



Nile Basin Initiative

Nile Transboundary Environmental Action Project (NTEAP)

NILE TRANS BOUNDARY WATER QUALITY MONITORING STRATEGY

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Initiative du Bassin du Nil

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NILE TRANSBOUNDARY WATER QUALITY MONITORING STRATEGY

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1.0 Preamble

1.1 Introduction

The Nile Transboundary Water Quality Monitoring Strategy describes how the water quality in the River Nile and its tributaries shall be assessed through regular transboundary water quality monitoring. The main objective of the Strategy is to highlight what actions need to be undertaken at the regional and national level to ensure effective trans boundary water quality monitoring. The implementation of the Strategy will include the following Strategy elements:

- *Institutionalization of the operation of the established 44 trans boundary water quality monitoring stations.*
- *Enhancing support to Regional Water Quality Working Group (RWQWG)*
- *Working in collaboration with SAPs and LVBC*
- *Enhancing support to Capacity building*
- *Support transboundary water quality monitoring program*
- *Enhance Awareness Raising and Information sharing on water quality issues*

Forty four (44) Trans boundary Water quality Monitoring Stations have been agreed on and established by the Regional Water Quality Working Group (RWQWG). The Nile Basin countries have to collectively support the operationalization of the Trans boundary Water Quality Monitoring network. The data generated from the trans-boundary water quality monitoring stations, will be forwarded initially to the NTEAP PMU and subsequently to the Nile Basin Commission or a designated institution for storage and use for regional planning and decision making, as per agreed data sharing mechanisms.

If trans boundary water quality monitoring is not institutionalized and initiated, the consequences will be regionally felt especially by many riparian communities who still consume water directly from the Nile. Other consequences will include increased water scarcity due to a reduction in suitability of water for many of its uses due to pollution including, servicing wetlands and biodiversity, sedimentation of reservoirs and a proliferation of water weeds, such as water hyacinth.

1.2 Achievements of the NTEAP Water Quality Monitoring Component

Water Quality Working Group established, regional water quality monitoring baseline studies concluded in all Nile basin countries, classification of laboratory facilities, designation of NBI Focal and Reference Laboratories and procurement of laboratory equipment done, transboundary sampling stations selected and parameters to be measured agreed upon, water quality data management and institutional and technical capacities for water quality monitoring assessed, water quality awareness messages developed, water sampling and testing, and data reporting formats agreed upon and manuals

prepared, concept paper on operationalizing the transboundary water quality monitoring network developed and close collaboration initiated with SAPs and Lake Victoria Basin Commission.

Collaboration with ENSAP, NELSAP and LVBC has already been initiated, in the following areas:

- Water Quality Assessment Studies in Lake Tana Sub-basin
- Water quality Assessment studies in Lake Cyohoha
- Water quality baseline studies in the Sio-Malaba Malakisi basins
- Sediment monitoring in the Sio-Malaba, Kagera, Mara and Blue Nile
- Capacity building in Sediment Monitoring
- Sharing and review of ToRs, and Reports.

1.3 Mission Statement

“To monitor the water quality of the Nile River and its tributaries for sustainable development, poverty alleviation, peace and security in the Nile basin”

1.4 Vision of the Strategy

“Assured good quality of the Nile Basin water resources for its different competing uses, for the preservation of different ecosystems and for sustainable development and poverty alleviation”

1.5 Purpose of the Strategy

The purpose of the Strategy is to institutionalize, regularize and sustain the already initiated activities of the NTEAP Water Quality Monitoring Component at the regional and national levels, specifically through the adoption of the 44 Trans boundary water quality sampling stations and 11 parameters and the launching of trans boundary water quality sampling and testing by the Nile Basin countries and other activities as detailed in this Strategy.

1.6 Main Objective/Goal

The main objective of the Strategy is to “Establish and Make Operational a Nile Transboundary Water Quality Monitoring Network through the establishment of a Regional Water Quality Monitoring Program supported by all Nile basin countries”

1.7 Specific objectives

Specifically, the Strategy will:

- Promote basin wide dialogue on Water Quality Management;
- Ensure transboundary Water Quality assessment;
- Ensure continued exchange of information on key transboundary parameters;
- Enhance continued awareness on water quality issues;
- Ensure the enhancement of capacities for Water Quality Monitoring, and
- Improve understanding of transboundary Water Quality Management issues.

2.0 Proposed Implementation mechanisms

In order to meet the Strategy objectives, six (6) broad implementation mechanisms are proposed for implementation both at the national and regional levels. These are:

- *Institutionalization of the operation of the established 44 trans boundary water quality monitoring stations.*
- *Enhancing support to Regional Water Quality Working Group (RWQWG)*
- *Working in collaboration with the SAPs and LVBC*

- *Enhancing support to Capacity building*
- *Support transboundary water quality monitoring program*
- *Enhance Awareness Raising and Information sharing on water quality issues*

The detailed strategy elements and proposed actions are as described below:

2.1 Institutionalization of the trans boundary water quality monitoring

- a. NTEAP together with the Regional Water Quality Working Group (RWQWG) members agreed on the establishment of 44 geo-referenced transboundary surface water stations, covering both the main Nile and its tributaries in the Nile basin countries. These stations are distributed as follows:
Burundi, 4; DRC, 3; Egypt, 2; Ethiopia, 5; Kenya, 7; Rwanda, 4; Sudan, 5; Tanzania, 4; and Uganda, 10; making a total of 44.
- b. NTEAP seeks the formal Institutionalization by the NBI, of these 44 Trans boundary stations, the 11 initially selected trans boundary parameters, the NTEAP Focal and Reference Laboratories and the piloting and use of the 4 Water Quality Operational Manuals.
- c. Once institutionalized, NBI countries will be obliged to carry out regular water quality sampling and testing, and generate transboundary water quality data and information which will be stored and shared for the benefit of the whole Nile Basin.
- d. The Governments of NB countries will sustain and oversee the regular monitoring of the Nile Transboundary Water Quality Monitoring Stations. Countries should therefore factor into their national programs, the monitoring of these transboundary stations, with a view to sustaining them in their own countries.
- e. Countries should continue operating their national water quality monitoring programs, which also cover the identified transboundary water quality monitoring stations. Countries whose water quality monitoring stations are not operational, should do so, start contributing data and information, from their trans boundary stations to the NTEAP PMU or to an NBI designated institution for storage and later use.

2.2 Enhancing support to Regional Water Quality Working Group (RWQWG)

In order to support and sustain the Component's activities at the national and regional levels, and in the short-term, NTEAP will support the RWQWG through:

- Enhanced participation of RWQWG members in transboundary meetings and Workshops,
- Encouragement to incorporate the Component's activities in their National Work plans,
- Use of RWQWG members expertise as Trainers or Facilitators in Workshops and Trainings,
- Recognition of RWQWG members trans boundary contribution by featuring them NTEAP Newsletters and Website,
- Issuance of Letters of Recognition with copies to their Heads of Departments.

2.3 Work in collaboration with the SAP' s and LVBC

In the short-term, and in order to raise more awareness and engage stakeholders in the implementation of the Component's activities, support will be given to both ENSAP and NELSAP and the Lake Victoria Basin Commission (LVBC), to continue carrying out planned and agreed

activities targeting transboundary water quality issues. The following areas have been identified and collaboration has already started:

- Water Quality Assessment Studies in Lake Tana Sub-basin
- Water quality Assessment studies in Lake Cyohoha
- Water quality baseline studies in the Sio-Malaba Malakisi basins
- Sediment monitoring in the Sio-Malaba, Kagera, Mara and Blue Nile
- Capacity building in Sediment Monitoring
- Sharing and review of ToRs, and Reports.

In addition to enhancing collaboration in these areas, it is proposed that NELSAP, ENSAP, and LVBC, assist in the consolidation and sustenance of the regional efforts already initiated by the Component at the Sub-regional levels, and also support and enhance the transboundary water quality monitoring efforts initiated.

2.4 Support Capacity building

(a) Low cost Laboratory and Field Equipment support

In order to augment the existing national capacities to undertake water quality monitoring, countries, NTEAP has assisted countries with the purchase of Low - cost Laboratory and Field equipment. These equipment will assist the countries participate in the transboundary water quality monitoring and testing. However in order to sustain the transboundary water quality monitoring activities, countries are encouraged to enhance their capacities for water quality monitoring by investing more in procurement of laboratory equipment and other apparatus and in setting up modern laboratories.

(b) Training

Training and continuous learning is important. A training of Laboratory Managers and Analysts of the designated NBI Focal Laboratories at the regional level is recommended. The training will target sharing of experiences and the use of similar analytical methods and laboratory management practices, as outlined in the agreed upon Water Quality Operational Manuals. The Laboratory Analysts will be trained on the operation and maintenance of the already procured equipment and in the use of other general laboratory equipment. The training of laboratory technicians should be undertaken at the national level, by the countries. All trainings should however be harmonized through the NBI and based on the already identified national training needs and institutional capacities.

2.5 Support transboundary water quality monitoring program

NTEAP together with the RWQWG have established transboundary water quality monitoring stations. However a transboundary water quality monitoring program should be formally launched taking cognizance of and utilizing the following methodologies and activities:

(a) Common Methods of sampling and testing

11 transboundary parameters and 44 transboundary sampling stations have already been agreed on (See Annexes 1&6). Water Quality Operational Manuals containing common methods of sampling and testing have also been prepared. These methods will be piloted, as alternative methods, for use

and adopted. ENSAP, NELSAP and LVBC will assist countries in piloting and adopting these Manuals.

(b) Support establishment of transboundary Water Quality Monitoring stations

NTEAP will initially support some countries to establish the Transboundary water quality monitoring stations.

All countries should support the establishment and operationalization of this network of transboundary water quality sampling stations, by monitoring the trans boundary stations within their respective countries.

(c) Regional Water Quality Database

Countries will agree on modalities of sharing and exchange of water quality data and information. This will be worked out in consultation with the DSS unit of the WRMP Project. The data generated from the analysis of the transboundary water samples will be sent to the PMU where a Regional Water Quality Database has been set up to receive and store data as interim measure. This database will eventually form part of the proposed Regional NBI database which will be set up by the DSS of the WRMP.

The sharing of water quality data and information will be an Annex of the proposed NBI data and information sharing protocol. To achieve this goal common water quality data reporting forms and formats will be used for data reporting. ENSAP, NELSAP and LVBC will assist countries implement this activity. Trans boundary Water Quality data will only be generated after the institutionalization of the Trans-boundary water quality monitoring network of 44 stations, by the Nile-COM.

(d) Regional Water Quality Assurance (QA) program

NTEAP will initiate an Inter-laboratory Proficiency Testing Program for the designated NBI Focal Laboratories, in collaboration with UNEP's GEMS/ Water, which operates similar Water Quality Assurance programs globally. This international collaboration with GEMS/Water will be of great benefit to the participating NBI Focal Laboratories, giving them recognition and the quality of the data that will be generated. ENSAP, NELSAP and LVBC will also assist countries implement this activity, and the NBI shall institutionalize this QA program.

(e) Biological Water Quality monitoring

Biological-indicator studies leading to the development of water quality Bio-indices have been carried out in some countries, including some countries in the Nile Basin. NTEAP will initially, source for the Biological monitoring and awareness materials, and will pilot them schools and communities to create awareness about biological water quality monitoring. Thereafter ENSAP, NELSAP and LVBC will assist countries in piloting these biological monitoring tools.

(f) National Water Quality Action Plans

Nile Basin countries will be encouraged to prepare National Water Quality Management Action Plans in which water quality monitoring will be one of the elements. Existing National and Regional Water Quality Monitoring Baseline reports should be used as reference material, and as a basis to solicit for extra bilateral or multilateral funding for their national water quality monitoring programs.

2.6 Awareness Raising and Information sharing on water quality issues

(a) Produce and disseminate Water Quality awareness information

NTEAP will initially support Printing and translation of the Regional WQ Operational Manuals and National Water Quality Monitoring Baseline reports, so that wider dissemination to stakeholders will be achieved. Follow-up and piloting on applicability and use of Manuals will also be initiated.

NTEAP will also support the preparation and dissemination of other water quality target specific awareness materials and information, at the national level, in all NB countries. This will be done in collaboration with the NTEAP EE&A Component, and the SAPs. Subsequent awareness raising campaigns will be done by the countries.

(b) Participate in World Water Monitoring Day

To enhance awareness on water quality issues, and increase the visibility of NTEAP, and the NBI, participation at the national level, in the World Water Monitoring Day held each year on 18th of October, is important. Countries should take advantage and use the official international days such World Water Day, Nile Week, Environment Day, Wetlands Day to create more awareness on water quality issues.

(c) Water Quality Awareness in Schools and Communities

Simple and easy to use water Quality Monitoring Kits will be procured for schools and communities initially by NTEAP, but countries should later on, invest in procuring more Kits. This approach has already in some countries involved a rich learning mix of primary, secondary and university students creating and increasing awareness on water quality issues. Countries will be expected to vigorously support this campaign.

(d) Draft Agreement on Water Quality Data and Information Sharing

Water quality Data sharing and exchange modalities will be part of the NBI data and information sharing protocol. NTEAP will work in close collaboration with the WRMP project, DSS Component to ensure that the modalities of water quality data and information sharing are captured in the protocol. Countries will be expected to comply with the provisions of the said protocol, to ensure that the collected data is used for regional planning and decision making.

(e) Biological Water Quality monitoring in schools

Biological water quality monitoring techniques are being piloted in the NB countries. If the pilots are successful at the technical level, then demonstrations will be carried out involving schools and communities and encouraging them to adopt and use the bio–indices developed for water quality monitoring in the rivers and streams in their sub-basins. This versatile technique promises to bring water quality monitoring to the communities, and should be adopted replicated and encouraged in the NB countries.

2.7 Financial Mechanisms

In order to operationalize the national water quality monitoring programs and contribute to the transboundary water quality monitoring network, resources in terms of personnel, laboratories, laboratory equipment, and funds to procure glassware and reagents will be required, in order to sustain the quarterly sampling and analysis of the transboundary samples.

NTEAP will initially give token support geo-referencing and initial reconnaissance sampling and analysis. Thereafter countries with minimal assistance from the NBI will have to sustain the regular sampling and analysis of transboundary samples. To ensure that this is done, funds for transboundary water quality monitoring should be factored into the national ministry budgets of the individual Nile basin countries (Annex 8 gives National budgetary requirements).

