



THE WORLD WATER QUALITY ALLIANCE NEWSLETTER

January 2024

The World Water Quality Alliance is convened by the United Nations Environment Programme and supported by the Swiss Confederation. It proudly presents its monthly newsletter, YEMAYA, named after the ancient African goddess of the ocean and motherhood. She is associated with fertility, femininity, protection, healing, and childbirth. Her domains are symbolized as water creatures: the seas, rivers, and lakes. She is honoured and revered in the African diaspora, particularly in Cuba, Haiti, Brazil, and the United States.

We, the World Water Quality Alliance Coordination Team, welcome articles about water quality. Tell us about your experiences. Describe the challenges you and your people face. Talk to our global community; talk to people from around the World. Send your articles to wwqa-coordination@un.org.

IN THIS ISSUE

- *WWQA 2023 Impacts*
 - *A Perspective of Water Quality in South Africa*
 - *A Years Journey: The Kibera Local Water Forum*
 - *The January Interview: Dr. Richard Munang (Ph.D.) Head of Unit, Global Environment Monitoring Systems and Early Warning for Environment, Early Warning and Assessment Division, UNEP*
 - *The WWQA BULLETIN BOARD*
-

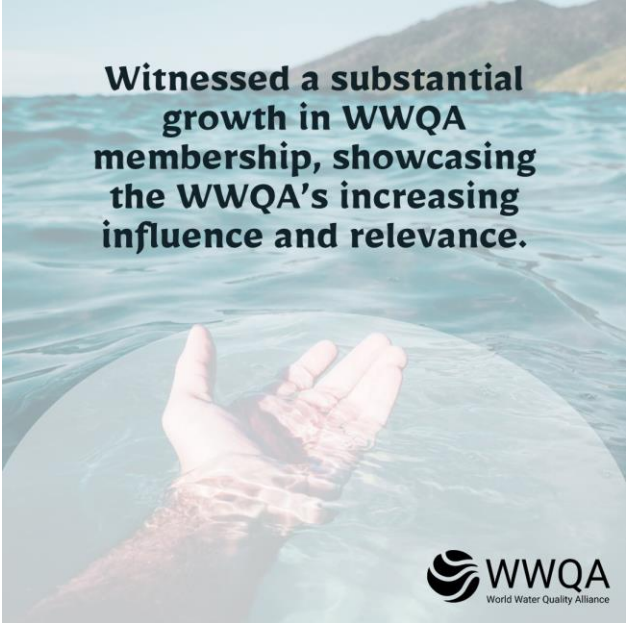
- *Citizen Science for Water Management and Sustainable Development*
 - *The Lahti Lakes 2024 - the international symposium on lake restoration science*
 - *Course - Sustainable Lake Management*
 - *Job Openings*
 - *2024 Seed Funding*
 - *WWQA Membership Application Form*
-

WWQA 2023 Impacts



Successfully organised and hosted the third Annual WWQA Conference, drawing over 200 participants in person from around the World.





Witnessed a substantial growth in WWQA membership, showcasing the WWQA's increasing influence and relevance.



Supported workstreams with seed funding





**The creation of over 100
more affiliated local water
forums**



**Membership now extended
to organisations in South
America, Asia and the
Caribbean**



Actively contributed to global discussions on water-related challenges by participating in the UN-Water conference in New York, the World Water Week hosted by SIWI & the Cassandra Conference



Collaborated with other UN Agencies and key partners to host a hackathon - style workshop, fostering innovation and collective action on Water Quality Monitoring & Assessment.



**Collaborated with
GEMS/Water and
workstream leaders to
orchestrate a successful 2-
day workshop in Nairobi,
Kenya, further advancing
shared goals towards
citizen science for SDG 6.3.2
reporting.**



**Created the monthly
newsletter entitled
'YEMAYA'**





A Perspective of Water Quality in South Africa

Poorly or untreated wastewater is one of the major reasons for the decline of freshwater quality. The negative effects of wastewater on humans, biodiversity, and ecosystem function are diverse and accumulate over time. This gradual pollution of freshwater systems from wastewater is a prime example of 'slow violence' - a term introduced by Rob Nixon in 2011 to describe the slow and almost invisible degradation of natural environments, that eventually leads to significant negative consequences and even ecological devastation.

In South Africa, a water-stressed country, broad-scale mismanagement in the water sector, especially relating to wastewater collection and treatment, has been culminating in high-profile symptoms of slowly dying freshwater systems. These range from dams like Hartebeestpoort and Inanda suffering from toxic blue-green algae blooms and explosive growth of invasive water hyacinth (Eichhornia crassipes), making drinking water much harder and more expensive to treat, to the tragic cholera outbreak in Hammanskraal in 2023 that resulted in the deaths of over 40 people. Crucially, the people typically most affected by degrading freshwater are those in marginalised and vulnerable communities, especially in developing countries.



1 - Raw, untreated sewage unsafely discharging from a dysfunctional wastewater treatment works directly into a nearby freshwater stream in the Free State, South Africa. Image credit GroundTruth.



2 - Drone imagery of the invasive common water hyacinth *Eichhornia crassipes* covering a large section of the Nagle Dam in Kwa-Zulu Natal. Image credit GroundTruth.



3 - Satellite imagery of the severe pollution (hyacinth and blue-green algal eutrophication) in 2021 at Hartbeespoort Dam in the North-West Province. Image credit Google Earth.

The freshwater crisis can be addressed effectively with the help of education and co-engagement.

Fortunately, a lot of efforts are being made in this direction. Several multi-tier collaborations are happening across the globe between different organizations, governments, and most importantly, local communities and everyday citizens. These collaborations are aimed at educating people and fostering action towards better water resource management.

The case of the inception and establishment of the Enviro-Champs in Kwa-Zulu Natal (KZN), South Africa, epitomises this good work. In 2009, the Duzi-uMngeni Conservation Trust (DUCT) began engaging with people in Mpophomeni township, a settlement in KZN that was suffering from severe wastewater and pollution issues. DUCT worked to establish relationships with unemployed residents who became the Enviro-Champs, a community-based environmental monitoring and engagement network. By 2016, among the many great achievements of the Enviro-Champs, was the fact that all the 104 manholes that had been surcharging sewage in the township were repaired! The incredible turnaround showed how the inspiring actions of a community can lead to significant positive change.

As water grows scarcer, the world will increasingly need to monitor and manage its freshwater resources efficiently and effectively. We must be alert to the reality that the effects of a water crisis are usually not immediately apparent, which can cause societal reaction and remediation to be perilously slow. Each of us must take action to improve how we monitor, conserve, treat, and manage our increasingly scarce, but vital, freshwater resources. Community action, partly through citizen science, can help combat the slow violence that threatens our global freshwater systems.

Article contributed by Dr. Jim Taylor, Nicholas B. Pattinson, and Dr. Mark Graham*

For correspondence, contact jimtaylor835@gmail.com.



4 - Enviro-Champs removing solid waste from a river in Kwa-Zulu Natal. Image credit the Duzi-uMngeni Conservation Trust (DUCT) and GroundTruth.



5 - Enviro-Champs removing solid waste from a river in Kwa-Zulu Natal. Image credit the Duzi-uMngeni Conservation Trust (DUCT) and GroundTruth.



6 - Enviro-Champs discussing the environmental and community impacts of a surcharging sewage manhole in Mpophomeni township in Kwa-Zulu Natal. Image credit the Duzi-uMngeni Conservation Trust (DUCT) and GroundTruth.

One Year Later: The Kibera Local Water Forum



The Local Water Forum in Kibera is proving to be an inspirational experience which many others can learn from. By directly engaging with children, women, and the youth of the Kibera district in Nairobi, Kenya, the forum is successfully rising to the challenge to clean the highly polluted Nairobi River that traverses the area, filled, as it is, with various forms of debris, ranging from plastics to human waste. The people of Kibera, come together every Saturday, with a specific objective; to enhance the water quality of a segment of the Nairobi River. The initiative has come to symbolize a new beginning for the Kibera community, demonstrating its resilience against all odds as it strives to advocate an improved local environment.

"Our accomplishments to date are important to us, especially after having witnessed the condition of the river before. When we began working on the river, the water wasn't flowing, and the garbage had blocked the river to the extent that one could walk right across it without realizing it was in fact a river. Fabrics, plastics, and all sorts of trash had filled the river with years of accumulated garbage.

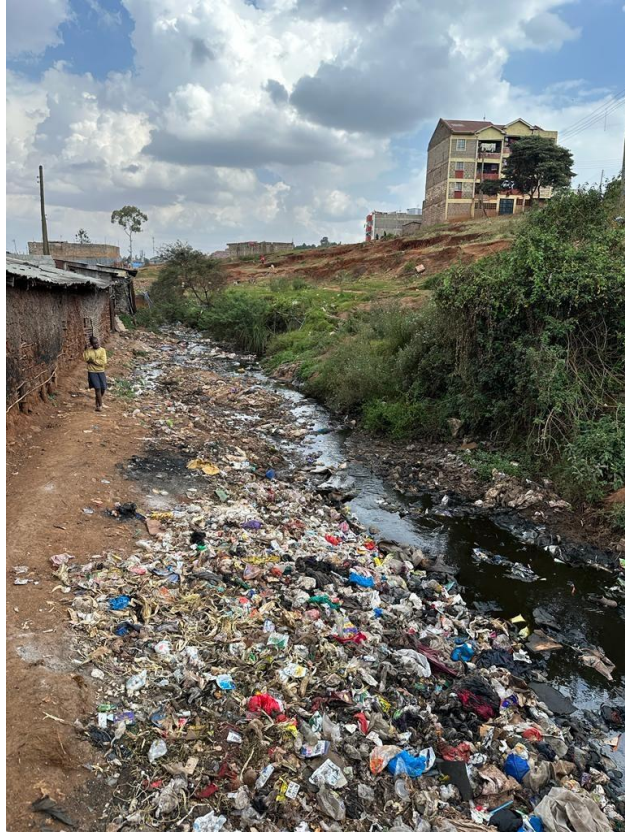
Today, the river is breathing again as we have successfully restored a section to maintain a continuous flow of water. This has motivated local people to cease dumping in the river. They now dispose of their waste at a designated area we've established as a temporary dumping site. From there, we sort and recycle the materials and then coordinate and put pressure on government officials to come and collect non-recyclable waste," reports, the leader of the Kibera Local Water Forum, Brandon Okoth.



7 - Before (Image credit - Brandon Okoth)



8 - After (Image credit - Brandon Okoth)



9 - Before (Image credit - Brandon Okoth)



10 - After (Image credit - Brandon Okoth)

Understanding the high risks of waterborne illness, the Kibera Local Water Forum, together with H2O4ALL, has distributed twenty bucket filters around the Kibera community to help reduce the spread of disease. This effort ensures that thousands of people are reached by targeting community gathering points such as children's library spaces and local food markets. The goal for 2024 is to install more water filters to ensure that access to reliable and safe water is possible for the greater population of the community.

Thanks to our active participation in the annual WWQA conference held in Nairobi in September 2023, we not only had the chance to present our work to the international community, (<https://www.youtube.com/watch?v=kzHOV-d1R7w>) but also had the opportunity to connect with other local water forums and initiatives, including the Mazingira Yetu project led by Sam Dindi. Sam's initiative stands at the forefront, ensuring that communities along the river in Kibera avoid channelling their human waste into the water. He has established at least 19 toilets along the river, all connected to sewers to help prevent faecal pollution. The Mazingira Yetu project will be partnering with the Kibera Local Water Forum team to train them in solid waste management, empowering them to effectively address household garbage issues. We eagerly anticipate the positive outcomes of this collaboration as we persist in our efforts to educate and engage the community at large.

Children play a significant role in changing the situation of our rivers and are made aware of the challenges thanks to board games such as that produced by Downstream Water, which has partnered with the Kibera Local Water Forum to promote water conservation. The game, has enabled children to have a broader understanding of water and reminds them of ways of conserving it, hence playing a very important role in introducing the issues to young people.

Our message to our community is simple. We all have a role to play in conserving and protecting our water sources. Our survival depends on how well we conserve water. Without water, we will not live. Let us remember to play our role in improving our water sources. It is our responsibility to ensure that rivers flow without plastics. Any small act makes a difference. Be part of the action. Let's join hands and work together.





We strongly believe it is possible to transform and restore the Nairobi River. Help us bring back life to a troubled river. To all our supporters, such as the WWQA who have provided us with a platform to be seen and to network with other like-minded organisations and initiatives, the Umoja Shoe Company which has donated gumboots that are so important and necessary for our team, VeeTee Africa Limited who have provided us with other protective gear such as overalls, coats, and hats, we say thank you very much for believing in us. To everyone who has invested in us to help us change the water quality of our beloved river, we can only express our gratitude. It is thanks to your support that we have been able to achieve real progress and grow as a community, focused on transforming our beloved river.

To learn more about the initiatives and transformative work of the Kibera Local Water Forum visit our official website [here](#).

Explore Kibera, hear our story and learn about ongoing programmes that underscore the community's dedication to clean the Nairobi River and promote environmental conservation. Your active engagement and support can play a crucial role in contributing to the positive impact they are making in transforming Kibera, a vibrant, friendly community but one facing numerous challenges expected in the largest district of its type in Africa.

Article contribution by Brandon Okoth - Chairman - Kibera Local Water Forum

Dr. Richard Munang, (PhD) Head, Global Environment Monitoring Systems and Early Warning for Environment Unit at UNEP's Early Warning and Assessment Division

Could you please introduce yourself and share the story of your personal and professional journey that has led you to your current role as the Head of the Global Environment Monitoring Systems and Early Warning for Environment (GEMS4EWE) Unit with the Early Warning and Assessment Division of UNEP.

I am Dr Richard Munang, Head of the Global Environment Monitoring Systems and Early Warning for the Environment Unit at UNEP. I joined UNEP 14 years ago and was amongst the team that conceptualised the ecosystems-based adaptation (EBA) approach during my time in the Ecosystems Division, which was called DEPI (Division of Environmental Policy Implementation) back then, which now underpins the UNEP flagship approach of nature-based solutions. I was later appointed as the Africa Regional Climate Change Coordinator, where, together with colleagues, we worked with member states to establish the first-ever Ecosystems Based Adaptation for Food Security Assembly (EBAFOSA) policy-action framework to support member states in taking up nature-based solutions through enablers like clean energy, innovative finance, market standards among others towards climate-proofing and maximising the productivity of food systems. Later, I was appointed the UNEP Africa Deputy Regional Director, where, with colleagues at the Africa office, we were able to support the transition of UNEP's work in Africa into the new delivery model approach that streamlines UNEP offices and divisions to deliver as one in addressing the triple planetary crises, as well as enhance the engagement with the UN Country Teams (UNCTs) to boost UNEP's leadership at country level on the environmental dimension of the SDGs. In all these engagements, the common denominator has been the generation and application of data to inform objective policies and investments.

*At a personal level, in all these engagements, one fundamental maxim has guided my interventions, and it is summarised in an insightful African proverb that says that “**One head alone does not go into council**”. I have fostered a collaborative approach to work because I firmly believe in harnessing the best each of us has to offer to achieve the most optimal outcomes. As the head of global environmental monitoring, I am building on this background, working with teams cutting across UNEP divisions, as well as environmental monitoring expertise in multiple domains – including air, water, and oceans – to enhance environmental monitoring from the lens of the Early Warning for the Environment (EWE) approach.*



11 - Image provided by Richard Munang, (PhD) Head, Global Environment Monitoring Systems and Early Warning for Environment (GEMS4EWE) Unit at UNEP's Early Warning and Assessment Division

What is your main inspiration to work on water and global environment monitoring-related issues in your career, and how do you see your role in the GEMS4EWE Unit as being instrumental in expanding and leveraging the EWE approach, which entails among other factors monitoring both slow and rapid onset risks arising from nature and biodiversity loss, pollution and waste, and the cascading risk of the triple planetary crises, and looking at how to expand monitoring techniques to cover both professional and citizen science as a complementary approach to expand the reach of environmental monitoring

My inspiration is to turn environmental challenges into inclusive opportunities that enhance the productivity of people, their livelihoods, and environmental health. My role in the GEMS4EWE is to catalyse the necessary shifts to this end, leveraging the EWE approach. At the core of EWE is data – covering an entire value chain, from sources at the upstream level to the midstream state of the environment, and end-of-pipe impacts, including monitoring of solutions for their optimisation and their investment potential to enhance uptake as they are matched to address the challenges at midstream and

upstream. The infrastructure to generate and manage this data is there, building on early warning systems that continue to be expanded, e.g., through the EW4All. However, these are inadequate, and it is in bridging gaps that citizen scientists come in. Citizen scientists apply simple tools that they already have, e.g., mobile phones, to supplement data generation and deployment. As with any process of integration, standardisation to achieve interoperability is critical. Also critical are effective incentives that can catalyze citizens' actions. On standardisation, we are looking at standards development for citizen scientists to ensure the data they collect can be easily reconcilable with professionally collected data. This can be by simple platforms that are dedicated to citizen science collected variables – which inform more targeted investments in professional data. For example, citizen scientists monitoring water resources record a number of economic activities that constitute an upstream risk to water quality, e.g., effluent from farmlands, landfills, industry, and wastewater, among others. By simple questionnaires, they generate preliminary data that informs professional monitoring activities to generate more detailed data that can better inform decisions. Further, citizen scientists can be incentivised in solutions and investment monitoring, where they are allowed to showcase and promote simple solutions they engage in that can be deployed to address the risks they are monitoring. As an example, wastewater risk is an opportunity for citizen scientists to showcase solutions such as biodigesters that can be deployed to recover the waste into value – in this case, clean domestic energy and organic fertilizer that is a source of income creation opportunities. This is among the exciting aspects we are engaging in.

As the head of UNEP's GEMS4EWE Unit, you play a crucial role in the World Water Quality Alliance(WWQA). How do you see the WWQA in solving global water quality issues through its partnership approach and contributing to good water quality in the long term?

I have been fortunate to meet both the Strategic Advisory Committee (SAC) and Technical Advisory Committee (TAC) of the World Water Quality Alliance on how we can leverage the Early Warning for Environment (EWE) approach to enhance the impact of the extensive water quality monitoring that is already being done. A critical aspect is the translating of early warnings into early action by leveraging solutions and investment opportunities monitoring. Fundamentally water cannot be monitored in a silo. It exists in a nexus because it underpins socioeconomic activities. The WWQA aligns with this through a strategic priority on the “Water-Energy-Food-Ecosystem-Health Nexus (WEFE+H)”. As examples of how this nexus applies, water is a critical resource for food production, with irrigation accounting for 70% of global water use and energy – where hydropower remains the world’s largest source of renewable electricity generation into the 2030s and is projected to grow by up to 17%. These uses impact water ecosystems. Also, about one-third of the global population depends on wood fuel, and a leading driver of encroachment, including in catchments - all degrade water ecosystems. At the same time, we need energy to treat wastewater from different sources – be it industrial/agricultural/domestic – and prevent it from contaminating water ecosystems and causing health risks to both humans and the environment. The EWE approach espouses a holistic approach to monitoring that would cover all these interactions. It provides a panoramic strategy to monitoring – where all potential upstream risks to water quality and ecosystem health from energy & food sectors – be it over-abstraction of water, effluent from farms, etc., are monitored simultaneously with the state of water quality and ecosystem health, to ensure we directly

match challenges to their risk causes. EWE also goes further to monitor solutions to these challenges so these can be optimised and matched directly to address the challenges. The investment potential of solutions is also monitored to inform investment planning and policy incentives needed to drive solutions uptake. Through its partnership approach, including citizen science, as earlier discussed, the WWQA is well-positioned to tap into the EWE approach and enhance global water quality for all.

The WWQA BULLETIN BOARD

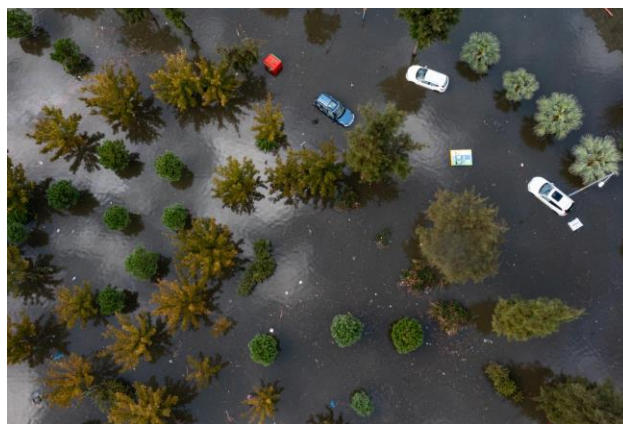
Citizen Science for Water Management and Sustainable Development

*The 3-week ON CAMPUS short course on **Citizen Science for Water Management and Sustainable Development** will be taking place again from 27 May to 14 June 2024 in Delft (NL) at the [IHE Delft Institute for Water Education](#).*

For whom?

Professionals, particularly from the Global South, from all areas of water management and governance (water resources management, water services, as well as flood and drought risk management), as well as development agencies and other funders with a focus on water and sustainable development.

Detailed information about the short course is available [here](#).



12 - Image from <https://www.un-ihe.org/>

Free course - Sustainable Lake Management

UNEP has launched a [new course](#) on sustainable lake management around restoring degraded lakes – an important contribution to [the UNEA 5.2 Resolution](#) on Sustainable Lake Management. The Resolution

recognises that lakes contain more than 90% of the planet's unfrozen surface fresh water and are key to ensuring availability and accessibility of water to protect lives and livelihoods. Yet many lakes have been affected by climate change or are polluted, or are degraded by hydrological alterations and invasive species.

The course delves into lake restoration and management best practice, which requires strong and inclusive stakeholder engagement and collaboration across multiple sectors.

Lahti Lakes 2024: the international symposium on lake restoration science

The symposium is co-organized by University of Helsinki, Lake Vesijärvi Foundation, SIL Working Group on lake restoration and the World Water Quality Alliance (Ecosystems workstream). The symposium takes place at the Sibelius Hall in Lahti, Finland from 3-5 June 2024, with an online participation option. Registration will be possible from January 2024 via a link on the symposium website www.lahtilakes.fi

Key Information

Dates: 3-5 June 2024

Location: Sibelius Hall, Lahti, Finland

Format: Onsite attendance + online streaming & remote participation

Registration and abstract submission: via website until 14.02.2024 (early bird); until 31.03.2024 (regular)

Lahti Lakes 2024
Towards sustainable lake restoration
3-5 June 2024, Lahti, Finland

Dense
The symposium will take place at the Sibelius Hall in Lahti. This modern venue is located close to the great Finnish company Sibelius (1865-1957) and hosts many cultural events as well as conferences and symposia. The symposium will take place over three days and will be open to 100 participants.

Lahti in summer is lively and warm, with a good selection of hotels and restaurants close to the conference venue. The city can be easily reached from Helsinki-Vantaa international airport.

Visiting Finland
Finnish speak excellent English, and Finland is a safe and easy country to travel around. The country has plentiful options for summer vacation activities, including in Lahti and surrounding regions, in the capital Helsinki and in many national parks. For more information please see visitfinland.fi

Registration
Registration will be possible via the symposium website at www.lahtilakes.fi from 01.01.2024. Early-bird registration closes on 14.02.2024, regular registration closes on 31.03.2024. Further information about the conference fee and links to accommodation options will be posted on the symposium website.

Logos: WWQA, Lahti, Vesijärvi, Working Group on Lake Restoration



Themes

The symposium is open to researchers and water managers working on all themes related to restoration of eutrophic lakes, including nutrient reduction strategies, biomanipulation, aeration, chemical treatment and hypolimnetic withdrawal, with an emphasis on understanding biogeochemical processes and implementing scientific knowledge into good management practice.

The Special Issue of Hydrobiologia "Restoration of eutrophic lakes: Current practice and future challenge" features original research articles based on presentations at Lahti Lakes 2024. The review article "Water article "Sustainable lake restoration: From challenges to solutions" by Järnström et al. features examples of sustainable lake restoration initiatives presented at Lahti Lakes 2024.

Fieldtrip in UNESCO Salpausselkä Geopark and social program

Lake visits on the shores of Lake Vesijärvi, which has provided the people of the city with recreational and aesthetic benefits. The wider landscape is characterized by Quaternary geological formations such as the Salpausselkä ridges, deposited at the end of the last ice age. The unique mosaic of ridges and lakes in the Lahti area was awarded UNESCO Geopark status in 2022. As part of a broad social program, the symposium includes a fieldtrip in the park, during which local experts will introduce the landscape and tell about the history of water quality management in the lake environments.

Job Openings

<https://www.joshswaterjobs.com/>

The EWAD Annual Internship Programme Opportunities for 2024 has been launched in INSPIRA under Job Opening: **23-UNEP-223433-V-NAIROBI**.

The Job Opening has been posted for 30 days until **24 January 2024**.

You can view the job opening at this [Link](#).

2024 WWQA Seed Funding

This is a general reminder to the World Water Quality Alliance Community that the 2024 call is now open for

1. *Proposals for new World Water Quality Alliance Workstreams*
2. *Seed Funding for existing and new World Water Quality Alliance workstreams*

It is important to note the following dates:

-
- *All proposals must be received by the WWQA coordination team at wwqa-coordination@un.org on the **31st January 2024 at 23:59 East African Time (Nairobi)***
 - *All proposals will receive an official communication stating whether they have been approved or not on the **21st of February 2024.***
 - *The approved seed funded proposals will be implemented in the period between the **4th of March 2024 and the 16th of September 2024.***
-

We wish you the very best of luck and we look forward to receiving your ideas.

If you have not received the email and would like the templates, please e-mail us at wwqa-coordination@un.org

WWQA Membership Application Form

The WWQA coordination team has set up a WWQA Membership Application Form to keep our growing membership organized.

We kindly request all members to fill out the form :)

<https://forms.office.com/e/BeF5iRuaP3>

In the February Issue of YEMAYA

- *Women and Girls in Science*
 - *Polar Bears!*
 - *Wetlands*
 - *UNEA 6*
-

Please follow our social media handles at:

Facebook: <https://www.facebook.com/profile>

Twitter: https://twitter.com/UN_WWQA

LinkedIn: <https://www.linkedin.com/company/wwqa>

Visit our website at: www.wwqa.info



*Unless otherwise indicated, all contributions are by the WWQA coordination team.

YEMAYA is a publication of the World Water Quality Alliance. The World Water Quality Alliance is convened by the United Nations Environment Programme and supported by the Swiss Confederation. All rights are reserved. For further information about the World Water Quality Alliance see the website www.wwqa.info or contact the WWQA Coordination Team at wwqa-coordination@un.org

YEMAYA welcomes articles, opinions and audio-visual material related to the issue of water quality. Please send any contribution to wwqa-coordination@un.org with a short 100-word biography, the name of your organisation and a phone number where you can be contacted.