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International environmental policy and governance issues

Information on the implementation of resolution 3/10 on addressing water pollution to protect and restore water-related ecosystems

Note by the secretariat

I. Introduction

1. In its resolution 3/10 on addressing water pollution to protect and restore water-related ecosystems, the United Nations Environment Assembly of the United Nations Environment Programme (UNEP) requested the Executive Director of UNEP, within the scope of available resources, to cooperate with other relevant organizations, including through UN-Water, to develop a world water quality assessment for consideration by the Environment Assembly at its fifth session.
2. The present note contains information on progress in the implementation of the resolution, in particular with regard to the workstreams of the World Water Quality Alliance.

II. Progress in the implementation of resolution 3/10

3. In order to address the broad scope of the comprehensive water quality assessment, as outlined in the UN-Water analytical brief entitled “Towards a Worldwide Assessment of Freshwater Quality”, and building on the findings of its initial assessment, *A Snapshot of the World’s Water Quality: Towards a global assessment* (published in 2016), UNEP has engaged a wide community of practice since 2019, comprising UN-Water members and partners and other experts from the scientific and research community, civil society and local communities. The Alliance, which emerged from that process, has brought together expert consortiums to address current and emerging issues inherent in the global water quality challenge across the Sustainable Development Goals, to work on advocacy for water quality solutions and to compile a comprehensive world water quality assessment.
4. The purpose of the world water quality assessment mandated by resolution 3/10 is to review the state of freshwater quality and the potential impacts of water pollution on health, food security and ecosystems, illustrating causal-chain cases from drivers to impacts, and responding to the scarcity of water quality data in many areas within a driving forces, pressures, state, impacts, responses framework.
5. The “First Global Display of a Water Quality Baseline” report and a global perspective paper on assessing groundwater quality were submitted to the Environment Assembly at the first part of its

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fifth session and in the biennium 2022–2023. With a view to the implementation of the UNEP medium-term strategy for the period 2022–2025 and following updates to the findings published for the first part of the fifth session of the Environment Assembly, the Alliance is gaining momentum and relevance in building bridges between data and action and tools and empowering society. To that end, during the course of 2022 a structure regarding the pathway to the world water quality assessment was created, with a view to establishing what will essentially be a digital platform that can be kept updated. Hence the use of the word “pathway”, as the digital social platform will be a product that will be continuously added to as new or additional data, tools and portals become available. The digital social platform was launched in 2023 and, as a digital data product, offers significant scope for innovation and reaching a variety of audiences and can be kept progressively updated. The objective is for the pathway to the world water quality assessment to establish itself as the principal source of water quality information for all stakeholders by 2025, no matter their level of expertise. The pathway is based on the approach known as “progressive disclosure”, which enables audiences from a breadth of backgrounds (beyond just a technical audience) to learn about the key factors affecting water quality.

6. For the 38th meeting of UN-Water, UNEP reviewed the functions of the UN-Water expert group on water quality and wastewater and provided updated terms of reference to revitalize the expert group. There was a keen interest in reinvigorating the expert group, and the Food and Agriculture Organization of the United Nations and the World Health Organization have come forward to help co-coordinate it, given the many areas of work around water quality and wastewater being handled across the UN system. The terms of reference are currently under revision to reflect the tripartite co-coordination and the expert group will convene all relevant and interested UN-Water members and will propose a set of activities by the 39th meeting of UN-Water.

7. The Alliance will be anchored, together with the Global Wastewater Initiative of UNEP, in the revitalized expert group’s updated terms of reference. The terms of reference specifically reference the Alliance and the Global Wastewater Initiative as the global coalitions convened by UNEP that can actively support UN-Water through the expert group and provide a platform to exchange information, knowledge and experience, to cross-fertilize the activities of individual entities and to avoid duplication of effort. That approach will allow the Alliance to anchor itself firmly in the UN-Water infrastructure and link it to the Sustainable Development Goal 6 Accelerator Framework, potentially the United Nations system-wide strategy on water and sanitation. The approach will also show what the Alliance can offer other UN-Water members and partners in the area of water quality and wastewater.

8. Since its inception in 2019, the Alliance has grown rapidly. In 2022, following a comprehensive evaluation process by the World Water Quality Alliance Strategic Advisory Committee and Technical Advisory Committee, a total of 16 workstreams were approved, which include workstreams focusing on a social engagement platform, citizen science for Sustainable Development Goal indicator 6.3.2, ecosystems, the Friends of Groundwater, scenario analysis, plastics, earth observation, in-situ monitoring of water quality data, and wastewater surveillance (in partnership with the Global Wastewater Initiative), a capacity-development consortium, and use cases. Worth highlighting among the products produced by the workstreams in recent years are the following, which are contributing to the overall pathway to the world water quality assessment:

- (a) The plastics guidelines piloting report and paper by the plastics workstream;
- (b) The white paper “Embedding Lakes into the Global Sustainability Agenda” on lake ecosystem restoration, by the ecosystems workstream;
- (c) The “Global Scenarios for Ecosystem Health” report by the scenarios workstream;
- (d) The guidance report and policy brief for expanding the use of citizen science for water quality monitoring;
- (e) The Global Groundwater Quality portal and guidelines for the assessment of groundwater quality by the Friends of Groundwater;
- (f) Africa use cases: continuation of stakeholder engagement in Lake Victoria, the Volta Basin, and the Cape Town aquifers, and evaluation of the stakeholder engagement process;
- (g) The stakeholder engagement and fundraising guidelines developed under the guidance of the social engagement platform to support the establishment of local water forums.

III. Lessons learned

9. A concerted effort was made during the period 2019–2023 to improve the cohesion and coherence of the interactions between the different World Water Quality Alliance workstreams. That approach has enhanced the overall approach of the Alliance, based on a proposed set of seven principal pillars. The seven pillars are seen as some of the central tenets for helping Member States and UNEP, through its convening power with regard to the Alliance, to facilitate and support action by Member States in the areas of monitoring and improving water quality for the health of humans and ecosystems. The pillars, which are set out below, will be used to orient the work of the Alliance and to support progress in addressing water pollution to protect and restore water-related ecosystems:

(a) Data to action, which promotes accessibility to all stakeholders in the socio-political helix (public, private, research, cultural and citizen). Data to action is a process whereby raw data are collected and analysed to inform decision-making and actionable tasks by communities at the local, sub-national, national and supranational levels. The process involves identifying patterns and trends and making decisions and acting based on the results. Data to action can be applied to all water-based organizational issues or problems.

(b) Source to sea: an integrated, collaborative approach to water resource management focused on the entire water cycle, from source (e.g., hills and mountains) to sea. It puts emphasis on the interconnectedness of freshwater systems (ocean, lakes and rivers) and the atmosphere, and makes a focused effort to protect and conserve aquatic ecosystems over their entire length. It involves continuous monitoring of both upstream eutrophication and downstream pollution to ensure water quality over the whole water body. Giving significant consideration to the impacts of climate change, the source-to-sea approach seeks to adopt a wide range of conservation measures, from better agricultural practices and pollution control to aquatic protection and restoration.

(c) The water-energy-food-ecosystem-health nexus: an interdisciplinary approach to managing, restoring and sustaining the environment by recognizing the interconnectedness between water, energy and food systems, as well as their interaction with ecosystems and human health. The approach considers how the use of natural resources and the production of energy (such as hydropower and biomass) affect water, land and other ecosystem services. In addition, the nexus emphasizes how water and energy enable food production and how changes in food production can impact energy and water resources and freshwater quality. The nexus approach can help policymakers and stakeholders to manage the environment and its resources more effectively through an integrated approach. For example, it can help decision makers to consider interactions between different sectors (water, energy, food, ecosystems and health) and how those interactions may result in constraints or opportunities for sustainable development. It can also help to identify potential trade-offs between different sectors and ways to optimize resource use.

(d) Citizen engagement, which involves citizens in civic processes, such as decision-making, policymaking and community issue resolution. It involves citizens participating in democratic processes, such as voting, petitioning and advocacy, to influence the outcome of an issue. It also includes more direct participatory activities, such as neighbourhood meetings, engagement with local government, and collaborative media projects, resulting in the necessary advances, supported by a strong capacity-development programme, as demonstrated by the work of a number of the Alliance workstreams.

(e) Development of long-term citizen science. “Citizen science” is a term used to describe scientific research projects or activities conducted in whole or in part by volunteers who are not professional scientists. Citizen science projects often involve collecting and submitting data for use in research conducted by professional scientists. This type of research has grown significantly in recent years and is now used by researchers in many different fields of science. In the case of the Alliance and water quality in general, there is a strong emphasis on the subsequent co-creation and co-implementation of local policies by society as a whole, represented by the socio-political helix. The socio-political helix is a model for developing networks, collaborations and partnerships that involve all five elements of a healthy innovation ecosystem: governments and political agencies, academia and research, industry representatives, civil society, and citizens. It has been proposed as a key model for transitioning towards circular economies and the development of sustainable communities.

(f) Interregional science-sustainability diplomacy: science diplomacy is the use of science and technology to help build bridges between countries and to enhance international cooperation. It is a tool that can help address a variety of issues, such as global health, climate change, sustainable development, biodiversity, and energy security. It can benefit all countries in a variety of ways,

including fostering economic growth, aiding foreign development, strengthening educational ties, and promoting scientific research and collaboration.

(g) Efficient water-based extreme event monitoring capacity: a medium-term ambition of the Alliance, this refers to the capacity to provide necessary scientific data to support the efficient response, on behalf of all stakeholders, to extreme events that concern water quality. It also involves developing a system for identifying data providers from the Alliance capable of sourcing and communicating appropriate information to those affected in a timely manner.

10. The United Nations Conference on the Midterm Comprehensive Review of the Implementation of the Objectives of the International Decade for Action, “Water for Sustainable Development”, 2018–2028, held from 22 to 24 March 2023, saw the adoption of the Water Action Agenda, representing voluntary commitments of States and stakeholders to accomplish the Sustainable Development Goals and their targets connected to water. The need for more data on water quality (surface and groundwater) to ensure healthy ecosystems and human communities was reiterated at the Conference, and the Alliance will keep working towards that objective with the aim of contributing to the preparatory processes and the water-related conferences taking place in 2026 and 2028.

IV. Recommendations and suggested actions

11. There is a need for more coherent action on water quality, as well as on the connection between data and such action that can be facilitated by convening actors from across the socio-political helix (public, private, research, cultural and citizen). Alliance activities have striven to engage widely across society – across gender, age and all ethnic contexts – particularly through the social engagement platform, as well as at all levels (local, regional, national and transboundary). Broad engagement of this type is vital to initiating and sustaining action for water quality. It is evident that data remain a critical bottleneck, requiring significant emphasis on capacity development. There is also a need for an open-access environment that is willing to facilitate sharing, especially in transboundary environments, and it is vital that water quality is seen as interconnected to nature-based solutions, and to resolving the triple planetary crisis. The need remains for a rigorous global assessment on water quality in order to provide a comprehensive synthesis of what is known on water quality and to communicate the urgency of the problem to decision makers, other stakeholders, and society. To that end, the World Water Quality Alliance Technical Advisory Committee has prepared a road map for a comprehensive world water quality assessment that draws lessons from other assessments and outlines scenarios towards the realization of the assessment.

12. Consolidating and advancing the World Water Quality Alliance will require specific attention in two areas. First, an effort to actively involve and connect all segments of society and stakeholder groups is necessary, reflecting the socio-political helix across gender, age, ethnic and belief backgrounds. That approach is being facilitated through the social engagement platform, and all workstreams in the Alliance are helping to connect to a variety of concerned stakeholders. Such engagement is crucial for making water quality solutions not only applicable but also owned and co-created by diverse societal actors. Second, data need to be leveraged to drive informed action. The challenge of operating in an environment abundant in data but lacking in actionable information is particularly pertinent to water quality within the Alliance. The information presented to date under the pathway to the world water quality assessment underscores that paradox, emphasizing the need to address information scarcity in order to effectively tackle water quality issues. While the Alliance fosters new avenues, decades of experience with the UNEP Global Environment Monitoring System/Water Programme show that data remain the major bottleneck.

13. Realizing both of the advances mentioned above hinges on Member States collaborating closely with the Alliance and monitoring programmes. Such collaboration is essential for creating mutually open and beneficial environments conducive to advancing water quality and sustainability efforts.

14. The Alliance has received resources from the Government of Switzerland to support coordination and seed funding activities, while the science and technology innovation platform underpinning the global assessment is supported by Germany. With that in mind, and grateful for the substantial support, the World Water Quality Alliance is looking forward to working with even more Governments and partners across society to broaden the resource base and supplement the generous in-kind and cash support mobilized.