

GEF - PROJECT IMPLEMENTATION REPORT (PIR)

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UNEP GEF PIR Fiscal Year 2024
Reporting from 1 July 2023 to 30 June 2024

1 PROJECT IDENTIFICATION

1.1 Project Details

GEF ID: 4886	Umoja WBS: SB-000690.32
SMA IPMR ID: 127863	Grant ID: S1-32GFL-000009 / P1-33GFL-000809/ P1-33GFL-000866/ P1-33GFL-000870/ P1-33GFL-000874/ P1-33GFL-000900/ P1-33GFL-000942/ P1-33GFL-001014/ P1-33GFL-001022/ P1-33GFL-001031/ P1-33GFL-001036/ P1-33GFL-001048/ P1-33GFL-001049/ P1-33GFL-001052/ P1-33GFL-001054/ P1-33GFL-001064/ P1-33GFL-001073/ P1-33GFL-001139/ P1-33GFL-001140/ P1-33GFL-001141/ P1-33GFL-001142/ P1-33GFL-001311/ P1-33GFL-001316/ P1-33GFL-001352/ P1-33GFL-001459/ P1-33GFL-001481
Project Short Title: GEF-CW.4886.GMP Africa	
Project Title: Continuing regional Support for the POPs Global Monitoring Plan under the Stockholm Convention in the Africa Region	
Duration months planned:	48
Duration months age:	101
Project Type:	Full Sized Project (FSP)
Parent Programme if child project:	
Project Scope:	Regional
Region:	Africa
Countries:	Egypt, Ethiopia, Ghana, Kenya, Mali, Mauritius, Morocco, Nigeria, Senegal, Tanzania, Togo, Tunisia, Uganda, Zambia
GEF Focal Area(s):	Chemicals and Waste
GEF financing amount:	\$ 4,208,000.00
Co-financing amount:	\$ 10,190,200.00
Date of CEO Endorsement/Approval:	2015-01-15
UNEP Project Approval Date:	2015-03-18

Start of Implementation (PCA entering into force):	2015-03-18
Date of Inception Workshop, if available:	2016-07-06
Date of First Disbursement:	2015-07-01
Total disbursement as of 30 June 2024:	\$ 4,170,370.00
Total expenditure as of 30 June:	\$ 4,044,370.00
Midterm undertaken?:	Yes
Actual Mid-Term Date, if taken:	2018-12-31
Expected Mid-Term Date, if not taken:	
Completion Date Planned - Original PCA:	2019-03-31
Completion Date Revised - Current PCA:	2023-12-31
Expected Terminal Evaluation Date:	2024-12-31
Expected Financial Closure Date:	2025-06-30

1.2 Project Description

The GMP phase 2 project (hereinafter "GMP2 project") intends to build on the results of phase 1 (2009-2012) and continue in assisting countries of the African region that are Parties to Stockholm Convention to respect their obligations under Article 16 on Effectiveness Evaluation. The project "Continuing Regional Support for the POPs Global Monitoring Plan under the Stockholm Convention in the Africa Region" will strengthen the countries' capacity for implementation of the revised POPs Global Monitoring Plan, generate sufficient high-quality data on the presence and transport of POP in the region, and create the conditions for sustainability of the networks. Hence, the staff in participating laboratories will receive further training to consolidate and extend their performance in sampling and analysis of the initial as well as the new POPs and matrices (i.e., water and matrices of core national interest). The project will also allow national laboratories to improve their ability to analyse POPs according to international standards consistent with GMP Guidelines, will develop detailed guidelines, protocols and manuals, and will facilitate reporting under the GMP. \n\n The project has five components: 1. Securing conditions for successful project implementation; 2. Capacity building and data generation on analysis of core abiotic matrices (air

and water); 3. Capacity building and data generation on analysis of core biotic matrices (human milk); 4. Assessment of existing analytical capacities and reinforcement of national POPs monitoring; 5. Securing conditions for sustainable POPs monitoring.

The executing agency is UNEP Chemicals and Health Branch. Partners of this project include MTM-Research Center School of Science and Technology, Oerebro University (MTM-Oerebro), Department of Environment and Health, Vrije Universiteit (Netherlands), Chemisches und Veterinaeruntersuchungsamt Freiburg (CVUA, UN Environment/WHO Reference Laboratory for Human Milk), Research Centre for Toxic Compounds in the Environment (RECETOX, Czech Republic), Spanish National Research Council (CSIC), Basel Convention Coordinating Centre, Stockholm Convention Regional Centre, for Capacity Building and Transfer of Technology hosted by Uruguay (BCCC-SCRC-LATU), World Health Organization (WHO), Secretariat of the Basel, Rotterdam and Stockholm Conventions and 15 project countries in the Africa Region.

1.3 Project Contacts

Division(s) Implementing the project	Industry and Economy Division
Name of co-implementing Agency	
Executing Agency (ies)	Knowledge and Risk Unit, Industry and Economy Division of UNEP
names of Other Project Partners	Governments of DR Congo, Egypt, Ethiopia, Ghana, Kenya, Mali, Morocco, Mauritius, Nigeria, Senegal, Tanzania, Togo, Tunisia, Uganda, Zambia. MTM-Research Center School of Science and Technology, Oerebro University (MTM-Oerebro), Department of Environment and Health, Vrije Universiteit (Netherlands), Chemisches und Veterinaeruntersuchungsamt Freiburg (CVUA, UN Environment/WHO Reference Laboratory for Human Milk), Research Centre for Toxic Compounds in the Environment (RECETOX, Czech Republic), Spanish National Research Council (CSIC), Basel Convention Coordinating Centre, Stockholm Convention Regional Centre, for Capacity Building and Transfer of Technology hosted by Uruguay (BCCC-SCRC-LATU), World Health Organization (WHO), Secretariat of the Basel, Rotterdam and Stockholm conventions.
UNEP Portfolio Manager(s)	Kevin Helps
UNEP Task Manager(s)	Jitendra Sharma
UNEP Budget/Finance Officer	Edward Aput
UNEP Support Assistants	
Manager/Representative	Ludovic Bernaudat
Project Manager	Haosong Jiao
Finance Manager	Gricha Zurita

Communications Lead, if relevant

Haosong Jiao

2 Overview of Project Status

2.1 UNEP PoW & UN

UNEP Current Subprogramme(s):	Thematic: Chemicals and pollution action subprogramme
UNEP previous Subprogramme(s):	
PoW Indicator(s):	<ul style="list-style-type: none"> • Pollution: (i) Number of Governments that, with UNEP support, are developing or implementing policies, strategies, legislation or action plans that promote sound chemicals and waste management and/or the implementation of multilateral environmental agreements and the existing framework on chemicals and waste • Pollution: (iii) Number of policy, regulatory, financial and technical measures developed with UNEP support to reduce pollution in air, water, soil and the ocean • Pollution: (iv) Reduction in releases of pollutants to the environment achieved with UNEP support
UNSDCF/UNDAF linkages	N/A
Link to relevant SDG Goals	<ul style="list-style-type: none"> • Goal 3: Ensure healthy lives and promote well-being for all at all ages • Goal 6: Ensure availability and sustainable management of water and sanitation for all • Goal 12: Ensure sustainable consumption and production patterns • Goal 17: Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development
Link to relevant SDG Targets:	<ul style="list-style-type: none"> • 3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination • 6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally • 12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment • 17.6 Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge-sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism • 17.8 Fully operationalize the technology bank and science, technology and innovation capacity-building mechanism for least developed countries by 2017 and enhance the use of enabling technology, in particular information and communications

	technology
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2.2. GEF Core and Sub Indicators

GEF core or sub indicators targeted by the project as defined at CEO Endorsement/Approval, as well as results

Indicators	Targets - Expected Value			Materialized to date
	Mid-term	End-of-project	Total Target	

Implementation Status 2023: Final PIR

2.3. Implementation Status and Risks

	PIR#	Rating towards outcomes (section 3.1)	Rating towards outputs (section 3.2)	Risk rating (section 4.2)
FY 2024	Final PIR	S	S	L
FY 2023	8th PIR	S	S	L
FY 2022	7th PIR	S	S	L
FY 2021	6th PIR	S	S	L
FY 2020	5th PIR	S	S	M
FY 2019	4th PIR	MS	MS	L
FY 2018	3rd PIR	MS	MS	L
FY 2017	2nd PIR	S	MS	L
FY 2016	1st PIR	S	MS	M
FY 2015				

Summary of status

This is the final PIR of the project. Over the past year, the project has successfully completed all the 17 activities as per the approved workplan and delivered all the planned outcomes and outputs. Moreover, upon requests from project countries and following approval from the project steering committee, additional monitoring activities were conducted to further support achieving the goal of the project on strengthening regional capacities and creating conditions for sustainable monitoring of POPs in the region. Key milestones include publishing twelve UNEP technical and project reports, conducting additional capacity building activities, organizing project final workshop, and publishing communication content for awareness raising, among others. It is important to note that 4 GMP projects (Asia, Africa, Pacific and GRULAC) have been implemented in coordination and have several common activities. Component wise progress is provided below:

Component 1

All of the fifteen project countries have conducted the planned activities as per the project requirements and their legal agreement with UNEP. POPs monitoring in abiotic samples (air and water), biotic samples (human milk) and matrices of national interest were conducted. Results generated were consolidated into UNEP reports and were shared with the Stockholm Convention Data Warehouse to support the effectiveness evaluation of the Convention. A laboratory databank was updated and published online <http://informea.pops.int/HgPOPLabs/index.html>.

Some project countries also conducted additional activities to use POPs monitoring results for informed policy and decision making. This includes for example, awareness raising, additional POPs monitoring in matrices of national interest, capacity building on data management and interpretation, among others.

Component 2

The project has collected seasonal air and water samples for two years. Guidance and protocols were developed to support the sampling and analysis of POPs. Air samples were collected in seven countries and water samples were collected in two countries analyzed for 23 POPs as per the project requirement. Moreover, newly listed POPs and chemicals proposed for review by the Stockholm Convention such as Chlorinated Paraffins were also analyzed. Results generated were shared with project countries and reported to the Stockholm Convention Data Warehouse. Two sectoral reports and a regional report were developed summarizing the results generated. The reports are published on UNEP website. <https://www.unep.org/topics/chemicals-and-pollution-action/pollution-and-health/persistent-organic-pollutants-pops/pops>.

Component 3

Human milk survey was conducted with guidance and protocols developed. Analytical results of 23 mandatory POPs, as well as newly listed POPs and some candidate POPs, have been generated, shared with project countries, and reported to the Stockholm Convention Data Warehouse. The results were used in the Stockholm Convention GMP reports for the effectiveness evaluation of the Convention. A sectoral report was developed to summarize the results, and was published on UNEP website <https://www.unep.org/topics/chemicals-and-pollution-action/pollution-and-health/persistent-organic-pollutants-pops/pops>.

Component 4

Two rounds of interlaboratory assessment were organized in 2016-2017 with 175 registrations and in 2018-2019 with 147 registrations. The reports for each of the interlaboratory assessments are available online. A report intitle "Organization and Outcomes of Four Interlaboratory Assessments on Persistent Organic Pollutants" presents a summary of the four interlaboratory assessments organized under the two rounds of UNEP/GEF GMP projects.

While interlaboratory assessments involves comparing the performance of multiple laboratories by analyzing the same samples, accreditation is a formal recognition that a laboratory meets established standards and requirements. In order to explore sustainable options to further support continued monitoring of POPs in countries and regions, an assessment was comparing Interlaboratory assessments and accreditation to provide inputs on ensuring laboratory quality and competence.

To support strengthening capacities and creating conditions for sustainable monitoring of POPs, the projects developed 16 protocols and Standard Operating Procedures (SOPs) in multiple UN languages to support POPs sampling, analysis, data management, and reporting, including video tutorials. An e-course was also developed to facilitate data management and interpretation. In addition, the project organized 26 training sessions on the analysis of abiotic and biotic core matrices for technical staff from 37 countries in four regions. Gender aggregated data was collected to ensure equal participation and gender integration in these trainings.

Eleven countries collected and submitted 105 samples of national interest including diary, egg, fish, meat, sediment, soil and others. Nigeria and Ghana also collected samples of plastic pellets. Results generated in the expert laboratories were shared with relevant countries. Mirror analysis were conducted in national laboratories where capacity exists. Results generated by national laboratories were included in the project national reports.

Following the recommendations of project stakeholder meetings and the results of capacity assessments, pilot studies were conducted in collaboration with the Stockholm Convention regional centres in Africa, Asia-Pacific and GRULAC focusing on strengthening regional coordination in POPs monitoring to fill in data gaps and address regional needs. Besides, analysis of POPs in matrices of national interest such as plastics were conducted in seventeen countries in Africa, Asia-Pacific and GRULAC. As part of this capacity building activity, a series of five webinars were organized (records available online) with 50-175 participants in each session. A guidance and two assessment reports were developed. Overall, 464 plastic samples, mainly domestically recycled pellets and shreds, were collected and analyzed with results summarized in a report.

Based on the results of POPs in biotic and abiotic matrices and upon requests from project countries, follow-up monitoring was conducted to support emission tracking and data use in national context. For example, in Egypt, with POPs detected in water and human milk samples, POPs pesticide residues were analysed in sludge collected at various wastewater treatment plants located near agriculture areas to support establishing POPs limits in the Egyptian health-related regulations and controlling the levels of sewage sludge treatment.

Component 5

The project has analyzed over 900 environmental and human samples for POPs. Various reports were developed to capture the presence of POPs, the conclusions, lessons learned as well as recommendations from future monitoring activities. Four regional reports were developed capturing POPs in Africa, Asia, Pacific Islands and GRULAC. Three sectoral reports were developed on POPs in air, water and human milk. A training report was developed summarizing the capacity building activities and lessons learnt. Three assessment reports were developed, namely “Organization and Outcomes of Four Rounds of Interlaboratory Assessments on Persistent Organic Pollutants”, “Review of Facts, Experiences, Achievements and Challenges in relation to Persistent Organic Pollutant Monitoring Activities”, and “Assessing Regional and National

Capacities for Monitoring and Research of Persistent Organic Pollutants in Air and Water”. A synthesis report on roadmap to secure conditions for sustainable monitoring of POPs was developed. These reports are shared in the UNEP webpage <https://www.unep.org/topics/chemicals-and-pollution-action/pollution-and-health/persistent-organic-pollutants-pops/pops>. The findings are also highlighted in multiple scientific publications including a special issue in a scientific journal on analytical chemistry (Chemosphere, which contains 18 articles) and a book entitled “Persistent Organic Pollutants in Human Milk”. The project also developed information documents for the 10th and 11th Conferences of Parties to the Stockholm Convention to share the progress and results of the project with the Parties of the Convention.

To facilitate data and knowledge management, the project developed guidance documents, e-course, data dashboard, and organized workshops and training sessions. Additionally, pilot studies were conducted in various countries to offer practical examples and hands-on experience. These efforts aim to build and strengthen the data and knowledge management capacities of project countries, enabling them to better utilize scientific results for environmental monitoring and policy making. Details are captured in the training report “Capacity building on POPs monitoring in biota and abiotic matrices in the Africa, Asia, Pacific and GRULAC regions”.

To share the data and results generated under the UNEP/GEF GMP projects with stakeholders and a broader audience, various tools and communication content were developed. This includes a webpage that presents progress and reports of the project, and an interactive dashboard for results sharing and visualization. Results of the project were also included in the World Environment Situation Room of UNEP (<https://staging7.unep.org/wesr/web/article/chemicals-and-waste>) to support decision-making, policy and action for sustainable development and national planning needs.

Communication activities were conducted to raise public awareness. Side events and booth exhibitions were organized at the 10th and 11th Conferences of Parties to the Stockholm Convention. A set of communication content – including nine videos in English, French and Spanish, three infographics, three factsheets, a colorbook, an interactive website, and a set of social media content – were developed to disseminate the scientific messages among the general public in particular the youth. A Trello board (<https://trello.com/b/TEKcmkw0/worst-friends-forever-campaign>) was designed to allow downloading and reposting by partners and stakeholders. A UNEP press release was published on 17 June 2024 focusing on the results and significance of POPs monitoring in humans and in the environment. The press release attracted wide global attention, resulting in ten re-posts and five media interviews.

Overall, the project has successfully achieved its objectives. Project steering committee meetings and stakeholder consultation meetings were timely organized during the project implementation to share progress and deliverables. Project final workshop was organized in 2023. Results of the project provided significant contributions to the effectiveness evaluation of the Stockholm Convention by filling in the data gaps for the Global South and providing scientific facts for informed decision making at the regional and national levels. Experience gained from the project and collaboration established among global partners provide a solid foundation for continued monitoring of POPs towards sound management of these toxic chemicals.

Regarding the financial progress during reporting period, the project has reported expenditure of over 96% (\$4,044,370 out of available 4,208,000) while amounts of ~\$121,000 is committed for payments. The project will initiate management led terminal reviews in Q4 of 2024.

2.4 Co Finance

Planned Co-finance:	\$ 10,190,200
Actual to date:	10,229,199
Progress	<p>Justify progress in terms of materialization of expected co-finance. State any relevant challenges:</p> <p>Most of the partner countries and institutes have provided co-finance according to their commitments. Confirmations are to be received from two other partners.</p>

2.5. Stakeholder

Date of project steering committee meeting	2023-11-30
Stakeholder engagement (will be uploaded to GEF Portal)	<p>The project aimed to actively engage a diverse range of stakeholders to enhance coordination and collaboration towards achieving the planned outcomes and objectives. Throughout the implementation, various activities were conducted with significant commitment and contributions from various stakeholders received.</p> <p>For data generation, governments of project countries including both the environment and health departments were engaged in the collection of samples. Local communities in some countries were also involved in sample collection and awareness raising, in particular human milk and matrices of national interest. Project countries also proposed and participated in additional activities within the scope of the project and upon approval of the steering committee, including for example national awareness raising, analysis of POPs newly listed in the Stockholm Convention, and data interpretation to support national policy making. For example, awareness raising was conducted in local communities in Vanuatu based on the POPs monitoring results to promote sound management of waste.</p> <p>Guidance and protocols for POPs monitoring were developed based on ISO standards and WHO guidance on human milk survey, and were followed across all project countries. Samples collected were analyzed at expert laboratories, including at MTM-Research Center, Orebro University (MTM-Orebro), Department of Environment and Health, Vrije Universiteit (VU), Research Centre for Toxic Compounds in the Environment (RECETOX, Czech Republic) and Spanish National Research Council (CSIC) for air and national matrices, at MTM-Orebro and Chemisches und Veterinaeruntersuchungsamt Freiburg (CVUA) for human milk, and at MTM-Orebro for water. Analysis was</p>

also conducted in national laboratories with existing capacities.

Moreover, close collaboration and communication were further established with the Secretariat of the Stockholm Convention, the Global Monitoring Plan Global Coordination Group and Regional Organizational Groups, the Data Warehouse hosted by the Research Centre for Toxic Compounds in the Environment (RECETOX, Czech Republic) for data reporting, validation and inclusion to support the effectiveness evaluation of the Stockholm Convention. The project also collaborated with regional monitoring networks including the POPs East Asia Programme (POPsEA) in Asia, the Monitoring Network for POPs (MONET) Programme in Africa, and the Global Atmospheric Passive Sampling (GAPS) Network in Latin America to share experience on capacity building and to jointly fill in global data gaps.

Besides, stakeholder engagement was also strengthened through various capacity building activities conducted under the project. Twenty-six (26) trainings were delivered by MTM-Orebro, VU, CSIC, RECETOX and University of Queensland (UQ) to national laboratories in four regions, including 9 in Africa, 5 in Asia, 2 in Pacific Islands and 10 in GRULAC. These trainings equipped hundreds of technical staff in national laboratories with the essential skills for POPs monitoring. Series of webinars and workshops were organized targeting on regional and national technical staff and scientific researchers to share the monitoring results. Two rounds of interlaboratory assessments were organized, the first from 2016-2017 and the second from 2018-2019. Each round received participation from over 100 laboratories from all UN regions, including a significant number of private sector participants. Close collaboration was also established with the Basel Convention Coordinating Centre, Stockholm Convention Regional Centre, for Capacity Building and Transfer of Technology hosted by Uruguay (BCCC-SCRC-LATU), China (BCCC-SCRC-China) and South Africa (BCCC-SCRC-SA) to conduct assessment and develop tools to support regional capacity building.

In addition, various stakeholder engagement activities were conducted throughout the implementation of the project. For example, Project steering committee meetings were regularly organized. Project inception, midterm and final workshops were organized at regional and international levels to share progress and gather inputs from various stakeholders. Multiple virtual and in-person consultations were held with experts and key stakeholders to discuss challenges, strategies, and ways to enhance collaboration, integration and sustainability. These meetings fostered transparency and sustained engagement throughout the project lifecycle.

Stakeholder feedback are carefully considered throughout the implementation of the project. Regular communication was held with project countries and partners to report progress and address issues. Project deliverables such as technical reports were shared with project countries for review and comments.

	<p>The project also organized and participated in various communication activities and events to reach out to broader stakeholders. For example, in collaboration with UNEP World Environment Situation Room, digital tools were developed to share the data generated under the project. Three side events were organized at the 9th, 10th and 11th Conferences of Parties to the Stockholm Convention to present progress and results of the project, with various presentations given at relevant meetings including for example, academic conferences and meetings on Stockholm Convention National Implementation Plans. A communication package was developed in collaboration with UNEP flagship campaigns, including a UNEP press release to present the key findings to policy makers and the scientific community, as well as content for awareness raising among the general public in particular the youth. This includes videos, social media stories, infographics, factsheets, interactive website, colorbook, among others.</p> <p>In conclusion, stakeholder engagement was integral to the project's implementation, ensuring that it was inclusive, transparent, and responsive to the needs and concerns. The continuous collaboration and communication with stakeholders enhanced their ownership of the project activities, identified and mitigated potential challenges, disseminated knowledge and information to amplify the impact of the project, and laid a strong foundation for achieving the project's objectives and promoting sustainability.</p>
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2.6. Gender

Does the project have a gender action plan?	No
Gender mainstreaming (will be uploaded to GEF Portal):	<p>Throughout the project implementation, gender aspects are carefully considered to ensure inclusivity and equality. First, the particular vulnerability to POPs exposure of women in childbearing age is taken into account in the design of the monitoring activities, notably by the incorporation of mother’s milk as one of the core matrices of the POPs GMP. The collection of human milk samples was conducted on the basis of the ethical clearance obtained in project countries following WHO guidance.</p> <p>Besides, project activities were designed to promote equal participation, including targeted outreach and capacity-building initiatives. For example, gender balance was considered during the selection of drafters and reviewers of reports, and gender-sensitive language was used across all UNEP reports published under this project.</p> <p>Regular monitoring and evaluation processes incorporate gender indicators were undertaken to track progress and outcomes, ensuring that both men and women are equally represented and their contributions and needs are addressed. In particular, gender aggregated information recorded for trainings, workshops and webinars were collected and presented in the UNEP report titled “Training Report: Capacity building on analysis of POPs in biota and abiotic matrices in the Africa, Asia, Pacific and GRULAC regions”.</p> <p>In conclusion, the approaches taken under the project contributed to promoting a more inclusive and effective environment for gender balance and integration.</p>

2.7. ESSM

Moderate/High risk projects (in terms of Environmental and social safeguards)	<p>Was the project classified as moderate/high risk CEO Endorsement/Approval Stage?</p> <p>No</p> <p>If yes, what specific safeguard risks were identified in the SRIF/ESERN?</p> <p>No</p>
New social and/or environmental risks	Have any new social and/or environmental risks been identified during the reporting period?

	<p>If yes, describe the new risks or changes?</p> <p>\n</p>
<p>Complaints and grievances related to social and/or environmental impacts</p>	<p>Has the project received complaints related to social and/or environmental impacts (actual or potential) during the reporting period?</p> <p>No</p> <p>If yes, please describe the complaint(s) or grievance(s) in detail, including the status, significance, who was involved and what actions were taken?</p>
<p>Environmental and social safeguards management</p>	<p>Analysis of samples requires usage of chemicals. The biotic and abiotic samples as well as the chemicals and consumables used are considered as wastes after analysis. To ensure a safe working environment, all laboratories should follow international safety standards and quality control while conducting lab analysis, which included laboratory management of human resources, data reporting and storage, operation of equipment, and disposal of waste. As all laboratories have waste management standards and routines, the project was able to ensure that an appropriate waste treatment system was in place at the laboratories to avoid unintentional contamination of soil, water or air. Regular follow-up and evaluation were conducted to track compliance. Stakeholder consultations were held to share progress and address concerns, ensuring that the international standards were followed and the environmental and social impact were well considered. Additionally, workshops and capacity-building activities were organized to enhance stakeholders' understanding, promoting responsible project implementation. Besides, technical support were provided to project countries including capacity building sessions delivered to facilitate data interpretation for informed policy and decision making in regions and countries. The project has prepared a variety of communication materials including press release, brochures, dashboard, interactive website, videos, infographics, factsheets, social media content etc. for awareness among stakeholders and the general public. As a result, POPs monitoring in humans and in the environment conducted under the project contributed to assessing the presence of POPs, supporting the effectiveness evaluation of the Stockholm Convention, and fostering actions to mitigate negative environmental and social impacts of POPs. UN Rules and standard procedures are followed throughout the implementation of the project to ensure that GEF resources are used for legitimate purposes. The project received midterm review in 2018, recommendations of which were taken into consideration and implementation where applicable.</p>

2.8. KM/Learning

<p>Knowledge activities and products</p>	<p>From 2016 to 2024, UNEP GMP POPs global monitoring plan projects monitored POPs in forty-two (42) countries in Africa, Asia-Pacific and Latin America and the Caribbean regions. This included the collection and analysis of over 900 samples of air, water, human milk and other matrices such as sediment and food. This effort significantly expanded the geographical and analytical scope of POP monitoring</p>
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and generated a wealth of data on POPs in air, water, and human milk. The results generated and experience gained have contributed to the effectiveness evaluation of the Stockholm Convention and expanded the geographical diversity of data in the POPs data warehouse of the Convention. These findings are also captured in four regional reports, three sectoral reports, three assessment reports, a synthesis report and a training report. The findings are also highlighted in multiple scientific publications including a special issue in a scientific journal on analytical chemistry (Chemosphere, which contains 18 articles) and a book entitled "Persistent Organic Pollutants in Human Milk". These reports are shared in the UNEP webpage <https://www.unep.org/topics/chemicals-and-pollution-action/pollution-and-health/persistent-organic-pollutants-pops/pops>.

During its implementation, the projects developed 16 protocols and Standard Operating Procedures (SOPs) in multiple UN languages to support POPs sampling, analysis, data management, and reporting, including video tutorials. An e-course was also developed to facilitate data management and interpretation. In addition, the project organized 26 training sessions on the analysis of abiotic and biotic core matrices for technical staff from 37 countries. Upon request, trainings were provided to the Pacific and GRULAC countries on data handling and interpretation. Pilot studies were organized on the analysis of POPs in matrices of national interest such as plastics in nine countries and on strengthening regional coordination for sustainable monitoring of POPs. Furthermore, webinars and workshops were held to share knowledge and results of POPs monitoring in air, water, human milk, and matrices of national interest such as plastics, among others.

The projects also conducted two rounds of global biennial interlaboratory assessments in 2016-2017 and in 2018-2019 to facilitate cross validation and quality control/quality assurance (QA/QC). A databank of POPs laboratories have been established and is publicly available online at <http://informea.pops.int/HgPOPLabs/index.html>. The reports for each of the four interlaboratory assessments are available online. A report intitle "Organization and Outcomes of Four Interlaboratory Assessments on Persistent Organic Pollutants" presents a summary of the four interlaboratory assessments organized under the two rounds of UNEP/GEF GMP projects.

To share the data and results generated under the UNEP/GEF GMP projects with stakeholders and a broader audience, various tools were developed. This includes a webpage that presents project related information, such as the guidance and reports prepared, activities conducted, and an interactive dashboard consolidating all the POPs monitoring results generated under the projects. This dashboard enables data visualization, retrieval and spatial-temporal comparison at national, regional and global scales, with the full dataset available for download for further research and interpretation by scientists and stakeholders. Moreover, the results generated under the UNEP/GEF GMP projects were also included in the World Environment Situation Room of UNEP (<https://staging7.unep.org/wesr/web/article/chemicals-and-waste>), which provides federated data system of the openly accessible environmental data, information and knowledge to support decision-making, policy and action for sustainable development and national

planning needs.

With valuable scientific facts generated under the project, communication activities were conducted to raise public awareness. This includes organization of side events and booth exhibitions at the 10th and 11th Conferences of Parties to the Stockholm Convention, as well as development of a set of communication content – including nine videos in English, French and Spanish, three infographics, three factsheets, a colorbook, an interactive website, and a set of social media content – to disseminate the scientific messages among the general public in particular the youth. A Trello board (<https://trello.com/b/TEKcmkw0/worst-friends-forever-campaign>) was designed to allow downloading and reposting by partners and stakeholders.

Besides, a UNEP press release was published on 17 June 2024 focusing on the results and significance of POPs monitoring in humans and in the environment. With press release attracted wide attention globally, the Chemicals and Health Branch of UNEP was interviewed by Politico EU, the Skimm USA, Radio France Internationale, and provided written inputs to Mail&Guardian and Miljöreporter Sweden. Meanwhile, various international and national media reposted the UNEP press release, including the Guardian (<https://mg.co.za/the-green-guardian/2024-06-19-un-report-shows-decline-in-some-chemical-pollutants-as-new-threats-emerge/>), Our World on X (<https://t.co/co9RCRRmaM> <https://t.co/H6VBIMB99t> / X), Down to Earth Organization (<https://www.downtoearth.org.in/pollution/ddt-levels-have-declined-in-humans-environment-since-2004-but-those-of-other-persistent-organic-pollutants-rising-un>), Environment News Nigeria (<https://www.vironewsigeria.com/while-some-chemical-pollutants-reducing-in-the-environment-new-ones-keep-popping-up-study/>), Krishijagran.com (<https://krishijagran.com/agriculture-world/global-study-confirms-persistence-of-harmful-pops-in-environment-and-humans-across-42-countries/>), Panapress.com (https://www.panapress.com/UNEP-Some-chemical-pollutants-re-a_630769437-lang2.html), Inter Press Service (a news agency that provides views from the Global South (<https://ipsnoticias.net/2024/06/persiste-la-contaminacion-quimica-en-alimentos-aire-y-aguas/>), Liberation (https://www.liberation.fr/environnement/pollution/pfas-lonu-alerte-sur-lomnipresence-des-polluants-eternels-dans-leau-potable-et-le-lait-maternel-20240617_DN6OVAFQUNAJBMQH2PW7QADV3U/), and by the GEF Head of Communication (<https://x.com/robbiebisset/status/1802705913154777464?s=48>). A more comprehensive report on the clippings of the press release is being prepared by the Media Team of UNEP Communication Division.

In conclusion, the project has produced a wealth of knowledge products that summarize the results of monitoring activities, strengthen regional and national capacities for POPs monitoring, and raise public awareness about the environmental presence and human exposure to POPs. These activities have contributed not only to the effectiveness evaluation of the Stockholm Convention but also to providing scientifically sound evidence for policymakers, stakeholders, and the general public. This evidence supports responsible and effective actions to address POPs pollution. Furthermore, these knowledge products will ensure the project's long-lasting impact beyond

	its implementation period, emphasizing the importance of long-term POPs monitoring for informed decision-making.
Main learning during the period	<p>From 2016 to 2024, the United Nations Environment Programme (UNEP) through financial support from the Global Environment Facility (GEF) conducted the recent round of Persistent Organic Pollutants (POPs) monitoring in 42 countries in Africa, Asia-Pacific and Latin America and the Caribbean regions. This included the collection and analysis of over 900 samples of air, water, human milk and other matrices such as sediment and food, and over 50,000 data points generated.</p> <p>This project significantly expanded the geographical and analytical scope of POPs monitoring in developing countries and generated a wealth of data on POPs in air, water, and human milk. The results were presented in four regional reports, three sectoral reports, three assessment reports and highlighted in multiple scientific publications including a book entitled “Persistent Organic Pollutants in Human Milk”. These reports are available at the UNEP webpage.</p> <p>Key messages on the monitoring reports prepared under the project</p> <p>1. Chemical Pollution: It is time to rethink the way we create, use and dispose chemicals for the health of people, environment and planet</p> <p>Chemical pollution poses severe risks to ecosystems and human health, necessitating urgent global cooperation for effective management and mitigation. Persistent Organic Pollutants (POPs), chemicals that stay in the environment over decades and longer have been found in air, water, human milk, and other environments around the world, including the mountains, the oceans, and remote islands. Due to the often-invisible nature of many chemicals and their chronic and cumulative toxic effects, the risks they pose to human health and ecosystems have not been sufficiently addressed through effective actions.</p> <p>Multilateral environmental agreements (MEAs), such as the Stockholm Convention on POPs, exist to regulate the production, import, export, use, waste management, and emission control of these chemicals. Despite this, the development of new chemicals and regrettable substitutions persist, highlighting the ongoing need for regulation, actions and monitoring.</p> <p>From 2016 to 2023, the UNEP/GEF POPs Global Monitoring Plan (GMP) projects conducted the recent round of POPs monitoring in forty-two (42) countries in Africa, Asia-Pacific and Latin America and the Caribbean regions. This also contributes to a 20-year joint survey between UNEP and the World Health Organization (WHO) on POPs in human milk, which covers a total of 82 countries all over the world. UNEP reports present the latest data on one of the largest geographical areas ever researched on these chemicals. The data is based on</p>

	<p>monitoring 30 POPs, all listed under the Stockholm Convention.</p> <p>The results of these projects, including the global cooperation established, have contributed to the implementation of the Stockholm Convention and its effectiveness evaluation. Leveraging these established mechanisms and collaboration can facilitate the generation of comprehensive data necessary to support decision making for the sound management of POPs, protecting long-term environmental and human health.</p> <p>The findings support the need to exert caution in the development of new chemicals that might exhibit persistent characteristics as their presence introduces risks to both humans and ecosystems. The newly listed POPs under the Stockholm Convention present an escalating challenge, as even the most advanced laboratories struggle to analyze them. This emphasizes a critical concern: the relentless creation of new chemicals with POP-like characteristics may soon surpass our ability to detect and manage them. Our current struggle to monitor the increasing list of POPs highlights the pitfalls of addressing chemicals on an individual basis, often resulting in regrettable substitutions. Instead, a value chain perspective should be promoted, especially within the industry, to fulfil the essential functions of these chemicals with safer and more sustainable solutions.</p> <p>2. Declining trends of some legacy POPs were observed, indicating the positive impacts of global joint efforts</p> <p>Declines on levels of POPs such as DDT, polychlorinated biphenyls (PCBs) and dioxins-like POPs (dl-POPs) have been observed, indicating the effectiveness of the Stockholm Convention and global joint efforts.¹ For example, 60% decline over a 10-year period on global average was observed on levels of DDT in human milk, reflecting the impact of actions taken in the past. Unintentionally produced POPs also significantly declined in all countries, reflecting improved waste management practices.</p> <p>3. Legacy POPs are still detected</p> <p>Notwithstanding this decline, results showed that the 12 POPs first regulated by the Stockholm Convention in 2004 were still found, such as dieldrin and PCBs in Africa and Latin America and the Caribbean. Some of these levels might be due to the remaining stockpiles, but other reasons such as illegal usage, lack of awareness or gaps in regulations are not negligible. We are still not safe from the potential health risk of these chemicals present in our environment. DDT remains commonly detected and accounts for the highest proportion of POPs in human milk on a global average and particularly in countries where DDT was intensively used.</p> <p>4. New POPs are detected at high levels</p>
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When entering into force in 2004, 12 POPs were listed under the Stockholm Convention. By 2023, mounting evidence of POPs characteristics in other chemicals has led to the addition of 22 new POPs under the Convention, reflecting the rapid development, production and widespread use of toxic chemicals, along with the potential damage they may cause. Some chemicals such as per- and polyfluoroalkyl substances (PFASs) were previously introduced as alternatives to the chemicals banned in countries and by the Stockholm Convention. However, later on they also became subject to control. Some of these substitutes can now be found in water in remote islands at elevated levels, much higher than the regulatory limits of the European Union and the United States.

Industrial chemicals that have been listed as POPs, which are intentionally added to products so that they acquire specific properties such as anti-adhesion or waterproofing, accounted for about 60% of the total load of POPs in human milk in the Asia-Pacific region and 40% in Africa and Latin America and the Caribbean. These POPs are widely used in textiles, adhesives, sealants, coatings and inks, and as solvents and additives.

The troubling pattern revealed by the monitoring results of POPs—banning one harmful chemical only to replace it with a regrettable substitution—should raise significant concern due to the persistence and bioaccumulation of these substances. Instead of perpetuating this cycle, value chain analysis demonstrates that relying on chemicals is not necessary to achieve desired functions and properties. For instance, specific weaving techniques can produce textiles with water-repellent properties, eliminating the need for chemical treatments like PFASs. Sustainable solutions such as the value chain approach offers a more effective and environmentally friendly alternative to short-sighted substitutions.

This also explains why the levels of legacy POPs showed some declines on global average while high levels of newly listed POPs were detected. For example, perfluorooctane sulfonic acid (PFOS), perfluorooctanoic acid (PFOA) and perfluorohexane sulfonic acid (PFHxS), three chemicals in the PFASs group that are listed under the Stockholm Convention, can now be found in rivers and oceans at elevated levels even in least explored areas, much higher than the regulatory limits set by the European Union and the United States. PFASs were also detected in all the human milk samples collected, with the highest found in the Pacific Islands, raising concerns on the sources of exposure.

High levels of Chlorinated Paraffins (CPs) were also found in human milk samples. Results of the 2016–2019 human milk survey showed that short-chain chlorinated paraffins (SCCPs) and medium-chain chlorinated paraffins (MCCPs) accounted for the 2nd largest proportion of POPs on global average, following DDT. These chemicals are commonly used as flame retardants and plasticizers in products.

5. POPs are detected in human milk

The WHO/UNEP human milk survey is largest and longest-running global study on human exposure to POPs. In total, 82 countries from all UN regions participated between 2000 and 2019. The most recent survey, conducted from 2016 to 2019, included participation from 43 countries. The accumulated data of human milk surveys have contributed to the derivation of statistically significant time trends at both regional and global levels.

There has been a measurable decrease in the global levels of legacy POPs such as DDT, PCBs and dioxin-like POPs. This indicates that restricting or banning the production and usage of these POPs and improving waste management and emission control has been successful. However, concentrations of POPs in some areas remain high. Globally, DDT individually accounted for the largest proportion of POPs on average, followed by CPs and PCBs. Industrial POPs combined accounted for about 60% of the total load of POPs in human milk in the Asia-Pacific Region and 40% in the African and the Latin America and the Caribbean regions. The high levels of new POPs listed under the Stockholm Convention such as SCCPs raise concerns over sources of exposure, indicating the need to address these sources.

PFOA, PFOS and PFHxS were also widely detected in the human milk samples. In the 2016-2019 study, the highest level was found in the Pacific Islands, which was 10 times higher than the global median.

6. The issue of PFAS

Of the thousands of synthetic chemicals grouped as PFASs, so far three and their related compounds are listed by the Stockholm Convention namely perfluorooctane sulfonic acid (PFOS), perfluorooctanoic acid (PFOA), and perfluorohexane sulfonic acid (PFHxS). In the UNEP project from 2016-2019, these three PFASs were widely detected in water and human milk. Among the 22 countries where water monitoring was conducted, the highest levels for PFOS and PFHxS were found in the Pacific Islands, and in Africa for PFOA. The highest level in human milk among the 43 surveyed countries was detected in the Pacific Islands.

Flame retardants, including some PFASs, are chemical compounds that can prevent or slow down the spread of fire. Mirex and PCBs were among the first chemicals used as flame retardants dating back to the 60s. They are among the 12 POPs first listed under the Stockholm Convention in 2004. Alternative flame retardants at the time of initial POPs replacement, like Penta-Chlorobenzene (PeCB), Polybrominated diphenyl ethers (PBDEs), Hexabromobiphenyl (HBB), and Hexabromocyclododecane (HBCD), were later on listed for elimination under the Convention from 2009 to 2017 as their POPs characteristics were demonstrated and recognized.

	<p>Nevertheless, regrettable substitutes continued to be introduced. SCCPs, used as a flame retardant and banned by the Stockholm Convention in 2017, have been detected as the second highest POP in human milk according to the UNEP/WHO human milk survey in 43 countries in 2016-2019. The use of PFOS, a flame retardant, was restricted under the Convention in 2009. Alternatives, chemically similar, filled in the place of PFOS and were soon also classified as POPs; e.g.: PFOA was severely restricted in 2019 and PFHxS was banned in 2022. However, because of their persistence, their accumulation in the environment continued.</p> <p>These toxic chemicals were detected in surface water in 22 countries across the world, even in remote islands in the Pacific. Substituting one harmful chemical with another is not the solution.</p> <p>7. Environmental monitoring is critical to provide evidence for informed policy and decision making</p> <p>We cannot afford to assume that any chemical developed as additive for a product for a specific property, whether for convenience or safety, is inherently safe to use. In reality, the pervasive use of thousands of chemicals in our daily lives means that no one is immune to their exposure and therefore the risks they pose. Environmental monitoring is essential to ensure that we remain vigilant and proactive in promoting action to address these risks before it is too late.</p> <p>UNEP's snapshot study of the state of POPs in the environment shows they remain omnipresent, despite an overall declining trend and efforts to reduce their use and production. Having monitoring data on concentrations of POPs in the environment and humans is vital. It helps assess the success of measures to control exposure but also in identifying new risks where we can focus efforts on developing preventative measures.</p> <p>Many project countries expressed interest and commitment on continued monitoring of POPs, which indicated the increasing awareness on the importance of POPs monitoring for evidence-based decision making. Meanwhile, some regional labs actively participated in capacity building activities and interlaboratory assessments. Although capacity gaps still exist in generating high-quality globally comparable data, opportunities exist to enhance regional participation in data generation and lab analysis of POPs in the long run. Future projects on global monitoring of POPs is vital to maintain and improve regional capacities towards generating high quality data to ensure data coverage for the effectiveness evaluation of the Stockholm Convention and for informed decision and policy making at all levels.</p>
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2.9. Stories

<p>Stories to be shared</p>	<p>From 2016 to 2024, the United Nations Environment Programme (UNEP) through financial support from the Global Environment Facility (GEF) conducted the recent round of Persistent Organic Pollutants (POPs) monitoring in 42 countries in Africa, Asia-Pacific and Latin America and the Caribbean regions. This included the collection and analysis of over 900 samples of air, water, human milk and other matrices such as sediment and food, and over 50,000 data points generated.</p> <p>This project significantly expanded the geographical and analytical scope of POPs monitoring in developing countries and generated a wealth of data on POPs in air, water, and human milk. The results were presented in four regional reports, three sectoral reports, three assessment reports and highlighted in multiple scientific publications including a book entitled “Persistent Organic Pollutants in Human Milk”. These reports are available at the UNEP webpage.</p> <p>Key messages on the monitoring reports prepared under the project</p> <p>1. Chemical Pollution: It is time to rethink the way we create, use and dispose chemicals for the health of people, environment and planet</p> <p>Chemical pollution poses severe risks to ecosystems and human health, necessitating urgent global cooperation for effective management and mitigation. Persistent Organic Pollutants (POPs), chemicals that stay in the environment over decades and longer have been found in air, water, human milk, and other environments around the world, including the mountains, the oceans, and remote islands. Due to the often-invisible nature of many chemicals and their chronic and cumulative toxic effects, the risks they pose to human health and ecosystems have not been sufficiently addressed through effective actions.</p> <p>Multilateral environmental agreements (MEAs), such as the Stockholm Convention on POPs, exist to regulate the production, import, export, use, waste management, and emission control of these chemicals. Despite this, the development of new chemicals and regrettable substitutions persist, highlighting the ongoing need for regulation, actions and monitoring.</p> <p>From 2016 to 2023, the UNEP/GEF POPs Global Monitoring Plan (GMP) projects conducted the recent round of POPs monitoring in forty-two (42) countries in Africa, Asia-Pacific and Latin America and the Caribbean regions. This also contributes to a 20-year joint survey between UNEP and the World Health Organization (WHO) on POPs in human milk, which covers a total of 82 countries all over the world. UNEP reports present the latest data on one of the largest geographical areas ever researched on these chemicals. The data is based on monitoring 30 POPs, all listed under the Stockholm Convention.</p> <p>The results of these projects, including the global cooperation established, have contributed to the implementation of the Stockholm Convention and its effectiveness evaluation. Leveraging these established mechanisms and collaboration can facilitate the generation of comprehensive data necessary to</p>
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support decision making for the sound management of POPs, protecting long-term environmental and human health.

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2. Declining trends of some legacy POPs were observed, indicating the positive impacts of global joint efforts

Declines on levels of POPs such as DDT, polychlorinated biphenyls (PCBs) and dioxins-like POPs (dl-POPs) have been observed, indicating the effectiveness of the Stockholm Convention and global joint efforts.¹ For example, 60% decline over a 10-year period on global average was observed on levels of DDT in human milk, reflecting the impact of actions taken in the past. Unintentionally produced POPs also significantly declined in all countries, reflecting improved waste management practices.

3. Legacy POPs are still detected

Notwithstanding this decline, results showed that the 12 POPs first regulated by the Stockholm Convention in 2004 were still found, such as dieldrin and PCBs in Africa and Latin America and the Caribbean. Some of these levels might be due to the remaining stockpiles, but other reasons such as illegal usage, lack of awareness or gaps in regulations are not negligible. We are still not safe from the potential health risk of these chemicals present in our environment. DDT remains commonly detected and accounts for the highest proportion of POPs in human milk on a global average and particularly in countries where DDT was intensively used.

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These toxic chemicals were detected in surface water in 22 countries across the world, even in remote islands in the Pacific. Substituting one harmful chemical with another is not the solution.

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We cannot afford to assume that any chemical developed as additive for a product for a specific property, whether for convenience or safety, is inherently safe to use. In reality, the pervasive use of thousands of chemicals in our daily lives means that no one is immune to their exposure and therefore the risks they pose. Environmental monitoring is essential to ensure that we remain vigilant and proactive in promoting action to address these risks before it is too late.

UNEP's snapshot study of the state of POPs in the environment shows they remain omnipresent, despite an overall declining trend and efforts to reduce their use and production. Having monitoring data on concentrations of POPs in the environment and humans is vital. It helps assess the success of measures to control exposure but also in identifying new risks where we can focus efforts on developing preventative measures.

In addition to the key messages mentioned in the above session "Main learning s during the period", a UNEP press release was published on 17 June 2024 capturing some fo the main findings and stories of the GMP project (<https://www.unep.org/news-and-stories/press-release/some-chemical-pollutants-reducing-humans-and-environment-new-ones>).

Some chemical pollutants reducing in humans and the environment, but new ones keep popping up

- A new UN study finds decline of 12 Persistent Organic Pollutants (POPs), such as DDT, regulated globally since 2004.
- Replacements for these POPs – often banned later due to their similar properties (e.g., PFAS) – were detected at high levels.
- POPs are linked to cancer, liver damage, decreased fertility, and increased risk of asthma and thyroid disease due to their endocrine disrupting properties.

Nairobi, 17 June 2024 – A comprehensive global study of POPs – health-endangering chemicals that stay in the environment over decades and longer – confirms they persist in human milk, air, water, soil, food and various ecosystems. The study, implemented by UN Environment Programme (UNEP) and funded by the Global Environment Facility (GEF), stresses the importance of POPs monitoring, caution in introducing alternatives, and addressing gaps in awareness and regulation.

The study was conducted across 42 countries in regions where data on POPs is limited, including Africa, Asia, Latin America and the Caribbean, and the Pacific Islands to monitor 30 POPs listed under the Stockholm Convention as of 2021. Samples were collected between 2016 and 2019.

The data is published as governments gather this week in Geneva for an ad hoc open-ended working group on the establishment of a science-policy panel on chemicals, waste and pollution prevention.

“POPs remain omnipresent, despite efforts to reduce their use and production,” said Andrea Hinwood, UNEP’s Chief Scientist. “Monitoring the concentrations of POPs in the environment and in our own bodies is vital, especially in low- and middle-income countries, to support their assessment of contamination, emissions, and exposure to POPs for informed decision making.”

The list of 30 POPs monitored in the study includes pesticides and industrial chemicals, as well as unintentionally released POPs that are by-products of industrial processes and from incomplete combustion (e.g., open burning of waste). They were found in every one of more than 900 collected samples, with over 50,000 data points generated on POPs in air, water, human milk, soil, beef, milk, milk powder, butter, mutton, pork, chicken, eggs, fish and shellfish, oil, and other items.

Data shows a global decline in the levels of 12 POPs initially listed in the 2004 Stockholm Convention; the report credits this trend to regulatory actions taken since. The use of DDT – once deployed in agriculture and now highly restricted – has decreased in human milk samples by over 70 per cent since 2004 on global average. Nevertheless, DDT remains the most prevalent POP in human milk, particularly in countries where it was intensively used.

“POPs monitoring is essential for evaluating the real-world impact of global actions,” said Rolph Payet, Executive Secretary of the Basel, Rotterdam and Stockholm Conventions. “The scientific findings not only illustrate the achievements of collective global efforts, but also highlight the urgent need of intensifying global initiatives to protect the health of humans and the environment.”

“GEF will continue to support and enhance POPs monitoring on a global scale,” said Anil Sookdeo, GEF’s Coordinator for Chemicals and Waste. “A new programme is being developed, building on the experience gained and including newly listed POPs and mercury (Hg).”

The study finds other POPs are present everywhere, including in areas far from any known source of contamination. Long-regulated chemicals, such as dieldrin and polychlorinated biphenyls (PCBs), were detected at elevated levels in the air across the African continent, the Caribbean, and Latin America.

Some banned chemicals have been replaced by the industry with other chemicals, which were later found to also have POPs properties, such as per- and polyfluoroalkyl substances (PFAS). Of the thousands of PFAS, three key chemicals (PFOS, PFOA, PFHxS) are listed under the Stockholm Convention. All of them were found in human milk. PFAS were also found in drinking water in remote islands, in levels far exceeding European Union and United States standards.

Newly listed POPs are increasingly difficult to monitor, even by the world’s top laboratories. While data collection is improving, with more labs in low-income countries participating in POPs monitoring, including in the UNEP global interlaboratory assessments, the quality of POPs analysis must continue to improve.

	<p>“Governments need not be pulled into a toxic game of hide and seek, where one regulated POP is replaced with a new one. This troubling pattern means these substances are still present in products we use, eat, wear, as well as in our air and water,” said Jacqueline Alvarez, Chief of the Chemicals and Health Branch of UNEP. “This highlights the risk of regrettable substitutions of banned POPs and the need to prioritize sustainability in industrial product design and consumer behaviour.”</p> <p>UNEP will continue supporting governments and work with industries to address POPs, identify areas in need of immediate attention, track the progress of pollution reduction efforts, and take action to prevent further contamination.</p>
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3 Performance

3.1 Rating of progress towards achieving the project outcomes

Project Objective and Outcomes	Indicator	Baseline level	Mid-Term Target or Milestones	End of Project Target	Progress as of current period (numeric, percentage, or binary entry only)	Summary by the EA of attainment of the indicator & target as of 30 June	Progress rating
National capacities for implementing the updated POPs Global Monitoring Plan (GMP) are strengthened, high quality data on the presence and transport of POPs are generated, and conditions for sustainable monitoring of POPs are in place in the African Region	# of countries capable to undertake sampling in the core and other matrices for POPs analysis	0	15	15	15	All the 15 project countries have completed the sampling activities.	S
	# of countries with reported data on 23 POPs;	0	12	12	15	Samples from 15 countries have been analyzed with results on 23 POPs as well as newly listed or voluntary POPs generated by the expert labs.	S
	# of regional roadmap for sustainable POPs monitoring published.	0	1	1	1	By 30 June 2024, experience gained and lessons learnt from the GMP2 project have been discussed in various meetings with multiple stakeholders including partner countries, experts, BRS Secretariat and other stakeholders. Project regional report and a synthesis report on roadmap on securing conditions for sustainable monitoring of POPs were developed and were presented at the regional final workshop in November 2023.	S
Technical and administrative support provided for the implementation of the project and organization of process established in the African Region	# of national project implementation agreements signed	0	15	15	15	15 countries have signed legal agreements with UNEP	S
	# of laboratories submitted information to UNEP for	0	8	8	44	The global databank has been updated with 256 labs registered from all UN	S

Project Objective and Outcomes	Indicator	Baseline level	Mid-Term Target or Milestones	End of Project Target	Progress as of current period (numeric, percentage, or binary entry only)	Summary by the EA of attainment of the indicator & target as of 30 June	Progress rating
	updating information in the databank					regions including those from the Africa Region which comprise of 44 laboratories.	
Training reports and sectoral reports on POPs analysis undertaken on two abiotic core matrices (i.e., air and water) in the African Region	# of countries that carried out sampling in abiotic matrices	0	12	12	15	15 countries have completed sampling of abiotic matrices	S
	# of training report for analysis of abiotic matrices	0	8	8	9	The trainings were provided based on the existing capacities in national laboratories to analyze different matrices e.g. biotic and/or abiotic. Nine trainings have been delivered with participants from 10 countries joined. A report was drafted summarizing all the training activities conducted under the project.	S
	# of sectoral reports developed in abiotic matrices	0	0	2	2	Two sectoral reports on air and water were developed and published on UNEP website https://www.unep.org/topics/chemicals-and-pollution-action/pollution-and-health/persistent-organic-pollutants-pops/pops .	S
Assessment report of existing analytical capacities prepared and report on POPs analysis undertaken in samples of national priority (other than core matrices) in the African Region	# of rounds for interlaboratory assessments held	0	0	2	2	Two rounds of interlaboratory assessments have been held with final result workshops organized and final reports published online.	S
	# of countries having high quality data reported for samples of major national interest.	0	0	up to 10	15	Standard Operating Procedures were developed and support were provided to all project countries to identify the list of matrices of national interest. Eleven countries collected and submitted	S

Project Objective and Outcomes	Indicator	Baseline level	Mid-Term Target or Milestones	End of Project Target	Progress as of current period (numeric, percentage, or binary entry only)	Summary by the EA of attainment of the indicator & target as of 30 June	Progress rating
						over 100 samples including diary, egg, fish, meat, sediment and others. Nigeria and Ghana also collected samples of plastic pellets. Results generated in the expert laboratories were shared with relevant countries. Mirror analysis were conducted in national laboratories where capacity exists. Results generated by national laboratories were included in the project national reports.	
Assessment reports contributing to regional report for the GMP undertaken, and a roadmap for sustainable POPs monitoring developed for the African region	# of assessments on POPs presence in the region and its capacity to analyse them	0	0	2	3	A project regional report and three sectoral reports were developed to summarize the results on POPs presence in the region and in air, water and human milk. Additionally, three UNEP reports were developed on assessing regional and national capacities for POPs monitoring, including the report "Assessing Regional and National Capacities for Monitoring and Research of Persistent Organic Pollutants in Air and Water", "Review of facts, Experiences, Achievements and Challenges in relation to Persistent Organic Pollutant Monitoring Activities", and "Organization and Outcomes of Four Rounds of Interlaboratory Assessments on Persistent Organic Pollutants". All reports are published on UNEP website https://www.unep.org/topics/chemicals-an	S

Project Objective and Outcomes	Indicator	Baseline level	Mid-Term Target or Milestones	End of Project Target	Progress as of current period (numeric, percentage, or binary entry only)	Summary by the EA of attainment of the indicator & target as of 30 June	Progress rating
						d-pollution-action/pollution-and-health/persistent-organic-pollutants-pops/pops.	
	# of regional roadmap for sustainable POPs monitoring in the region, with strategy for implementation, milestones and timetable in a regional roadmap	0	0	1	1	By 30 June 2024, experience gained and lessons learnt from the GMP2 project have been discussed in various meetings with multiple stakeholders including partner countries, experts, BRS Secretariat and other stakeholders. A project regional report was developed summarizing the results of the project, and a synthesis report on roadmap to secure conditions for sustainable monitoring of POPs was developed. The reports were developed and presented at the regional final workshop in November 2023.	S
	# of countries providing inputs to develop conclusions and lessons learned on GMP phase 2, as well as recommendations and future plans	0	0	15	15	All project country have drafted national reports including a chapter on future plans. Finalized reports were received from fourteen countries with one more national report pending finalization.	S

3.2 Rating of progress implementation towards delivery of outputs (Implementation Progress)

Component	Output/Activity	Expected completion date	Implementation status as of previous reporting period (%)	Implementation status as of current reporting period (%)	Progress rating justification, description of challenges faced and explanations for any delay	Progress Rating

Component	Output/Activity	Expected completion date	Implementation status as of previous reporting period (%)	Implementation status as of current reporting period (%)	Progress rating justification, description of challenges faced and explanations for any delay	Progress Rating
1 Technical and administrative support provided for the implementation of the project and organization of process established in the African Region	Activity 1.1: Key stakeholders sign legal documents to carry out	2023-12-31	100%	100%	Output indicator target: 15 legal agreements signed Progress: Completed All partners have signed legal agreements with UNEP. Extension of Agreement has been granted to partner countries to compensate the time loss due to COVID-19 and to complete the planned activities.	S
	Activity 1.2: Organise inception workshop, with project workplan and budget assigned	2016-07-31	100%	100%	Output indicator target: Inception workshop organized Progress: Completed Inception workshop took place in July 2016, with project launched and workplan and budget assigned.	S
	Activity 1.3. Update POPs laboratory databank	2020-04-30	100%	100%	Output indicator target: at least 8 laboratories submitted information to UNEP for updating information in databank Progress: Completed The POPs laboratory databank has been updated, with new registered labs included. It is available online at http://informea.pops.int/HgPOPLabs/index.html	S
2 Training reports and sectoral reports on POPs analysis undertaken on two abiotic core matrices	Activity 2.1: Identify sampling sites for air monitoring and make them operational.	2016-12-31	100%	100%	Output indicator target: At least 12 countries carried out sampling in abiotic matrices. Progress: Completed with guidance document provided by UNEP, sampling sites for air monitoring have been identified (15 for air and 6 for water as planned) in all project countries. Air monitoring has	S

Component	Output/Activity	Expected completion date	Implementation status as of previous reporting period (%)	Implementation status as of current reporting period (%)	Progress rating justification, description of challenges faced and explanations for any delay	Progress Rating
(i.e., air and water) in the African Region					been undertaken in all project countries.	
	Activity 2.2: Identify sampling sites for water monitoring and make them operational.	2016-12-31	100%	100%	Output indicator target: At least 12 countries carried out sampling in abiotic matrices (15 for air and 6 for water). Progress: Completed with guidance document provided by UNEP, sampling sites for water monitoring have been identified in the six countries assigned to undertake water monitoring. Monitoring activities have been undertaken in those project countries.	S
	Activity 2.3: Make national laboratories operational for undertaking analysis of abiotic matrices.	2018-08-30	100%	100%	Output indicator target: Training provided to at least 8 laboratories Progress: Completed National analytical capacity screening has been conducted at the beginning of the project. National labs with existing capacity have been assigned to analyse certain POPs according to their capacity. Mirror analysis was conducted in reference labs to ensure the generation of high quality international comparable data. Trainings have been provided to selected national laboratories, and two rounds of interlaboratory assessment have been organized for quality assurance/quality control. A report was drafted summarizing all the training activities	S

Component	Output/Activity	Expected completion date	Implementation status as of previous reporting period (%)	Implementation status as of current reporting period (%)	Progress rating justification, description of challenges faced and explanations for any delay	Progress Rating
					conducted under the project.	
	Activity 2.4: Analyse national samples for air and water and report high quality data.	2021-03-31	100%	100%	Output indicator target: at least 12 countries analyze abiotic samples Progress: Completed Air and water samples have been analyzed and results have been validated, shared with project countries and reported to the Stockholm Convention Data Warehouse. Sectoral reports and a regional report were developed summarizing the results generated. The reports are published on UNEP website. https://www.unep.org/topics/chemicals-and-pollution-action/pollution-and-health/persistent-organic-pollutants-pops/pops .	S
	Activity 2.5: Summarize results of analysis in two distinctive sectoral reports.	2024-06-30	90%	100%	Two sectoral reports on air and water were developed summarizing the results generated under the project. The reports were published on UNEP website https://www.unep.org/topics/chemicals-and-pollution-action/pollution-and-health/persistent-organic-pollutants-pops/pops .	S
3 Training reports and sectoral report on POPs analysis undertaken on one biotic core matrix (6th	Activity 3.1: Make countries in the region capable to undertake sampling of human milk for the 6th round of UNEP/WHO survey	2017-11-30	100%	100%	Output indicator target: none Progress: Completed Standard Operating Procedures and video tutorials have been provided to guide the implantation of human milk survey. National coordinator for human milk survey were nominated by each project country. Additional support have been provided to countries to obtain	S

Component	Output/Activity	Expected completion date	Implementation status as of previous reporting period (%)	Implementation status as of current reporting period (%)	Progress rating justification, description of challenges faced and explanations for any delay	Progress Rating
round of human milk survey) in the African Region					ethical clearance	
	Activity 3.2: Make national laboratories operational for undertaking analysis of human milk samples	2018-02-28	100%	100%	Output indicator target: none Progress: Completed National laboratory capacity screening have been conducted to identify labs that can analyse human milk samples.	S
	Activity 3.3: Implement the 6th round of human milk survey	2020-04-30	100%	100%	Output indicator target: 12. Progress: Completed. All project countries have received sampling materials. All fifteen countries have completed the human milk survey.	S
	Activity 3.4: Compare results from earlier rounds, and report them to the GMP	2021-03-31	100%	100%	Output indicator target: None Progress: Completed. Analytical results of 23 mandatory POPs, as well as newly listed POPs and some candidate POPs, have been generated, shared with project countries, and reported to the Stockholm Convention Data Warehouse. The results were used in the Stockholm Convention GMP reports for the effectiveness evaluation of the Convention. A sectoral report was developed to summarize the results, and was published on UNEP website https://www.unep.org/topics/chemicals-and-pollution-action/pollution-and-health/persistent-organic-pollutants-pops/pops .	S
4 Assessment report of	Activity 4.1: Undertake two rounds of the global interlaboratory assessment.	2020-08-31	100%	100%	Output indicator target: 2 round of interlaboratory assessment Progress:	S

Component	Output/Activity	Expected completion date	Implementation status as of previous reporting period (%)	Implementation status as of current reporting period (%)	Progress rating justification, description of challenges faced and explanations for any delay	Progress Rating
existing analytical capacities prepared and report on POPs analysis undertaken in samples of national priority (other than core matrices) in the African Regio					Completed Two rounds of interlaboratory assessment were held in 2016-2017 with 175 registrations and in 2018-2019 with 147 registrations. Final reports were prepared and published online.	
4 Assessment report of existing analytical capacities prepared and report on POPs analysis undertaken in samples of national priority (other than core matrices) in the African Regio	Activity 4.2: Identify and analyse samples of major national interest.	2021-06-30	100%	100%	Output indicator target: up to 10 countries reported data for samples of major national interest. Progress: Completed. Standard Operation Procedures were developed and support were provided to all project countries to identify the list of matrices of national interest. Eleven countries collected and submitted 105 samples including diary, egg, fish, meat, sediment, soil and others. Nigeria and Ghana also collected samples of plastic pellets. Results generated in the expert laboratories were shared with relevant countries. Mirror analysis were conducted in national laboratories where capacity exists. Results generated by national laboratories were included in	S

Component	Output/Activity	Expected completion date	Implementation status as of previous reporting period (%)	Implementation status as of current reporting period (%)	Progress rating justification, description of challenges faced and explanations for any delay	Progress Rating
					the project national reports.	
5 Assessment reports contributing to regional report for the GMP undertaken, and a roadmap for sustainable POPs monitoring developed for the African region	Activity 5.1: Develop conclusions, lessons learned and recommendations from GMP2 for future monitoring plan.	2024-06-30	100%	100%	Output indicator target: none Progress: Completed. Steering committee meetings and expert and stakeholder consultation meetings have been organized to discuss findings and messages of the project, lessons learned and recommendations for future monitoring of POPs. A project regional report and three sectoral reports were developed to summarize the results on POPs presence in the region and in air, water and human milk. Additionally, three UNEP reports were developed on assessing regional and national capacities for POPs monitoring, including the report "Assessing Regional and National Capacities for Monitoring and Research of Persistent Organic Pollutants in Air and Water", "Review of facts, Experiences, Achievements and Challenges in relation to Persistent Organic Pollutant Monitoring Activities", and "Organization and Outcomes of Four Rounds of Interlaboratory Assessments on Persistent Organic Pollutants". All reports are published on UNEP website https://www.unep.org/topics/chemicals-and-pollution-action/pollution-and-health/persistent-organic-pollutants-pops/pops .	S

Component	Output/Activity	Expected completion date	Implementation status as of previous reporting period (%)	Implementation status as of current reporting period (%)	Progress rating justification, description of challenges faced and explanations for any delay	Progress Rating
	Activity 5.2: Prepare a state-of-the-art report to picture the present situation of POPs in the region's environment and humans.	2024-06-30	90%	100%	Based on the results and outputs of the project, a regional report was developed to present situation on POPs in the region in environment and in humans. The report has been published on UNEP website https://www.unep.org/topics/chemicals-and-pollution-action/pollution-and-health/persistent-organic-pollutants-pops/pops .	S
	Activity 5.3: Develop a roadmap for sustainable POPs monitoring.	2024-06-30	90%	100%	By 30 June 2024, experience gained and lessons learnt from the GMP2 project have been discussed in various meetings with multiple stakeholders including partner countries, experts, BRS Secretariat and other stakeholders. A synthesis report on roadmap to secure conditions for sustainable monitoring of POPs was developed. The reports were developed and presented at the regional final workshop in November 2023.	S

The Task Manager will decide on the relevant level of disaggregation (i.e. either at the output or activity level).

4 Risks

4.1 Table A. Project management Risk

Please refer to the Risk Help Sheet for more details on rating

Risk Factor	EA Rating	TM Rating
1 Management structure - Roles and responsibilities	Low	Low
2 Governance structure - Oversight	Low	Low
3 Implementation schedule	Low	Low
4 Budget	Low	Low
5 Financial Management	Low	Low
6 Reporting	Low	Low
7 Capacity to deliver	Low	Low

If any of the risk factors is rated a Moderate or higher, please include it in Table B below

4.2 Table B. Risk-log

Implementation Status (Current PIR)

Insert ALL the risks identified either at CEO endorsement (inc. safeguards screening), previous/current PIRs, and MTRs. Use the last line to propose a suggested consolidated rating.

Risks	Risk affecting: Outcome / outputs	CEO ED	PIR 1	PIR 2	PIR 3	PIR 4	PIR 5	Current PIR	Δ	Justification
Logistical risks inherent to program involving fifteen countries.	All outputs						L	L	=	Risk mitigated.
Delay in the collection of samples especially related to ethical issues in relation to human	Outcome 3						L	L	=	Risk mitigated.

Risks	Risk affecting: Outcome / outputs	CEO ED	PIR 1	PIR 2	PIR 3	PIR 4	PIR 5	Current PIR	Δ	Justification
milk samples at national level.										
Inability to conduct satisfactory laboratory work.	All outputs						L	L	=	Risk mitigated.
COVID-19 pandemic impacts: Significant delays have occurred due to the COVID-19 pandemic. such as analysis of samples in the expert and national laboratories. which consequently caused delays on reporting data to the Stockholm Convention Data Warehouse. and on the preparation of national. regional and sectoral reports. Delays also occurred on administrative work including issuing financial report and shipment of samples. In addition. due to the high risk and strict regulations on international travels. planned meetings. namely the final result workshop of the 4th interlaboratory assessment and the project final meeting. cannot be held face-to-face in 2020.	All outputs						L	L	=	Risk mitigated.
Due to uncertainty for international travel. the final meeting of the project may not be able to be held in person.	All outputs						L	L	=	Risk mitigated with final workshop held.
Delay in review and approval by UNEP Publication board	Outcome 2-3-5							L	=	Risk mitigated with the reports approved and published
	Low						L	L	=	

4.3 Table C. Outstanding Moderate, Significant, and High risks

Additional mitigation measures for the next periods

Risk	Actions decided during the previous reporting instance (PIRt-1, MTR, etc.)	Actions effectively undertaken this reporting period	What	When	By Whom

High Risk (H): There is a probability of greater than 75% that assumptions may fail to hold or materialize, and/or the project may face high risks. Significant Risk (S): There is a probability of between 51% and 75% that assumptions may fail to hold and/or the project may face substantial risks. Moderate Risk (M): There is a probability of between 26% and 50% that assumptions may fail to hold or materialize, and/or the project may face only modest risks. Low Risk (L): There is a probability of up to 25% that assumptions may fail to hold or materialize, and/or the project may face only modest risks.

5 Amendment - GeoSpatial

Project Minor Amendments

Minor amendments are changes to the project design or implementation that do not have significant impact on the project objectives or scope, or an increase of the GEF project financing up to 5% as described in Annex 9 of the Project and Program Cycle Policy Guidelines. Please tick each category for which a change occurred in the fiscal year of reporting and provide a description of the change that occurred in the textbox. You may attach supporting document as appropriate

5.1 Table A: Listing of all Minor Amendment (TM)

Minor Amendments	Changes
Results Framework:	No
Components and Cost:	No
Institutional and implementation arrangements:	No
Financial Management:	No
Implementation Schedule:	
Executing Entity:	No
Executing Entity Category:	No
Minor project objective change:	No
Safeguards:	No
Risk analysis:	No
Increase of GEF financing up to 5%:	No
Location of project activity:	No
Other:	No

Minor amendments

No cost extension and budget revision.

5.2 Table B: History of project revisions and/or extensions (TM)

Version	Type	Signed/Approved by UNEP	Entry Into Force (last signature Date)	Agreement Expiry Date	Main changes introduced in this revision
Original Legal Instrument		2015-03-18	2015-03-18	2019-03-31	Internal Agreement with UNEP Knowledge and Management Unit
Amendment 1	Extension	2019-06-20	2019-06-20	2021-06-30	Extension at no additional cost
Amendment 2	Extension	2021-06-30	2021-06-30	2022-06-30	Extension at no additional cost / budget and workplan revision
Amendment 3	Extension	2022-05-10	2022-05-10	2023-06-30	Extension at no additional cost / budget and workplan revision
Amendment 4	Extension	2023-06-23	2023-06-23	2024-06-30	Extension at no additional cost / budget and workplan revision

GEO Location Information:

The Location Name, Latitude and Longitude are required fields insofar as an Agency chooses to enter a project location under the set format. The Geo Name ID is required in instances where the location is not exact, such as in the case of a city, as opposed to the exact site of a physical infrastructure. The Location & Activity Description fields are optional. Project longitude and latitude must follow the Decimal Degrees WGS84 format and Agencies are encouraged to use at least four decimal points for greater accuracy. Users may add as many locations as appropriate. Web mapping applications such as OpenStreetMap or GeoNames use this format. Consider using a conversion tool as needed, such as: <https://coordinates-converter.com> Please see the Geocoding User Guide by clicking here

Location Name	Latitude	Longitude	GEO Name ID	Location Description	Activity Description
Kinshasa. DRC	-4.35	15.2833333333333			POPs air sampling
New CDA building. Eastern Cairo. Egypt	29.9934388888889	31.5852583333333			POPs air sampling
Addis Ababa. Ethiopia	9.01842369444445	38.8185401388889			POPs air sampling

Location Name	Latitude	Longitude	GEO Name ID	Location Description	Activity Description
Accra. Ghana	5.65	-0.166666666666667			POPs air sampling
Nairobi. Kabete. Kenya	-1.24944444444444	36.7425			POPs air sampling
Bamako. Mali	12.6589	-7.9422			POPs air sampling
Vacoas-Phoenix. Mauritius	-20.29717	57.4983			POPs air sampling
Pachalik d'Ifrane. Morocco	33.526783	-5.107577			POPs air sampling
FME. Nigeria	9.038667	7.46725			POPs air sampling
Dakar. Ngoye. Senegal	14.635	-16.4297222222222			POPs air sampling
Vikuge. Kibaha district. Tanzania	-6.78833333333333	38.8633333333333			POPs air sampling
Kouma-Konda. Togo	6.95	0.583333			POPs air sampling
Tunis. Tunisia	36.8366388888889	10.2113888888889			POPs air sampling
Soroti Flying School. Uganda	1.720833	33.6166666666667			POPs air sampling
Kenneth Kanuda Airport. Lusaka. Zambia	-15.32585	28.44723			POPs air sampling
Egypt River Nile	30.136667	31.294167			POPs water sampling
Ghana Volta River	6.125092	0.123497			POPs water sampling
Kenya Sabaki	-3.161389	40.134356			POPs water sampling
Tunisia Qued Medjerda	37.022788	10.140758			POPs water sampling
Zambia Kafue/Zambezi Confluence	-15.9500556	28.9237777777777			POPs water sampling
Senegal River Senegal	15.98611111	-16.515278			POPs water sampling

Please provide any further geo-referenced information and map where the project interventions is taking place as appropriate. *

The information provided by default had mistakes. There are 15 air sampling sites and 6 water sampling sites in Africa under the GMP project. The blank and surplus rows need to be deleted.

[\[Annex any linked geospatial file\]](#)

Additional Supporting Documents:

Filename	File Uploaded By	File Uploaded At	
GEFID_4886_GMP Africa_PIR 2023_final.pdf	CW TM	2024-06-25 09:06:30	<u>Download</u>