weeds. This diversified approach has cultivated a resilient farming system less vulnerable to pests and diseases.

Beyond the farm's boundaries, Kigozi's methods have set a standard for farmers throughout the region. The biodiversity promoted by her intercropping techniques has transformed Zuri Model Farm into a sanctuary for pollinators, including bees and butterflies, essential to the broader ecosystem. Moreover, her farm contributes to climate change mitigation efforts by sequestering carbon in the soil.

But Kigozi's ambitions extend far beyond growing crops. In a country where nearly three in ten children under five suffer from chronic malnutrition, she has made food security her mission. According to the 2022 Global Hunger Index, the situation in Uganda is classified as “serious”. A UN World Food Programme report indicated that approximately 16.5 million Ugandans faced food insecurity as

of January 2023. “It's a real shame that people lack food in a country with fertile soils and conducive weather,” Kigozi observes. The farm's innovative practices demonstrate how farming can be adapted to meet modern challenges, ensuring sustainability while addressing food scarcity.

Bonny Johnson, the manager of Zuri Model Farm, emphasises the importance of these sustainable practices. “Achieving food security requires innovative approaches,” he explains. “By using intercropping techniques and recycling organic matter like dry banana leaves, we enrich the soil and boost the productivity of our coffee trees. Additionally, harvesting rainwater during the dry season ensures our farming remains sustainable even in challenging conditions.”

A journey to revitalise

The vision of Zuri Model Farm goes beyond agriculture; it is a beacon of community support, particularly for women. The farm employs dozens of women on long-term contracts, with many others working as casual labourers during peak seasons. These women perform crucial tasks such as pruning, weeding, and harvesting.

Zulaina Kyokushaba, a mother of seven, works in the “mother garden” at Zuri Model Farm, where she helps cultivate plants specifically for propagation. Reflecting on her experience, Zulaina says: “I now believe that one day I can also establish my own farm, employ others, help the community, and earn money.” The farm provides immediate employment and inspires long-term aspirations among the women who work there.

Adding value to raw agricultural products is another critical focus at Zuri Model Farm. By transforming primary crops into higher-value products, Kigozi increases farm revenue and creates new jobs for the community. The farm has become a destination for agricultural tourism, offering educational tours and workshops that further extend its impact.

Kigozi's commitment to community development is also evident in her personal conservation efforts. Partnering with the Uganda National Forest Authority, she collects and distributes seedlings to residents, teaching them how to replant forests decimated by fuel harvesting. These efforts are beginning to bear fruit as wildlife like monkeys and diverse bird species return to the rejuvenated forests.

A staunch advocate for women's rights, Kigozi is also a driving force behind Akina Mama wa Africa, a pan-African organisation dedicated to women's leadership and policy advocacy. She proudly identifies as both a farmer and a feminist, believing that education and economic independence are the cornerstones of agency. “Pursue education whenever the opportunity arises,” she advises the women of the region.

As for lessons learned, an important one for Kigozi is patience. “You need to be aware of uncertainties,” she says. For example, she anticipated a good mango harvest this season, only for the young flowers to be blown away by winds and heavy rains. “But you don't give up because you know next season can be better,” she adds. The knowledge that things can be better is the essence of patience.

Margaret Kigozi's story is not just one of personal achievement but also of using her privileged background to create opportunities for others. “The lives I have touched are my legacy,” says Kigozi. Her journey from medicine to agriculture is a testament to how access and opportunity can be leveraged for the greater good. By transforming her inherited land into a sustainable farming enterprise, Kigozi has created jobs and built a model of agricultural resilience that benefits her entire community. **FN**



*Surrounded by water,
deprived of access:
The paradox of
scarcity at Lake Victoria*

Despite the proximity of one of Africa's largest freshwater lakes, millions around Lake Victoria face a striking paradox: water scarcity. This challenge profoundly affects the physical, psychological, and economic wellbeing of women and girls in particular.

While water scarcity is expected in Tanzania's arid regions, it is less understandable near abundant sources like Lake Victoria. As the largest lake in Africa, Lake Victoria is a vital resource for East Africa, supporting over 30 million people across Tanzania, Kenya, and Uganda. According to the Lake Victoria Fisheries Organisation (LVFO), the fishing industry alone sustains the livelihoods of three to four million people.

Despite its importance, Lake Victoria faces issues such as pollution and inadequate sanitation. These issues have both localised and far-reaching impacts: local communities face water scarcity, which severely undermines their wellbeing by affecting health, safety, and economic stability, and the entire Nile Basin is affected, as Lake Victoria is the primary source of the White Nile.

The Tanzania 2020-2021 National Panel Survey (NPS) reports that 20 percent of Tanzanian households lack access to an improved source of drinking water during the rainy season, rising to 33 percent in the dry season. Improved sources include piped water, standpipes, tube wells, protected wells and springs, bottled water, and rainwater.

“50 percent of Tanzanian households lack sanitary latrines.”

Dr Martin Odhiambo of the Community Alive Organisation in Musoma highlights that many Tanzanians resort to using contaminated surface water laden with bacteria and human waste. “This unsafe water is often their only option for drinking, bathing, and washing clothes, contributing to the spread of diseases.” The situation is exacerbated by open defecation, with the NPS indicating that 50 percent of Tanzanian households lack sanitary latrines.

The costs: Health, time and money

The contamination of water sources leads to numerous water-borne illnesses. Malaria, diarrhoea, and cholera all affect Tanzanians. Schistosomiasis, another severe health threat, spreads when infected individuals release parasite eggs into freshwater through their faeces or urine. These eggs hatch in the water, continuing the infection cycle and affecting those in contact with the lake. The World Health Organisation (WHO) estimates that 90 percent of those needing treatment for schistosomiasis live in Africa.

These health challenges also impose significant economic costs, further deteriorating communities' wellbeing. According to The World Bank's 2022 Tanzania Economic Update, inadequate WASH (water, sanitation, and hygiene) access costs Tanzania over USD 2.4 billion (TZS 5.6 trillion) annually. This equates to 3.2 percent of the 2022 Tanzanian DGP or about USD 38 (TZS 88,000) per person. The report notes that over a billion days per year are lost in Tanzania due to sickness and access issues related to poor WASH.

The gendered double burden

Due to pollution and inadequate sanitation, Tanzanians living on the shores of Lake Victoria face severe water scarcity, with women and girls bearing the brunt. The 2022 Tanzania Demographic and Health Survey and Malaria Indicator Survey found that in 78.9 percent of households, women aged 15 and older are responsible for collecting drinking water, often walking eight kilometres or more.

This limits their time for education and economic activities and exposes them to significant risks. The World Bank's 2022 Tanzania Economic Update highlights the gendered consequences of this task, linking it to musculoskeletal disorders, physical injuries, exhaustion, and dehydration. Carrying heavy water loads is associated with pelvic floor dysfunction, urinary and faecal incontinence, and an increased risk of lower back pain with every additional kilogram.

The Tanzanian Gender Networking Programme (TGNP) found that inadequate access to safe, sufficient, and affordable water has led to higher rates of gender-based violence and school dropouts among girls. Families unable to afford water or school fees send their daughters to collect water, exposing them to violence and infections. Despite these dangers, they have no choice; water is essential for survival.

Mwanza-based Human Rights activist Edgar Masanja explains: “In a household where money is scarce, daughters and mothers have to spend several hours each day walking to get water from pumps. They run the risk of being attacked or raped.” This daily struggle for water profoundly impacts women's safety, physical health, and psychosocial wellbeing.

Nyambona Karabana, from Mugango Village in the Mara region, exemplifies this struggle. Karabana faced numerous challenges to pursue her education. At 14, she travelled over two and a half hours each morning to reach school, often arriving late and facing punishment. At home, she woke early to fetch water from a pump two kilometres away, which could take over an hour and expose her to dangerous wildlife. According to the Humanitarian Charter and Minimum Standards in Humanitarian Response, the furthest distance any household should be from the nearest water point is 500 metres. Additionally, the waiting time at a water source should be at most 15 minutes and filling a 20-litre container should take at most three minutes.

“My dream to become a secondary teacher was shattered.”

Nyambona Karabana

When she turned 16 years old, Karabana was sexually abused by the pump manager. When Karabana realised she was pregnant, she informed the pump manager, who first denied his involvement and later disappeared. President John Magufuli had prohibited pregnant students from continuing their studies in government schools. “My dream to become a secondary teacher was shattered,” she says, “I knew I was going to be expelled from school and from home too.” Karabana attempted suicide.

A truth to resolve a paradox

Living near Lake Victoria should mean something other than grappling with water scarcity. Addressing this paradox requires concerted efforts. The sixth Sustainable Development Goal emphasises universal access to safe drinking water and sanitation, improved water quality, and protection of water-related ecosystems by 2030.

Tanzania has made strides towards this goal, particularly in the Mara Region, with TZS 15.7 billion (USD 6.76 million) invested in water projects over the last two years, including water tanks, pumps, and kiosks. “The government aims to develop water projects to



Uganda, Jinja, Victoria Nile above the Rippon Falls, 1936.
 (cc) Matson Photo Service / Library of Congress Prints and Photographs Division Washington, D.C.

meet the national policy of water distribution within 400 metres and to alleviate the burden on women,” says Engineer Edward Sirona, Rural Water and Sewerage Authority Manager in Musoma District.

“The wellbeing of millions across the Nile Basin is intrinsically tied to the health of Lake Victoria.”

Between 2015 and 2021, Tanzania reduced the percentage of households without sanitary toilets from 67 percent to 50 percent. At this rate, achieving universal access may take another 18 years.

Without improvement to WASH, Tanzania will continue to face economic losses, which by 2030 could reach USD 4 billion in today’s value of money. The gains anticipated if basic WASH is achieved for everyone by 2030, according to the World Bank’s 2022 Tanzania Economic Update, are halving WASH-related diseases and deaths and reducing losses to USD 1.1 billion per year. Fast-tracking this goal to 2025 could lower losses to USD 820 million annually. The most ambitious scenario, featuring universal high-quality water and sanitation by 2030, could reduce losses to USD 330 million annually by 2030 and cut diseases and deaths by 80 percent.

Resolving WASH issues reduces waterborne diseases, bolsters safety, and generates economic benefits, with every Tanzanian Shilling invested yielding fourfold returns.

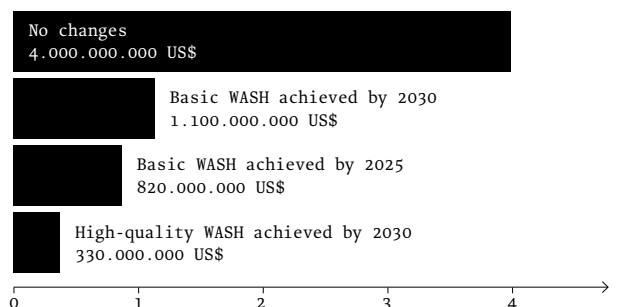
However, focusing on infrastructure alone is not enough. “It is essential to focus on comprehensive health education,” says Dr. Odhiambo. Proper water and sanitation infrastructure can reduce negative impacts, including the gendered burden, but the actual positive impact requires cultural and social transformations.

For Nyambona Karabana the future looks brighter. Under the leadership of President Samia Suluhu, East Africa’s first female president, the Back to School Programme was implemented. Now, Karabana is enrolled at the Musoma Folk Development College, pursuing both vocational training and an academic programme as she prepares for her qualifying test by September. She has revived her ambitious dream of becoming a teacher.

The wellbeing of millions across the Nile Basin is intrinsically tied to the health of Lake Victoria. Issues of pollution and contamination create the paradox of living near a vast water source yet suffering from water scarcity. Resolving this paradox lies in a simple truth: healing the lake through investments in WASH services not only restores this vital resource but also enhances health, economy, and potential.

This same truth can help resolve the gender burden. Healing the wounds that women suffer from improves the overall health of communities and unlocks economic potential for the future. Together, these efforts can create a new narrative of restoration, equality, and a brighter, more equitable future for all. **TN**

Reduction in annual costs related to WASH (Billion US\$)



Source: Tanzania Economic Update, 2022. © The World Bank

TOXIC WATER, UNEQUAL IMPACT: THE GENDERED TOLL OF INDUSTRIAL POLLUTION

BY **Sharon Musaki**, UGANDA

In Uganda, the discharge of industrial waste into the River Nile has created a public health crisis, particularly affecting women's urogenital health. Historically overlooked, these health risks underscore significant environmental injustice and call for urgent intervention.

In Central Uganda, factories discharge waste directly into water sources, severely contaminating streams like Naava, Misiri, and Nakwaga. These streams flow into the Nile, playing a crucial role in its hydrological cycle and directly impacting nearby villages, such as Naminya village in Njeru.

Robinah Byegajye, a businesswoman from Naminya, recounts the severe health impacts faced by women, including urogenital health issues and infectious diseases. "The factories have contaminated the Naava and Misiri water streams. Our water is so polluted that we can no longer consume it."

"When I first contracted vaginal infections, I was pregnant with my fourth child, and my baby was at risk. Initially, I thought it was witchcraft, but a medical centre diagnosed it as an infection," she shares.

Byegajye's story is not unique. Medical professionals like Dr Mondo Ben David, an obstetrician/gynaecologist at Jinja Regional Referral Hospital, confirm the broader implications of such contamination. He emphasises the significant impact of polluted water on women's health, particularly regarding vaginal infections. Dr Ben David explains that direct contact with contaminated water exposes women to harmful microorganisms, including bacteria, viruses, and parasites.

"These microorganisms can enter the vaginal area, leading to infections such as bacterial vaginosis, yeast infections, and other sexually transmitted infections (STIs)," Dr Ben David says. "When a woman has bacterial vaginosis, the epithelium is damaged, compromising this protective barrier of the vagina. This makes it easier for her to contract STIs from an infected partner because the initial infection from the contaminated water has already weakened her vaginal health." Chronic exposure to contaminated water also weakens the immune system, making women more susceptible to various infections. It often contains heavy metals like lead, arsenic, and mercury, further compromising overall health.

Research confirms Dr Ben David's explanations. In 2023, the Water Research Journal published a study demonstrating that water pollution significantly increases harmful fungi, including those that can cause infections. Certain yeast species are found more often in polluted waters, indicating contamination. Higher pollution levels raise the risk of infection, with more dangerous yeast species posing a more significant threat even in smaller amounts.



The upper Naava stream shows black waters, which, according to Sozi Abdu, the second local council (LC2) chairperson of the Naminya zone, are due to factory discharges, 18 February 2024. (cc) Sharon Muzaki / Girls for Climate Action



A resident at an abandoned water source, tapped from the lower Naava stream, 18 February 2024. (cc) Sharon Muzaki / Girls for Climate Action

The impact at the local level is loud, and citizens demand to be heard. Sozi Abdu, the second local council (LC2) chairperson of the Naminya zone, emphasises the urgent need for government intervention. “Factories release polluted smoke and biogas at night, making it impossible for women to cut banana leaves or for animals to eat grass. Washing clothes is futile as they come out dirtier due to the black substances from the factories,” he explains. “Sometimes, we don’t have national water for a week and are forced to use the contaminated stream water. This has caused numerous health issues and the death of animals,” the LC2 chairperson adds.

Despite writing letters of concern to the different government institutions, including the National Environment Management Authority (NEMA) and the Speaker of the Parliament of Uganda, they have yet to receive a response. In one of their petitions, the community of Njeru Central Division and Wakisi Division, Buikwe District, outlined the villages that are at risk and the factories causing the pollution. The petition even mentions that one company’s Environment and Safety personnel “confirmed that there are some leakages of water from the factory that are not yet handled, and it goes out into the streams.” Despite this, action has yet to be undertaken.

Girls for Climate Action (G4CA), a civil society organisation working to encourage ecology and climate education in Njeru municipality, published a Situational Analysis Report on Water Pollution in Naava and Misiri Water Streams/Water Sources. The study, conducted from October 2023 to February 2024, collected and analysed industrial wastewater samples from different effluent discharge points. The key findings revealed that on a normal day, between one and three water quality parameters did not conform to NEMA standards. On days of waste release, between four and twelve parameters failed to meet NEMA standards. The worst water quality was detected at the NAVA-Kampala Jinja Highway Bridge crossing, with Modern Distillery and Briton Lubricant identified as the highest polluters.

Joanitah Babirye, Executive Director of G4CA, highlights the severity of the water pollution. “This affects everyone, especially women, and disrupts ecosystems, animals, and insects,” Babirye explains.

According to the National Environmental Act 2019, communities have the right to a clean and healthy environment. Ugandan law mandates that factories must be at least 100 metres from a river’s highest watermark, but many factories are much closer. Residents of Buikwe district, where Njeru is located, demand that their voices be heard and their wellbeing be prioritised in decision-making processes. They argue that current procedures are inadequate and fail to address the community’s immediate needs. The National Fisheries Resources Research Institute (Na-FIRRI), which carried out the laboratory analysis requested by G4CA, recommends that “better wastewater treatment practices must be emphasised before discharge into the environment,” as noted in the Summary Laboratory Results Appendix of the Situational Analysis Report.


Babirye stresses the importance of equipping women and girls with the tools to advocate for climate justice, highlighting the urgent need for action to safeguard the community’s wellbeing.

The case of industrial pollution in the Buikwe district highlights the crucial link between environmental health and the wellbeing of communities. Addressing this issue requires



Misiri stream with erosion near the factories, characterised by brown water, 18 February 2024. (cc) Sharon Muzaki / Girls for Climate Action

stricter enforcement of environmental regulations and a commitment to understanding how our actions create these problems. By prioritising health and wellbeing, especially women's, we can safeguard the basic human need for a clean and healthy environment, benefiting the entire community.

Byegajye's experience proves this: "These streams used to provide fresh water that didn't need boiling. Now, chemicals from factories are contaminating them. When I stopped using stream water, my health improved." 

APPENDIX

Water Analysis Test I (On a Normal Day)

MINISTRY OF AGRICULTURE ANIMAL INDUSTRIES AND FISHERIES
National Fisheries Resources Research Institute, P. O. Box 343 Jinja
Head Office +256 434 120484, 121369, 120798; Email: firi@firi.go.ug; URL: www.firi.go.ug



Summary Laboratory Results

CLIENT: Girls for Climate Action SAMPLE TYPE: Industrial Effluents DATE OF SAMPLING: Jan 2024
SAMPLED BY: Technician/NaFIRRI LABORATORY NO:001 ANALYSES COMPLETION: 13/1/2024

Method code*	Parameter	NAVA		Millennium Tiles		Gold Star		Victoria		Teta	NEMA, MPL2020	
		Pramukh	G/water	Point Source	Point Source	Misiri	Mixture	Free flow	Point Source			Mixture
10300 D	DO (mg/l)	11.1	10.1	13.4	13.9	11.9	8.7	13.9	15.8	12.4	12.5	-
2550 B	Temp (°C)	23.9	23.8	23.9	24.0	24.3	23.6	23.4	22.4	23.1	22.8	-
4500 H	pH	8.1	8.5	8.1	8.0	7.1	7.6	8.0	7.5	7.6	8.4	5 – 8.5
2510 B	EC (µ/cm)	261.9	265.3	377.0	250.6	4381.6	108.9	240.4	129.3	129.0	425.1	1000
2050 A	Salinity (ppt)	0.1	0.1	0.2	0.2	11.9	5.1	2.4	6.0	6.0	21.0	-
1030 F	TDS (mg/l)	176.6	176.7	250.6	237.4	2886.5	161.0	72.7	88.3	87.0	288.2	750
2310 B	Alkalinity (CO3) (mg/l)	384	40	186	184	200	210	218	60	196	238	-
4500-NO3	NO ₃ -N (mg/l)	0.173	0.165	0.16	0.09	0.14	0.15	0.15	0.15	0.03	0.16	10
4500-NO2	NO ₂ -N (mg/l)	0.063	0.021	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.003**
4500-NH3	NH ₄ -N (mg/l)	0.54	0.21	0.25	0.22	0.05	0.04	0.04	0.22	0.28	0.25	0.5*
4500-P B	PO ₄ -P (mg/l)	0.59	0.403	0.22	0.13	0.04	0.03	0.07	0.04	0.06	0.05	2.2
2540 D	TSS (mg/l)	40.5	6.0	12.0	15.0	31.0	35.0	30.0	46.5	107.0	31.0	50

NB -US EPA, 2009; **ISO 15681Standards (EAC, 2014)

General Remarks: Figures in bold are in excess of the maximum permissible limit as per NEMA standard, 2020. Most parameters seem within the range except for some few cases. This is probably attributed to the fact that samples were collected outside the peak discharge period.

Recommendation: There is need to sample during time of discharge.

Henry O. Analyst Date: 13/01/2024

Water Analysis II (Day of Waste Release)

MINISTRY OF AGRICULTURE ANIMAL INDUSTRIES AND FISHERIES
National Fisheries Resources Research Institute, P. O. Box 343 Jinja
Head Office +256 434 120484, 121369, 120798; Email: firi@firi.go.ug; URL: www.firi.go.ug



Summary Laboratory Results

CLIENT: Girls for Climate Action SAMPLE TYPE: Industrial Effluents DATE OF SAMPLING: 27th Jan 2024
SAMPLED BY: Technician/NaFIRRI LABORATORY NO:002 ANALYSES COMPLETION: 30th Jan 2024

Method code*	Parameter	Pramukh + Nile Plastics	Millennium Tiles	NAVA Lake	Briton Lubricant	Modern Distillery + Amazima	NAVA Highway	NEMA, 2020
2550 B	Temp (°C)	28.8	24.5	25.8	23.8	22.3	22.6	-
4500 H	pH	7.5	7.4	7.8	6.7	7.9	3.9	5 – 8.5
2510 B	EC (µ/cm)	267	432	90	1925	2268	2449	1000
2050 A	Salinity (ppt)	0.12	0.21	0.04	1.0	1.23	1.32	0.5
1030 F	TDS (mg/l)	162	284	58	1277	1554	1668	1200
2310 B	Alkalinity (CO3) (mg/l)	119.4	299.4	75.4	1599.4	1899.4	1899.4	80 – 120***
2120 B	Color (TCU)	1.0	0.5	1.5	5.5	6.5	7	5
2130 B	Turbidity (NTU)	93	75	160	1200	1500	3000	30
4500-NO3	NO ₃ -N (mg/l)	1.1	0.7	0.4	0.7	1.5	0.7	10
4500-NO2	NO ₂ -N (mg/l)	0.09	0.07	0.01	0.02	0.01	0.02	0.003**
4500-NH3	NH ₄ -N (mg/l)	6.1	5.9	0.5	4.9	5.5	5.0	0.5*
4500-P B	PO ₄ -P (mg/l)	8.6	11.5	0.8	7.1	9.5	11.9	2.2
2540 D	TSS (mg/l)	27.3	17.3	73.3	1085.0	820.0	2305.0	50

NB -US EPA, 2009; **ISO 15681Standards (EAC, 2014); ***Ideal alkalinity range

General Remarks: Figures in bold show poor conditions beyond the recommended limit (MPL) as per NEMA standard, 2020. The worst wastewater quality was detected at NAVA - Kampala Jinja Highway Bridge crossing with an acidic condition recorded. The highest pollutants were Modern Distillery and Briton Lubricant. All tested physicochemical conditions are indicative of high usage of chemicals portraying a high environmental risk.

Recommendation: Better wastewater treatment practices must be emphasized before discharge into the environment.

Henry O. Analyst Date: 30/01/2024



Women of Ukerewe

Innovate in cooking, challenge the patriarchy and protect resources

BY **Lilian Ruguga, TANZANIA**

On Ukerewe Island, traditionally tasked with ensuring their families' wellbeing through cooking, women are now kindling a fresh flame using local resources. This initiative revitalises kitchens and communities, shifting perceptions and driving a movement to protect the island's scarce resources.

Ukerewe Island is a serene haven amidst the vast waters of Lake Victoria. Beneath its tranquil surface, however, islanders face the harsh realities of daily survival. For the women of Ukerewe, cooking to provide food for their families is a constant challenge.

Debora Rocky, 43, a mother of four and native to the island, describes many women's daily struggles. "The cost of gas is high," she says. "We can't afford to buy a gas stove when we have children who need to eat and go to school."

This stark reality has propelled the community to find sustainable solutions. Leading this transformative movement, the Sauti ya Wanawake Ukerewe, Voice of Ukerewe Women, initiative introduced efficient stoves in July 2023 that significantly reduce the need for firewood, improve health conditions, and are affordable.

Protecting nature and health

Sixtaimelda Katembo, 41, is a small fruit farmer who is both a beneficiary and a member of the initiative. She compares how the decline in natural resources has impacted women's daily lives on the island. "In the past, firewood was abundant," Katembo reminisces. "But now we trek for kilometres just to cook a meal."

Katembo's personal experience reflects a broader environmental trend affecting the Ukerewe. The five-year forestry development plan for the Mwanza region of 2000/2001 indicates that only 2.3

percent of Ukerewe Island is covered by forest. According to Global Forest Watch (GFW), an online platform that provides data and tools for monitoring forests, Ukerewe Island has lost 15 percent of its tree cover from 2000 to 2020. This rate is higher than Tanzania's 11 percent national average.

This loss is not limited to Tanzania: Across the Nile Basin, tree cover has decreased by over 15 percent from 1990 to 2015, according to research by Solomon Gebreyohannis Gebrehiwot, Associate Professor with Addis Ababa University's Water and Land Resources Centre.

Tree cover is essential for ecosystems and human communities. It provides habitats for wildlife, enhances biodiversity, and regulates climate. Trees filter pollutants, improve air quality, produce oxygen, and prevent soil erosion. On Ukerewe Island, tree cover is a lifeline, providing firewood for cooking and heating. Introducing efficient stoves is timely, addressing this scarcity.

"Traditional stoves emit copious amounts of smoke," says Pili Kadegu, 39, Secretary General of Sauti ya Wanawake Ukerewe. Our new efficient ones minimise eye irritation and discomfort while cooking." These stoves are made from locally available materials like potter's clay, cow dung, and ash, making them accessible and sustainable. All that is needed is to "mix them well with water, form bricks, and you have your stove."

A journey towards transformation

Behind these advancements lies a story of determination. Sophia Donald, the Director of Sauti ya Wanawake Ukerewe, explains how the concept originated: "I got this idea from a friend of mine who is an environmentalist. When he explained it to me, I was intrigued."

Left: The women of Sauti ya Wanawake Ukerewe celebrate their efforts with Executive Director Sophia Donald (second from the right).

Donald recounts the journey of initiating change in a remote island community. The challenges were numerous, from scepticism within the community to the physical demands of gathering materials and constructing the stoves. Donald recalls the initial reception of their idea. “We faced questions like, ‘Why should we change what we’ve been doing for generations?’ and ‘How can this simple stove be better than what we know?’

Winning the community’s trust was a gradual process. “We started by training a few women willing to try, and they became our ambassadors. As they shared their positive experiences, more people became interested.”

A future of collaboration

The key was to demonstrate to the community that Sauti ya Wanawake Ukerewe was not imposing their vision but that they were part of the community, working together to find solutions. Donald reflects on this journey. “It wasn’t easy,” she admits, “but we decided to help women because they are the most affected.” Sauti ya Wanawake Ukerewe secured funding from Women Fund Tanzania Trust, an NGO focused on women’s rights and feminist

movement building, under their Haki Mazingira, or Environmental Rights, project.

The influence of this movement goes beyond women. John Mapesa, a 48-year-old fisherman and resident of Ukerewe, reflects on how the stoves have shaped his outlook: “Initially, I had doubts about these stoves. However, witnessing the amount of firewood we saved and the minimal smoke they produced convinced me. Now, not only do we save time and effort, but the air in our home is much cleaner. This has greatly benefited my family and the community.”

In the future, Mapesa wants to engage in initiatives that can create a positive impact. He adds: “I also hope my fellow men will get involved rather than leaving it all to our wives.”

This collaborative initiative, led by women, emphasises the need for shared responsibility in sustainable practices. And the community’s determination and hope drive the progress towards a better future.

“We are trying to empower women to engage in activities beyond the project’s scope. They will be engaging in entrepreneurship ventures of their own,” says Donald. “And we will continue to support them in that.”

On Ukerewe Island, women are not only burden bearers; they are also catalysts for change, positively transforming their communities. **WV**



- (1) Clay and dry cow dung are two ingredients used to make efficient stoves
- (2) Using local resources, women filter ashes to mix with clay soil, a testament to the project’s sustainability and community impact.
- (3) Women mix ingredients to make efficient stoves.
- (4) Women work collaboratively, putting bricks in the chosen kitchen.
- (5) To make an efficient stove fit, saucers are used as measurement tools.

TRADING FISH FOR FREEDOM

by **Winnie Cirino**, SOUTH SUDAN

In Bor, South Sudan, women redefine their roles through the fish trade, breaking away from traditional norms to support their families. Their work sustains their households and strengthens their community's wellbeing, showing how economic independence can reshape lives.



Above and below: Salted and preserved fish spread out in a fish market in Bor, South Sudan.

Along the banks of the Nile River lies the bustling town of Bor. Each day, the sun rises over the vibrant fish markets, where salted, preserved fish are spread out. Amidst this daily hustle, a group of women is reshaping their lives and community through the fish trade, breaking away from traditional gender roles.

One such woman is 40-year-old Abul Ajac, a mother of four whose children are studying in Kakuma camp in Kenya. Ajac began her fish business in 2020 in Bor town to support her children's education. "I joined the business because of my children," she says. "I don't earn much from it, but it's a business I could manage as a woman. You know, women cannot go looking after cows. We also don't have the means to open big shops in the market or try other male-dominated businesses."

"I joined the business because of my children."

Abul Ajac

Ajac heads to the riverbank every morning to buy fresh fish from the fishermen. She assigns young men to clean and salt the fish, then spreads them out to dry in a designated area near the riverbanks. "Depending on how hot the sun is, it can take three to four days for the fish to dry properly," Ajac explains, noting that she sells some of the fish across South Sudan's borders. "I take some to sell in the market here in Bor, and the rest I pack into sacks and send to Uganda and Congo to sell."

The sacks are sewn into what the traders call "bundles," each containing at least 500 fish pieces. "My profit from a bundle can be about USD 50 or USD 100 after deducting the costs for tax, transport, and other expenses," Ajac says. "I add this little money to what my husband or relatives provide, and I send it to the children," she adds, expressing happiness at seeing her primary school children progress in their studies.

Diing Arok, a 65-year-old mother of six, is also a fish trader in Bor town. She ventured into the business two years ago, driven by the country's economic crisis. "Times were very hard; some days, my fam-

ily would go to bed hungry because there was no food," Arok explains. "I saw many women entering the fish business, so I decided to try it, and now, with this income, I am happy that I can provide a balanced diet for my children, and we no longer sleep hungry."

However, the women traders sometimes incur losses, as illustrated by an incident in June when Ugandan authorities impounded several trucks carrying salted fish from Bor traders at the Elegu and Epondwe border points. Yar Mabior, another fish trader in Bor, shared her experience, stating: "When the fish is left in the trucks as they resolve their issues, the fish turns black and cannot be sold. Yet, we spend a lot of money to process the fish, and we end up losing all that money, which affects us in raising our children."

"When some of them joined the business, they looked stressed, but now I see many have become more comfortable."

Peter Isaac

Mabior also highlighted other challenges they face. "Water from the river floods the area where we dry the fish, which affects us. We would appreciate it if the drying area could be raised to prevent water damage, and we also need tents for drying the fish."



Approximately 200 women are involved in the fish trade in Bor, according to Peter Isaac, the Secretary for Finance at the Fish Traders Association in Bor. "Some are in Lodyar, others in Yonagai, and others in Ngoi," Isaac says, reflecting on the women's progress. "When some of them joined the business, they looked stressed and would easily get tired, but now I see many of them have become more comfortable as they earn money and provide for their families."

As the women of Bor redefine their roles and improve their economic standing, they show how financial independence fosters wellbeing. Their work supports their families and unlocks new opportunities, forging their identity through leadership and determination. **TN**

GUARDIANS OF THE NILE: WOMEN'S SYNERGY PROTECTS THE BASIN

BY Keziah Wangui Githinji, KENYA

The transformative capability of inclusive leadership and environmental stewardship is evident as women collaborate at various levels, enhancing their freedom to lead in protecting the environment.

Water hyacinth, an aquatic plant native to the Amazon Basin, has become a significant challenge in Lake Victoria. Its rapid growth clogs waterways, hampers fishing activities and threatens the lake's biodiversity. The fight against this invasive species requires innovative solutions and relentless effort. Women have risen to the challenge, transforming adversity into an opportunity for environmental stewardship and sustainable development.

At the Nile Basin level, Dr Mary Atieno is a key figure in the Women in Water Diplomacy Network. She highlights the importance of integrating local insights into policy-making. "Our policies are

"Our organisational efforts are amplified when grounded in real-world applications."

Jane Muthoni

only as effective as their implementation on the ground," she says. "We regularly engage with grassroots leaders to ensure our strategies are both practical and impactful. This continuous dialogue enriches our policies and communities."

Dr Atieno elaborates on how to bridge the gap between policy

and practice. She describes regular forums and workshops where policymakers and community leaders exchange ideas and feedback. These sessions address real-time challenges and adapt strategies to local contexts. "By involving those directly affected by our policies, we can tailor our approaches to meet their unique needs and circumstances," she says.

"It's not just about creating policies; it's about creating partnerships," Dr Atieno concludes by stressing the importance of continuous dialogue and collaboration. "Through our collective efforts, we can achieve sustainable solutions that benefit both the environment and the people who depend on it."

Grassroots initiatives and local leadership

On a local level, Achieng Otieno leads the Women's Environmental Network in Kisumu. This grassroots initiative has mobilised hundreds of women to engage in daily clean-up activities around Lake Victoria. "Our work is hard, but it's necessary," says Otieno. "We are not just cleaning the lake; we are securing our livelihoods and our children's future."

Otieno details her group's various challenges, from the physical toll of the clean-up efforts to the logistical difficulties of organising and sustaining large-scale volunteer activities. Despite these obstacles, the women remain committed to their mission, driven by their work's immediate and long-term benefits. "We see the positive impact every day. Cleaner waters mean better health for our

families and more abundant fish stocks, which are crucial for our local economy,” she says.

Collaboration with larger organisations and networks has been instrumental in the success of the Women’s Environmental Network. Otieno emphasises that these partnerships provide vital funding, equipment, and training resources. “We receive support that allows us to scale our operations and make a more significant impact,” she notes. Additionally, being part of broader networks gives the group a platform to voice their challenges and successes, advocating for greater attention and support from regional and international bodies.

Otieno shares stories of how these collaborations have led to tangible improvements. For example, training programmes facilitated by larger organisations have equipped women with better waste management techniques and knowledge about sustainable practices. These skills enhance the efficiency of their clean-up activities and enable the women to educate others in their community.

She also highlights the importance of visibility and advocacy. Through their connection with more extensive networks, the Women’s Environmental Network has brought their issues to the forefront, garnering support and recognition. “It’s important for us to be seen and heard. Sharing our successes inspires others to join us and helps us secure additional support,” Otieno says.

Achieng Otieno’s leadership and the collective efforts of the Women’s Environmental Network demonstrate how vital grassroots initiatives are in driving environmental change. Their work, sup-

“It’s important for us to be seen and heard. Sharing our successes inspires others to join us and helps us secure additional support.”

Achieng Otieno

ported by collaborations with larger organisations, improves the local ecosystem and strengthens the community’s resilience and sustainability. “Together, we are building a better future for our children and ensuring that our natural resources are preserved for generations to come,” she says.

Innovation and collaboration

At the grassroots level, individual efforts shine through in stories like that of Grace Mwendu, a community organiser in Homa Bay. Mwendu’s group manually removes water hyacinth and finds innovative uses for the harvested biomass, such as crafting biogas and organic fertilisers. “We are directly affected by the water hyacinth, so our motivation is strong,” Mwendu says. “But we can’t do it alone. The support and recognition from regional and organisational levels fuel our determination and provide us with much-needed resources.”

Mwendu highlights the importance of external assistance in providing technical training, equipment, and financial support. This support has been crucial in scaling their operations and sustaining their efforts. Collaborations with larger organisations have also opened up knowledge exchange and capacity-building opportunities. Mwendu’s group has benefited from workshops on sustainable

practices and access to advanced tools that make their work more efficient. “These partnerships help us innovate and find better ways to use the resources we extract from the lake,” she says.

“We are not just cleaning the lake; we are securing our livelihoods and our children’s future.”

Achieng Otieno

Moreover, recognition from higher levels has boosted the morale of the group members. Acknowledged for their hard work and impact has validated their efforts and inspired more community members to join their cause. “When people see the tangible benefits of our work and the recognition we receive, they are more inclined to support and participate,” Mwendu explains.

Her group’s efforts demonstrate how local action can lead to sustainable and impactful solutions when backed by regional and organisational support. “Together, we are making a difference,” Mwendu says. “We are fighting the water hyacinth and creating a better, more sustainable future for our community.”

Building synergy across levels

Policies developed at the regional level benefit significantly from grassroots leaders’ practical insights and feedback. At the same time, local initiatives gain crucial support and visibility by associating with larger, more influential platforms—all signs of leveraged interdependence.

“Our recent policy on sustainable biomass utilisation was inspired by the innovative practices we observed in Kisumu. This policy provides guidelines for other regions and channels funding and technical support to enhance these grassroots solutions,” says Dr Mary Atieno. The innovations in Kisumu, led by groups like Achieng Otieno’s Women’s Environmental Network, have demonstrated effective methods of converting water hyacinth into biogas and organic fertilisers. These practices have mitigated the invasive plant’s environmental impact and provided economic benefits to the local community.

Jane Muthoni, another Women in Water Diplomacy Network member, adds, “Our organisational efforts are amplified when they are grounded in real-world applications. Our feedback loop with local leaders ensures our projects are relevant and sustainable.” Muthoni emphasises the importance of ongoing communication and collaboration, where regional leaders continually incorporate grassroots experiences into their policy frameworks, ensuring that these policies are practical and impactful.

The battle against water hyacinths in Lake Victoria is far from over, but women’s strides at various leadership levels are remarkable. By bridging the gap between high-level decision-making and grassroots action, these women are reclaiming their environment and redefining genuine cooperation. Their sustained collaboration is a profound expression of freedom—freedom to act when met with a shared sense of responsibility and an acute awareness of need. This synergy not only fosters enduring, inclusive leadership but also sets a compelling example that can inspire similar initiatives across the Nile Basin and the world. **FN**



FREE TO GROW? HOW THE GENDER OF MONEY DEFINES ECONOMIC FUTURES

BY **Ferdinand Mbonihankuye**, BURUNDI

In Burundi, as in many Nile Basin countries, female farmers are the backbone of food security, yet they face immense cultural and structural challenges. Their quest for economic freedom and autonomy could radically transform the region's economic growth.

Patriarchal systems and customary traditions severely restrict women's access to land ownership and decision-making in Burundi and the Nile Basin region. According to the National Institute of Statistics of Burundi (INSBU), in 2008, only 17.7 percent of land-owners were women.

Agriculture forms the backbone of the Burundian economy, with women constituting over 55 percent of the agricultural workforce. Greater economic opportunities for women would significantly boost agriculture and economic growth. The World Bank estimates that bridging the gender gap in Africa could increase the continent's GDP by USD 2.5 trillion by 2025.

In Gatara, the capital of Kayanza province, women cultivate small plots despite numerous challenges, such as land fragmentation and lack of modern techniques. "I have to rent additional plots of land to increase production," says Godelieve Gambozira, a 37-year-old farmer from Karurusi Hill. Viola Niyonsaba, a 42-year-old farmer from Gitwenge Hill, adds: "We still farm the traditional way, which limits our productivity."

An effective way to conquer these challenges is to secure credit, invest in fertilisers, and adopt modern production techniques. This, however, poses a significant challenge for female farmers. Severa Niteretse, a 45-year-old farmer, explains: "We lack financial means and have no access to necessary agricultural inputs. There are no banks near us that could lend us money. We only hear about banks on the radio."

Established in 2010 in Gatara, the local women's organisation Femmes Abakanguriramahoro, or Women of Peace, is passionately dedicated to driving women's economic empowerment. With 78 members, the organisation implements microcredit projects, agricultural management training, and awareness campaigns on women's land and economic rights, aiming to promote women's access to land ownership and increase their knowledge of their rights.

Lucie Ndayishimiye, the leader of this organisation, highlights a significant issue: "Even if banking services were in place,



Women and girls carrying out their agricultural activities in Gitega, 8 June 2024.

female farmers frequently encounter distrust, thus impeding their access to essential loans.”

Applying for bank credit is an ongoing struggle for female farmers. Alice Nyandwi, a 43-year-old farmer, explains that it took her three years to secure a loan, “even with all the required documents. Banks are hesitant to provide loans to female farmers.”

Ndayishimiye adds that spouses can be a barrier to accessing credit. Banks often require collateral, but women without land in their name depend on their husbands’ consent. Although not required by law, this consent is frequently requested for cultural reasons, perpetuating their economic dependence. Lucie Ndayishimiye herself had sought a loan of 25 million Burundian Francs (BIF), about USD 8,500. Without the 30 million BIF (approximately USD 10,300) collateral required by the Women’s Investment and Development Bank (BIDF), she only secured a loan of 5 million BIF (USD 1,700).

These obstacles have led to a sharp decline in the number of women obtaining loans from financial institutions, dropping by 57 percent between 2014 and 2016, while access to credit for men increased by 67 percent over the same period. This reveals a systemic imbalance in the banking system, hindering women’s economic empowerment and affecting Burundi’s economic growth.

Local and international initiatives can play a significant role in bridging this gap. The inaugural Women Land Summit took place in Gitega in January 2023, bringing together reformers, government officials, women’s associations, and other key stakeholders to devise legal strategies against gender discrimination in land access. The first strategy involves revising laws, including inheritance and land ownership laws. Despite constitutional guarantees of gender equality, the law does not explicitly prohibit gender discrimination in inheritance and credit access. Efforts to reform the law are often met with significant cultural and social resistance. Customary law favours sons as the recipients of family property, while daughters usually receive unequal marriage

dowries. In many cases, widows are excluded from inheriting their deceased husband’s property, while widowers have more rights.

Addressing these resistances is crucial to achieving sustainable solutions. Implementing awareness programmes on land rights and access to legal resources is essential. Ndayishimiye criticises the lack of awareness from banks, such as the BIDF, which fail to reach remote areas to inform female farmers about available services. Cultural awareness initiatives are also necessary to deconstruct gender stereotypes. Furthermore, educational programmes that promote gender equality from an early age, along with community awareness campaigns, are crucial in emphasising the importance of equal rights for sustainable development.

At the Women Land Summit, strategies also included enhancing institutional capacities through targeted training, establishing protection mechanisms, and creating specialised courts. Femmes Abakanguriramahoro offers training programmes in leadership, financial management, and agricultural techniques. “Our latest programme empowered 50 women to master the basics of financial management, significantly enhancing their small agricultural businesses,” explains Lucie Ndayishimiye.

With concerted efforts and strong political will, female farmers in Burundi can become the true architects of food security and sustainable land management. Financial inclusion and access to resources are vital drivers of this transformation.

Farmers like Alice Nyandwi envision a future where women are financially and economically independent and capable of supporting themselves and their families without reliance on others. “We would then have the chance to control our destiny, no longer seen merely as helpers but as economic leaders capable of transforming our daily lives,” she asserts. “As farmers, our work is essential to feeding communities and supporting the national economy. To fully play this role, we need fair conditions and equal opportunities.” **TN**



GANOBIA HORA: YOUNG WOMEN EMBODY ECOFEMINISM IN SOUTHERN EGYPT

BY **Enas Kamal, EGYPT**

Over a decade ago, young women in Aswan transformed their efforts into an ecofeminist initiative. Today, their work has supported over 1,000 women in Aswan, raising their awareness of their sexual, reproductive, psychological, and environmental rights.

The 2011 Egyptian revolution was a turning point for many across the nation, including the women of Aswan, a city over 1,000 kilometres south of Cairo. Amany Maamoun, reflecting on the catalyst for Ganobia Hora, explains: “One of our friends was beaten while trying to protest in Aswan. This incident pushed us to create Ganobia Hora, aiming to raise awareness and promote respect for women.”

In Egypt, women face numerous challenges. The 2021 Egypt Family Health Survey reveals that female genital mutilation (FGM) affects 84 percent of women aged 15 to 49, with the prevalence in Upper Egypt rising to 91.5 percent. In such a conservative and tribal society, Maamoun, who grew up in a leftist family valuing freedom and equality, was well-positioned to co-found this initiative with eight other members. Ganobia Hora, which translates to Free Southern Woman, began its work by addressing bodily rights, especially the pervasive issue of sexual harassment.

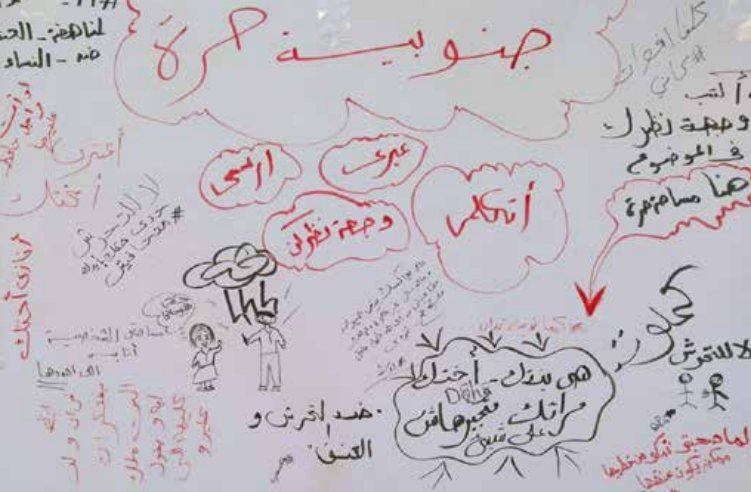
Aswan awoke to graffiti sending a clear message: respect women, don't interfere with their clothing choices, and keep your hands to yourself. This bold step was followed by interactive

theatre on harassment and training sessions introducing gender concepts, laying the groundwork for deeper awareness.

As Ganobia Hora gained momentum, its focus broadened to include environmental issues. The group implemented projects addressing climate change's unique challenges in southern Egypt, independently of Cairo-based institutions. In 2022, Ganobia Hora took the global stage at the 27th UN Climate Change Conference (COP27) in 2022, highlighting how climate change disproportionately affects women in Aswan.

A gendered toll

Aswan is particularly vulnerable to climate change. Known for its extreme heat, the city faced record-high temperatures of 49 degrees Celsius in June 2024. With limited infrastructure, these deadly conditions disproportionately impact the most vulnerable, especially women. According to Ayat Osman, Executive Director and co-founding member of Ganobia Hora in charge of climate



Left: Aswan, December 2022. (cc) Holger Wirth
 Right: Participants at Aswan University expressed their views on sexual harassment during a workshop led by Ganobia Hora in December 2015. (cc) Ganobia Hora

change and environmental affairs, “extreme heat reduces women’s ability to work, leading to diminished income. Many suffer from heatstroke and exhaustion, making it difficult to work during mid-day hours.”

Rising temperatures have severely impacted the economic situation of women in Aswan. The once-thriving winter tourist season, which provided substantial income for local women, has shortened significantly due to the increased heat. Female agricultural workers also find it increasingly difficult to work during the hottest parts of the day, leading to a reduction in their workforce participation.

Climate change also exacerbates water scarcity. Contrary to popular belief, Aswan, despite its proximity to the Nile, faces a severe decline in the availability of clean drinking water. In addition to the immediate economic consequences, the responsibility of securing water often falls on women, particularly in villages with inadequate sanitation systems. “The water supply is sometimes cut off for up to 12 consecutive hours, forcing women to carry heavy containers over long distances,” Osman notes. This burden, coupled with the psychological strain from unmet reproductive health needs, underscores the intersection of gender and environmental justice that Ganobia Hora seeks to address.

The 2023 United Nations Population Fund (UNFPA) study, *Assessing the Impact of Climate Change on Women and Girls’ Reproductive Health in Egypt*, emphasises that rising temperatures worsen maternal and newborn health outcomes and contribute to the spread of diseases such as hemorrhagic fever and cholera. Additionally, water shortage directly impacts women’s physical and reproductive health, particularly during menstrual cycles. Disruptions in access to natural resources can trigger violence, while extreme weather events can interrupt reproductive health services, leading to unmet needs, unintended pregnancies, and maternal mortality. Furthermore, the lack of psychological support for young mothers and inadequate post-abortion care can result in severe health issues.

Moreover, environmental displacement is becoming a pressing issue. Osman explains that Lake Nasser, one of the world’s largest artificial lakes, contributes to high water evaporation, leading to floods and heavy rains that Aswan is ill-prepared to handle. In 2022, severe floods in Aswan damaged infrastructure and homes, leading to increased internal displacement, further straining resources and exacerbating the challenges faced by women in these communities.

Ecofeminism in action

Ganobia Hora’s work represents a holistic approach, addressing the interconnectedness of women’s rights and environmental sustainability. The organisation has launched campaigns advocating for state-level precautionary measures against climate-induced disasters like floods and promoting safe, clean sanitation in vulnerable communities.

At COP27, Ganobia Hora presented solutions to mitigate the impacts of climate change in Aswan, such as reducing evaporation

from Lake Nasser and establishing an emergency committee to respond to floods. These efforts embody the principles of ecofeminism, demanding a healthy environment for all and recognising that women are disproportionately affected by ecological changes.

They also launched an online campaign explaining climate change in the context of Aswan and profiling a number of women such as climate activists, journalists and photographers who work on shedding light and addressing climate change impact in Egypt, particularly in Aswan.

Ganobia Hora faced many challenges operating in a politically and socially restrictive environment. “Our initial challenges were internal, stemming from the diverse backgrounds and visions of our founding group. Yet, my team and I persisted, grounded in our political mission,” recounts Maamoun. As the initiative progressed, challenges grew. Ensuring their safety was essential, as they were frequently stigmatised for dealing with topics that are sensitive in upper Egypt.

For example, Ganobia Hora concentrated on raising awareness about female genital mutilation (FGM) in border areas, where the practice has deep roots. After the 2011 revolution, “anti-FGM efforts became associated with Suzanne Mubarak, the wife of the ousted President Hosni Mubarak, which led to political and religious polarisation,” which unfortunately “set back our progress on FGM to pre-2008 levels.”

Ganobia Hora conducted numerous training sessions and workshops to educate women about FGM, including specialised sessions on the practice and a digital session on reconstructive surgery to provide greater understanding of its severe health and psychological impacts.

Neama Monzaly is one of the beneficiaries of Ganobia Hora training programmes, who hails from a community laden with taboos. “I come from a tribal society where topics like sexual and reproductive health are stigmatised. Speaking about these issues invites shame. However, the scientific knowledge I gained from the training equips me to engage in discussions and present topics academically, making a real difference for me and my group.” Monzaly went on to co-found her own initiative, *Genderist*, an online southern feminist magazine focusing on women’s rights and affairs.

Ganobia Hora continues to train young women in environmental advocacy. They are equipping the next generation of ecofeminists with the knowledge and skills needed to fight for a future where equality and justice prevail—both in terms of gender and climate.

Their work also extends to women displaced by the war in Sudan. “We have provided essential health supplies, such as sanitary pads and contraceptives, to women fleeing the war in Sudan,” says Maamoun. The initiative also launched the *Urgent Escape* campaign to document the suffering of survivors. “Our role shifted significantly after seeing their needs. We discovered that many of these women were subjected to clear sexual exploitation, either directly or through deceptive marriages.”

Maamoun, who identifies as a black feminist, sees great similarities between Egypt and Sudan. “Borders and political divisions are the only things that separate the two countries.”

As the impacts of climate change intensify, Ganobia Hora’s work in Aswan becomes increasingly vital. “I hope that Upper Egypt will see more initiatives like Ganobia Hora, dismantling marginalisation, discrimination, and centralisation,” says Maamoun.

By focusing on the intersection of gender and environmental justice, Maamoun sees their role extend to the rest of the Nile Basin, as they pave the way for a more equitable future. Their journey from a local initiative to an international advocate underscores the critical role of grassroots movements in driving global change. **FN**

WOMEN IN STEM OPEN THE DOOR TO FREEDOM

BY Innocent Kiiza and Okello Jesus Ojara, UGANDA



Engineer Winnie Biira (in pink) welcomes female engineers to an internship programme at Kilembe Mines Limited's head office in Kasese, Uganda, on 10 June 2024.

In Uganda, where science disciplines are often male-dominated, women like Winnie Biira, Alice Otto, and Dr Alice Veronica Lamwaka are rewriting the narrative. Their journeys expose cultural and systemic barriers, underscoring the urgent need for transformative change to achieve gender equity in STEM.

Science, Technology, Engineering, and Mathematics (STEM) drive innovation and economic growth. The more people engaged, the greater the potential for breakthroughs in medicine, climate change and renewable energy. Despite this, in the Nile Basin, including Uganda, STEM fields remain male-dominated, and women pursuing these disciplines encounter deep-seated cultural and structural obstacles.

Solve for: A culture of confidence

Winnie Biira's story exemplifies the cultural hurdles Ugandan women face. Initially directed towards humanities by a system discouraging women from technical fields, Biira's passion for engineering persisted. With parental support, she switched to a STEM curriculum, marking the first step towards her engineering career.

In Uganda, cultural stigmas discourage women from physically challenging jobs. Biira, 25, defied these societal expectations, excelling in a field where climbing poles and working on transformers are routine. Her success challenges stereotypes and proves that women can thrive in what are often considered "men's jobs."

"Engineering is not inherently discriminatory; one can work in various capacities and locations, proving that flexibility and adaptability are essential for success," Biira asserts. She credits her achievements to her commitment, noting: "My passion for engineering and determination have helped me overcome the challenges and gender stereotypes in the field."

Alice Otto, a 57-year-old mathematician, also confronted cultural biases. Ridiculed for choosing mathematics—a subject traditionally deemed suitable only for men—Otto faced intense scrutiny. "They said, 'Why choose the path of men? Women should teach language, not mathematics,'" she recalls.

"Most female learners fear mathematics because of negative attitudes and beliefs."

Alice Otto

Her challenges continued as she started teaching. "When I first joined, I was assigned a primary six class with big boys who intimidated and harassed me. This made my early days difficult," Otto shares. However, through perseverance, she became a respected educator and mentor to the next generation of female mathematicians. Otto's emphasis on encouragement, love, and support has been crucial in uplifting female students in mathematics. "Most female learners fear mathematics because of negative attitudes and beliefs. As a mother, I stay close to my learners, offering them love; that's why they excel."

Biira and Otto's stories serve as powerful counternarratives to the belief that STEM is a male domain. Yet, personal determination alone cannot dismantle the systemic and cultural barriers that prevent more women from entering these fields. Broader societal changes are imperative.

Solve for: Systemic equity

Women in STEM face systemic challenges in education, policy, finance, and pharmaceuticals. Tackling the root causes within each of these areas is essential to ensuring women's full inclusion in STEM.

The journey begins with education. In many Nile Basin countries, educational systems still steer girls away from STEM, reinforcing gender biases through curricula and classroom practices. Winnie Biira's initial placement in a humanities track reflects a broader systemic issue where girls are not encouraged to pursue technical fields.

Achieving gender equality in STEM requires comprehensive

reforms. Educational curricula must be revised to eliminate gender biases, allowing students like Biira to pursue their interests in STEM from an early age. A gender-inclusive curriculum that does not reinforce socialised gender roles but promotes parity is essential. This includes removing textbooks and learning materials that convey gender biases and replacing them with content that highlights female role models alongside their male counterparts.

These reforms must also consider Uganda's broader social context. Pressures like early marriage, pregnancy, and the absence of female STEM role models deepen inequality. Eliminating gender biases among teachers is another crucial step in fostering female students' interest in STEM.

"Ironically, we have the solutions but lack the resources to implement them."

Dr Alice Veronica Lamwaka

Uganda's journey towards gender equality in STEM also requires making these fields more engaging and accessible for girls. Research from Mbarara University of Science and Technology on the gender gap in STEM among students in rural Uganda suggests enhancing students' soft skills and employing gender-responsive teaching and digital tools. Creating supportive home and school environments that encourage girls in STEM is essential to overcoming stereotypes and boosting participation.

While education lays the groundwork, supporting women in their STEM careers through strong research networks is essential for long-term success. Research networks significantly impact women's careers, leading to professional advancement. The study *Experiences of Female Scientists in Research Networks in STEM Fields in Public Universities in Uganda* highlights how both formal and informal networks are vital in fostering career growth and helping women overcome barriers in STEM.

Capital I: Intersectional equity

A further step in dealing with the root causes of exclusion is recognising the interconnectedness of systemic challenges. Structural intersectionality explains how various forms of oppression do not exist parallel to each other; instead, they reinforce one another, deepening their impact on affected individuals and groups.

Dr Alice Veronica Lamwaka, a pharmaceutical researcher at Gulu University, led a team to develop Covyllice-1, a potential COVID-19 treatment from local herbs. Dr Lamwaka's work also includes developing a traditional medicine for sickle cell disease. Both drugs hold great potential but lack funding for clinical trials. This funding gap prevents the validation of herbal products and their compliance with international standards, consequently limiting access to global markets.

This lack of access is rooted in the interplay of three patriarchal systems: gender, pharmaceutical, and financial. These systems collectively undervalue and marginalise female contributions and herbal medicine. "Despite possessing valuable knowledge and skills, we are falling behind. Ironically, we have the solutions but lack the resources to implement them," says Dr Lamwaka.

Uganda and its Nile Basin neighbours can realise the immense potential for women to lead in STEM, but only with significant changes. By dismantling structural barriers, Uganda can build a future where women can freely innovate. And, with role models like Alice Otto, the next generation is being prepared: "I am glad that most of my students excel with distinctions in mathematics," she says, adding that women should lead with confidence: "Women should not fear mathematics. Everything we do in the world involves mathematics, so we should not fear." **FN**

In the Nile Basin, women are often excluded from water governance despite being the most affected by water scarcity. Recognising this disparity, a rising movement exists to empower women, address gender norms, and dismantle systemic barriers to their full participation in decision-making.

COMMENT BY **Raphael Obonyo**, KENYA

*Ripple effect:
Gender equity in
water governance
key to prosperity
and sustainability*

As the primary users and managers of household water, women are profoundly affected by water scarcity and mismanagement. According to the 2023 UNICEF/WHO progress report on household drinking water, sanitation, and hygiene, they bear the burden of water collection in seven out of ten households, a daily task that is time-consuming and prevents girls from attending school and women from holding jobs. Safety and health are also critical concerns. Women face risks such as falls, animal attacks, and sexual violence while fetching water. Additionally, the lack of clean water impacts women during menstruation and childbirth.

“Women bear the burden of water collection in seven out of ten households.”

Addressing these issues is essential for women and girls’ survival, wellbeing, and freedom. This is the right course of action. Yet, despite this clarity, gender equity remains unachieved globally, including in the Nile Basin. Beyond benefiting women, gender equity brings tangible advantages to entire communities, nations, and countries, contributing to stability, economic prosperity, and peace.

Equity should be present in higher decision-making levels, such as water governance. Inclusive decision-making guarantees a variety of viewpoints, resulting in more thorough and efficient policies. Achieving gender equity at all governance levels is not just a matter of justice but also a strategic necessity for a stable and prosperous future.

A striking example is Maria Mutagamba, who, as Uganda’s Minister of State for Water, developed five-year gender strategies for the water sector. These strategies promoted women to key positions on decision-making committees and integrated women’s concerns into the water and sanitation sectors. As a result, “access to safe water increased from 51 percent to 61 percent in just two years,” according to a 2018 article by the World Resources Institute.

As it stands now, however, despite the positive impact of having more women in decision-making positions, Nile Basin countries continue to see a significant gender gap in water governance. An article by the Stockholm International Water Institute (SIWI) titled *Tapping our Potential: Women’s Water Leadership in the Nile Basin*, published in 2019, highlights this gap, noting that only 15 percent of 65 surveyed countries had a gender policy in their water ministry, and only 35 percent included gender-specific considerations in their water policies.

“Only three of the ten ministers of water represented in Nile-COM are women.”

In transboundary water governance, women face cultural and structural challenges. They face a battle on two fronts: overcoming the traditionally male-dominated worlds of water and peacebuilding.

According to the same study by SIWI, cultural norms often discourage women’s participation, with many societies viewing men as the primary decision-makers and diplomats. Women are frequently criticised for being aggressive when they assert their opinions and take charge in professional settings. This criticism stems from the cultural expectation that women should embody traditionally feminine values such as empathy and nurturing, which are often undervalued in leadership and decision-making.

Systemic discrimination is also a significant hurdle; educational disparities further exacerbate the issue, with girls often steered away from studying science, technology, engineering, and mathematics (STEM), which are crucial for careers in water diplomacy. Additionally, workplace discrimination, including sexual

harassment and lower wages, continues to impede women’s professional growth. Legal and institutional frameworks are also lacking, with national and international policies frequently omitting gender-specific provisions.

To tackle cultural and structural discrimination, a multifaceted approach is necessary. Engaging men to advocate for gender equality is crucial, as their support can help shift societal mindsets and demonstrate that gender equity is not solely a women’s issue. Supporting men to espouse empathy and nurturing as effective leadership qualities is also crucial. In the workplace, mandatory training on gender issues and robust anti-discrimination policies are essential to create a supportive environment for women. These policies should address issues such as sexual harassment and pregnancy discrimination, ensuring that women have realistic mechanisms for redress.

Policies and legal frameworks must also be developed to actively support women’s participation in water governance. This includes implementing affirmative action in educational opportunities to encourage girls to pursue higher education in STEM fields and ongoing professional development for educators to create gender-inclusive classrooms. Increasing the visibility of women in decision-making positions within water ministries and related institutions is a crucial step towards achieving this goal.

Organisations like the Nile Basin Initiative (NBI) have made commendable efforts to ensure women are not left behind. By integrating gender within its core structures, policies, and programmes, NBI aims to address the unique challenges women and girls face.

“Policies should address issues such as sexual harassment and pregnancy discrimination.”

The Women and Water Diplomacy Network, established in 2017 by SIWI and partners, exemplifies these efforts by empowering women in the Nile Basin and supporting their engagement in decision-making and peacebuilding.

Its success has inspired similar initiatives, such as the Network of Women in Water Management for Central Asia and Afghanistan, launched in 2021. In 2022, the Regional Nile Women Network (RNWN) was inaugurated in Kenya under the Nile Basin Discourse (NBD). This network enhances women’s participation in water resource management across all ten Nile Basin countries. Additionally, NBD has established ten Grassroots Women Networks designed and managed by women, ensuring that grassroots women’s voices are heard and that they play a significant role in water governance. Workshops and forums organised by these initiatives emphasise coalition-building, trust, and confidence over power struggles, fostering a collaborative environment where women can thrive.

These efforts, led mainly by women, represent significant progress, yet the journey towards gender equity in water governance is far from complete.

The Nile Council of Ministers (Nile-COM), part of the Nile Basin Initiative, comprises water ministers from basin states and is the initiative’s top decision-making body. According to a study titled *Water Diplomacy: A Man’s World?* published in the *Journal of Hydrology X* in August 2023, only three of the ten ministers of water represented in Nile-COM are women. This stark statistic highlights the long road ahead towards fair representation.

It is imperative to build on the current momentum and address the cultural and structural root causes of this limited representation on a basin-wide level. Ensuring women have an equal seat at the decision-making table will lead to more inclusive and effective water governance. The journey is challenging, but it is clear: gender equity in water governance has a ripple effect that can lead to prosperity and sustainability for the whole basin. **WV**

SHAPING IDENTITIES THROUGH LEADERSHIP

INTERVIEW BY **Raphael Obonyo**, KENYA / ETHIOPIA

Dr Adanech Yared Jillo, President of the Ethiopian Women in the Water Association (EWIWA), is championing the integration of women's voices in water management across the Nile Basin. Her leadership and inclusive governance foster community identities and pave the way for sustainable practices that uphold cultural and environmental integrity.

Q: Could you share your journey to becoming the President of the Ethiopian Women in the Water Association and the experiences that have shaped your leadership in this role?

A: It has indeed been a journey. I hold a Bachelor of Science (BSc) in Hydraulic and Water Resources Engineering from Arba Minch University and a PhD in Water Resources Engineering from Addis Ababa University in Ethiopia. My interest in studying water resources engineering stemmed from my father, who specialised in hydrology. I wanted to follow in his footsteps.

My university advisor, Murgesu Sivapalan, always encouraged me to think of ways to increase women's engagement in the water sector. On a personal level, I was deeply concerned that women faced significant challenges in accessing opportunities and that some lost opportunities after maternity leave. This led me to found the Ethiopian Women in the Water Association (EWIWA).

Throughout my career, I've encountered various obstacles. Social norms were one of the first barriers I faced. When I decided to pursue my PhD at 25, some people warned me that it might make it difficult for me to get married – they believed that having a PhD would make it hard to find a husband. Many assumed I was a secretary when I was appointed director general because of my young age (Dr Adanech was the Director General of the

Ethiopian Basins Development Authority from November 2018 to October 2021). Young women are often not expected to take on leadership roles.

Another significant challenge has been dealing with negative energy and frustrations. Women are often not given the same opportunities as men, and even when they do assume leadership positions, they are frequently undermined and faced with discouragement. Developing the confidence to lead can be difficult in environments where women are not supported or encouraged.

Despite these challenges, my journey has been supported by my mentors, particularly my father, who inspired me to pursue a career in water engineering. I always put God first and remain committed to addressing the capacity gaps that often deny women opportunities in leadership.

Q: What are the most significant barriers to leadership for women, particularly within the water sector, and how can these barriers be addressed?

A: Society has not fully embraced diversity and inclusion, and many people still resist women's participation and engagement in decision-making. Additionally, women often lack the capacity and empowerment needed to take on leadership roles. The lack of



“When I decided to pursue my PhD at the age of 25, some people warned me that it might make it difficult for me to get married.”

Dr Adanech Yared Jillo

visibility for women in the water sector remains a critical barrier, particularly in terms of bringing more women into leadership positions.

To effectively address gender gaps in the Nile Basin, we must first tackle gender biases. Secondly, it's essential to address capacity gaps by ensuring women receive the training and support they need to lead. Finally, ensuring that women are given opportunities and a seat at the decision-making table is crucial.

Q: Does women's engagement in decision-making within the water sector support cooperation among Nile Basin countries, and what steps are essential to ensure their participation and leadership?

A: Absolutely. Women's empathy enables them to engage more effectively in negotiations and find common ground. They bring innovation, compassion, and unwavering leadership. Moreover, their faith, focus, resilience, and ability to network with people from diverse backgrounds can be harnessed to foster cooperation among Nile Basin countries on Nile issues.

To ensure greater women's participation and access to leadership roles, we must promote gender inclusion and implement gender-sensitive policies. Establishing exchange programmes between countries to share best practices for promoting women's partici-

pation and leadership is also important. Additionally, developing women's capacities and creating more opportunities for them are crucial steps.

Q: What are the most significant achievements of EWIWA, and what is your vision for its future in terms of environmental sustainability and inclusive governance?

A: EWIWA is relatively young, just one year and seven months old, but I'm pleased with our progress. We've spearheaded initiatives to advance women's participation and leadership in water-related matters, collaborating with other organisations. We consistently promote gender-sensitive, participatory, and sustainable water management practices that benefit communities and contribute to achieving the Sustainable Development Goals.

My vision is to build a sustainable organisation with the resources needed to run impactful programmes. I aim to empower women to engage meaningfully in the water sector and increase their visibility in water-related activities and initiatives.

Q: Reflecting on your experiences, what advice would you give young women aspiring to leadership roles?

A: My advice to young women is to support each other, work with each other, and remember that they are stronger together. **TN**

A RELENTLESS PURSUIT OF SOLUTIONS

by **Annonciata Byukusenge**, RWANDA

In Bugesera, the daily struggle for water is more than a matter of survival; it is integral to the identity of the women who navigate a system that restricts their access to essential resources. Their relentless pursuit of water reflects not just their roles as providers but the deep-rooted inequalities they face — inequalities that shape their identity as guardians of their families and communities.

In the Musenyi Sector of Bugesera, 35-year-old Beatrice Nyiransengimana starts her day long before dawn. At 4 a.m., she rises to tend to her one-hectare farm. But before any work on the farm can begin, she embarks on a two-hour journey to fetch water from Cyohoha Lake — a gruelling trek she has known all her life. This daily routine is just one of many challenges imposed by a system that forces women to bear the burden of water collection. “We need water for various household activities, but we don’t have enough,” Nyiransengimana says, echoing the frustration of many women in her community.

Bugesera, a district in Rwanda’s Eastern Province, is home to over half a million people across 1,288 square kilometres. Despite being dotted with lakes, access to clean water remains a daunting challenge. The district suffers from socio-economic water scarcity due to insufficient investment in water supply infrastructure, which worsens during the dry season. The district relies on three main water supply options: large-scale networks managed by the Water and Sanitation Corporation (WASAC), small-scale networks managed by private operators, and hand pumps under a community-based management model.

These challenges force women like Nyiransengimana to confront the daily hardships of water scarcity. “In my lifetime, I have never seen clean water or a water pipe in my village,” she says. The impact of this situation is manifold. “Children go to fetch water till 10 a.m. due to long queues at water points,” Nyiransengimana explains. “Sometimes they come home without water because of [their] limited energy to fight, and others get hungry and leave before fetching water.” The struggle for water directly impacts their health and education, with diseases like bilharzia becoming common due to reliance on dirty water.

Water scarcity in Bugesera also severely hampers agricultural productivity. Dusabe Jean de Dieu, another resident of the Musenyi Sector, shares the same ordeal. “Water is a big problem, and life is challenging because of using dirty and insufficient water,” he says. The lack of clean water has led to the spread of diseases like bilharzia and reduced agricultural output due to insufficient water for irrigation.

During the rainy season, there is a brief reprieve, but in the dry season, the situation becomes desperate. “Everyone looks crazy and hopeless because they spend much time looking for water.” This leads to an overuse of groundwater, which has also become a significant concern across the Eastern Province.

Dr Judith Uwihirwe, a hydro-meteorological and geological hazards prediction and warning expert and senior lecturer at the University of Rwanda, stresses the importance of regularly monitoring groundwater storage changes to take timely appropriate measures in case of severe decline. She suggests that “the community explore alternative water sources, implement limitations on

groundwater use for irrigation, and adopt groundwater preservation techniques to balance recharge and discharge.”

In response to these challenges, women in Bugesera have taken matters into their own hands, engaging in efforts to address water scarcity. Béatha Ntabanganyimana, a 40-year-old mother and farmer, sees hope in a Water Aid supply project that aims to provide a more reliable water source for the community. WaterAid is an international non-governmental organisation focused on water, sanitation and hygiene. “We hope that dams, linked to Cyohoha Lake, could provide enough water and help us in irrigation,” she notes.

“Young generations in Eastern Rwanda are currently playing a vital role in fighting against water challenges.”

Beatrice Nyiransengimana

Meanwhile, rainwater harvesting has emerged as one alternative, though it comes with challenges. “Rainwater harvesting and storage is very expensive because one needs a tank or other tools for water storage,” Ntabanganyimana explains. “I don’t have a tank, but I have a big bucket and many jerrycans that I use for rainwater harvesting and conservation.”

The situation in Bugesera reflects broader trends across the Nile Basin, where water scarcity is a growing concern for millions. Across the basin, innovative local solutions are emerging, rooted in traditional knowledge and community collaboration. For example, in Kenya’s Kajiado County, women have led the way in water conservation by implementing sand dams, earth pans, and shallow wells – traditional techniques that have significantly improved water availability.

The women of Bugesera, like those in other parts of the Nile Basin, are relentless in their pursuit of solutions. “The impacts of this water shortage are common for the community, but young generations in Eastern Rwanda are currently playing a vital role in fighting against water shortage challenges,” Beatrice Nyiransengimana reflects. Their efforts underscore the need for structural reform, not just individual resilience. By fostering regional cooperation and sharing knowledge, Nile Basin countries can take significant steps towards solving water crises. The success of these efforts will provide sustainable solutions and honour the identity and heritage of all who live along the Nile.

As the women of Bugesera continue to push against structural barriers, their struggle is a powerful reminder that the battle for water is also a battle for dignity and a better future. **FN**



Above: Beatrice Nyiransengimana irrigates her farm by fetching water from Cyohoha Lake.
Below: Béatha Ntabanganyimana from Bugesera District.

A statue of a lion, showcasing Uganda's rich wildlife, faces the crafts village along Entebbe road in Entebbe municipality.



WOMEN UNITING WILDLIFE AND TOURIST TRAILS

BY **Diana Kibuuka Nakayima**, UGANDA

Bridging systematic divides and building common ground are the hallmarks of cooperation. This is particularly relevant for conservation and tourism, two industries that often seem at odds. Embracing an ecofeminist ideology could be a significant step towards creating a future of equity and mutual support.



Women hiking Wanale Hill, an activity popular with tourists.

Local women sell handcrafted souvenirs made from sustainable materials to tourists in a bustling market in Entebbe. These goods are strategically positioned in spaces near big supermarkets, hotels and relaxing public green spaces where they can easily catch the eye of potential buyers.

A few kilometres away, women conservationists monitor the health of wildlife populations in national parks visited by tourists, an essential source of state revenue. These efforts are examples of a powerful synergy that could revolutionise Uganda's environmental and economic future.

However, a true systemic collaboration between tourism and conservation is still missing. Both sectors operate within a deep-seated patriarchal system where competition and dominance trump cooperation.

A systemic divide

Joy Nyikirindi, a freelance guide in Entebbe, attributes the gap between conservation and tourism to conflicting interests and goals. While conservation aims to protect natural resources, tourism focuses on economic growth and visitor experience. This creates, according to Nyikirindi, “a perceived misalignment that hinders collaboration.”

Namakula Shelloner, a Conservation Educator at the Uganda Wildlife Conservation Education Centre (UWEC), explains that one major hurdle to bridging this perceived divide is systemic. Much of the conservation work is under the Ministry of Water and Environment, while tourism falls under the Ministry of Tourism, Wildlife, and

Antiquities. “There’s zero multi-sectoral engagement in policy development and implementation.”

The lack of coordinated policy is a significant challenge, given the inherent link between tourism and conservation in regions like Uganda, where natural attractions are the primary draw for visitors. The potential benefits of robust conservation practices are to ensure the preservation of natural landscapes, wildlife, and ecosystems, all essential for sustaining tourism. Without such practices, the very resources that attract tourists would deteriorate, leading to a decline in tourism. Conversely, tourism generates the revenue necessary to fund conservation projects. Entrance fees to parks, eco-tourism activities, and tourist donations contribute to the financial resources needed for conservation efforts.

An ideological transformation

For the symbiosis between conservation and tourism to become a reality, however, the underlying values of each industry must evolve to foster a more harmonious relationship. Tourism profits should be viewed through a long-term lens, recognising that sustainable success depends on preserving natural resources. Conservation efforts should extend beyond simply protecting wildlife to addressing the needs and livelihoods of people living in and around parks. Instead of viewing these industries in opposition, we should embrace their complementarity. Collaboration must replace competition, ensuring both sectors can thrive together and all stakeholders can share the benefits of a sustainable future.



Joan Naamala, one of the women in conservation at UWEC, presents food to the White Rhinos. White Rhinos are extinct in the wild and only survive in captivity.

A World Wildlife Fund (WWF) 2017 report shows that “93 percent of all natural heritage sites support recreation and tourism, and 91 percent of them provide jobs,” demonstrating the economic benefits of integrating conservation efforts with tourism. This shift requires adopting ecofeminist values over patriarchal ones.

Aisha Nabwanika is a gender expert and proprietor of Ewaffe Cultural Village. This tourism project provides a unique window into Uganda’s culture, incorporating gender role plays and sex education into its programme. The Ewaffe Cultural Village represents a form of tourism that embraces ecofeminist values. Nabwanika advocates for more projects to embrace similar principles. According to her, “adopting ecofeminist values would spur more implementation and follow-up on conservation-related issues.”

“Adopting ecofeminist values would spur more implementation and follow-up.”

Aisha Nabwanika

Ecofeminism, a movement that combines ecological concerns with feminist perspectives, emphasises the interconnectedness of all life. Environmental theorist Kathryn Miles explains that ecofeminism “uses the basic feminist tenets of equality between genders, a revaluing of non-patriarchal structures, and a view of the world that respects organic processes, holistic connections, and collaboration.” This ideology challenges the traditional patriarchal views that often dominate both conservation and tourism, promoting values of inclusivity, equity, and mutual support instead. Ecofeminism advocates for women to take leading roles in sustainable practices and conservation efforts. It encourages the integration of women’s traditional knowledge and skills into environmental management and tourism, fostering a more holistic and inclusive approach.

An intrinsic bond

Often primary caregivers and educators in their communities, women are catalysts for this change. They can influence sustainable grassroots practices and further cooperation between the two sectors, paving the way for a more sustainable future.

For instance, integrating conservation messages into tourism experiences educates visitors about preserving natural habitats, garnering support for conservation initiatives. Educator Namakula Shelloner is dedicated to this work. According to her, both sectors can benefit from collaboration by promoting conservation tourism through thematic guided tours, for example.

Moreover, sustainable tourism businesses can provide economic opportunities for local communities, particularly women, who are often key players in both sectors. This can also positively impact conservation efforts. Dr Gladys Kalema, the founder of Conservation Through Public Health (CTPH), launched the Gorilla Conservation Coffee programme in 2015. This initiative helps local coffee farmers secure international market prices for Arabica crops, boosting community income, improving health, and reducing disease transmission to gorillas around Bwindi Impenetrable National Park. Additionally, farmers, many of whom are women, earn extra income from fees collected when tourists visit their coffee gardens during gorilla treks, further supporting both the community and conservation efforts.

“Waste management and climate change are good linkages.”

Ritah Atukwase

Collaboration can also foster innovation. Women in conservation can share their knowledge of sustainable practices with those in tourism, who can implement them in their operations. This exchange of ideas can result in new, eco-friendly tourism products and services that attract environmentally conscious travellers.

Gertrude D. is a crafts maker and shop owner in Entebbe municipality. She says that for the last five years, she has been in that business, they have never experienced an exchange of ideas with the women in conservation. She, however, believes there can be shared information, especially on the sustainable use of natural resources like the wetlands and forests, where they get most of their raw materials for their crafts. Gertrude D. is eager to know more. “We could learn, for example, how to turn plastic waste into something more useful. This will save the environment from choking on waste and be a source of income for us,” says Gertrude.

Such joint efforts can extend to advocacy for policy changes that support both sectors. Women united in their goals can exert more significant influence on government policies, ensuring that conservation and tourism are integrated into national development plans. This would significantly contribute to bridging the systemic divide between the two sectors. Ritah Atukwase, a horticulturist at the Uganda Wildlife Conservation Education Centre (UWEC), considers topics such as “waste management and climate change to be good linkages because they are of utmost importance for both sectors.”

Expanding this cooperative approach to other sustainability and environmental protection aspects in the Nile Basin can positively transform the region. Fostering collaboration across agriculture, fishing, and industry and adopting inclusive, long-term ecofeminist values can help preserve natural resources, improve community livelihoods, and effectively address environmental challenges. **UN**

A collection of crafts women sell, made with raw materials from natural resources.



ECO-CAREGIVERS: NURTURING THE FUTURE

COMMENT BY **Keziah Wangui Githinji**, KENYA

In Nile Basin cultures, women are often caregivers, whether for children, the elderly, their families, or communities. This shared identity trait has found a particular expression in Laikipia where it extends to caring for tomorrow's natural habitats, leveraging inclusion, cooperation, and shared responsibility to ensure a sustainable future.

Elizabeth Muthoni, a school teacher and community organiser, adeptly balances her domestic responsibilities with her crucial role in community-based environmental initiatives. She not only manages her household but also leads projects that advocate for sustainable farming practices and water conservation in her village. Her efforts play a vital role in ensuring food security and water availability, while also educating her community about the significance of environmental conservation.

Grace Wangari, a nurse, leads health education programmes in her community. Beyond her professional duties, she engages in tree-planting campaigns and waste management initiatives, advocating for cleaner environments and healthier lifestyles. Her leadership in environmental stewardship reflects her commitment to balancing societal and ecological responsibilities, inspiring others to adopt sustainable practices.

Across the Nile Basin, women's roles as primary caregivers have extended beyond their households, fostering a profound commitment to safeguarding the region's ecological and cultural heritage. Women drive community-led conservation initiatives that emphasise sustainable land use and effective water resource management, which are essential for the region's environmental and social resilience.

Both Elizabeth Muthoni and Grace Wangari are from Kenya's Laikipia County, where women participate in a range of activities and programmes focused on biodiversity conservation. Organisations like the Laikipia Wildlife Forum provide platforms for women to engage in biodiversity conservation. Through educational programmes, women gain expertise in conservation practices, enabling them to spearhead initiatives such as planting indigenous trees, restoring degraded landscapes, and implementing sustainable farming techniques.

In areas reliant on the Ewaso Ng'iro River, women participate in local water committees and community-based organisations, advocating for sustainable irrigation and equitable water distribution. Additionally, they promote eco-tourism, which blends traditional practices with sustainable principles, celebrating the region's cultural heritage and natural landscapes. These efforts foster environmental stewardship and support local economies, making conservation economically viable for diverse communities.

A hallmark of the women-led efforts in Laikipia County is their dedication to environmental education within families, schools, and community centres. These efforts empower children to become informed environmental stewards capable of addressing future challenges sustainably.

For instance, community leader Jane Njeri educates local communities about sustainable water use and conservation. Through local water committees and educational programmes facilitated by organisations like the Laikipia Wildlife Forum, Jane ensures equitable water distribution and instils a deep appreciation for water resources among children and adults alike.

Similarly, Mary Wanjiku, a farmer and mother, teaches her children sustainable farming techniques that prioritise soil conservation and biodiversity. Her efforts contribute to food security and nurture a generational commitment to safeguarding Laikipia's natural resources.

By engaging children in tree planting and recycling projects, women like Sarah Njeri, a primary school teacher, instil a sense of ownership and responsibility towards preserving Laikipia's natural resources. Sarah integrates environmental education into the curriculum, teaching children about biodiversity conservation and sustainable farming practices. Through hands-on activities, she encourages her students to become advocates for environmental sustainability within their families and communities.

Community leader Lucy Akinyi organises educational workshops where children learn about water conservation and ecosystem protection. These workshops not only educate but also encourage children to advocate for environmental sustainability within their families and communities. Lucy's inclusive approach transcends traditional gender norms by empowering both girls and boys to actively participate in caring for their environment.

We often talk about solving problems, overcoming challenges, or transforming issues. But what if we focused on limiting our participation in the creation of these problems in the first place? This is exactly what the women in Laikipia County are doing. They ensure that future of men and women do not contribute to the issues we face today.

By blending their caregiving roles with proactive environmental activism, the women in Laikipia County protect natural resources, shape their community's identity, and advance gender equity. Their initiatives foster a deep reverence for the environment among younger generations, promoting a unified dedication to conservation and equitable roles in sustainable resource management.

These efforts highlight the importance of inclusive leadership and shared responsibility in safeguarding our planet's heritage. Through their dedication, these women demonstrate how local action can inspire global movements, ensuring a sustainable future for all and reinforcing their community's identity as stewards of the Nile Basin. **TN**

Bold bonds

by **Pauline Ongaji, Kenya**

At Lake Baringo in Kenya's Great Rift Valley, women fish vendors have devised a practical way to coexist with Nile crocodiles. These bold bonds reflect how their lives and identities are deeply connected with the challenges of their natural environment.

From the main highway in Marigat, a small town in Kenya's Great Rift Valley, the sun rises over the waters of Lake Baringo. This vast freshwater lake, home to over 500 species of birds and fauna, plays a crucial role in the lives of the local community. The lake supports seven species of freshwater fish, including the Nile tilapia subspecies, *Oreochromis niloticus baringoensis*.

Beyond its ecological significance, Lake Baringo is central to the local economy, mainly through fishing. The communities around the lake depend on it for water, livestock, and fish, which have been integral to their way of life for generations. However, the lake is also home to Nile crocodiles, dangerous to those living nearby.

The Nile crocodile is a natural inhabitant of Lake Baringo. Its proximity to human activity can sometimes lead to dangerous encounters. However, in Kampi ya Samaki, a settlement on the lake's shores, a group of women has found a way to coexist with these animals, ensuring their safety and livelihood.

Lilian Chebui, a fish vendor from Kampi ya Samaki, has worked in the fish trade since 2007. "I started my fish business after getting married," she recalls. "It's been 17 years now." Chebui waits for the fishermen to return with their catch every day, which she sells to her buyers.

Chebui and her fellow fish vendors have adapted to the changing conditions around the lake, including the increasing crocodile population. "We have lived with the crocodiles around here for a very long time," Chebui says. "When they come to us, we feed them – the spoiled fish."

Feeding the crocodiles has helped the women avoid attacks, allowing them to work without fear. On a good day, Chebui earns up to KSH 2,000 (USD 15), which helps support her family and educate her children.

Emily Chebet, who started in the fish trade three years ago after closing her shop during the COVID-19 pandemic, shares a similar experience. "On a good day, I can make between KSH 7,000 and KSH 9,000," she says. She adds that the relationship with the crocodiles is built on mutual understanding: "Once they're fed, they have no problem with anyone."

Stella Chepkoech, the chair of the fishing camp, has also seen the benefits of this coexistence. "We interact mainly with seven crocodiles," she explains. Chepkoech has been in the trade since childhood, learning from her mother. She has never experienced a crocodile attack.

However, the women face challenges, particularly the lack of adequate infrastructure such as refrigeration and sufficient boats. "Improved facilities could enhance our economic stability," says Samuel Cherotich, Kampi ya Samaki's beach chairperson.

Despite these challenges, the women of Lake Baringo continue to support their families and maintain their way of life. Their story is one of adaptation to the challenges imposed by nature and the community's need to balance their safety with their livelihoods. Their work is not just about survival but about maintaining a balance with nature. **ENY**

Above: Emily Chebet tosses a spoiled fish (mara) to a crocodile in the lake.

Below: Emily Chebet (left), Stella Chepkoech (centre), and Lilian Chebui (right), women fishmongers at Kampi ya Samaki on the shores of Lake Baringo, examine the catch of the day.



“Once they’re fed, they have no problem with anyone.”
Emily Chebet



BUILDING THE FOUNDATIONS OF TRANSFORMATION



INSPIRING CHANGE THROUGH THE LENS

As a refugee from Uganda to Canada in 1972, **Amina Mohamed** built a successful career in the film and television industry. Drawing from her experiences, she founded Cameras For Girls to address gender inequality and poverty in Africa. Her organisation trains young women in photography, teaching them storytelling and employable skills that boost their confidence. Despite cultural challenges, Mohamed remains dedicated to making a positive impact, guided by her belief that **“serving others makes the world a better place.”**



A QUEST FOR A GREENER UGANDA

Inspired by her environmentalist mother and the plastic littering in Kampala, **Sandra Asimwe** founded Ecoville Uganda in 2021. Her company offers biodegradable bamboo and papyrus products sourced globally and from local Ugandan women. With 50 products available, Asimwe aims to eventually source everything locally and also leads tree planting efforts. Her guiding principle is: **“No matter the challenges, keep going. Never wait for perfect conditions to start; start with whatever you have.”**

Esther Muwombi put together the profile of Justine Kyanjo Kivumbi. The remaining profiles are by Mugume Davis Rwakaringi.



TRANSFORMING WOMEN'S ECONOMIC OPPORTUNITIES

In Uganda, where women's economic participation faces significant barriers, **Justine Kyanjo Kivumbi** is making a substantial impact. Through her initiative, Growing an Online Business in Uganda, she mentors women in starting and marketing their businesses online. To date, she has mentored over 100 women, enabling them to achieve financial independence. “Mentoring these women has been a rewarding journey,” says Kivumbi. “It's incredible to witness the transformative power of guidance and continuous learning.” Kivumbi is changing lives and reshaping the economic landscape for women in Uganda and beyond. Her guiding principle is: **“Empower women, change the world.”**



INNOVATING WOMEN'S HYGIENE

Motivated by the need to support her autistic child named Mapalo, **Kansiime Honest** conceived the idea of a “pant pad.” She founded a manufacturing factory called Mapalo Period Pants, which employs dozens of women. This Ugandan company produces period pants that provide convenience during menstruation. The biodegradable material helps women maintain hygiene during their periods, allowing them to go about their daily routines.



TRANSFORMING LIVES THROUGH SPORT AND SKILL

Facing societal judgement as a pregnant teenager, **Winnie Atyang** found solace and strength in rugby. Her successful career, including participation in the 2009 Rugby World Cup Sevens, motivated her to complete her university education. “Rugby is my redeemer,” she says. Now, Atyang trains women in rugby and teaches practical skills such as soap making and crafts to support their livelihoods. Her efforts have earned her awards for promoting women's rugby in Uganda. Her guiding principle is: **“Embrace every challenge as an opportunity. Live your life to the fullest.”**



TURNING WASTE INTO WEALTH

University student **Margret Birungi** started Mcreatives, a business that ingeniously recycles items like car tyres and plastic bottles into products such as crochet bags and furniture. Motivated by the pollution problem in Kampala, she collects non-biodegradable waste to create useful materials. Birungi has trained over 30 women in this work, promoting environmental conservation and community improvement. Her guiding principle, **“a skilful generation for a prosperous future,”** reflects her dedication to sustainability.

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THE FEMININE AND THE NILE