

REPORT ON POGO WORKING GROUPS - 2023

Contractor's Report

Title of Working Group: Capacity building for Biochemical observation of Anthropogenic pollution, tropical transitional waters (BEACON)

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Total expenditure to be reimbursed (please attach a financial report with copies of receipts):

1) Please provide a brief description of the activities undertaken by the working group.

1. The BEACON working group established cooperation among interdisciplinary scientists in the Sub-Saharan Africa region (Ghana, Côte d'Ivoire, Nigeria, Togo and Benin) and working with international partners (UK, Germany and USA) through the creation of the Biochemical Observation Network (BON).
2. The BEACON working group engaged in a series of seminars and meetings online for scientific knowledge exchanges and discussions.

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3. The BEACON working group through online seminars and in-persons shared knowledge with members on methods for adoption for biological sampling (e.g., benthos and plankton) and dead remains of biological organisms (microfossils) analysis, chemical pollutants and mercury analysis via Direct Mercury Analyzer (DMA).
4. The BEACON working group fostered working together by interdisciplinary scientists to sample soft substrate using bottom sampling gears (e.g., Eckman grab), plankton net for sampling plankton, Multi-Parameter Probe (e.g., Horiba 50 U Model) to measure physical and chemical properties of transitional water such as Volta Estuary, Ghana and use of Mercury Analyzer to measure chemical pollutant such as Mercury (Hg) in sediment at Department of Marine and Fisheries Sciences, University of Ghana.
5. The BEACON working group participated in field and laboratory work for benthos, plankton, microfossil and mercury analysis at the Department of Marine and Fisheries Sciences, University of Ghana.
6. Photos from BEACON Workshop:
https://drive.google.com/drive/folders/1oimRONwS1CRoL8BT6c-ZLhTRLdCvVn0-?usp=share_link

2) Please describe the milestones and deliverables achieved.

- i. Scientific Network among Interdisciplinary Sub-Saharan Scientists.
- ii. The BEACON Hybrid Workshop was held.
- iii. Public awareness of pollutants (e.g., mercury) via media coverage of the BEACON workshop.
<https://gna.org.gh/2023/04/beacon-holds-capacity-workshop-for-scientists-and-graduate-students/>
- iv. Establishment of Biochemical Observation Network (BON).
- v. Fostered scientific support for graduate students from participating countries.
- vi. The BEACON working group demonstrated the use of Eckman grab and other sampling gears for biological sampling during a field trip on the Volta Estuary, Ghana.
- vii. The BEACON working group engaged in preliminary analysis of mercury in sediments using Direct Mercury Analyzer (DMA) during BEACON Hybrid Workshop in Ghana.
- viii. Generated preliminary data physicochemical properties of transitional waters from participating countries.
- ix. Generated preliminary analysis of Mercury in some of the sediments from participating countries.

Summary of major milestones and deliverables:

	Milestones	Deliverable achieved
1	Creation of Biochemical Observation Network (BON) in West Africa	2021/2022
2	Capacity building preparation workshop	2021/2022
3	Harmonization of methods and capacity building workshop for the adoption of benthos sampling and Hg analysis in (e.g., sediment)	2021/2022/2023
4	Online seminar for sharing of results and local species distribution maps for the creation of an overall regional map for key pollutant indicator species	Still in progress.
5	Online seminar data generated from the workshop and preparation of the concluding report	Still in progress

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6	Submission of the final report to POGO	May 2023
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3) Is this Working Group likely to continue to meet beyond the dates outlined in the original proposal?

Yes.

- i. The BEACON Working Group will continue the scientific collaboration and work together to complete initial tasks as well as foster new opportunities for future scientific research within the region.
- ii. The **preliminary results** of the **condition of coastal waters** in the region will be communicated via **Online seminars and the development of policy briefs** to policymakers.
- iii. The **data generated** will be shared via online seminar as used to set up the **Regional Biochemical Data Unit**.
- iv. The BEACON working group proposed **new research poles for the region “BEACON West Africa Research Clusters”** to **initiate research collaboration, scientific mobility for a short research stay and summer school for 15-20 graduate students** in the region. But requires new funding to realize the goals.

4) Please provide your comments on the POGO-funded Working Group Initiative (e.g. has the funding made a significant difference in the progress of this Working Group?).

- I. Yes. The funding provided opportunities for scientific interaction, discussions, and exchanges online and in person.
- II. Without the funding, the BEACON Hybrid Workshop will not have been possible.
- III. It also provided opportunities for Scientific Mobility within the region since it was the first time some scientists and graduate students, had to travel to Ghana.
- IV. The BEACON Hybrid Workshop provided the atmosphere for the scientists and graduate students to know each other as well as build capacity for further scientific development and research.
- V. The BEACON Hybrid Workshop provided knowledge sharing between West Africa Scientists and International Scientists.
- VI. The funding covers mainly the cost of travel, accommodation and feeding for the participating scientists from Ghana, Côte d'Ivoire, Nigeria, Togo and Benin.
- VII. The funding enabled the purchase of Eckman Grab for sediment sampling through field demonstration.
- VIII. The funding facilitated the purchase of Oxygen gas, which is needed for the operation of a Direct Mercury Analyzer (DMA) for the analysis of Hg in sediment at the Department of Marine and Fisheries Sciences, University of Ghana.

Please return the completed form by e-mail to pogoadmin@pml.ac.uk and enclose a copy of the Workshop report, if applicable.

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