

Plastics.



Plastics

ABSTRACT

The plastics workstream has an objective which is to provide scientists, water authorities and other stakeholders with current knowledge how plastic in aquatic systems can be assessed and monitored, which options for preventive and counteractive measures may be available, and which obstacles will be met and hopefully counteracted during their implementation.

In June 2021, *MONITORING PLASTICS IN RIVERS AND LAKES: Guidelines for the Harmonization of Methodologies* were launched by UNEP in close collaboration with the GPML. The guidelines contain the most current procedures for monitoring and analyzing plastic content in rivers, lakes, reservoirs and water/wastewater treatment plants. The plastics workstream aims to pilot these freshwater plastics monitoring guidelines for the World Water Quality Assessment in Europe, Africa and Asia.

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CONTACT

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UPDATE ON PROGRESS

In 2021, the following activities have been conducted by the workstream:

- Final edits and publication of the Guidelines and a technical summary for policymakers
- Webinar to launch the Guidelines
- Promotion of Guidelines in meetings and conferences
- Inclusion of remote sensing experts in the workstream team
- Participation in "Eyes on Plastic" workshop
- Consultation with marine litter specialists
- Application for seed funding to conduct pilot studies in geographically and socio-politically different places
- Connection to other WWQA workstreams, e.g., Africa use cases
- Preparation for surveys, workshops and pilot field studies for implementing the guidelines

ACHIEVEMENTS

Until the end of 2021 the workstream achieved:

- Publication of *MONITORING PLASTICS IN RIVERS AND LAKES: Guidelines for the Harmonization of Methodologies*
- Seed funding proposal approved
- Stakeholder analysis and first surveys conducted (Table 1)
- Virtual mini-workshop for Rhine basin (Figure 1)
- On-site workshop in Accra, Ghana (Figure 2) including monitoring campaign (Figures 3 and 4) successfully conducted

Number	Topic	Speaker
11.15-11.20	Introduction and plastic	Tim van Emmerik
11.20-11.25	Introduction 1. Identifying knowledge gaps	Shuvajit Nath
11.25-11.30	Introduction 2. Identifying knowledge gaps	Tim van Emmerik
11.30-11.35	Introduction 3. Identifying knowledge gaps	Tim van Emmerik
11.35-11.40	Introduction 4. Identifying knowledge gaps	Tim van Emmerik
11.40-11.45	Introduction 5. Identifying knowledge gaps	Tim van Emmerik
11.45-11.50	Introduction 6. Identifying knowledge gaps	Tim van Emmerik
11.50-11.55	Introduction 7. Identifying knowledge gaps	Tim van Emmerik

Figure 1. Rhine mini-workshop agenda. Around 20 people from academia, practice and government participated.



Figure 3. Plastic litter in Accra.



Figure 2. Accra workshop participants (around 50 in total).

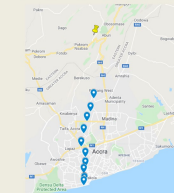


Figure 4. Sampling sites in Accra.

	Lower Rhine	Ghana	Vietnam
Funding		x	x
Lack of technical equipment		x	
Theft of equipment	x		x
Lack of skilled personnel		x	x
Quantity to be monitored		x	x
Accessibility		x	
Compatibility of the guidelines	x		
Absence of government directives			x

Table 1. Hinderances to monitor plastics in freshwaters.

FUTURE OUTLOOK

The plastics workstream hopes to achieve the following in the next 6 months:

- Make the Guidelines more popular
- Evaluate on-site workshops in the Rhine basin and in Accra, Ghana
- Evaluate monitoring data obtained in Accra
- Prepare on-site workshop and pilot monitoring at the Mekong River, Cambodia
- Conduct pre-workshop stakeholder survey in Cambodia
- Evaluate monitoring data obtained at Mekong River
- Prepare for online workshop in Uganda
- Update stakeholder analysis (Chart 1)

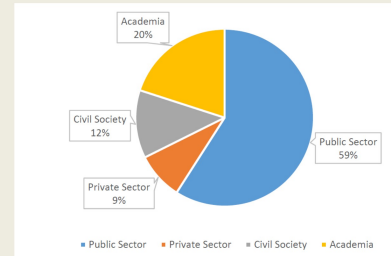


Chart 1. Stakeholder composition across all pilot sites, December 2021.

WORKSHOP LEARNING ACTIVITIES

On-site workshops comprise the following elements:

- Welcome and icebreaker
- Presentation of the Guidelines
- Sessions on latest freshwater plastics science
- Interactive sessions on local plastic pollution
- Training on different plastic monitoring methods
- Hands-on training in the field (Figure 5)
- Design assessment

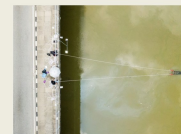


Figure 5. Sampling and observation of litter from bridge.



GENERAL STRATEGY

- Aim for variety in (1) river/lake characteristics, (2) social context, (3) limitations
- Measurements of (1) floating plastic, (2) plastic on banks/shores, and (3) plastic on land
- Synthesize general strategy to develop freshwater plastics monitoring plan
- Long-term goals beyond 2022: consideration of extreme events; biota sampling