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UNEP/GEF projects “Implementation of the POPs Global Monitoring Plan under the Stockholm Convention” in the Asia Region and “Continuing Regional Support for the POPs Global Monitoring Plan under the Stockholm Convention” in the Africa, Pacific and Latin America and Caribbean Regions

Paper 1: Background

1. Introduction

The Persistent Organic Pollutants (POPs) Global Monitoring Plan (GMP) of the Parties of the Stockholm Convention is established to provide a harmonized organizational framework for the collection of comparable monitoring data on the presence of POPs from all regions, in order to identify changes in their concentrations over time, as well as on regional and global environmental transport.

Data and information collection, including capacity-enhancement activities and the development of regional monitoring reports, is under the responsibility of regional organization groups in each of the five UN Regions. A global coordination group is overseeing the implementation of the global monitoring plan across the regions and the development of the global monitoring report.

The GMP is structured by strategic attributes that stated the approach to gather information on the presence of POPs in core matrices by cooperative arrangements with existing programs and by monitoring activities to supplement existing information in order to obtain data from all regions. Also, includes needs and opportunities for capacity enhancement to increase data supplementation and participation in the global monitoring plan through financial and technical assistance. It envisions capacity building and the improvement of the comparability of the data by training programs through strategic partnerships and the organization of inter-calibration programs.

Since the first edition of the guidance document for a Global Monitoring Program was published in 2004 and two rounds of global monitoring reports have been completed and the third round is currently being undertaken with compilation of comparable abiotic (air, water) and biotic (human breast milk) data to support the effectiveness evaluation (Figure 1).

The first phase compiled data from 2000 -2008 on the presence of the 12 legacy POPs from selected existing monitoring programs. Global monitoring report for the effectiveness evaluation presented at the fourth Conference of the Parties in 2009, concluded, among others, that there are data on air and human milk or blood in all five United Nations regions that can be used as a baseline for future evaluations. All regions noted, however, that data were missing in some significant subregions¹.

¹ UNEP/POPS/COP.4/33

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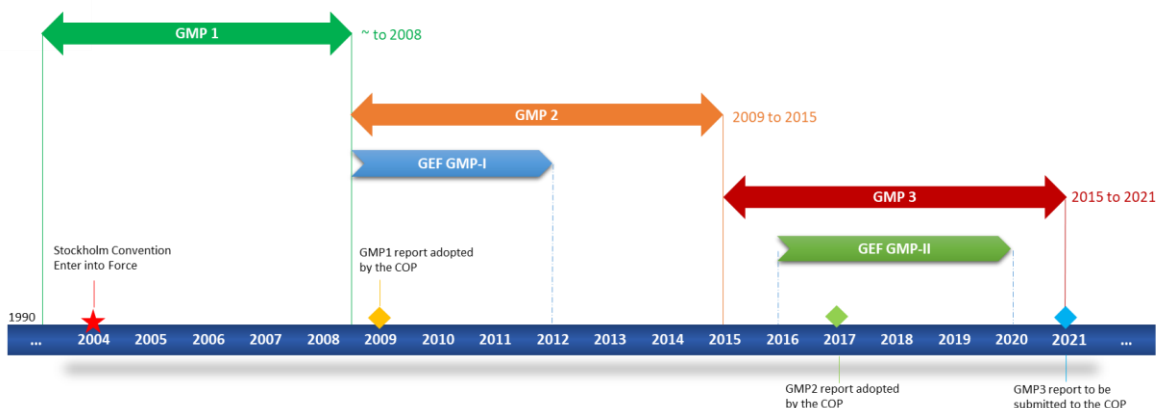


Figure 1: Timeline of the Stockholm Convention POPs GMP and the UNEP/GEF GMP projects

2. Capacity assistance projects

Globally, there are number of partner organizations and stakeholder initiatives contribute to strengthening the capacities for monitoring of POPs. The UNEP Chemicals Health Branch, in close collaboration with the Secretariat of the Stockholm Convention, has been implementing several rounds of projects, towards enabling the provision of quality and comparable data on POPs in humans and the environment to cover gaps of information in regions.

Much of the financial assistance was provided by the Global Environment Facility (GEF) and substantial additional financial contributions were made by the Strategic Approach to International Chemicals Management (SAICM) Trust Fund, the Government of Norway, the European Union and the Secretariat of the Stockholm Convention.

Two rounds of projects were undertaken to pilot test the recommendations of the guidance document for the Global Monitoring Plan on POPs² and two series of regional projects to support the implementation of the Global Monitoring Plan. The first series of regional projects (UNEP/GMP-I) were implemented in 32 countries in Africa, Latin America and the Caribbean Islands, and the Pacific Islands regions from 2009 to 2012, and the second series of projects (UNEP/GEF GMP-II) are currently being implemented in 42 countries in Africa, Asia, the Pacific Islands and in Latin America and the Caribbean Islands from 2016 to 2020 (see Table 1).

Table 1: UNEP/GEF GMP-II projects in brief.

Objective	To strengthen the capacity for implementation of the updated POPs Global Monitoring Plan and to create the conditions for sustainable monitoring of POPs
Duration	2016-2020
Components	<ul style="list-style-type: none"> • Securing conditions for successful project implementation • Capacity building and data generation on analysis of core abiotic matrices (air and water)

² GEF Project on assessment of existing capacity and capacity building needs to analyze POPs in developing countries

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	<ul style="list-style-type: none"> • Capacity building and data generation on analysis of core biotic matrices (human milk) • Assessment of existing analytical capacities and reinforcement of national POPs monitoring • Securing conditions for sustainable POPs monitoring 			
Activities	<ul style="list-style-type: none"> • Development of standard operating procedures and guidance • Sampling and analysis of air (passive and active) • Sampling and analysis of water • Sampling and analysis of human milk • Mirror analysis of matrices of national interest • Trainings in national laboratories on the analysis of POPs • Organization of two rounds of global interlaboratory assessment • Development of national reports, regional reports and sustainable plans 			
Countries	Africa (15)	Asia (7)	Pacific Islands (9)	Latin America and Caribbean (11)
	DR Congo, Egypt, Ethiopia, Ghana, Kenya, Mali, Morocco, Mauritius, Nigeria, Senegal, Tanzania, Togo, Tunisia, Uganda, Zambia	Cambodia, Indonesia, Lao PDR, Mongolia, Philippines, Thailand, Vietnam	Fiji, Kiribati, Marshall Islands, Niue, Samoa, Solomon Islands, Palau, Tuvalu, Vanuatu	Antigua and Barbuda, Argentina, Barbados, Brazil, Chile, Colombia, Ecuador, Jamaica, Mexico, Peru, Uruguay
Executing agency	<p>UN Environment for Africa, Asia and Pacific Islands regions;</p> <p>Basel Convention Coordinating Centre, Stockholm Convention Regional Centre, for Capacity Building and Transfer of Technology hosted by Uruguay for GRULAC Region co-execution in coordination and collaboration with UN Environment</p>			
Partners	<p>Secretariat of the Basel, Rotterdam and Stockholm Conventions; World Health Organization (WHO); Man-Technology-Environment Research Center (MTM), Örebro University, Sweden; Chemisches und Veterinäruntersuchungsamt (CVUA), Freiburg, Germany; Department of Environment and Health, Vrije Universiteit, Netherlands; Research Centre for Toxic Compounds in the Environment (RECETOX), Czech Republic; Spanish National Research Council (CSIC); Japan Environmental Sanitation Center; National Institute for Environmental Studies, Japan; Project countries</p>			
Total grant (USD)	13,775,000 (excluding co-financing)			

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Table 2: UNEP/GEF GMP-II Budget Breakdown by Activities*

Activities		Africa	Asia	Pacific	GRULAC	TOTAL
National coordination and reporting		420000	350,000	200,997	123,000	1,093,997
Air monitoring	Sampling	450,500	335,500	260,400	221,500	1,267,900
	Analysis	444,400	328,050	205,650	367,800	1,345,900
Milk survey	Sampling	315,000	166,000	189,000	106,000	77,6000
	Analysis	66,225	32,025	41,175	54,900	162,332
Water monitoring	Sampling	137,600	136,000	53,000	54,000	380,600
	Analysis	42000	21,000	27,000	21,000	105,000
National samples	Sampling	Co-finance	Co-finance	Co-finance	Co-finance	Co-finance
	Analysis	396,700	423,300	216,500	333,000	1,369,500
Training and analysis at national laboratories		407,633	322,650	99,452	290,000	1,119,735
Interlab**		211,634	170,000	15,000	140,000	536,634

* Source: project documents and partner agreements

** Expenditure as of 2019

3. Current status of implementation

3.1 Sampling activities

3.1.1 Air Sampling

Passive air sampling has been conducted in all 42 project countries every three months for two years from 2017 to 2019. The analytes include the 23 POPs listed in the Stockholm Convention as of the sixth meeting of the Conference of Parties (at the time of the project approval) and are planned to include newly listed POPs and some candidate POPs under review by the Stockholm Convention. Besides, active air sampling has been conducted in Brazil, Mongolia and Mauritius, and in Ghana and Kenya by project partners as part of the co-financing.

Analysis of samples are conducted in the expert laboratories and in national laboratories where analytical capacity exists. First set of results for dl-POPs for all regions are available; the full dataset is expected to be available by end of 2019.

3.1.2 Water Sampling

Twenty-two project countries (six in Africa, nine in Pacific Islands, five in Latin America and the Caribbean Islands and two in Asia) were found to meet the criteria for water sampling

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according to the GMP guidance document. Water samples have been collected from large rivers or estuaries using grab sampling approach. Samples are collected every three months from 31 March 2017 until 31 December 2018 at the same site for two years for a total of eight samples per country. Samples have been sent to expert laboratory and also to national laboratories where analytical capacity for the analysis of POPs exist. Analytical results are planned to be available by end of 2019.

3.1.3 Human Milk Survey

Human milk samples are collected and pooled at national level. Out of the 42 project countries, four have not been able to take part in the milk survey due to internal regulations. Milk samples from 38 countries have been sent to the UNEP/WHO reference laboratory, CVUA in Germany for analysis of the 23 POPs under the project, as well as newly listed POPs and some candidate POPs under review by the Stockholm Convention. PFOS analysis is performed at MTM Research Centre, Örebro University. National laboratories with analytical capacity will also analyze either the sub-pool or individual samples for POPs according to their needs or interests. The first set of results have been communicated to countries; the full dataset of the milk survey is expected to be available by end of 2019.

3.1.4 Sampling of Matrices of National Interest

All 42 project countries were scheduled to take samples of matrices of national interests. More than 350 samples have been collected covering sediments, fish, butter, dairy, soil, meat, egg and other matrices. These samples do not only provide additional information about the presence of POPs in each country, but also serve as so-called mirror samples to compare the “expert laboratory results” with the results from the national or local laboratory.

3.2 Capacity building activities

3.2.1 Guidance and Standard Operating Procedures

In support of national sampling and analytical activities, the UNEP/GEF GMP-II projects supported the development and updating of standard operating procedures (SOPs)³ as well as tutorials in several languages (Table 3).

Table 3: Guidance and SOPs developed in support of national sampling and analytical activities.

Subject	Available languages**
Passive Sampling of Ambient Air: Methodology and Procedure	En. Fr. Sp.
Protocol for the Sampling of Water as a Core Matrix in the UNEP/GEF GMP2 Projects for the Analysis of PFOS	En.
Guidelines for Organization, Sampling and Analysis of Human Milk on Persistent Organic Pollutants	En. Fr. Sp.

³ <https://www.unenvironment.org/explore-topics/chemicals-waste/what-we-do/persistent-organic-pollutants/guidance-and-standard>

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Protocol for the Sampling and Pre-treatment of National Samples	En. Fr. Sp.
Active sampling of Ambient Air: Operation procedure and Methodology	En. Fr. Sp.
Video tutorial for the sampling of human milk	En. Fr. Sp.
Video tutorial for passive air sampling	En. Fr. Sp. Ru.
Video tutorial for active air sampling	En. Sp.
General procedure for analysis of PFOS	En. Fr. Sp
General procedure for analysis of PCB and OCP	En. Fr. Sp
General procedure for analysis of PBDE	En. Fr. Sp
General procedure for analysis of PFAS in water	En. Fr. Sp
General procedure for analysis of dl-POPs	En. Fr. Sp

** Note: *En.-English; Fr.-French; Sp.-Spanish*

3.2.2 Training

Under the UNEP/GEF GMP-II projects, trainings on the analysis of core media are provided to national laboratories in 30 countries. By October 2019, 80% of the scheduled trainings have been completed in national laboratories (Table 4).

Table 4: Trainings in project countries planed and progress made

Region	No. of trainings panned	No. of trainings completed
Africa	11	11
Asia	6	6
Pacific Islands	2	1
Latin America and the Caribbean Region	11	6

3.2.3 Interlaboratory Assessment

The biennial global interlaboratory assessment on POPs is a key element of quality control/quality assurance for any chemical analytical laboratory and has an important role under the UNEP/GEF GMP projects.

Through the years, the UNEP-coordinated interlaboratory assessments have become the world largest exercise on POPs analysis covering quite a wide spectrum of test matrices. The first two rounds of interlaboratory assessments were performed from 2010 to 2011 on the analysis of 12 initial POPs listed under the Stockholm Convention. The second round also had the nine new POPs listed under the Stockholm Convention in 2009. Under the UNEP/GEF GMP-II projects, the third round inter-laboratory assessment was conducted from 2016 to 2017 with 175 participating laboratories. The forth inter-laboratory assessment was launched in September 2018 with 148 laboratories registered. A total of 428 laboratories did register to the four rounds of inter-laboratory assessments covering all UN regions with 293 of them submitted results.

The implemented global interlaboratory assessment scheme follows proficiency testing without special training component. Participation in the assessment is not restricted to countries participating in the UNEP/GEF GMP projects, and is free-of-charge for developing countries (in the present arrangement).

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Performance by laboratories vary a lot among compounds: Experience have shown that some laboratories have improved their performance, while 20% of laboratories registered do not report and about 20% of the reported results are of unsatisfactory quality.

4. Securing conditions for sustainable POPs monitoring

One of the components of UNEP/GEF GMP-II projects is to secure conditions for sustainable POPs monitoring, including contributing to the development of a roadmap for sustainable POPs monitoring in global context. Several rounds of consultations were held with the project steering committee, project implementing partners⁴ and with the GMP global coordination group.

The series of UNEP/GEF regional projects helped countries to acquire the vital elements to participate in global monitoring of POPs under the Stockholm Convention. However, deficiencies in broader framework of sound management of chemicals at national level in developing countries challenge the countries to be sustainably resourceful to continue to contribute effectively.

Various initiatives are already in place to strengthen national policy frameworks for the sound management of POPs and other chemicals of concerns. Such initiatives include assistance on the establishment and update of the Stockholm Convention National Implementation Plans (NIPs), the Special Programme and the SAICM Quick Start Programme (QSP) etc.. Opportunities exist to explore further strengthen technical, political and financing conditions for enhanced synergy between POPs monitoring and activities within the broader objective of the elimination of POPs.

The consultation held with the GMP global coordination group in October 2019 on strategies to strengthen mechanisms to support monitoring of POPs in the frame of the GEF projects concluded⁵, among others:

- The implementation of the human milk survey as part of the GEF projects worked very well and generated extremely valuable human exposure data for GMP-3. Air monitoring could continue as a project component in the future to cover critical gaps in current geographical coverage. Water sampling activities are also an important project component as monitoring of PFOS in this core matrix is at its incipient stage, and its scope would be enlarged to accommodate the recent listing of PFOA, and eventually PFHxS in the near future. Focus would be on capacity building and QA/QC data generation on critical core matrices and in critical locations that complement other GMP activities.
- The project design should also consider long term strategies to generate information over time that is needed for the effectiveness evaluation. An example of success story that

⁴ UNEP/POPS/COP.9/INF/37

⁵ Report of the Meeting of the Coordination Group for the Global Monitoring Plan for Persistent Organic Pollutants under the Stockholm Convention, 15-17 October 2019

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enabled continuation of activities and effective use of the capacity that was built through the projects was the involvement of the research community and academia.

- The formulation of a global project to enhance capacity on the critical gaps that are still identified within the GMP, in particular a global human milk survey covering all developing regions, air monitoring in a limited number of sites that complement activities conducted by the monitoring programmes within the GMP, and water monitoring at sites where past activities have already generated baseline data, could offer a cost effective way to continue GMP capacity enhancement in a sustainable way.